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ORGANIC CHEMICALS**

**United States Production
and Sales, 1944**

Report No. 155

• **Second Series**



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SYNTHETIC
ORGANIC CHEMICALS

United States Production
and Sales, 1944

UNDER THE GENERAL PROVISIONS OF TITLE III
PART II, SECTION 332 OF THE TARIFF ACT OF 1930

UNITED STATES
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INTRODUCTION

For 28 years the United States Tariff Commission has issued reports on the annual production and sales of synthetic organic chemicals and the raw materials from which they are made. The last complete report covered a period of 3 years, 1941-43. The report for 1944 includes statistics on United States production and sales of all synthetic organic chemicals and their raw materials, except explosives and other chemicals manufactured at Government-owned Ordnance plants. These statistics were compiled from information supplied by 531 producing companies, a list of which is given in part III.

The raw materials covered by this report are obtained by various processes from coal, crude petroleum, natural gas, and other natural sources. Those derived from coal are obtained from coke-oven gas and by distillation from various tars; those derived from crude petroleum and natural gas are principally the result of cracking and distillation processes; and those derived from other natural sources are obtained by fermentation. These raw materials (principally coal-tar crudes and crude petroleum products) represent the first stage in the manufacture of synthetic organic chemicals. Intermediates are chemicals derived from these crudes by refining or by synthesis and represent the second stage. They, in turn, are used chiefly to make finished chemical products. Finished products, including dyes, rubber-processing chemicals, and plastics materials, are not usually sold to the ultimate consumer but to industrial concerns for use in their manufacturing processes. In general, organic chemicals extracted or distilled from natural (vegetable) sources such as wood or plants (except grains) are beyond the scope of this report.

Unless otherwise noted, the data on chemicals are given in terms of undiluted materials. Dyes, however, are reported in terms of established commercial concentrations. The items included are grouped into the following categories: Crudes, intermediates, dyes, lakes and toners, medicinals, flavor and perfume materials, plastics materials, rubber-processing chemicals, elastomers, plasticizers, surface-active agents, and miscellaneous chemicals. Because of the increasing importance of plasticizers and surface-active agents, statistics for these products are shown in separate tables for the first time. Formerly they were included with miscellaneous synthetic organic chemicals. Organic chemicals made from grain by fermentation processes are included with miscellaneous chemicals.

Within each group the classification of items follows as closely as feasible the system used in Group 19 of the Standard Commodity Classification.¹ In accordance with the practice in the more recent of these reports, the synthetic organic chemicals in each group are divided according to their known chemical structure into cyclic and

¹ Executive Office of the President, Bureau of the Budget, *Standard Commodity Classification*, vol. 1, Tech. Paper 26, 1943.

acyclic compounds. This classification roughly parallels the distinction between chemicals of coal-tar and non-coal-tar origin followed in earlier reports. The cyclic and acyclic classification is more accurate as important products which formerly were exclusively of coal-tar origin, are now made from non-coal-tar sources.

The system of nomenclature for organic chemicals used by *Chemical Abstracts*, a publication of the American Chemical Society, is employed as standard, whenever possible, to avoid confusion in terminology and errors in tabulation.

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

Imports of coal-tar intermediates and finished coal-tar products entering the United States under paragraphs 27 and 28 of the Tariff Act of 1930 are given in the appendix of the report. In the appendix there is also given a tabulation of the number of technical research workers and the cost of research in the synthetic organic chemicals industry.

SUMMARY

Synthetic organic chemicals are used in the manufacture of many products indispensable to the Nation's health, comfort, and security. Production of these chemicals was larger in 1944 than in 1943, but the percentage increase over the preceding year was less. The output of tars, tar crudes, and crudes from petroleum and natural gas—the raw materials from which most of the synthetic organic chemicals are made—was also larger in 1944 than in 1943.

As shown in table 1, the combined production of synthetic organic chemicals and their raw materials (a total involving much duplication) was 37 billion pounds in 1944 compared with 32 billion in 1943. In 1944, sales amounted to about 25 billion pounds, valued at 2.4 billion dollars, an increase of 20 percent in quantity and 47 percent in value over the sales in 1943. The quantities sold in both 1944 and 1943 represented about 65 percent of the production, the remainder being consumed chiefly at the producing plants in further manufacturing.

TABLE 1.—*Synthetic organic chemicals and their raw materials: United States production and sales, 1943 and 1944*

Chemical	Production			Sales					
	1943	1944	In-crease or de-crease (-), 1944 over 1943	Quantity			Value		
				1943	1944	In-crease or de-crease (-), 1944 over 1943	1943	1944	In-crease or de-crease (-), 1944 over 1943
	Million pounds	Million pounds	Percent	Million pounds	Million pounds	Percent	Million dollars	Million dollars	Percent
Grand total ¹	32, 121	37, 318	16	20, 475	24, 589	20	1, 609	2, 358	47
Tar ²	9, 280	9, 680	4	5, 679	5, 131	-10	30	27	-10
Tar crudes.....	9, 207	9, 905	8	5, 845	6, 850	17	114	132	16
Crude products from petro- leum and natural gas.....	1, 565	2, 804	79	1, 617	2, 547	58	34	194	471
Synthetic organic chemi- cals, total.....	12, 069	14, 929	24	7, 334	10, 061	37	1, 431	2, 005	40
Intermediates.....	1, 637	2, 143	31	1, 032	1, 556	51	135	185	37
Dyes.....	144	152	6	145	150	3	105	111	6
Lakes and toners.....	16	19	19	15	18	20	10	14	40
Medicinals.....	56	39	-30	52	36	-31	140	112	-20
Flavor and perfume ma- terials.....	13	16	23	13	16	23	16	19	19
Plastics materials.....	654	782	20	568	697	23	178	211	19
Rubber-processing chemi- cals.....	81	93	15	77	85	10	31	42	35
Elastomers (synthetic rubbers).....	573	1, 758	207	553	1, 628	194	156	354	127
Miscellaneous chemicals..	8, 895	9, 927	12	4, 879	5, 875	20	660	957	45

¹ This total involves much duplication; see text.

² Partly estimated.

Since these figures include the production of tars, crudes, and intermediates, as well as the production of finished synthetic organic chemicals, the totals necessarily include considerable duplication.

The output of all tars in 1944 was 968 million gallons (9,680 million pounds), or about 4 percent larger than in 1943. Production of coal tar was about 30 million gallons larger than in the preceding year, and that of oil-gas and water-gas tar about 10 million gallons larger. The quantity of tar distilled, however, declined from 682 million gallons in 1943 to 633 million in 1944. This decline was due principally to the rise in consumption of tar for fuel and other purposes.

In spite of the decrease in the quantity of tar distilled, the output of tar crudes was 8 percent greater in 1944 than in 1943. This output was possible because of increased production of tar crudes at byproduct coke ovens, production of benzene from imported crude materials, and increased production of toluene from petroleum. Production of toluene from petroleum is included with that from coal tar, since in earlier years the data could not be shown separately. Most of the toluene went into the manufacture of explosives, and most of the benzene into the manufacture of synthetic rubber and of cumene, an additive for aviation gasoline.

The most striking increase in production of all organic chemicals in 1944 was in the group of organic raw materials derived from petroleum and natural gas. The computed value of the output of these materials was about five times that in 1943, principally because of the large quantities needed in the manufacture of synthetic rubber. Production, from petroleum, of butadiene, one of the principal constituents of synthetic rubber, was valued at 20 million dollars in 1943 and 143 million in 1944.

In 1944, production of all synthetic organic chemicals (intermediates and finished products) totaled 14.9 billion pounds, an increase of 24 percent over that of 1943. The production of many of the important synthetic organic chemicals would probably have been still larger in 1944 except for the fact that the output was limited by Government controls and that the quantities produced were under Government allocation. Approximately one-third of the total production was consumed at the producing plants in the manufacture of other finished products.

Because of the continued increase in the demand for intermediates used in the manufacture of explosives, signal smokes, dyes, synthetic rubber, and plastics, the output of intermediates was 31 percent higher in 1944 than in 1943.

Over-all production of dyes and of lakes and toners increased only moderately in 1944, principally because the War Production Board restricted deliveries for nonmilitary purposes. Medicinals in bulk were the only group of finished synthetic organic chemicals which showed a decrease in 1944 compared with 1943; production in 1944 was 39 million pounds, valued at 120 million dollars, a substantial decline from the 56 million pounds, valued at 150 million dollars, produced in 1943. A smaller output of sulfa drugs and lower prices of vitamins were important factors in this decline. Statistics on production of penicillin are not included with the total for medicinals in 1944; the limited output in that year went exclusively to the military forces.

Production of flavor and perfume materials in 1944 was 23 percent greater than in 1943. More abundant supplies of raw materials during the year allowed increased production for civilian uses. Large quantities of synthetic flavoring materials were also used in Army rations.

The mounting requirements for plastics in important civilian and military uses were reflected in a larger output of plastics materials in 1944, chiefly among the acyclic (including nonbenzenoid) group. Production of all plastics materials, except cellulose esters, was 782 million pounds compared with 654 million pounds in 1943. Plastics materials made from cellulose esters are not covered in this report.

Production of rubber-processing chemicals in 1944 rose about 15 percent over the level of 1943, because of the increased production of synthetic rubber.

Elastomers include synthetic rubbers, of which the GR-S type is the most important. As might be expected, production of elastomers increased more than that of any other group of finished products. It totaled 1.8 billion pounds in 1944, more than a 200-percent increase over 1943.

Miscellaneous synthetic organic chemicals consist of products such as solvents, insecticides, and other chemicals not included in any other group. In 1944, production of these items was 9.9 billion pounds, an increase of 12 percent over that of 1943.

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

TARS

The quantity of crude tars produced depends on the demand for coke for the manufacture of steel and on industrial and household consumption of manufactured gas. Coal tar is recovered principally as a byproduct in the manufacture of coke. Water-gas tar and oil-gas tar are byproducts of the fuel-gas industry. Water gas is produced when coal or coke is burned in an atmosphere of steam; water-gas tar is made by carbureting water gas with oil and cracking the mixture; oil-gas tar is manufactured in the process of cracking certain types of oil to produce fuel for household and industrial purposes. Oil-gas and water-gas tars have properties intermediate between those of petroleum asphalt and coal tar; and, although they contain many crudes that are recovered from coal tar, they contain these crudes in smaller amounts and in different proportions. Petroleum asphalts are not considered as raw materials for chemicals.

In 1944, the amount of tars recovered from all sources totaled 968 million gallons compared with about 930 million in both 1942 and 1943, and 856 million in 1941. Of the output in 1944, 788 million gallons was coal tar—768 million gallons of which was produced at byproduct coke-oven plants and 20 million gallons at coal-gas retort plants. The output of water-gas and oil-gas tar in 1944 was estimated at 180 million gallons. Statistics on production and consumption of tars in 1944 are given below:

	<i>Source and use, 1944</i>	<i>1,000 gallons</i>
Production of tar, total.....		967, 526
Water-gas and oil-gas tar ¹		180, 000
Coal tar, ² total.....		787, 526
Coal tar from byproduct coke-oven plants, total.....		767, 807
Plants not owned by city gas companies.....		719, 145
Plants owned by city gas companies (public utilities).....		48, 662
Coal tar from coal-tar retort plants.....		19, 719
Consumption of tar, total.....		974, 057
Tar consumed by distillation, total.....		633, 428
Water-gas and oil-gas tar distilled by producers and tar distillers ³ ..		35, 709
Coal tar distilled or topped by byproduct coke-oven operators ² ..		200, 570
Coal tar distilled by tar distillers ⁴		397, 149
Tar consumed chiefly as fuel tar, total.....		248, 365
Water-gas and oil-gas tar consumed as fuel ⁵		74, 915
Coal tar sold or consumed as fuel by byproduct operators ²		173, 450
As fuel under boilers.....		863
In open-hearth or affiliated plants.....		156, 736
Sold as fuel by byproduct operators to affiliates.....		688
Sold as fuel by byproduct operators to others.....		15, 163

See footnotes at end of table.

UNITED STATES TARIFF COMMISSION

Source and use, 1944

1,000 gallons

Consumption of tar—Continued

Tar consumed otherwise than by distillation or as a fuel, total.....	92, 264
Coal tar from retort plants sold for consumption ² ⁶	19, 067
Coal tar consumed in byproduct plants for roads and upkeep.....	5, 166
Coal tar, water-gas and oil-gas tar processed at tar refineries and consumed in roads and upkeep at such refineries ⁷	68, 031

¹ Estimated. Production reported to the U. S. Tariff Commission (150 million gallons) estimated to represent between 80 and 85 percent of the total production.

² Reported to the U. S. Bureau of Mines.

³ Reported to the U. S. Tariff Commission.

⁴ Represents coal tar purchased from byproduct coke-oven and retort plants and distilled by chemical companies operating tar-distillation plants as reported to the U. S. Tariff Commission. Tar purchased and distilled by corporations affiliated with the byproduct coke-oven operators is included in the quantity of tar distilled and topped by these operators.

⁵ Represents data reported to the Federal Power Commission by gas-manufacturing plants. Consumption of water-gas and oil-gas tars as a fuel reported to the U. S. Tariff Commission (63 million gallons) estimated to represent between 80 and 85 percent of total consumption.

⁶ Consumption of some of this coal tar from coal-tar retort plants may also be included in the data shown for tar distilled at tar refineries.

⁷ Partly estimated; includes crude tar used for refining and blending at refinery plants, and crude tar consumed in plant upkeep, roads, and for other purposes at tar refineries.

Apparent consumption of all tars in 1944 slightly exceeded production and totaled about 974 million gallons. Of this quantity, 633 million gallons was consumed by distillation.

Byproduct coke-oven operators distilled or partially distilled (topped) 201 million gallons of coal tar in 1944 compared with 205 million in 1943; tar-distilling companies distilled 397 million gallons in 1944 compared with 408 million gallons in 1943. The total quantity of water-gas and oil-gas tar distilled was 36 million gallons in 1944 compared with 69 million in 1943. Tar consumed as fuel in 1944 amounted to 248 million gallons, an increase of about 44 million gallons over 1943; tar thus consumed consists chiefly of coal tar burned in open-hearth steel plants (or other plants affiliated with those owned by byproduct operators) and oil-gas and water-gas tar burned as fuel by gas companies. In 1944 about 92 million gallons of tar was consumed for road and plant maintenance, in blending, and for other purposes in refineries and byproduct plants. Tars consumed for these purposes amounted to 43 million gallons in 1943. The apparent increase of 49 million gallons in 1944 was due, in part, to more complete reporting by producers in that year.

In 1944 sales of all tars amounted to 513 million gallons, valued at 27 million dollars; of this quantity it is estimated that 84 million gallons, valued at 4.2 million dollars, represented the sales of oil-gas tar and water-gas tar combined.

TAR CRUDES

Before the war, United States production of coal-distillation products such as coke-oven gas and coal tar was large enough to supply the domestic synthetic organic chemical industry with most of its raw materials (coal-tar crudes). During the war, however, as the demand for synthetic organic chemicals increased, the supply of crudes from coke-oven gas and coal tar became inadequate, and efforts were made to obtain more of these crudes from other sources, chiefly from petroleum crude hydrocarbons,¹ from natural gas, and from oil-gas and water-gas tar.

¹ These crudes should not be confused with crude petroleum.

In 1944, increased quantities of benzene, toluene, and various crude tar acids were derived from coal tar, oil-gas tar, and water-gas tar. In addition, large quantities of crudes such as cresylic and naphthenic acids, toluene, butadiene, butanes, and ethylene were produced from petroleum. Ethylene, butane, butylene, and some of their derivatives were obtained also from natural gas or grain.

Production and sales of the principal tar crudes (benzene, toluene, naphthalene, and creosote oil) in 1942, 1943, and 1944 and the average of 1937-41 are shown in table 2.

TABLE 2.—*Tar and tar crudes: Summary of production and sales of specified products, average, 1937-41, annual, 1942-44*

Chemical ¹	Unit of quantity	Average, 1937-41	1942	1943	Increase or decrease (—), 1943 over 1942	1944	Increase or decrease (—), 1944 over 1943
Tar: Production ²	1,000 gal.....	697,600	931,100	928,100	Percent —0.3	967,526	Percent 4.2
Benzene:							
Production.....	1,000 gal.....	31,276	85,257	142,047	66.6	178,392	25.6
Sales.....	1,000 gal.....	28,178	80,779	135,960	68.3	172,503	26.9
Sales value.....	1,000 dol.....	3,616	10,487	17,864	70.3	23,230	30.0
Motor benzene:							
Production.....	1,000 gal.....	91,465	68,662	24,390	—64.5	(3)	-----
Sales.....	1,000 gal.....	87,278	66,698	24,530	—63.2	(3)	-----
Sales value.....	1,000 dol.....	7,628	5,808	2,310	—60.2	(3)	-----
Toluene:							
Production.....	1,000 gal.....	25,148	43,292	96,342	122.5	134,178	39.3
Sales.....	1,000 gal.....	24,689	43,004	90,358	110.2	127,066	40.6
Sales value.....	1,000 dol.....	3,884	11,630	28,635	146.2	39,873	39.2
Naphthalene:							
Production.....	1,000 lb.....	126,213	250,926	305,269	21.7	301,138	—1.4
Sales.....	1,000 lb.....	111,468	220,291	235,305	6.8	240,512	2.2
Sales value.....	1,000 dol.....	2,275	5,407	5,785	7.0	5,898	1.9
Creosote oil:							
Production.....	1,000 gal.....	113,757	175,297	175,186	—0.1	161,152	—8.0
Sales.....	1,000 gal.....	112,152	174,733	156,669	—10.3	163,293	4.2
Sales value.....	1,000 dol.....	13,541	23,779	21,714	—8.7	22,175	2.1

¹ For detailed explanation of data included in statistics shown in this table, see table 3A.

² Includes estimated production of water-gas and oil-gas tar.

³ Data reported to the U. S. Tariff Commission by tar distillers cannot be published because they would disclose the operations of individual companies. Data reported to the U. S. Bureau of Mines by byproduct operators were as follows: Production, 18,557,000 gal.; sales, 17,289,000 gal.; and sales value, \$1,547,000.

Large quantities of benzene were used to make styrene in 1944. Styrene constitutes about 25 percent by weight of all the synthetic rubber of the GR-S type, which is used chiefly for automobile, bus, and airplane tires. Additional quantities of benzene were used also to produce synthetic cumene (isopropyl benzene), which was employed as an additive to aviation fuel; to produce monochlorobenzene for making phenol and other products used in plastics materials; and to produce explosives, dyes, and pharmaceuticals. In 1944 production of benzene amounted to 178 million gallons, or 36 million gallons more than the quantity reported in 1943, the largest up to that time. Part of the extra supply was obtained by distilling imported crude materials to produce a high-grade benzene, and part by recovering more benzene from motor benzene, a mixture containing 3 parts of benzene to 1 part of toluene. Before the war, motor benzene was made in large quantities as a motor fuel, but during the war production of this product decreased sharply.

In 1944 approximately three times as much toluene was produced from petroleum, by distillation, cracking, reforming, hydrogenation, and other chemical processes, as was produced from tar. The output of toluene, excluding Ordnance plants, in 1944 totaled 134 million gallons, or 39 percent more than in 1943. Most of the toluene was used in the production of explosives.

Naphthalene has important uses as a raw material in synthetic resins, dyes, moth repellents, and other products. Large amounts are consumed in the production of phthalic anhydride to make alkyd resins, phthalate plasticizers, and mosquito repellents such as dimethyl phthalate. Production in 1944 remained at about the 1943 level of slightly more than 300 million pounds, which is about the limit for economical production of naphthalene with the available facilities.

Creosote oil is a name loosely applied to certain middle and heavy oil distillates consisting usually of mixtures of cresols and xylenols and their derivatives, anthracene oil, naphthalene, and some phenols. After the removal of the more important tar acids, creosote oil is made by blending the residue with several other distillate fractions. The composition of the mixture is varied according to consumer preference. Creosote oil is used chiefly as a wood preservative in railroad ties, telephone poles, and pilings. In 1944 the output of creosote oil amounted to 161 million gallons, a decrease from the level of about 175 million gallons in 1943 and in 1942, but still well above the 1937-41 average of 114 million. The recent decrease was due, in part, to the diversion of the tar-acid content of creosote oil to the manufacture of plastics materials as a result of War Production Board General Preference Order M-27. The increased consumption of coal tar as fuel possibly had some effect on the supplies of creosote oil.

Detailed statistics of production and sales of tar crudes and such residual tar crude products as pitch and tar coke are shown in table 3A (see also table 3B, part III, for an alphabetical list of these products in which the manufacturers are identified).

Owing to increased road construction, production of road tars was 161 million gallons in 1944 compared with 151 million in 1943. Pitch has important applications in the manufacture of roofing materials and special electrodes. The output of 1.3 million tons in 1944 was, however, only slightly larger than that of 1943 because of the heavy demand for the lighter distillate fractions.

Recovery of crude tar acids, which represent a mixture of crude xylenols and phenols, was pushed to the limit in 1944; so was production of road tars, roofing and coating tars, and pitch.

An accurate total value of production of the products listed in table 3A cannot be computed as it is not practicable to eliminate all duplication contained in the figures shown. Nevertheless, an idea of the magnitude of this value can be gained by multiplying the quantities of each produced by the unit value of sales of the several items. In 1944 the value of production of tar crudes, tar pitches, and tar coke thus calculated was about 147 million dollars compared with 138 million in 1943.

TABLE 3A.—Organic chemicals:¹ United States production and sales of tar crudes, 1944

[Listed below are all tar crudes for which any reported data on production or sales may be published. Table 3B in part III lists alphabetically all those products for which data on production or sales were reported and identifies the manufacturer of each]

Product	Unit of quantity	Production	Sales		
			Quantity	Value	Unit value ²
Crude light oil.....	1,000 gal.....	284,849	38,330	<i>1,000</i> dollars 3,407	\$0.089
Light oil distillates:					
Benzene, except motor benzene ³	1,000 gal.....	178,392	172,503	23,230	.135
Motor benzene ⁴	1,000 gal.....	18,557	17,289	1,547	.089
Toluene, except aviation grade:					
Produced at byproduct plants and tar refineries.....	1,000 gal.....	37,771	36,946	10,070	.273
Produced at petroleum refineries ⁵	1,000 gal.....	62,693	60,155	19,255	.321
Toluene, aviation grade ^{6,7}	1,000 gal.....	33,714	29,965	10,508	.351
Xylene ⁴	1,000 gal.....	8,669	8,903	2,284	.257
Solvent naphtha.....	1,000 gal.....	7,139	6,669	1,196	.179
Other light oil distillates ⁸	1,000 gal.....	36,170	32,463	4,950	.162
Pyridine: ⁴					
Crude.....	1,000 gal.....	485	434	305	.701
Refined.....	1,000 gal.....	135	135	472	3.490
Naphthalene, crude (solidifying under 79° C.) ⁹	1,000 lb.....	301,138	240,512	5,898	.025
Creosote oil (distillate as such and in coal-tar solution).....	1,000 gal.....	161,152	163,293	22,175	.136
Crude tar acids:					
From 5% to 24%.....	1,000 gal.....	13,548	13,467	1,625	.121
Other crude tar acids.....	1,000 gal.....	6,261	1,748	265	.151
Carbolic oil, light and heavy ⁴	1,000 gal.....	1,477	1,480	155	.105
Sodium phenolate ⁴	1,000 gal.....	3,318	3,213	187	.058
Coal tar sold or consumed in coal-tar solution ⁷	1,000 gal.....	10,702	11,439	928	.081
All other distillate products ¹⁰	1,000 gal.....	11,226	9,776	2,046	.209
Blended tars (crude and refined) for coatings, saturatings, etc.....	1,000 gal.....	49,561	44,572	2,795	.062
Road tars.....	1,000 gal.....	160,976	160,825	12,983	.081
Pitch of tar, soft ^{4,11}	1,000 tons.....	380	53	572	10.859
Pitch of tar, medium ¹²	1,000 tons.....	214	183	3,418	18.637
Pitch of tar, hard ¹³	1,000 tons.....	707	358	3,898	10.888
Pitch of tar coke ¹⁴	1,000 tons.....	104	99	1,236	12.483

¹ Data for coke ovens and gas-retort ovens reported to the Coal Economics Division, U. S. Bureau of Mines, and for tar refineries and others to the U. S. Tariff Commission unless otherwise noted.

² Unit value per gallon, pound, or ton according to the unit of quantity shown.

³ Does not include benzene produced from petroleum.

⁴ Product of coke-oven operators only; reported to the U. S. Bureau of Mines.

⁵ Does not include toluene produced under Ordnance control in petroleum refineries, but does include toluene produced from petroleum in plants not under such control.

⁶ All aviation grade was produced in petroleum refineries.

⁷ Reported to the U. S. Tariff Commission only.

⁸ Includes data of production and sales of motor benzene and xylene reported to the U. S. Tariff Commission by tar distillers only. The statistics have been combined in order to prevent the disclosure of the operation of individual producers.

⁹ Included in the statistics are data for three grades of crude naphthalene combined to prevent the disclosure of the operations of individual companies. These are the grade solidifying at less than 74° C. as produced for sale only, and the grades solidifying at 74° C. to less than 76° C. and at 76° C. to less than 79° C. produced both for consumption within the producing plants and for sale. As there is some conversion between grades, the data include some duplication.

¹⁰ Includes anthracene; cumene; cresylic acid, crude; and pyridine, crude and semirefined, all reported to the U. S. Tariff Commission, and other tar distillate products reported to the Coal Economics Division of the U. S. Bureau of Mines and the U. S. Tariff Commission.

¹¹ Water softening point less than 110° F. ASTM D61-24.

¹² Water softening point 110° to 160° F. Includes data of production and sales of soft pitch of tar reported to the U. S. Tariff Commission. These data have been combined in order to prevent the disclosure of the operations of individual producers.

¹³ Softening point above 160° F.

¹⁴ Includes some pitch emulsion.

CRUDE PRODUCTS FROM PETROLEUM AND NATURAL GAS

Statistics on the production and sales of chemical raw materials derived from petroleum and natural gas were first reported to the Tariff Commission in 1943. In that year more than 1.5 billion pounds of these materials, excluding toluene, were produced for purposes other than for fuel. In 1944 the output of these products totaled 2.8 billion pounds; sales were 2.5 billion pounds, valued at 194 million dollars. Production and sales of chemical raw materials from petroleum and natural gas are shown in table 4A (see also table 4B, part III, for an alphabetical list of these products in which the manufacturers are identified).

Naphthenic acid, cresylic acid, xylene, and the C₂ to C₄ hydrocarbons are some of the raw materials derived from petroleum. Cresylic acid is used chiefly to make plastics materials and plasticizers. Salts of naphthenic acids are employed mainly as paint driers and antimildew agents. The C₂ and C₄ hydrocarbons are used in the manufacture of synthetic rubber, solvents, and other hydrocarbon derivatives, all of which will probably have large peacetime uses. Production of most items in this group, particularly the hydrocarbons used in synthetic rubber, increased in 1944 compared with 1943. The output of butadiene alone (not counting that made from alcohol) rose from about 100 million pounds in 1943 to nearly half a billion pounds in 1944.

TABLE 4A.—Organic chemicals: United States production and sales of crude products from petroleum and natural gas for chemical conversion, 1944

[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. Table 4B in part III lists alphabetically all those 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
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Total	2,804,625	2,547,196	193,665	\$0.076
Chemicals for which separate statistics may not be shown ¹	674,362	646,788	8,015	.012
Chemicals for which separate statistics are shown below	2,130,263	1,900,408	185,650	.097
Crude products from petroleum: ²				
Cresylic acid, crude	(3)	(3)	(3)	(3)
Naphthenic acid	28,462	15,524	1,346	.087
Xylene, all grades ⁴	354,639	245,648	4,875	.020
Hydrocarbons:				
C ₂ hydrocarbons: Ethylene ⁵	272,188	216,733	9,801	.045
C ₃ hydrocarbons: Propane and propylene	214,559	187,100	1,438	.008
C ₄ hydrocarbons:				
1,3-Butadiene, grade for rubber ⁵	488,945	482,744	143,450	.297
1-Butene and 2-butene mixture	202,380	200,774	4,001	.029
All other	569,090	551,885	20,739	.038

¹ Represents statistics on production and sales of benzene and other crude products from petroleum, other petroleum-derived hydrocarbons, and some material derived from natural gas. Data for toluene produced at petroleum refineries not under Ordnance control are shown in table 3A.

² The chemical raw materials designated as crude products from petroleum may include some compounds identical with those obtained by the carbonization of coal or the processing of coal tar; those derived from coal tar, however, are excluded from this table.

³ Statistics on production and sales of crude cresylic acid from petroleum have been included with data for the chemicals for which separate statistics may not be shown in order to prevent the disclosure of operations of individual producers. In 1944 the production of cresylic acid, crude, from petroleum and coal tar combined amounted to 29,052,000 pounds; total sales were 26,175,000 pounds, valued at \$1,302,000.

⁴ Includes all grades of xylene; nitration grade 1^o, aviation grade, and all other grades.

⁵ Statistics on production and sales of ethylene and butadiene produced from alcohol are given in table 21A.

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

GENERAL

In this report, synthetic organic chemicals are grouped according to their principal uses. These groups, in turn, are subdivided according to chemical classes into cyclic and acyclic compounds.

In 1944, production of all cyclic and acyclic synthetic organic chemicals combined (intermediates and finished products) totaled 14.9 billion pounds compared with 12.1 billion in 1943; sales in 1944 were 10.1 billion pounds, valued at 2.0 billion dollars, a gain of 37 percent in quantity and 40 percent in value over the corresponding figures for 1943.

Production and sales statistics of intermediates and finished synthetic organic chemicals by major groups in 1943 and 1944 are shown in table 5 for general comparative purposes.

TABLE 5.—*Synthetic organic chemicals: Summary of United States production and sales of intermediates and finished products, average, 1938-42, annual, 1943-44*

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

Chemical	Average, 1938-42	1943	Increase or decrease (-), 1943 over 1938-42	1944	Increase or decrease (-), 1944 over 1943
			<i>Percent</i>		<i>Percent</i>
Production, grand total.....	5,688,025	12,069,552	112.2	14,929,550	23.7
Sales, grand total.....	3,043,104	7,334,050	141.0	10,061,193	37.2
Sales value, grand total.....	556,507	1,431,894	157.3	2,004,621	40.0
I. ORGANIC CHEMICALS, CYCLIC¹					
Production, total.....	1,386,669	3,035,617	118.9	4,805,870	58.3
Sales, total.....	847,531	2,305,007	171.9	3,938,432	70.9
Sales value, total.....	267,824	619,869	131.4	881,299	42.2
A. INTERMEDIATES					
Production.....	819,037	1,637,275	100.0	2,143,305	30.9
Sales.....	377,544	1,032,439	173.5	1,555,749	50.7
Sales value.....	53,763	134,988	151.1	184,660	36.8
Number of manufacturers ²		101		101	
B. FINISHED PRODUCTS					
Production, total.....	567,632	1,398,342	146.3	2,662,565	90.4
Sales, total.....	470,287	1,272,568	170.6	2,382,683	87.2
Sales value, total.....	214,061	484,881	126.5	696,639	43.7
1. Dyes					
Production, total.....	130,064	144,013	10.7	151,653	5.3
Sales, total.....	129,324	145,499	12.5	150,049	3.1
Sales value, total.....	82,501	105,350	27.7	110,748	5.1
Number of manufacturers ²		46		45	
a. Colour Index Group					
Production.....	105,246	107,147	1.8	409,870	2.5
Sales.....	105,229	108,724	3.3	108,320	- .4
Sales value.....	54,682	60,267	10.2	59,861	- .7

See footnotes at end of table.

TABLE 5.—*Synthetic organic chemicals: Summary of United States production and sales of intermediates and finished products, average, 1938-42, annual, 1943-44—Continued*

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

Chemical	Average, 1938-42	1943	Increase or decrease (-), 1943 over 1938-42	1944	Increase or decrease (-), 1944 over 1943
I. ORGANIC CHEMICALS, CYCLIC—Continued			<i>Percent</i>		<i>Percent</i>
B. FINISHED PRODUCTS—Continued					
1. <i>Dyes—Continued</i>					
b. Prototype Group					
Production.....	(3)	20,098		26,314	30.9
Sales.....	(3)	19,605		26,062	32.9
Sales value.....	(3)	25,041		32,027	27.9
c. Ungrouped					
Production.....	24,818	16,768	-32.4	15,469	-7.7
Sales.....	24,095	17,170	-28.7	15,667	-8.8
Sales value.....	27,819	20,042	-28.0	18,860	-5.9
2. <i>Lakes and Toners</i>					
Production.....	19,045	16,317	-14.3	19,197	17.7
Sales.....	16,914	14,970	-11.5	18,401	22.9
Sales value.....	12,635	10,358	-18.0	13,793	33.2
Number of manufacturers ²		45		45	
3. <i>Medicinals</i>					
Production.....	22,820	51,633	126.3	35,353	-31.5
Sales.....	19,678	47,262	140.2	33,103	-30.0
Sales value.....	34,173	120,869	253.7	94,039	-22.2
Number of manufacturers ²		97		98	
4. <i>Flavor and Perfume Materials</i>					
Production.....	7,543	9,559	26.7	11,726	22.7
Sales.....	6,912	9,516	37.7	11,050	16.1
Sales value.....	7,946	11,920	50.0	14,565	22.2
Number of manufacturers ²		35		38	
5. <i>Plastics Materials</i>					
Production.....	229,810	380,523	65.6	404,113	6.2
Sales.....	175,427	337,654	92.5	380,822	12.8
Sales value.....	43,304	76,761	77.0	83,264	8.5
Number of manufacturers ²		112		111	
6. <i>Rubber-Processing Chemicals</i>					
Production.....	33,068	61,710	86.6	73,774	19.5
Sales.....	25,557	58,300	128.1	66,260	13.7
Sales value.....	11,654	23,628	102.7	27,446	16.2
Number of manufacturers ²		10		10	
7. <i>Elastomers (Synthetic Rubbers)</i>					
Production.....	(4)	413,908		1,500,993	262.6
Sales.....	(4)	401,056		1,395,136	247.9
Sales value.....	(4)	74,355		268,315	260.9
Number of manufacturers ²		14		16	
8. <i>Miscellaneous</i> ⁵					
Production.....	125,282	320,679	156.0	465,756	45.2
Sales.....	96,475	258,311	167.7	327,862	26.9
Sales value.....	21,788	61,640	182.9	84,469	37.0
Number of manufacturers ²		92		110	

See footnotes at end of table.

TABLE 5.—*Synthetic organic chemicals: Summary of United States production and sales of intermediates and finished products, average, 1938-42, annual, 1943-44—Continued*

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

Chemical	Average, 1938-42	1943	Increase or decrease (-), 1943 over 1938-42	1944	Increase or decrease (-), 1944 over 1943
II. ORGANIC CHEMICALS, ACYCLIC (INTERMEDIATES AND FINISHED PRODUCTS) ⁶			<i>Percent</i>		<i>Percent</i>
Production, total.....	4,301,356	9,033,935	110.0	10,123,680	12.1
Sales, total.....	2,195,273	5,029,043	129.1	6,122,761	21.7
Sales value, total.....	288,683	812,025	181.3	1,123,322	38.3
<i>1. Medicinals</i>					
Production.....	2,214	4,062	83.5	3,398	-16.3
Sales.....	1,709	4,541	165.7	3,109	-31.5
Sales value.....	5,666	18,770	231.3	17,756	-5.4
Number of manufacturers ²		67		67	
<i>2. Flavor and Perfume Materials</i>					
Production.....	2,620	3,687	40.7	4,553	23.5
Sales.....	2,502	3,573	42.8	4,514	26.3
Sales value.....	2,282	3,933	72.3	4,546	15.6
Number of manufacturers ²		26		25	
<i>3. Plastics Materials</i>					
Production.....	72,664	273,415	276.3	378,239	38.3
Sales.....	65,367	230,179	252.1	316,506	37.5
Sales value.....	35,093	101,430	189.0	128,078	26.3
Number of manufacturers ²		65		59	
<i>4. Rubber-Processing Chemicals</i>					
Production.....	14,203	19,213	35.3	18,865	-1.8
Sales.....	13,239	18,975	43.3	18,465	-2.7
Sales value.....	3,355	7,509	123.8	14,629	94.8
Number of manufacturers ²		14		13	
<i>5. Elastomers (Synthetic Rubbers)</i>					
Production.....	742,423	158,801	271.3	256,917	61.8
Sales.....	733,598	151,560	351.1	233,301	53.9
Sales value.....	719,788	82,022	314.5	85,435	4.2
Number of manufacturers ²		12		14	
<i>6. Miscellaneous ⁵</i>					
Production.....	⁸ 4,209,655	8,574,757	103.7	9,461,708	10.3
Sales.....	⁸ 2,112,456	4,620,215	118.7	5,546,866	20.1
Sales value.....	⁸ 242,287	598,361	147.0	872,878	45.9
Number of manufacturers ²		165		168	

¹ Before 1941 this group included only cyclic organic chemicals derived from coal tar. The statistics shown for 1941-44 include alicyclic, heterocyclic, and terpenoid compounds, as well as benzenoid (coal-tar) chemicals.

² Number of companies engaged in the manufacture of these products, not the number of producing establishments or plants, except that separate divisions of large corporations are considered as separate companies if their operations are virtually independent of the parent organization.

³ Included with ungrouped dyes.

⁴ Cyclic elastomers are included with acyclic elastomers to avoid disclosure of confidential information.

⁵ Includes totals of plasticizers and surface-active agents.

⁶ Before 1941 this group included all synthetic organic chemicals not derived from coal tar and therefore contained certain alicyclic and terpenoid compounds as well as acyclic organic chemicals. In the statistics shown for 1941-44 only acyclic chemicals are included in this group.

⁷ 2-year average, 1941-42. Elastomers are included with miscellaneous chemicals for 5-year average 1938-42 and therefore are not considered again in arriving at the 5-year average totals for acyclic intermediates and finished products.

⁸ Includes elastomers.

The output of all cyclic intermediates and cyclic finished products (such as dyes, color lakes and toners, flavor and perfume materials, plastics materials, rubber-processing chemicals, elastomers, and miscellaneous chemicals) in 1944 totaled 4.8 billion pounds, of which cyclic finished products represented 2.7 billion pounds, an increase of 90 percent over 1943. Cyclic elastomers accounted for most of this increase.

Total production of acyclic intermediates and acyclic finished chemical products (the intermediates are not shown separately from the finished products) amounted to 10.1 billion pounds in 1944, or 68 percent of all synthetic organic chemicals. This production represented an increase of 12 percent over the output of 9.0 billion pounds in 1943. The principal acyclic groups showing large gains in output in 1944 were elastomers (the increases amounting to 62 percent), plastics materials (38 percent), and flavor and perfume materials (24 percent). Production of acyclic medicinals decreased 16 percent and that of rubber-processing chemicals, 2 percent.

INTERMEDIATES

Cyclic intermediates are semifinished materials of commerce from which finished synthetic products, such as dyes, medicinals, explosives, plastics materials, flavor and perfume materials, and elastomers, are made. There is no rigid distinction between intermediates and finished products: some intermediates are chemically converted to finished products or may be sold without further processing as finished products. *p*-Dichlorobenzene, for example, may be employed as a coupling agent in the production of various dyes, or it may be recrystallized and packaged for use as a moth repellent or a deodorant. In general, the classification of materials in this report is determined by the manner in which most of a given product is consumed. Cyclic intermediates are generally of coal-tar origin, but more recently increasing quantities of them are being manufactured from petroleum raw materials.

Production and sales of cyclic intermediates in 1944 are shown in table 6A (see also table 6B, part III, for an alphabetical list of these products in which the manufacturers are identified). Production of cyclic intermediates in 1944 totaled 2.1 billion pounds. This quantity exceeds that reported in 1943 by 30.9 percent, thus continuing the sharp upward trend of the five previous years. Sales of 1.6 billion pounds of intermediates in 1944 accounted for 72 percent of the total quantity produced; the rest was consumed by the original producers in the manufacture of finished products.

A much greater proportional increase occurred in production of intermediates used in the manufacture of synthetic elastomers (such as GR-S, GR-A, and GR-M) than in the production of all intermediates. The output of styrene, an important constituent of GR-S, in 1944 rose 260 percent. The production of intermediates used chiefly in synthetic resins remained at the high levels of the previous year or slightly exceeded them; production of phenol and phthalic anhydride, for example, increased 4 and 8 percent, respectively. Phenol is used chiefly in phenolic resins. Phthalic anhydride is used in alkyd resins, plasticizers, and insect repellents. Production of the

TABLE 6A.—*Synthetic organic chemicals: United States production and sales of cyclic intermediates, 1944*

[Listed below are all cyclic intermediate synthetic organic 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 6B in part III lists alphabetically all cyclic intermediate synthetic organic chemicals for which data on production or sales were reported and identifies the manufacturer of each]

Product	Production	Sales		
		Quantity	Value	Unit value
Total.....	1,000 pounds 2, 143, 305	1,000 pounds 1, 555, 749	1,000 dollars 184, 660	Per pound \$0. 12
Chemicals for which separate statistics may not be shown.....	764, 561	752, 978	91, 975	. 12
Chemicals for which separate statistics are shown below.....	1, 378, 744	802, 771	92, 685	. 12
5-Acetamido-8-amino-2- and 3-naphthalenesulfonic acid (Acetyl amino Cleve's acid).....	6			
Acetanilide, tech.....	5, 302			
p-Acetotoluide.....	507			
N-Acetylsulfanyl chloride (p-Acetamidobenzenesulfonyl chloride).....	5, 914	692	305	. 44
p-Aminoacetanilide.....	224			
5-Amino-2-anilinobenzenesulfonic acid.....	75			
1-Aminanthraquinone and salt.....	2, 190			
2-Aminanthraquinone and salt.....	804			
6-(m-Aminobenzamido)-1-naphthol-3-sulfonic acid (m-Aminobenzoyl J acid).....	54			
6-(p-Aminobenzamido)-1-naphthol-3-sulfonic acid (p-Aminobenzoyl J acid).....	25			
2-Amino-p-benzenedisulfonic acid (Anilino-2,5-disulfonic acid).....	66			
3-Amino-6-chlorobenzoic acid.....	35			
2-Amino-5-chloro-p-toluenesulfonic acid (Lake red C amine).....	337	70	53	. 76
3-Amino-1,5-naphthalenedisulfonic acid.....	176			
6-Amino-1,3-naphthalenedisulfonic acid.....	1, 168			
7-Amino-1,3-naphthalenedisulfonic acid (Amino G acid).....		2	1	. 47
8-Amino-1,6-naphthalenedisulfonic acid and salt.....	88			
2-Amino-1-naphthalenesulfonic acid (Tobias acid).....	1, 850	832	430	. 52
5-Amino-1-naphthalenesulfonic acid (Laurent's acid).....	218			
5-Amino-2-naphthalenesulfonic acid.....	120			
5- and 8-Amino-2-naphthalenesulfonic acids (Cleve's acid).....	282	23	13	. 54
6-Amino-2-naphthalenesulfonic acid (Broenner's acid).....	80			
8-Amino-1-naphthalenesulfonic acid.....	411			
8-Amino-2-naphthalenesulfonic acid.....	107			
8-Amino-1,3,6-naphthalenetrisulfonic acid.....	2, 795			
8-Amino-1-naphthol-3,6-disulfonic acid, monosodium salt (H acid).....	3, 549			
1-Amino-2-naphthol-4-sulfonic acid.....	1, 583			
6-Amino-1-naphthol-3-sulfonic acid, sodium salt (J acid).....	730	77	153	1. 98
7-Amino-1-naphthol-3-sulfonic acid, sodium salt (Gamma acid).....	859			
8-Amino-1-naphthol-5-sulfonic acid, sodium salt (S acid).....	49			
2-Amino-5-nitrobenzenesulfonic acid.....	44			
4'-Amino-4-nitrodiphenylamine-2-sulfonic acid.....	16			
2-Amino-4-nitrophenol.....	211			
o-Aminophenol.....	38	40	59	1. 47
p-Aminophenol and salts.....	650	552	325	. 59
2-Amino-1-phenol-4-sulfonic acid.....	46			
m-(p-Aminophenylazo)benzenesulfonic acid.....	110			
p-(p-Aminophenylazo)benzenesulfonic acid.....	49			
2-Aminothiazole.....	818			
4-Amino-m-toluenesulfonic acid.....	218			
Aniline (Aniline oil).....	89, 130	42, 606	4, 338	. 10
6-Anilino-1-naphthol-3-sulfonic acid (Phenyl J acid).....	93			
7-Anilino-1-naphthol-3-sulfonic acid (Phenyl gamma acid).....	23			
N-(p-Anisyl)-4-chloroanthranilic acid, potassium salt (3-Chloro-4'-methoxy-6-diphenylamine-carboxylic acid, potassium salt).....	225			

TABLE 6A.—*Synthetic organic chemicals: United States production and sales of cyclic intermediates, 1944—Continued*

[Listed below are all cyclic intermediate synthetic organic 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 6B in part III lists alphabetically all cyclic intermediate synthetic organic chemicals for which data on production or sales were reported and identifies the manufacturer of each]

Product	Production	Sales		
		Quantity	Value	Unit value
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Anthraquinone-2,6-disulfonic acid and salt	140			
1-Anthraquinonesulfonic acid and salt	4,629			
Anthraquinone (1,5-Dihydroxyanthraquinone)	157			
Benzaldehyde, tech	2,230	2,204	883	\$0.40
1-(4-Benzamido-1-anthraquinonylimino)-5-benzamidoanthraquinone	106			
1-Benzamido-5-chloroanthraquinone	52			
6-Benzamido-1-naphthol-3-sulfonic acid (Benzoyl J acid)	6			
7-Benz[de]anthracen-7-one (Benzanthrone)	1,364			
Benzenesulfonic acid and salt	9	8	11	1.36
Benzidine hydrochloride and sulfate	2,108			
p,p'-Bis(dimethylamino)benzophenone (Miechler's ketone)	110			
N,N'-Bis-6-(1-naphthol-3-sulfonic acid)urea (J acid urea)	247			
3-Bromo-7-benz[de]anthracen-7-one	214			
4-Chloro-o-anisidine	91			
1-Chloroanthraquinone	289			
2-Chloroanthraquinone	577			
o-Chlorobenzaldehyde	167			
Chlorobenzene, mono	212,455			
Chlorobenzoylbenzoic acid	1,641			
1-Chloro-2,4-dinitrobenzene	18,556	7,845	889	.11
Chloromethylanthraquinone	270			
2-Chloro-4-nitroaniline	172			
4-Chloro-2-nitroaniline	168	178	100	.56
2-Chloro-5-nitrobenzenesulfonic acid	283			
2-Chloro-5-nitrobenzoic acid	33			
o-Chlorophenol		363	88	.24
α-Chlorotoluene (Benzyl chloride)	3,730	2,845	517	.18
(4-Chloro-o-tolylmercapto)acetic acid	62			
Cresols, total ¹		13,101	1,336	.10
Cresol (meta, para) ¹	6,141	(²)	(²)	(²)
Cresol (ortho, meta, para) ¹	7,337	(²)	(²)	(²)
o-Cresol ¹	3,625	2,484	318	.13
All other		10,617	1,018	.10
Cresylic acid, refined ^{1,3}	29,859	28,628	2,225	.08
2,6-Diaminoanthraquinone	65			
4,4'-Diamino-3,3'-biphenyldisulfonic acid	5			
2,2'-Diamino-5,5'-bi-m-toluenesulfonic acid	17			
4,4'-Diamino-1,1'-dianthraquinonylamine	324			
4,4'-Diaminodiphenylamine-2-sulfonic acid	17			
N,N'-Di(m-aminophenyl)oxamide (Oxalyl-m-phenylenediamine)	9			
4,4'-Diamino-2,2'-stilbenedisulfonic acid	226			
1,1'-Dianthraquinonylamine	274			
2',7'-Dibromofluorescein	7	8	20	2.65
2,5-Dichloroaniline	176	127	62	.49
o-Dichlorobenzene	12,333	9,856	566	.06
p-Dichlorobenzene	24,649	23,900	2,152	.09
3,3'-Dichlorobenzidine and sulfate	398	323	376	1.16
2,4-Dichlorobenzoic acid	531	463	454	.98
6,9-Dichloro-2-methoxyacridine	342			
1,4-Dichloro-2-nitrobenzene	346			
1-(2,5-Dichloro-4-sulfophenyl)-3-methyl-5-pyrazolone	109			
2,4-Dichlorotoluene	337			
N,N-Diethylaniline	472	246	93	.38
4,5-Dihydroxy-1-naphthalenesulfonic acid (Dioxy S acid)	11			
N,N-Dimethylaniline	7,274			
2,2'-Dimethyl-1,1'-bianthraquinone	181			
N,N'-Dimethyl-p-phenylenediamine and hydrochloride	2	1	7	5.18
2,4-Dinitrophenol, tech		42	10	.24
4,4'-Dinitro-2,2'-stilbenedisulfonic acid	482			
8-Diphenylamino-1,6-naphthalenedisulfonic acid	82			
α-(N-Ethylanilino)-p-toluenesulfonic acid	457			

See footnotes at end of table.

TABLE 6A.—*Synthetic organic chemicals: United States production and sales of cyclic intermediates, 1944—Continued*

[Listed below are all cyclic intermediate synthetic organic 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 6B in part III lists alphabetically all cyclic intermediate synthetic organic chemicals for which data on production or sales were reported and identifies the manufacturer of each]

Product	Production	Sales		
		Quantity	Value	Unit value
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Ethylbenzyl-m-toluidinesulfonic acid	48			
Ethylphenylmalonic acid, diethyl ester	285			
p-Hydrazinobenzenesulfonic acid	96			
Hydroquinone, tech	3, 651	3, 449	1, 932	\$6. 56
1,1'-Iminobis(4-benzamidoanthraquinone)	312			
6,6'-Iminobis(1-naphthol-3-sulfonic acid) (I or J acid imide) (Rhoduline acid)	14			
Indophenol, blue and green	215			
Leuco quinizarin	39			
Metanilic acid	537			
p,p'-Methylenebis(N,N-dimethylaniline) (Tetramethyldiaminodiphenylmethane)	983			
3-Methyl-1-phenyl-5-pyrazolone (Developer Z)	119			
Methylphenylpyrazolone-4-sulfonic acid	27			
Naphthalene, solidifying at 79° C. or above, refined, flake	81, 588	40, 528	3, 044	.08
1,5-Naphthalenedisulfonic acid	181			
Naphthionic acid (4-Amino-1-naphthalenesulfonic acid) and salt	1, 574			
α-Naphthol	731	368	189	.52
2-Naphthol-3,6-disulfonic acid and salt	562			
2-Naphthol-6,8-disulfonic acid and salt	1, 167	70	37	.53
1-Naphthol-5-sulfonic acid	119			
2-Naphthol-6-sulfonic acid (Schaeffer's acid)	237	75	34	.45
1-Naphthylamine	3, 503	559	160	.29
2-Naphthylamine		228	106	.47
m-Nitroaniline	217			
2-Nitro-p-anisidine	73			
6-(m-Nitrobenzamido)-1-naphthol-3-sulfonic acid (m-Nitrobenzoyl J acid)	24			
6-(p-Nitrobenzamido)-1-naphthol-3-sulfonic acid (p-Nitrobenzoyl J acid)	69			
Nitrobenzene	118, 928	3, 876	287	.09
m-Nitrobenzenesulfonic acid	675			
o-Nitrophenol	289			
p-Nitrosophenol	213			
3-Nitro-p-toluenesulfonic acid	168			
5-Nitro-o-toluenesulfonic acid	1, 069			
2-Nitro-p-toluidine	1, 007	658	651	.99
Phenol, total ¹	201, 993	176, 110	16, 527	.09
Natural from coal tar, total ¹	28, 852	27, 305	2, 352	.09
39° C. m. p. ¹	2, 233	3, 230	309	.10
All other ¹	26, 619	24, 075	2, 043	.08
Synthetic	173, 141	148, 805	14, 175	.10
Phenolsulfonic acid	352	367	50	.14
Phenylacetic acid, tech	61	57	58	1.03
p-Phenylazoaniline (Aminoazobenzene) and hydrochloride	152			
m-Phenylenediamine	1, 050			
m-Phenylenediaminesulfonic acid	163			
p-Phenylenediaminesulfonic acid	9			
Phenylglycine and salt	5, 567			
2,2'-Phenyliminodiethanol (Phenyldiethanolamine) (N,N'-Bis(2-hydroxyethyl)aniline)	158			
Phenylmalonic acid, diethyl ester	150			
N-Phenyl-1-naphthylamine-8-sulfonic acid (Phenyl peri acid)	278			
Phthalic anhydride	122, 723	87, 117	10, 934	.13
Picoline, total ¹	1, 614	1, 366	317	.23
2-Picoline (alpha) ¹	1, 130	1, 005	180	.18
All other	484	361	137	.38
Picramic acid and salt	149	119	87	.72
Quinizarin (1,4-Dihydroxyanthraquinone)	1, 029	443	649	1.47
Styrene (Vinylbenzene)	349, 367	348, 747	41, 343	.12
1,4,5,8-Tetrachloroanthraquinone	518			

See footnotes at end of table.

TABLE 6A.—*Synthetic organic chemicals: United States production and sales of cyclic intermediates, 1944—Continued*

[Listed below are all cyclic intermediate synthetic organic 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 6B in part III lists alphabetically all cyclic intermediate synthetic organic chemicals for which data on production or sales were reported and identifies the manufacturer of each]

Product	Production	Sales		
		Quantity	Value	Unit value
	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 dollars</i>	<i>Per pound</i>
1,4,5,8-Tetrakis(1-anthraquinonylamino)anthraquinone (Penta-anthramide).....	1,665			
α -Toluic acid, ethylester (Phenylacetic acid, ethyl ester) (Ethyl phenylacetate).....	172	1,019	457	\$0.45
p-Toluidine.....				
8-(p-Toluido)-1-naphthalenesulfonic acid (Tolyl peri acid).....	50			
4-(o-Tolylazo)-o-toluidine (o-Aminoazotoluene).....	480			
o-(p-Tolyl)benzoic acid.....	603			
m-Tolylethylenediamine.....	1,115	272	185	.68
Trichlorobenzenes.....	2,379	2,196	155	.07
α -Trichlorotoluene (Benzotrichloride).....		115	17	.15
m-Xylene.....	90			
Xylene, ortho and para.....	62			
Xylidines:				
2,4-Xylidine (m-4-Xylidine).....	65			
Xylidine mixtures ⁴	416			

¹ Includes data reported by coke-oven manufacturers to U. S. Bureau of Mines.

² Included in "All other" cresols.

³ Includes cresylic acid, refined from petroleum.

⁴ Obtained by the chemical reduction of the reaction product of nitric acid and xylene.

purified cresols and refined cresylic acids decreased slightly from the levels of recent years.

The output of monochlorobenzene, amounting to 212 million pounds in 1944, was 9 million pounds less than in 1943 but considerably more than in the earlier war years. Most of this material goes into phenol and a smaller amount into aniline, certain dyes, and insecticides. Production of benzoic acid and benzaldehyde also increased appreciably.

Statistics on the production and sales of synthetic cumene (isopropylbenzene) are not included in the totals for 1944 for all intermediates because in that year this material was consumed almost entirely in aviation fuel. Production totaled 217 million pounds; sales of 213 million pounds were valued at 6.4 million dollars.

DYES

In 1944, production of dyes of all types amounted to 152 million pounds compared with 144 million in the previous year. Peak military requirements for dyes accounted for most of this increase. The production of coal-tar dyes for civilian use continued under War Production Board Order M-103, which restricted deliveries to 70 percent of those for 1941. Restrictions were placed also on the supplies of many basic raw materials (benzene, phenol, toluene, aniline, and naphthalene) available for production of civilian dyes.

Sales of all dyes in 1944 totaled 150 million pounds, valued at 111 million dollars, compared with 145 million pounds, valued at 105 million dollars, in 1943. Inventories of dyes for civilian consumption were abnormally low in 1944, and the dyes being produced for military

purposes were disposed of rapidly. Few dyes are consumed in the dye-producing plants themselves.

Statistics on production and sales of dyes are shown in table 7A (see also table 7B, part III, for an alphabetical list of these products in which the manufacturers are identified).

TABLE 7A.—*Synthetic organic chemicals: United States production and sales of coal-tar dyes, 1944*

[Listed below are all coal-tar dyes of 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 dyes for which data on production or sales were reported and identifies the manufacturer of each]

Colour Index or Prototype No.	Dye	Production	Sales		
			Quantity	Value	Unit value
		1,000 pounds	1,000 pounds	1,000 dollars	Per pound
	Grand total.....	151,653	150,049	110,748	\$0.74
	Dyes for which separate statistics may not be shown.....	32,491	31,185	35,584	1.14
	Dyes for which separate statistics are shown below.....	119,162	118,864	75,164	.63
	DYES GROUPED BY COLOUR INDEX NUMBER				
	Total.....	109,870	108,320	59,861	.55
	<i>Azo Dyes</i>				
	<i>Monoazo Dyes</i>				
17	Spirit yellow R.....	85	67	52	.77
20	Chrysoidine Y.....	404	427	163	.38
21	Chrysoidine R.....		130	49	.38
24	Sudan I.....	260	272	143	.52
27	Orange G.....	385	376	172	.46
30	Fast acid fuchsine B.....		11	5	.44
31	Amido naphthol red G.....	496	502	163	.32
36	Chrome yellow 2G.....	202	226	112	.49
40	Chrome yellow R.....	95	112	65	.58
52	Azo alizarin yellow GP.....	98	164	69	.42
53	Victoria violet 4BS.....	37	48	32	.67
57	Amido naphthol red 6B.....	266	261	137	.53
73	Sudan II.....		95	82	.86
79	Ponceau R.....	575	535	167	.31
88	Fast red B.....	84			
98	Chrome brown R.....	266	263	177	.67
138	Metanil yellow.....	291	302	161	.53
145	Azoflavine RS.....	12	16	18	1.14
146	Azo yellow.....	25	43	27	.62
151	Orange II.....	1,292	1,196	322	.27
168	Acid chrome garnet R.....		63	44	.69
169	Acid chrome violet N.....	11	10	7	.75
176	Fast red A.....	206	178	92	.51
179	Azo rubine.....	128	123	67	.54
180	Fast red VR.....	67	79	41	.52
184	Amaranth.....	46			
185	Cochineal red A.....	122	112	50	.45
201	Chrome blue black B.....	184	200	89	.45
202	Chrome blue black R.....	2,438	2,296	685	.30
203	Chrome black T.....	1,102	1,000	338	.34
204	Chrome black A.....	162	130	57	.44
208	Fast acid blue R.....	107	92	45	.49
209	Fast acid blue B.....		16	10	.66
216	Acid chrome red B.....	73	59	33	.55
219	Chrome flavine A.....	144	214	215	1.01
	<i>Disazo Dyes</i>				
234	Resorcin brown.....	465	470	255	.54
235	Resorcin dark brown.....	118	140	98	.70
246	Acid black 10B.....	1,389	1,551	571	.37
247	Azo dark green A.....		28	16	.57
252	Brilliant croceine M.....	259	256	223	.87
262	Cloth red B.....	45			

TABLE 7A.—*Synthetic organic chemicals: United States production and sales of coal-tar dyes, 1944—Continued*

Colour Index or Prototype No.	Dye	Production	Sales		
			Quantity	Value	Unit value
DYES GROUPED BY COLOUR INDEX NUMBER—Continued					
<i>Azo Dyes—Continued</i>					
<i>Disazo Dyes—Continued</i>					
		<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 dollars</i>	<i>Per pound</i>
274	Milling orange.....		39	18	\$0.46
275	Cloth scarlet G.....		3	3	.98
278	Direct fast red 8BL.....	228	205	391	1.90
280	Scarlet EC.....	25	14	14	1.00
289	Fast acid cyanine 5R ex.....	446	452	247	.55
299	Acid chrome black F.....	169	193	103	.53
302	Acid chrome green SS.....		13	10	.75
304	Fast acid black 2BN.....	54	60	28	.46
307	Fast acid cyanine black B.....	264	246	165	.67
316	Developed blue NA.....	96	109	90	.82
324a	Rosanthere.....	55	32	34	1.07
325	Direct brilliant violet.....	24	19	43	2.27
326	Direct fast scarlet.....	972	968	969	1.03
331	Bismarck brown G.....	114	108	43	.39
332	Bismarck brown R.....	920	826	355	.43
343	Chrome fast yellow C.....	57	84	53	.62
346	Direct fast yellow 5GL.....	13	21	36	1.75
353	Direct fast pink 2BL.....	39	36	69	1.91
364	Brilliant yellow.....	202	187	141	.76
375	Congo corinth G.....	424	420	281	.67
382	Direct scarlet B.....	158	145	136	.93
387	Direct violet B.....		34	28	.83
394	Direct violet N.....		68	66	.97
401	Developed black BH.....	3,078	2,877	947	.33
406	Direct blue 2B.....	1,046	959	208	.22
411	Cresotine yellow G.....		15	6	.37
415	Direct orange R.....	106	113	44	.39
419	Direct fast red F.....	406	397	236	.59
420	Direct brown M.....	629	639	310	.49
430	Polar red.....	249	257	216	.84
472	Direct blue BX.....	6	9	6	.71
477	Direct blue 3B.....	113	140	35	.25
487	Acid anthracene red 3B.....	76	70	61	.87
495	Benzopurpurine 10B.....		17	15	.88
502	Direct azurine G.....	191	184	123	.67
512	Direct blue RW.....	157	128	96	.75
518	Direct sky blue FF.....	506	480	415	.86
520	Direct pure blue.....	185	187	89	.48
<i>Trisazo Dyes</i>					
539	Direct fast black FF.....	398	393	187	.48
561	Direct brown BT.....	255	278	343	1.24
581	Direct black EW.....	8,211	8,290	2,120	.26
582	Direct black RX.....	619	609	179	.29
583	Direct green ET.....	241	195	65	.34
589	Chloramine green B.....	54	31	12	.40
593	Direct green B.....	682	600	228	.38
594	Direct green G.....	126	76	33	.44
596	Direct brown 3GO.....	898	804	283	.35
598	Congo brown G.....	174	149	66	.45
<i>Stilbene Dyes</i>					
620	Direct yellow R.....	418	418	214	.51
621	Chloramine orange G.....	217	194	142	.73
622	Stilbene yellow.....	392	313	182	.58
<i>Pyrazolone Dyes</i>					
636	Fast light yellow G.....	149	115	119	1.04
639	Xylene light yellow.....	227	189	182	.96
640	Tartrazine.....	715	719	481	.67
652	Chrome red B.....	215	203	174	.86
653	Pyrazol orange.....	56	57	75	1.32
<i>Ketanimine Dyes</i>					
655	Auramine.....	1,461	1,559	1,299	.83

TABLE 7A.—*Synthetic organic chemicals: United States production and sales of coal-tar dyes, 1944—Continued*

Colour Index or Prototype No.	Dye	Production	Sales		
			Quantity	Value	Unit value
DYES GROUPED BY COLOUR INDEX NUMBER—Continued					
<i>Triphenylmethane and Diphenyl-naphthylmethane Dyes</i>					
		1,000 pounds	1,000 pounds	1,000 dollars	Per pound
657	Malachite green.....	240	248	278	\$1.12
658	Rhoduline blue 6G.....	5	12	39	3.22
666	Acid green B.....	109	83	59	.72
667	Fast acid green B.....	28	24	56	2.33
671	Acid glaucine blue.....	612	529	379	.72
676	Para fuchsine.....	11			
677	Magenta.....		58	105	1.81
680	Methyl violet B and base.....	1,016	864	523	.61
681	Crystal violet.....	1,003	946	1,635	1.73
698	Acid violet.....	200	201	193	.96
707	Soluble blue.....	77	96	192	2.00
714	Patent blue A.....	120	98	164	1.68
720	Acid chrome azurol B.....	105	88	127	1.45
728	Victoria blue R.....		1	3	2.56
735	Naphthalene green V.....		46	85	1.86
737	Wool green S.....	126	155	81	.52
<i>Xanthene Dyes</i>					
766	Fluorescein.....	158			
768	Tetrabromofluorescein.....	270	273	320	1.18
<i>Acridine Dyes</i>					
793	Phosphine.....	72	76	72	.95
<i>Quinoline Dyes</i>					
801	Quinoline yellow.....	75	53	103	1.96
<i>Thiazole Dyes</i>					
814	Direct fast yellow.....	325	326	289	.89
<i>Azine Dyes</i>					
833	Wool fast blue.....	242	219	311	1.42
841	Safranin.....		192	244	1.28
864	Nigrosine, spirit-soluble.....	2,012	2,055	650	.32
865	Nigrosine, water-soluble.....	1,363	1,188	443	.37
<i>Thiazine Dyes</i>					
922	Methylene blue.....	250	260	239	.92
<i>Sulfur or Sulfide Dyes</i>					
	Total.....	17,896	17,747	4,371	.25
	Sulfur black.....	11,738	11,629	2,023	.17
	Sulfur blue.....	2,137	2,043	960	.47
	Sulfur brown.....	1,767	1,791	900	.28
	Sulfur green.....	346	300	231	.77
	Sulfur maroon.....	476	429	195	.45
	Sulfur olive.....	1,088	1,238	365	.29
	Sulfur tan.....	67	85	24	.28
	Sulfur yellow.....	253	208	67	.32
	All other.....	24	24	6	.25
<i>Anthraquinone Dyes</i>					
1034	Alizarin red S.....	89	92	158	1.72
1053	Acid alizarin blue SE.....	48	45	108	2.40
1054	Acid alizarin blue B.....	428	421	691	1.64
1078	Alizarin cyanine green.....	457	465	924	1.99
1085	Anthraquinone blue black B.....	340	435	628	1.44

TABLE 7A.—*Synthetic organic chemicals: United States production and sales of coal-tar dyes, 1944—Continued.*

Colour Index or Prototype No.	Dye	Production	Sales		
			Quantity	Value	Unit value
DYES GROUPED BY COLOUR INDEX NUMBER—Continued.					
<i>Anthraquinone Vat Dyes</i>					
		<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 dollars</i>	<i>Per pound</i>
1095	Anthraquinone vat yellow GC, 12½%—	977	1,005	963	\$0.96
1096	Anthraquinone vat golden orange G, 12%—	375	296	362	1.23
1097	Anthraquinone vat golden orange R, 12%—	565	530	696	1.31
1099	Anthraquinone vat dark blue BO, 25%—	689	733	936	1.28
1102	Anthraquinone vat green B and black B, 12½%—		566	224	.40
1104	Anthraquinone vat violet 2R, 12½%—		129	239	1.85
1106	Anthraquinone vat blue RS, 10%—	322	299	231	.77
1113	Anthraquinone vat blue GCD, 8½%—	768	633	397	.63
1114	Anthraquinone vat blue BCS, 20%—	1,132	966	1,140	1.18
1150	Anthraquinone vat olive R, 12½%—	3,392	3,693	4,002	1.08
1151	Anthraquinone vat brown R, 12½%—	773	897	1,107	1.23
1152	Anthraquinone vat brown G, 12½%—	1,024	1,033	1,212	1.17
<i>Indigoid and Thioindigoid Dyes</i>					
1177	Indigo, synthetic, 20%—	17,287	17,435	2,856	.16
1184	Bromindigo blue 2BD, 16%—	934	1,005	670	.67
1212	Vat red 3B, 20%—	170	194	205	1.05
<i>Food, Drug, and Cosmetic Dyes</i>					
	Total.....	851	847	2,303	2.72
	Food, drug, and cosmetic colors, total.....	678	681	1,930	2.84
	Blue #1.....		12	127	10.50
	Blue #2.....		3	31	12.28
	Green #1.....	3	1	8	11.39
	Orange #1.....	93	86	187	2.17
	Red #1.....	47	43	186	4.30
	Red #2.....	187	204	493	2.41
	Red #3.....	8	7	99	14.35
	Yellow #5.....	164	169	415	2.46
	Yellow #6.....	87	92	217	2.37
	All other.....	89	64	167	2.62
	Drug and cosmetic colors, total ¹	173	166	373	2.25
	Orange #4.....	9	9	17	1.92
	Red #7.....	10	9	21	2.25
	Red #19.....	23	23	75	3.25
	Red #21.....	11	10	11	1.09
	Red #35.....	4	4	8	2.23
	All other ¹	116	111	241	2.17
<i>All other Colour Index Dyes</i>					
	Total.....	14,479	12,755	11,252	.88
DYES GROUPED BY FOREIGN PROTOTYPE NUMBER					
	Total.....	26,314	26,062	32,027	1.23
1	Acid alizarin flavine R.....		21	19	.90
4	Acid anthracene brown PG.....	56	82	138	1.69
14	Anthracene chromate brown EB.....	323	340	248	.73
20	Benzo chrome black blue B.....		54	50	.93
24	Benzo fast black L.....	207	220	181	.82
26	Benzo fast blue 4GL.....	99	107	154	1.44
35	Brilliant benzo violet B.....		96	101	1.06
40	Brilliant wool blue FFR.....	50	49	81	1.67
43	Celliton orange GR.....	45	36	48	1.31
47	Chlorantine fast brown BRL.....	168	202	258	1.28
53	Chlorantine fast yellow 4GL.....	170	140	196	1.40
54	Chlorantine fast yellow RL.....		32	55	1.75

¹ Includes drug and cosmetic dyes, external, data on which are confidential.

TABLE 7A.—Synthetic organic chemicals: United States production and sales of coal-tar dyes, 1944—Continued

Colour Index or Prototype No.	Dye	Production	Sales		
			Quantity	Value	Unit value
DYES GROUPED BY FOREIGN PROTOTYPE NUMBER—Con.					
		<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 dollars</i>	<i>Per pound</i>
67	Diamine Bordeaux B	99	98	82	\$0.84
70	Diamine catechine 3G	119	115	69	.60
71	Diamine fast blue FFB	338	333	401	1.20
72	Diamine fast orange EG	141	137	137	1.01
73	Diamine fast orange ER	67	47	58	1.24
77	Diazo Bordeaux 7B	26	26	46	1.20
79	Diazo brilliant scarlet 2BL ex	28	32	72	2.21
80	Diazo brilliant scarlet ROA	166	179	280	1.56
94	Fast scarlet 2G base, salt	110	134	74	.55
101	Guinea fast red BL	54	71	59	.83
121	Indanthrene brown RRD	761	776	740	.95
122	Indanthrene khaki 2G	12,660	12,119	14,598	1.22
147	Oxydiaminogen OB	117	146	119	.81
152	Polar orange R		16	17	1.06
164	Rapidogen blue D	187			
169	Rapidogen red RS	120	123	197	1.61
172	Rosanthrene fast Bordeaux 2BL	68	56	93	1.64
187	Sulphon yellow R	26	35	33	.95
188	Supra light rubine BL		14	27	1.96
197	Victoria fast violet 2R ex		39	24	.62
201	Zambesi black D		22	20	.90
202	Zambesi black V	270	294	174	.59
244	Celliton scarlet B	70	68	70	1.03
260	Fast Bordeaux GP base, salt	81	92	92	1.00
264	Fast orange GC base, salt	27	32	31	.97
269	Fast red 3GL salt	115	122	76	.63
270	Fast red KB base		26	59	2.25
273	Fast red TR base, salt	27			
275	Fast yellow GC base, salt		6	6	1.07
293	Indanthrene olive green B	1,304	1,090	1,449	1.33
302	Naphthol AS	620	672	645	.96
305	Naphthol AS-BS	114	85	144	1.68
306	Naphthol AS-D	63	17	33	2.00
312	Naphthol AS-RL		5	12	2.43
314	Naphthol AS-TR	21	19	57	2.98
	All other dyes grouped by Foreign Prototype number	7,397	7,625	10,504	1.38
UNGROUPE DYES					
	Total	15,469	15,667	18,860	1.20
Acetate rayon dyes, total (see tables 9 and 10 for total of all acetate rayon dyes) ²					
		2,584	2,286	1,973	.86
	Black, IV, IV ex., B, BND, BNF, 2G, 3G, 3GNF, GS, J, NS, RB, SN, SS	1,107	957	599	.62
	Blue, IV, XII, BB, BGF, BNN, G, 2G, GR, R, 3R ³	541	451	516	1.14
	Orange, BL, GR, GRN conc., JER, R, 2R, 3R, 4R, RB, TF ⁴	189	142	139	.98
	Red, III, VI ex., VII, VIII, B, 2B, BX, FSI, NB, R, RP, VOL, Y	174	145	116	.80
	Rubine IX, B, C, G, R	21	56	48	.86
	Scarlet III, BG, BS, CSB, G, GY	37	24	26	1.07
	Violet II, 3B, 4B, BA, BGF, FSI, 2R, 4R, 3RA, 5RLF		11	19	1.79
	Yellow #8, #38, G, 5G, 6G, 3GM, GN, 6GN, GS, GX, JT, 4RL, RN	118	104	115	1.11
	All other	397	396	395	1.00
	Acid black, 640, 773, AR, 3G, GRF conc., J, RB, RCW		19	13	.67
	Acid red A-100, 3B, 3BX, G, GL, OA, RB	16	19	16	.86
	Anthraquinone vat blue CLX, GR, IBC	135	109	222	2.04
	Anthraquinone vat navy blue, BN, BRA, NRD, NTP	308	302	283	.94

² Does not include acetate rayon dyes which appear in the Colour Index and Foreign Prototype groups.³ Includes brilliant blue B, NR.⁴ Includes golden orange I, III.

TABLE 7A.—*Synthetic organic chemicals: United States production and sales of coal-tar dyes, 1944—Continued*

Colour Index or Prototype No.	Dye	Production 1,000 pounds	Sales		
			Quantity 1,000 pounds	Value 1,000 dollars	Unit value Per pound
UNGROUPED DYES—Continued					
	Azoic dyes and their components, total (see table 11 for data on all azoic dyes and their components) ⁵	1,064	1,055	1,474	\$1.40
	Chrome yellow FTL, 2G, 2GN, SSN, SW	104	116	39	.34
	Developed Bordeaux 7B, 2BL	11	13	20	1.54
	Developed red 2B, BFW, 7BL		40	62	1.54
	Direct black CAM, CW, 3G, 5G, NCW		133	59	.45
	Direct blue 2B, BR, FFGL, 5G, KHB, NR, RDW, VRS	17	21	17	.78
	Direct brilliant violet B, 4B, R		15	17	1.10
	Direct brown BGA/CF, CWR/GB, GKA, G2R, 3GS, KRS, N, R, RB, RBA		85	61	.72
	Direct fast blue 6GKS, GL, SGL, R, RL, SRL	77	99	157	1.58
	Direct fast brown BRL, FW, 4GL, LBRSA, R, 4R, 2RL, 3YL	50	50	72	1.45
	Direct fast gray BL, GL, 2GL, LVGLA, LVL, RLN	32	35	55	1.57
	Direct fast orange G, 2G, 4G, GL, 2GL, R, 4RL, 5RL, 2RN, RT	79	89	135	1.52
	Direct fast red, 3BL, 8BLN, 8BLSW	40	35	54	1.55
	Direct navy blue B, DB, RY	63	61	35	.56
	Oil orange, #30, MT, 2R	33	35	30	.85
	Oil red, #322, EGN, G, I-1471, N-1700, OB, XO, Y-292	241	245	238	.97
	All other ungrouped dyes	10,615	10,805	13,828	1.28

⁵ Does not include azoic dyes and their components which appear in the Colour Index and Foreign Prototype groups.

The dyes are grouped according to Colour Index number, or according to Foreign Prototype number, or are listed as ungrouped dyes. Of a total production of 152 million pounds of dyes reported, separate statistics on individual items are shown for 119 million pounds. Dyes grouped by Colour Index number accounted for 110 million pounds in 1944, compared with 107 million pounds in 1943. Sales of such dyes in 1944 were 108 million pounds, valued at 60 million dollars. Production of dyes having a recognized foreign equivalent (prototype) amounted to 26 million pounds in 1944, compared with 20 million pounds thus grouped in 1943. This increase indicates that an increasing number of dyes, of types which were imported before the war, are now being made by domestic producers. The output of ungrouped dyes in 1944 was 15 million pounds, compared with 17 million in the previous year. As in previous years, acetate rayc dyes were the most important type of ungrouped dyes.

Production and sales of dyes by chemical classes in 1944 are shown in table 8. Of the dyes produced in large quantities, anthraquinone vat dyes made a greater proportional gain in output over the previous year than any other chemical class; about 38 million pounds of

these dyes was produced in 1944 compared with 33 million in 1943. Anthraquinone vat dyes were used chiefly for dyeing uniforms, canvas, and other textiles of the armed forces. Production of azo dyes also increased significantly, totaling 55 million pounds in 1944 compared with 49 million in 1943. Sulfide dyes and indigoid and thioindigoid dyes were among the important chemical classes which were produced in smaller quantities in 1944 than in 1943.

TABLE 8.—*Synthetic organic chemicals: United States production and sales of coal-tar dyes, by chemical class, 1944*

Chemical class	Production	Sales		Unit value
		Quantity	Value	
Grand total.....	1,000 pounds 151,653	1,000 pounds 150,049	1,000 dollars 110,748	Per pound \$.74
Azo.....	54,921	54,444	35,384	.65
Anthraquinone vat ¹	37,739	37,348	44,785	1.20
Indigoid and thioindigoid vat.....	20,435	20,742	5,408	.26
Sulfide.....	17,990	17,874	4,488	.25
Triphenylmethane and diphenylnaphthylmethane.....	4,806	4,277	5,592	1.31
Azine.....	3,908	3,755	1,745	.46
Anthraquinone.....	3,590	3,422	4,888	1.43
Pyrazolone.....	1,572	1,503	1,519	1.01
Ketanimine.....	1,460	1,559	1,299	.83
Xanthene.....	1,396	1,480	2,096	1.42
Stilbene.....	1,116	1,028	669	.65
Nitro.....	82	84	83	.98
Oxazine.....	38	41	53	1.29
All other ²	2,600	2,492	2,739	1.10

¹ Includes carbazole vat dyes.

² Includes nitroso, acridine, quinoline, thiazole, aniline black and allied dyes, thiazine, rubber colors, and miscellaneous mixtures; these groups cannot be published separately without disclosing confidential information.

Production of dyes by class of application (such as acid, direct, sulfur, and vat) in 1943 and 1944 and in the period 1938-42 is shown in table 9, and corresponding data on sales are given in table 10. The output of vat dyes (other than synthetic indigo) in 1944 continued the sharp upward trend which had prevailed in recent years. It amounted to 41 million pounds, or 27 percent of all dyes produced, compared with 25 percent in the previous year. Production of indigo vat dyes was 17 million pounds in 1944, a drop of half a million from 1943. Direct dyes, the next most important class, accounted for 20 percent of total production, compared with 19 percent in the previous year. Sulfur dyes and acid dyes accounted for 12 percent and 11 percent of the total, respectively, in 1944. Sales of vat dyes in 1944, amounting to 58 million pounds valued at 50 million dollars, accounted for 39 percent of the total quantity of all dyes sold in that year. Sales of direct dyes accounted for 20 percent of the total sales in 1944.

TABLE 9.—*Synthetic organic chemicals: United States production of coal-tar dyes, by class of application, average, 1938-42, annual, 1943-44*

Class of application	Average, 1938-42	1943	1944
Quantity (1,000 pounds)			
Total.....	130,051	144,013	151,653
Acetate rayon.....	2,803	2,512	3,473
Acid.....	16,519	14,512	17,236
Azoic.....	3,969	3,282	3,805
Basic.....	6,615	5,502	6,758
Direct.....	31,933	26,903	29,880
Lake and spirit soluble.....	3,820	7,123	4,352
Mordant and chrome.....	7,346	9,693	8,438
Sulfur.....	19,872	19,561	17,990
Vat, total.....	35,165	54,104	58,174
Indigo.....	14,785	17,770	17,287
Other.....	20,380	36,334	40,887
All other.....	2,009	821	1,547
Percent of total quantity			
Total.....	100.0	100.0	100.0
Acetate rayon.....	2.2	1.7	2.3
Acid.....	12.7	10.1	11.4
Azoic.....	3.1	2.3	2.5
Basic.....	5.1	3.8	4.4
Direct.....	24.6	18.7	19.7
Lake and spirit soluble.....	2.9	4.9	2.9
Mordant and chrome.....	5.6	6.7	5.6
Sulfur.....	15.3	13.6	11.9
Vat, total.....	27.0	37.6	38.3
Indigo.....	11.4	12.3	11.4
Other.....	15.6	25.3	26.9
All other.....	1.5	.6	1.0

TABLE 10.—*Synthetic organic chemicals: United States sales of coal-tar dyes, by class of application, average, 1938-42, annual, 1943-44*

Class of application	Average, 1938-42	1943	1944
Quantity (1,000 pounds)			
Total.....	129,322	145,499	150,049
Acetate rayon.....	2,673	2,990	3,150
Acid.....	16,627	15,456	17,029
Azoic.....	3,856	3,161	3,930
Basic.....	6,316	5,365	6,378
Direct.....	32,066	28,822	29,356
Lake and spirit soluble.....	3,750	6,736	4,309
Mordant and chrome.....	7,236	9,869	8,425
Sulfur.....	19,902	19,542	17,874
Vat, total.....	34,927	52,684	58,090
Indigo.....	14,521	18,284	17,434
Other.....	20,406	34,400	40,656
All other.....	1,969	874	1,508

TABLE 10.—*Synthetic organic chemicals: United States sales of coal-tar dyes, by class of application, average, 1938-42, annual, 1943-44—Continued*

Class of application	Average, 1938-42	1943	1944
Percent of total quantity			
Total.....	100.0	100.0	100.0
Acetate rayon.....	2.1	2.1	2.1
Acid.....	12.9	10.6	11.3
Azoic.....	3.0	2.2	2.6
Basic.....	4.9	3.7	4.3
Direct.....	24.8	19.8	19.6
Lake and spirit soluble.....	2.9	4.6	2.9
Mordant and chrome.....	5.5	6.8	5.6
Sulfur.....	15.4	13.4	11.9
Vat, total.....	27.0	36.2	38.7
Indigo.....	11.2	12.6	11.6
Other.....	15.8	23.6	27.1
All other.....	1.5	.6	1.0
Value (1,000 dollars)			
Total.....	82,498	105,350	110,748
Acetate rayon.....	2,577	2,915	3,164
Acid.....	13,610	13,579	13,293
Azoic.....	5,494	4,661	5,577
Basic.....	6,023	5,449	6,449
Direct.....	18,481	17,561	17,109
Lake and spirit soluble.....	2,876	5,478	2,944
Mordant and chrome.....	3,931	5,777	4,621
Sulfur.....	5,213	4,956	4,488
Vat, total.....	22,477	43,924	50,193
Indigo.....	2,296	2,819	2,856
Other.....	20,181	41,105	47,337
All other.....	1,816	1,050	2,910
Percent of total value			
Total.....	100.0	100.0	100.0
Acetate rayon.....	3.1	2.8	2.9
Acid.....	16.5	12.9	12.0
Azoic.....	6.7	4.4	5.0
Basic.....	7.3	5.2	5.8
Direct.....	22.4	16.6	15.5
Lake and spirit soluble.....	3.5	5.2	2.7
Mordant and chrome.....	4.8	5.5	4.2
Sulfur.....	6.3	4.7	4.0
Vat, total.....	27.2	41.7	45.3
Indigo.....	2.8	2.7	2.6
Other.....	24.4	39.0	42.7
All other.....	2.2	1.0	2.6

Production and sales of azoic dyes and their components are shown in table 11. Output of this group totaled 3.8 million pounds, compared with 3.2 million in the previous year. Sales amounted to 3.9 million pounds, valued at 5.6 million dollars.

TABLE 11.—*Synthetic organic chemicals: United States production and sales of azoic dyes and their components, 1944*

Foreign Prototype No.	Dye or component	Production	Sales		
			Quantity	Value	Unit value
	Grand total ¹	1,000 pounds 3,805	1,000 pounds 3,930	1,000 dollars 5,577	Per pound \$1.42
	Dyes and components for which separate statistics may not be shown.....	371	623	1,243	1.99
	Dyes and components for which separate statistics are shown below.....	3,434	3,307	4,334	1.31
	DYES				
	Rapid fast.....		41	74	1.79
	Rapidogen, total.....	1,172	1,251	2,294	1.83
164	Blue D.....	187	(²)	(²)	(²)
	Blue.....	71	² 282	² 495	1.75
	Bordeaux.....	86	82	179	2.20
	Brown.....	36	41	118	2.84
169	Red RS.....	120	123	197	1.61
	Red.....	273	269	402	1.49
	Scarlet.....	117	140	247	1.76
	Yellow.....	121	113	213	1.88
	Other.....	161	201	443	2.20
	COMPONENTS				
	Fast color bases:				
264	Orange ³	27	32	31	.97
270	Red.....	(⁴)	26	59	2.25
	Red.....	⁴ 29	15	35	2.39
94	Scarlet ³	110	134	74	.55
	Scarlet.....	155	154	238	1.55
275	Yellow ³		6	6	1.07
	Fast color salts:				
	Blue.....	78	71	49	.70
260	Bordeaux ³	81	92	92	1.00
269	Red.....	115	122	76	.63
273	Red ³	27	(⁵)	(⁵)	(⁵)
	Red.....	212	⁵ 286	⁵ 251	.88
	Scarlet.....	285	279	164	.59
	Naphthols, total.....	1,143			
302	Naphthol AS.....	620	672	645	.96
305	Naphthol AS-BS.....	114	85	144	1.68
306	Naphthol AS-D.....	63	17	33	2.00
312	Naphthol AS-RL.....		5	12	2.43
314	Naphthol AS-TR.....	21	19	57	2.98
	All other.....	325			

¹ Totals shown represent *all* azoic dyes and their components. Totals shown in table 7A represent ungrouped azoic dyes and their components only.

² Blue and blue Foreign Prototype No. 164 combined.

³ Base and salt.

⁴ Red base and red Foreign Prototype No. 270 combined.

⁵ Red salt and red Foreign Prototype No. 273 combined.

LAKES AND TONERS

Lakes and toners are synthetic organic pigments used to color paints and varnishes, wallpapers, printing inks, plastics, and other industrial products. Lakes are organic pigments prepared by precipitating a soluble dye on the surface of an inorganic compound, known as the substrate. Toners, or full-strength colors, are insoluble organic pigments. Reduced or extended toners are toners to which a solid diluent has been added.

Data on production and sales of lakes and toners in 1944 are given in table 12A (see also table 12B, part III, for an alphabetical list of these products in which the manufacturers are identified). Statistics not publishable as individual items have been classified as far as possible in color groups.

TABLE 12A.—*Synthetic organic chemicals: United States production and sales of lakes and toners, 1944*

[Listed below are all lakes and toners 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 12B in part III lists alphabetically all lakes and toners for which data on production or sales were reported and identifies the manufacturer of each]

Product	Production	Sales		
		Quantity	Value	Unit value
Grand total.....	1,000 pounds 19, 197	1,000 pounds 18, 401	1,000 dollars 13, 793	Per pound \$. 75
LAKES OR LAKE COLORS				
Total.....	5, 741	5, 098	2, 317	. 45
Products for which separate statistics may not be shown.....	1, 626	1, 594	505	. 32
Products for which separate statistics are shown below.....	4, 115	3, 504	1, 812	. 52
Black lakes.....	82	75	43	. 57
Blue lakes, total.....	1, 776	1, 259	766	. 61
Indanthrene blue.....	15	20	43	2. 18
Methylene blue.....	4	5	3	. 55
Peacock blue (Patent blue).....	1, 574	1, 100	649	. 59
Victoria blue.....	39	33	18	. 54
All other.....	144	101	53	. 53
Brown lakes.....	26			
Green lakes, total.....	189	173	87	. 50
Acid green.....	20	20	12	. 62
Naphthol green.....	47			
Pigment green.....	37	38	13	. 34
All other.....	85	115	62	. 53
Maroon lakes:				
Alizarin maroon.....	48	44	38	. 87
Azo Bordeaux.....	234	240	73	. 30
Helio fast rubine.....	58	61	50	. 82
Orange lakes, total.....	316	275	104	. 38
Persian orange.....	223	188	84	. 45
All other.....	93	87	20	. 23
Red lakes:				
Alizarin red.....	88	91	125	1. 37
Eosine and phloxine.....	22	24	22	. 89
Rhodamine.....	3	4	6	1. 37
Rose and pink lakes.....	9	8	8	1. 05
Scarlet 2R.....	941	946	293	. 31
Violet lakes, total.....	104	105	67	. 64
Methyl violet.....	91	94	63	. 67
All other.....	13	11	4	. 37
Yellow lakes, total.....	219	199	130	. 65
Fast light yellow.....	24	26	22	. 86
Naphthol yellow.....	14	13	9	. 69
Quinoline yellow.....	34	27	23	. 84
Tartrazine.....	102	115	65	. 57
All other.....	45	18	11	. 60

TABLE 12A.—*Synthetic organic chemicals: United States production and sales of lakes and toners, 1944—Continued*

Product	Production	Sales		
		Quantity	Value	Unit value
TONERS OR FULL-STRENGTH COLORS				
Total.....	1,000 pounds 9,867	1,000 pounds 9,610	1,000 dollars 9,571	Per pound \$1.00
Products for which separate statistics may not be shown.....	30	28	54	1.93
Products for which separate statistics are shown below.....	9,837	9,582	9,517	.99
Blue toners, total.....	667	668	1,572	2.35
PMA Victoria blue.....	37	27	86	3.19
PTA Peacock blue.....	20	17	65	3.87
PTA Victoria blue.....	55	56	173	3.09
PTA Blue, other.....	14	15	32	2.22
All other.....	541	553	1,216	2.20
Brown toners.....	1	1	1	1.81
Green toners, total.....	320	289	814	2.82
PMA Brilliant green.....	37	24	71	2.96
PTA Brilliant green.....	30	28	92	3.26
Brilliant green, other.....	7	6	21	3.43
PMA Malachite green.....	23	19	58	2.98
PTA Malachite green.....	8	7	21	3.11
PTA Green, other.....	19	18	46	2.56
All other.....	196	187	505	2.70
Maroon toners:				
Lithol maroon.....	69	74	76	1.03
α -Naphthylamine maroon.....	6	6	5	.86
Toluidine maroon.....	58	59	163	2.75
Orange toners, total.....	171	182	174	.96
2,4-Dinitroaniline orange.....	72	81	81	.97
o-Nitroaniline orange.....	64	65	47	.72
All other.....	35	33	46	1.40
Red toners, total.....	7,247	7,056	5,261	.75
o-Chloronitroaniline red.....	296	316	251	.79
Eosine and phloxine.....	352	211	229	1.08
Lithol red.....	3,404	3,232	1,745	.54
Lithol rubine.....	193	198	193	.98
Para red, light.....	799	838	522	.62
Para red, dark.....	403	456	315	.69
Permanent red 2B.....	44	45	71	1.57
PMA Red.....	10	5	19	4.09
PTA Rhodamine B.....	22	18	69	3.83
PTA Rhodamine Y.....	42	40	150	3.73
PTA Red, other.....	2	2	3	1.99
Red lake C.....	496	388	329	.84
Red lake D.....	8	16	11	.69
Toluidine red.....	1,045	1,119	1,144	1.02
All other.....	131	172	210	1.22
Violet toners:				
Methyl violet, other than PMA or PTA.....	278	222	148	.67
PMA Methyl violet.....	32	31	39	1.25
PMA Violet, other.....	36	31	36	1.16
PTA Methyl violet.....	33	36	73	2.00
PTA Violet, other.....	7	8	17	2.21
Yellow toners, total.....	912	919	1,138	1.24
Benzidine yellow.....	581	578	750	1.30
Hansa yellow.....	279	295	334	1.13
All other.....	52	46	54	1.17
EXTENDED OR REDUCED TONERS				
Total.....	3,589	3,693	1,905	.52
Products for which separate statistics may not be shown.....	759	807	334	.41
Products for which separate statistics are shown below.....	2,830	2,886	1,571	.54

TABLE 12A.—*Synthetic organic chemicals: United States production and sales of lakes and toners, 1944—Continued*

Product	Production	Sales		
		Quantity	Value	Unit value
EXTENDED OR REDUCED TONERS— Continued				
	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 dollars</i>	<i>Per pound</i>
Blue toners, reduced, total.....	988	985	791	\$0.80
PMA Victoria blue.....	29	26	19	.73
PMA Blue, other.....	104	137	93	.68
PTA Peacock blue.....	24	23	37	1.62
Phthalocyanine blue B.....	342	340	299	.88
Phthalocyanine blue G.....		2	2	1.24
All other.....	489	457	341	.75
Green toners, reduced:				
PMA Brilliant green.....	55	47	28	.58
PMA Green, other.....	7	9	6	.70
PTA Brilliant green.....	37	(¹)	(¹)	(¹)
PTA Green, other.....	8	59	32	.54
Maroon toners, reduced.....	5			
Orange toners, reduced.....	20	14	6	.45
Red toners, reduced, total.....	1,113	1,188	483	.41
Lithol red.....	142	158	52	.33
Lithol rubine.....	90	93	44	.47
Para red, light.....	131	161	21	.13
Para red, dark.....	153	192	26	.14
PTA Rhodamine B.....	15	15	14	.97
PTA Rhodamine Y.....	15	11	18	1.69
Red lake C.....	27	25	11	.45
Toluidine red.....	158	142	44	.31
All other.....	382	391	253	.64
Violet toners, reduced:				
PMA Violet.....	23	34	18	.53
PTA Violet, methyl and other.....	27	26	23	.88
Yellow toners, reduced, total.....	547	524	184	.35
Hansa yellow.....	489	465	144	.31
All other.....	58	59	40	.68

¹ Included in "PTA Green, other."

NOTE.—The abbreviations PMA and PTA stand for phosphomolybdic acid and phosphotungstic acid, respectively.

Data were obtained in 1944 in more detail than in previous years, and phosphomolybdic acid (PMA) and phosphotungstic acid (PTA) toners are now further identified by the dye component of the pigment.

Production of organic pigments totaled 19.2 million pounds in 1944, an increase of 3 million pounds over that of 1943, but considerably less than the record of 26 million pounds in 1941, when consuming industries were building up stocks. Sales were 23 percent higher in quantity than in 1943 and 33 percent higher in value. The output of lake colors in 1944 was almost the same as in 1943, but that of toners increased substantially. The most important products among the lakes were peacock blue (patent blue) and scarlet 2R; among the toners, lithol reds, para reds, and toluidine red; and among the reduced toners, phthalocyanine blues and hansa yellows.

Production of lakes and toners in 1944 was restricted somewhat by shortages of the organic intermediates and other raw materials as a result of diversions of these materials to products considered more essential to the war. In order to insure equitable distribution of existing supplies, consumption of organic pigments in printing inks, controlled by War Production Board Conservation Order M-53,

and of dyes and organic pigments in nonmilitary uses, controlled by Conservation Order M-103, was maintained at approximately 70 percent of the quantity consumed in 1941. The growing shortage of paper also contributed to the decreased consumption of organic pigments in printing inks and wallpapers.

MEDICINALS

Statistics on production and sales of medicinals are divided into three subgroups—benzenoid compounds (usually derived from coal tar); alicyclic and heterocyclic compounds, which may be derived from sources such as terpenes from wood and cholesterol from animal tissue; and acyclic compounds, which are usually derived from grain, natural gas, and petroleum hydrocarbons. The products of each group differ pharmacologically and chemically. Production and sales of medicinals in 1944 are shown in table 13A (see also table 13B, part III, for an alphabetical list of these products in which the manufacturers are identified).

TABLE 13A.—*Synthetic organic chemicals: United States production and sales of medicinals,¹ 1944*

[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 13B in part III lists alphabetically all those medicinals for which data on production or sales were reported and identifies the manufacturer of each]

Product	Production	Sales ²		
		Quantity	Value	Unit value
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
• Grand total	38,751.1	36,212.4	111,794.4	\$3.09
MEDICINALS, CYCLIC				
Total	35,353.3	33,103.3	94,038.8	2.84
Chemicals for which separate statistics may not be shown	7,234.5	7,371.7	18,229.2	2.47
Chemicals for which separate statistics are shown below	28,118.8	25,731.6	75,809.6	2.95
<i>Benzenoid</i>				
Total	28,489.0	26,445.6	34,935.3	1.32
Acetanilide	620.9	597.9	175.4	.29
Acetyl-p-aminophenyl salicylate (Phenetsal)	9.8	9.3	41.4	4.44
N-Acetyl-4-hydroxy-m-arsanilic acid (Acetarsone) (Stovarsol)	11.6	11.4	326.0	28.59
Acetylsalicylic acid (Aspirin)	9,423.4	9,325.3	3,676.0	3.39
Acetyltannic acid (Tannigen) (Tannyl acetate)	5.6	4.1	14.4	3.51
p-Aminobenzoic acid derivatives, total	141.8	96.0	612.3	6.38
β-Diethylaminoethyl p-aminobenzoate hydrochloride (Procaine hydrochloride)	44.7	20.2	127.7	6.30
Ethyl p-aminobenzoate (Benzocaine) (Anaesthetic)	71.3	55.9	171.6	3.07
All other	25.8	19.9	313.0	15.73
3-Amino-4-hydroxyphenyldichloroarsine hydrochloride (Dichlorophenarsine hydrochloride)	1.4	.5	122.5	250.54
Benzaldehyde	269.2			
Benzoic acid salts ³	8.7	7.0	10.7	1.52
Benzyl benzoate ⁴	432.6	437.1	438.7	1.00
Bismuth compounds:				
Bismuth subgallate	32.5	40.6	58.3	1.44
Bismuth subsalicylate	66.5	79.2	197.0	2.48

See footnotes at end of table.

TABLE 13A.—*Synthetic organic chemicals: United States production and sales of medicinals,¹ 1944—Continued*

Product	Production	Sales ²		
		Quantity	Value	Unit value
MEDICINALS, CYCLIC—Continued				
<i>Benzenoid—Continued</i>				
	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 dollars</i>	<i>Per pound</i>
dl-Desoxyephedrine, and d-desoxyephedrine and dl-desoxyephedrine hydrochloride (all isomers).....	.1	.1	5.1	\$47.24
Diethylstilbestrol.....	.4	.5	158.9	344.64
Dyes, medicinal.....	86.1	38.5	625.5	16.25
β -Naphthyl benzoate.....	8.2	11.6	19.7	1.70
Neoparsphenamine.....	16.9	13.6	436.0	32.18
Phenolsulfonic acid salts.....	1,360.7	1,077.5	286.9	.27
Salicylic acid.....	5,469.4	3,661.4	964.6	.26
Salicylic acid salts, total.....	1,431.5			
Sodium salicylate.....	1,386.9	1,352.8	599.2	.44
All other.....	44.6			
Sulfa drugs, total.....	4,514.5	5,012.7	17,088.1	3.41
Sulfanilamide (p-Aminobenzenesulfonamide).....	748.0	1,193.2	1,106.1	.93
Sulfathiazole.....	1,498.8	1,913.0	4,877.7	2.55
Sulfathiazole, sodium.....	55.0	34.9	121.0	3.46
All other.....	2,212.7	1,871.6	10,983.3	5.87
Sulfoarsphenamine.....	2.4			
Tannin albuminate (Tannalbin).....	3.4	2.9	9.6	3.35
Vitamin K, all forms.....	.4	.2	23.5	117.50
All other.....	4,571.0	4,665.4	9,045.5	1.94
<i>Alicyclic and Heterocyclic</i>				
Total.....	6,864.3	6,657.7	59,103.5	8.88
Amino acids derived from proteins.....	1.1	1.1	112.4	102.18
Antipyrine salicylate.....	2.2	3.1	4.4	1.42
Barbituric acid derivatives, total.....	559.2	558.4	3,119.8	5.59
5-Ethyl-5-phenylbarbituric acid (Phenobarbital) (Luminal).....	205.4	221.6	795.2	3.59
5-Ethyl-5-phenylbarbituric acid, sodium salt (Phenobarbital sodium).....	28.3	54.2	193.7	3.57
All other.....	325.5	282.6	2,130.9	7.54
Bile acids and salts, total.....	108.3	96.7	380.4	3.93
Cholic acid.....	39.4			
Dehydrocholic acid and sodium salt.....	23.7	23.5	246.1	10.46
All other.....	45.2	73.2	134.3	1.83
Caffeine.....	646.6	657.3	1,732.3	2.64
Caffeine derivatives, total.....	62.8	63.0	146.3	2.32
Caffeine citrate.....	46.2	46.5	92.5	1.99
Caffeine sodium benzoate and caffeine sodium salicylate.....	16.6	16.5	53.8	3.26
Camposulfonic acid and salts.....	4.3	3.9	15.9	4.08
Hexamethylenetetramineanhydromethylene citrate (Helmitol).....	15.0	11.2	27.9	2.48
7-Iodo-8-hydroxyquinoline-5-sulfonic acid (Yatren acid) and salt.....	43.4	44.5	320.4	7.21
2-Methoxy-6-chloro-9-diethylaminopentylaminoacridine (Quinacrine hydrochloride) (Atebrin).....	853.7	853.3	8,901.4	10.43
p-Methylphenyleinchoninic ethyl ester (Neocinchophen).....		7.8	55.6	7.15
Nikethamide (Niacin diethylamide).....	25.9	27.2	437.5	16.08
Progesterone.....	(³)	(³)	555.5	21,366.50
Theobromine derivatives, total.....	120.9	120.2	252.8	2.10
Theobromine and sodium salicylate.....	92.0	88.0	178.0	2.02
All other.....	28.9	32.2	74.8	2.32
Theophylline (1,3-Dimethylxanthine) and derivatives, total.....	227.1	205.1	1,711.6	8.34
Theophylline base.....	118.9	99.2	690.0	6.95

See footnotes at end of table.

TABLE 13A.—*Synthetic organic chemicals: United States production and sales of medicinals,¹ 1944—Continued*

Product	Production	Sales ²		
		Quantity	Value	Unit value
MEDICINALS, CYCLIC—Continued	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
<i>Alicyclic and Heterocyclic—Continued</i>				
Theophylline (1,3-Dimethylxanthine) and derivatives—Continued				
Theophylline ethylenediamine (Aminophylline).....	93.9	93.7	903.5	\$9.64
All other.....	14.3	12.2	118.1	9.67
Vitamins, total.....	1,530.3	1,298.6	32,145.6	24.75
B ₁ (Thiamin).....	152.9	122.6	9,740.9	79.43
B ₂ (Riboflavin) for human use.....	84.6	60.1	6,293.7	104.65
B ₆ (Pyridoxine).....	4.2	3.0	1,337.3	454.56
D ₂ (Irradiated ergosterol) (Viosterol) ⁶	307.9	304.2	1,926.4	6.33
Niacin and niacinamide.....	939.7	774.5	3,007.8	3.88
All other.....	41.0	34.2	9,839.5	288.05
All other.....	2,663.5	2,706.3	9,183.7	3.39
MEDICINALS, ACYCLIC				
Total.....	3,397.8	3,109.1	17,755.6	5.71
Chemicals for which separate statistics may not be shown.....	2,082.4	1,833.1	2,962.2	1.62
Chemicals for which separate statistics are shown below.....	1,315.4	1,276.0	14,793.4	11.59
Cacodylic acid.....	2.3	.5	7.5	14.75
Cacodylic acid salts.....		2.4	26.1	10.82
Calcium lactophosphate.....	6.3	7.2	5.3	.73
Calcium levulinat.....	10.0	6.9	11.0	1.60
Ethyl iodide.....		10.2	25.7	2.53
Iodoform.....		7.7	32.0	4.18
Methyl iodide.....	7.2	5.7	21.1	3.68
Silver preparations, colloidal.....	46.1	46.8	144.7	3.09
Tartaric acid salts.....	.5	.2	1.2	5.00
Thiosinamine (Allylurea).....	.2	.1	.6	4.56
tert-Trichlorobutyl alcohol (Chloretone) (Chlorobutanol).....	23.9	29.2	59.9	2.06
Vitamins, total.....	1,218.9	1,159.1	14,458.3	12.47
A (all esters).....	9.0	7.6	397.9	52.36
C (Ascorbic acid and sodium salt, and Isoascorbic acid).....	1,177.2	1,123.6	13,192.7	11.74
Pantothenic acid salts.....	32.7	27.9	867.7	32.22

¹ Represents statistics of production and sales of bulk medicinals only. These statistics do not include the production of finished preparations, such as tablets, capsules, or ampoules, which are manufactured from bulk medicinals. The quantity and value of sales are for bulk medicinals or the bulk equivalent of medicinals which are compounded into finished preparations.

² Sales represent the combined quantity of sales to another company and the quantity of interplant transfers for consumption, i. e., the transfer within a company from the division which manufactures the bulk medicinal to another division which makes it into a finished consumer product. The value of sales represents the combined sales value and the value (at the prevailing market price) of interplant transfers for consumption.

³ Does not include sodium benzoate.

⁴ Includes non-U. S. P. grade.

⁵ Less than 50 pounds.

⁶ In million U. S. P. units, these data would be as follows: Production, 33,905,981; sales, 32,165,411, valued at \$1,926,378. The unit value per million U. S. P. units is 6 cents.

To avoid duplication in these figures, all data are given in terms of bulk medicinals. This practice has been followed in the Commission's reports beginning with that for 1942. Before that year, the figures given in these reports represented production and sales which were partly in bulk form and partly in the form of finished products such as tablets, ampoules, and perles. Reports from different manufacturers were, therefore, not entirely comparable.

Medicinals were the only group of synthetic organic chemicals produced in smaller volume in 1944 than in 1943. Production amounted to 39 million pounds in 1944 compared with 56 million pounds in 1943; sales in 1944 were 36 million pounds, valued at 112 million dollars, a considerable decrease from the 52 million pounds, valued at 140 million dollars, sold in 1943.

Cyclic medicinals represented in 1944 approximately 91 percent of the output of all synthetic organic medicinals. Benzenoid derivatives accounted for 81 percent of the cyclic compounds, and alicyclic and heterocyclic compounds for 19 percent.

Among the more important benzenoid medicinal compounds were acetylsalicylic acid (aspirin); salicylic acid; sulfa drugs; salicylic acid salts, principally sodium salicylate; and phenolsulfonic acid salts.

The production of acetylsalicylic acid (aspirin) in 1944 set a new record of 9.4 million pounds; this was an increase of more than 700,000 pounds over that of the previous year. Sales totaled 9.3 million pounds, valued at 3.7 million dollars.

Production of salicylic acid, which decreased slightly during 1941-43, rose to a new high of 5.5 million pounds in 1944. The average unit value of sales dropped to 26 cents per pound in 1944 after having reached 29 cents in 1942.

Phenolsulfonic acid salts (principally the sodium and zinc salts), which are used as anti-infective agents, have steadily increased in production from 566,000 pounds in 1941 to more than twice as much (1.4 million pounds) in 1944. Sales also rose, from 566,000 pounds, valued at \$145,000, in 1941 to 1.1 million pounds, valued at \$287,000, in 1944.

Production of sulfa drugs, which totaled 10 million pounds in 1943, fell sharply to 4.5 million in 1944. Current demand was able to draw upon the fairly large stock piles accumulated during 1942 and 1943. Competition with the newer antibiotics such as penicillin, which were preferred in some clinical applications, also may have contributed to the decline in production. Sulfathiazole continued as the principal sulfa drug.

Production of acetanilide in 1944 decreased to 621,000 pounds from the level of 840,000 pounds in 1942 and in 1943.

The output of p-aminobenzoic acid derivatives, which include compounds such as β -diethylaminoethyl p-aminobenzoate hydrochloride (procaine hydrochloride), ethyl p-aminobenzoate (benzocaine or anaesthesine), and isobutylaminoethyl p-aminobenzoate (monocaine), was 142 million pounds in 1944; this quantity represented a decline of about 5 percent from the 1943 level. The average unit value of sales of these compounds dropped from \$10.10 per pound in 1943 to \$6.38 in 1944.

Although penicillin was the most important heterocyclic medicinal produced in 1944, statistics on production and sales of this product are not included with those on medicinals for that year because production was still largely on an experimental basis. Sales, completely under Government control, were almost entirely to the armed forces, and at a price many times that which prevailed early in 1945. Production in 1944 is estimated at 1.6 trillion Oxford units, valued at 35 million dollars.

The demand for 2-methoxy-6-chloro-9-diethylaminopentylamino-

acridine (quinacrine hydrochloride or atebirin), the most important antimalarial, continued to increase in 1944. Production reached 854,000 pounds; sales were 853,000 pounds, valued at 8.9 million dollars. In 1943, sales amounted to 504,000 pounds, valued at 6.2 million dollars.

Sales of synthetic caffeine in 1944 slightly exceeded production of that product; they amounted to 657,000 pounds, valued at 1.7 million dollars, compared with 468,000 pounds, valued at \$821,000, in 1943.

Production of barbituric acid derivatives, used by the military forces and in medicine for treatment of shock and as a soporific, amounted to 559,000 pounds in 1944, compared with 583,000 in 1943 and 607,000 in 1942.

The sales value of all bulk vitamins amounted to 47 million dollars in 1944, a considerable drop from the value of 61 million dollars in 1943, owing chiefly to a marked decrease in prices in 1944. An apparent decrease in the quantity of some of the vitamins produced is the result of converting to a 100-percent basis, data which had previously been incorrectly reported on a more dilute basis. Several of the vitamins were produced, however, in larger quantity in 1944 in accordance with increased demand and the flour-enrichment program. The combined output of niacin and niacinamide, the pellagra-preventive vitamins, was 940,000 pounds in 1944. Statistics on production and sales of vitamins B₁ (thiamin) and B₆ (pyridoxine) are reported separately for the first time. In 1944 the output of B₁ was 153,000 pounds; sales were 123,000 pounds, valued at 9.7 million dollars. Production of pyridoxine was 4,200 pounds, and sales were 3,000 pounds, valued at 1.3 million dollars.

The most important item in the acyclic subgroup of medicinals was ascorbic acid, the output of which totaled about 1.2 million pounds, a gain of about 400,000 pounds over 1943. Sales of this vitamin were valued at 13 million dollars out of a total of 18 million for the entire group of acyclic medicinals.

FLAVOR AND PERFUME MATERIALS

The flavor and perfume materials included in this report are organic chemicals synthesized from natural crude materials or from cyclic or acyclic chemical intermediates; floral extracts or flavors obtained by extraction or distillation from natural substances are not included. Statistics on production and sales of these synthetic flavor and perfume materials are shown in table 14A. An alphabetical list of them, identifying the manufacturers of each, appears in table 14B, part III.

Few of the products in this group reach the ultimate consumer in the form of the pure chemicals listed in the tables; instead they are blended with essential and floral oils, fixatives, and solvents according to special formulas. These blends or mixtures are then used to flavor foods, drinks, and medicines; to perfume toiletries, cosmetics, and soaps; and to conceal objectionable odors.

The individual flavor and perfume materials are arranged in groups according to chemical classification as cyclic (including benzenoid, as well as terpenoid and heterocyclic), acyclic, and chemically modified essential oils. In 1944, refined benzyl benzoate was shifted to the

TABLE 14A.—*Synthetic organic chemicals: United States production and sales of flavor and perfume materials, 1944*

[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 14B in part III lists alphabetically all those flavor and perfume materials for which data on production or sales were reported and identifies the manufacturer of each]

Material	Production	Sales		
		Quantity	Value	Unit value
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total.....	16,279.0	15,564.0	19,111.2	\$1.23
FLAVOR AND PERFUME MATERIALS, CYCLIC				
Total.....	11,726.3	11,049.8	14,564.7	1.32
Materials for which separate statistics may not be shown.....	3,066.3	3,137.7	4,733.8	1.51
Materials for which separate statistics are shown below.....	8,660.0	7,912.1	9,830.9	1.37
<i>Benzenoid</i>				
Total.....	7,425.2	6,879.4	7,161.3	1.04
α -Amylcinnamaldehyde.....	80.3	74.7	121.6	1.61
Amyl salicylate.....	221.9	198.6	120.5	.61
Anethole.....	385.2	407.7	408.2	1.00
Anisaldehyde.....	62.5	54.5	144.9	2.66
Anisole (Methyl phenyl ether).....		.3	1.1	3.38
Anisyl acetate.....		.4	3.1	7.00
Anisyl alcohol.....	2.5	1.7	8.8	5.20
Benzyl acetate.....	331.9	328.7	177.9	.54
Benzyl alcohol.....	204.3	194.3	131.6	.68
Benzyl butyrate.....	1.0	1.1	2.8	2.57
Benzyl cinnamate.....	2.8	2.7	15.2	5.55
Benzyl formate.....	.5	.7	1.8	2.49
Benzyl propionate.....	3.4	2.9	5.4	1.89
Benzyl salicylate.....	23.7	21.2	34.4	1.63
Cinnamaldehyde.....	347.5			
Cinnamic acid.....	7.7			
Cinnamyl acetate.....	.7	.5	2.9	6.08
Cinnamyl alcohol.....	34.4	34.5	98.3	2.85
Cinnamyl propionate.....		.1	1.0	9.31
p-Cresyl α -toluate (p-Cresyl phenylacetate).....		1.4	6.1	4.46
Ethyl anthranilate.....		.1	.8	5.74
Ethyl benzoate.....		1.7	1.4	.83
Ethyl cinnamate.....	.4	.7	1.8	2.78
Ethyl methylphenylglycidate.....		1.7	12.2	7.19
Ethyl salicylate.....		.3	.2	.93
Eugenol.....	55.0	58.7	138.7	2.37
Guaiacyl acetate.....	.2			
Isoeugenol.....		29.0	97.4	3.36
Methyl benzoate.....	53.0			
α -Methylbenzyl alcohol (Methylphenyl carbinol) (Styralyl alcohol).....	.7	.7	2.8	4.01
Methyl cinnamate.....	1.1	2.8	5.3	1.91
Methyl eugenyl ether (Methyl eugenol).....		1.9	8.2	4.28
Methyl isoeugenyl ether.....	4.1			
Methyl salicylate (Artificial wintergreen oil).....	3,412.0	3,127.1	964.3	.31
Musk xylene.....	139.0	128.1	173.2	1.35
Phenethyl alcohol (Phenylethyl alcohol).....	284.5	268.4	509.5	1.90
Phenethyl propionate.....		.4	1.7	4.56
3-Phenyl-1-propyl acetate (Hydrocinnamyl acetate).....	.2	.2	1.4	6.12
Vanillin.....	653.0	681.2	1,528.1	2.24
All other ¹	1,111.7	1,250.4	2,428.7	2.11
<i>Terpenoid and Heterocyclic</i>				
Total.....	4,301.1	4,170.4	7,403.4	1.78
Gedryl acetate.....	11.9	11.5	33.3	2.90
Citral.....	48.1	42.0	160.1	3.81
Citronellol.....	33.1	36.5	198.9	5.44
Citronellyl acetate.....	.4	.7	5.1	7.31
Coumarin, synthetic.....	259.8	244.0	601.4	2.47

¹ Includes data of production and sales for naphthalenoid compounds, which amounted to less than 1 percent of the total. The data have been included with "All other" benzenoid compounds in order to prevent the disclosure of the operations of individual companies.

TABLE 14A.—*Synthetic organic chemicals: United States production and sales of flavor and perfume materials, 1944—Continued*

Material	Production	Sales		
		Quantity	Value	Unit value
FLAVOR AND PERFUME MATERIALS, CYCLIC—Continued				
<i>Terpenoid and Heterocyclic—Continued</i>				
	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 dollars</i>	<i>Per pound</i>
Geraniol.....	62.0	59.2	257.4	\$4.35
Geranyl acetate.....	20.0	15.3	75.0	4.90
Geranyl butyrate.....	.1	.2	1.1	6.45
Geranyl formate.....	.6	.2	1.5	8.59
Indole.....		3.7	68.4	18.67
α -Ionone.....	25.1	29.8	121.4	4.08
β -Ionone.....		.9	8.2	9.32
Ionone, mixed.....	18.2	28.4	100.4	3.53
Linalool, natural.....	38.3	34.1	255.6	7.48
Linalyl acetate.....	101.2	89.9	441.0	4.90
Linalyl butyrate.....	.4	.2	2.1	8.49
Linalyl formate.....	.4	.4	3.2	7.84
Linalyl isobutyrate.....		.4	4.3	9.75
Linalyl propionate.....	.2	.1	1.3	10.64
Menthol, synthetic, tech. and U. S. P.....	217.1	201.7	1,400.3	6.94
Methylionone.....	123.7	125.3	519.4	4.14
Nerol.....	1.8	1.8	15.8	8.89
Piperonal (Heliotropin).....	47.8	44.4	141.8	3.19
Rhodinol (2,6-Dimethylocten(2)ol).....	21.6	21.9	183.4	8.36
Rhodinyl acetate.....	.2	.2	3.0	18.35
Santalol.....	1.1	.8	11.8	14.90
Terpineol (α and β).....	1,140.3	1,124.0	299.7	.27
Terpinyl acetate.....	171.7	164.2	106.2	.65
Vetivenyl acetate.....	1.4	1.3	77.2	59.01
All other.....	1,954.6	1,887.3	2,305.1	1.22
FLAVOR AND PERFUME MATERIALS, ACYCLIC				
Total.....	4,040.2	4,003.6	4,431.9	1.11
Materials for which separate statistics may not be shown.....	3,992.3	3,890.5	4,244.8	1.09
Materials for which separate statistics are shown below.....	47.9	113.1	187.1	1.65
Allyl caproate.....	2.5	2.2	10.1	4.51
Decyl aldehyde (C ₁₀).....	2.9	2.5	44.8	17.57
Ethyl butyrate.....		71.4	53.1	.74
Ethyl caproate.....	1.3			
Ethyl enanthate.....	9.5	10.4	11.6	1.11
Ethyl pelargonate.....	.3	.1	.4	7.51
Ethyl sebacate.....	.8			
Isoamyl butyrate.....	25.2	21.4	17.7	.83
Isoamyl formate.....	1.3	1.0	1.0	.97
Methylnonylacetalddehyde.....	1.1	1.1	26.0	24.05
Undecalactone.....	3.0	3.0	22.4	7.42
CHEMICALLY MODIFIED ESSENTIAL OILS				
Total.....	512.5	510.6	114.6	.22

medicinal group because of its increased use in the treatment of scabies; another use of this product is in insect repellents.

Production of all flavor and perfume materials in 1944 totaled 16.3 million pounds, an increase of 23 percent over 1943 and almost 6 percent over 1942, the highest previous year. This increase, made possible by larger supplies of some raw materials, was partly in response to a greater demand resulting from a higher national income. It also reflected a greater substitution of synthetic flavor and perfume materials for natural products, imports of which were limited by war conditions. Certain flavoring materials were required in greater quantity for use in military rations. Sales in 1944, totaling 15.6 million pounds, were valued at 19.1 million dollars.

Production of benzenoid flavor and perfume materials in 1944 amounted to 7.4 million pounds, 18 percent greater than in 1943. This increase was due in part to larger supplies of coal-tar intermediates. Production of methyl salicylate (artificial wintergreen oil) in 1944 totaled 3.4 million pounds; sales were 3.1 million pounds, valued at \$964,000. Production of vanillin totaled 653,000 pounds; sales were 681,000 pounds, valued at 1.5 million dollars.

The output of terpenoid and heterocyclic chemicals combined was 4.3 million pounds; sales were 4.2 million pounds, valued at 7.4 million dollars. Shortages of natural menthol stimulated the production of synthetic menthol, which reached 217,000 pounds; production would probably have been much higher if raw materials for the synthetic product had been more abundant. Another important item in this group was coumarin; 260,000 pounds was produced and 244,000 pounds, valued at \$601,000, was sold. Production of citronellol, geraniol, and their derivatives was low because of the shortage of imported raw materials. Among the items for which the statistics are not publishable, saccharin, a substitute sweetening agent, was produced in large quantities owing to the shortage of sugar.

The acyclic flavor and perfume materials consist chiefly of synthetic alcohols, aldehydes, ketones, and esters. Statistics reported to the Commission on the principal item in this group, monosodium glutamate, cannot be shown as they are confidential; but production in 1944 is estimated in trade publications at about 3.5 million pounds. This material enriches the flavors of other foods and is used in dehydrated soups, Army rations, and other products.

PLASTICS MATERIALS

Plastics materials are produced in semimanufactured forms such as granular molding compounds, solutions, and sheets. They may be further processed by the manufacturers, or sold to fabricators. In either case, the plastics materials go into molded objects such as radio cabinets; laminated products such as table tops; preparations for treatment of paper, textiles, and leather; protective coatings for wood and metal; adhesives; safety glass; and a multitude of other finished products for civilian or military uses.

Plastics materials may be made from a wide variety of raw materials and each has its special properties which make it preferable in certain uses. Phenolic condensation resins, for example, have a high tensile strength and are thermo-setting; that is, they are not changed greatly in form by heat. Polystyrene polymerization resins have excellent electrical properties. Organic nitrogen resins may be easily molded or cast into clear or slightly colored products; vinyl polymers make flexible special-purpose resins; and acrylate resins are transparent and especially useful where special optical properties are desired. Alkyd resins of the phthalic anhydride, abietic acid, and maleic acid or anhydride types are used widely in protective coatings, which constitute one of the major uses of all plastics materials as a group.

Plastics materials made from cellulose esters are not considered within the scope of this report. Data on cellulose plastics are published by the United States Bureau of the Census. Statistics on production and sales of cellulose esters as a chemical raw material for

all purposes are included with the group of miscellaneous chemicals.

United States production and sales of plastics materials are shown in table 15A (see also table 15B, part III, for an alphabetical list of these products in which the manufacturers are identified).

TABLE 15A.—*Synthetic organic chemicals: United States production and sales of plastics materials, grouped according to chemical composition, 1944*

[Quantities and values are based on net resin content¹ only. Listed below are all synthetic plastics 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 15B in part III lists alphabetically all those products for which data on production or sales were reported and identifies the manufacturer of each]

Material	Production	Sales ²		
		Quantity	Value	Unit value
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total.....	782,352	697,328	211,342	\$0.30
PLASTICS MATERIALS, CYCLIC				
Total.....	404,113	380,822	83,264	.22
Materials for which separate statistics may not be shown.....	16,535	16,356	1,397	.09
Materials for which separate statistics are shown below.....	387,578	364,466	81,867	.22
<i>Condensation Resins, Benzenoid</i>				
Total.....	334,396	311,345	76,081	.24
Alkyd resins, total ³	132,402	118,348	22,278	.19
Saturated polyesters type, total.....	130,123	116,079	21,813	.19
Phthalic anhydride-glycerol, total.....	127,854	114,205	21,392	.19
For molding and casting.....	162	118	35	.30
For protective coatings.....	127,083	113,534	21,244	.19
For other uses.....	609	553	113	.20
All other.....	2,269	1,874	421	.22
Unsaturated polyesters type.....	2,279	2,269	465	.20
Coal-tar acid resins, total.....	197,315	188,366	52,662	.28
Phenolic resins, total.....	158,946	153,370	42,461	.28
p-tert-Alkylphenol-aldehyde (p-tert-Amylphenol and p-tert-Butylphenol).....	2,575	2,513	807	.32
Cresols-formaldehyde, total.....	14,825	15,134	3,546	.23
For laminating.....	12,481	12,795	2,889	.23
For other uses.....	2,344	2,339	657	.28
Phenol-formaldehyde, total.....	116,204	111,340	33,576	.30
For molding.....	42,094	41,868	15,726	.38
For laminating.....	27,173	23,169	5,527	.24
For protective coatings.....	10,296	10,115	3,793	.37
For adhesives.....	21,080	20,787	3,841	.18
For textile, paper, and leather treatment.....	318	(⁴)	(⁴)	(⁴)
For other uses.....	15,243	15,401	4,689	.30
Phenol-formaldehyde, modified by abietic acid.....	2,020	1,625	237	.15
Phenol-formaldehyde, modified by abietic acid ester.....	20,889	20,627	3,492	.17
All other phenolic resins.....	2,433	2,131	803	.38
Mixed phenolic (tar acid) resins, total.....	38,369	34,996	10,201	.29
Cresylic acid-formaldehyde.....	6,720	4,148	1,089	.26
Cresols- and xylenols-aldehyde.....	1,740	1,340	385	.29
All other mixed phenolic resins.....	29,909	29,508	8,727	.30
All other cyclic condensation resins.....	4,679	4,631	1,141	.25
<i>Polymerization Resins, Benzenoid</i>				
Total.....	69,717	69,477	7,183	.10
Polyaromatic resins, total.....	57,861	57,752	6,927	.12
Polystyrene resins.....	10,571	10,702	3,001	.28
All other polyaromatic resins.....	47,290	47,050	3,926	.08
All other cyclic polymerization resins.....	11,856	11,725	256	.02

See footnotes at end of table.

TABLE 15A.—*Synthetic organic chemicals: United States production and sales of plastics materials, grouped according to chemical composition, 1944—Continued*

Material	Production	Sales ²		
		Quantity	Value	Unit value
PLASTICS MATERIALS, ACRYLIC ⁵				
Total.....	1,000 pounds 378, 239	1,000 pounds 316, 506	1,000 dollars 128, 078	Per pound \$. 40
Materials for which separate statistics may not be shown.....	79, 429	50, 770	39, 567	. 78
Materials for which separate statistics are shown below.....	298, 810	265, 736	88, 511	. 33
<i>Condensation Resins</i>				
Total.....	171, 545	162, 312	37, 885	. 23
<i>Alkyd resins, total.....</i>				
	105, 481	101, 337	17, 484	. 17
Abietic acid, and abietic acid and maleic acid.....	70, 686	68, 126	8, 088	. 12
Fumaric acid.....	3, 411	3, 306	665	. 20
Maleic acid or anhydride and maleic anhydride- terpene.....	13, 572	12, 955	3, 164	. 24
All other.....	17, 812	16, 950	5, 567	. 33
Organic nitrogen resins, total.....	66, 064	60, 975	20, 401	. 33
<i>Urea-formaldehyde, total.....</i>				
	48, 066	43, 110	13, 218	. 31
For molding and casting.....	18, 647	13, 958	7, 108	. 51
For adhesives.....	22, 411	20, 876	4, 575	. 22
For textile, paper, and leather treatment.....	3, 580	5, 359	916	. 17
For other uses.....	3, 428	2, 917	619	. 21
All other organic nitrogen resins.....	17, 998	17, 865	7, 183	. 40
<i>Polymerization Resins</i>				
Total.....	206, 694	154, 194	90, 193	. 59
<i>Alcohol polymerization resins (allyl and furfuryl alcohols).....</i>				
	373	444	394	. 89
Polyvinyl alcohol, ester, ether, and halide resins.....	111, 900	91, 369	39, 743	. 43
Polyvinyl alcohol-aldehyde resins.....	14, 992	11, 611	10, 489	. 90
All other acyclic polymerization resins ⁶	79, 429	50, 770	39, 567	. 78

¹ Net resin content excludes all fillers, drying agents, dyes, and plasticizers. Chemical modifiers such as abietic acid and special oils are considered part of the net resin content when they are chemically combined with the principal resin.

² Sales of protective coatings materials include certain intraplant transfers as well as the usual interplant transfers, i. e., transfers from the producing department of a plant to the department of the same plant which mixes or compounds these materials for sale.

³ Data for alkyd resins include anhydride-alcohol-oil chemically combined.

⁴ Included in statistics of phenol-formaldehyde resins for other uses.

⁵ Includes small amounts of alicyclic and heterocyclic resins.

⁶ Includes statistics for polymethacrylic acid ester resins, polyamide resins, and several other miscellaneous resins.

The data in table 15A are given in terms of the net-resin content of the type of resin reported, that is, solvents, dyes, fillers (such as sawdust), and other unreacted chemicals are not included in the weight reported. Oil and abietic acid when chemically combined, however, are included. Statistics of plastics materials on this basis are less influenced by various methods of formulation, which may change from year to year, than statistics on the basis of gross weight. They are also more suitable for combination with the statistics of the other synthetic organic chemicals included in this report. In order to obtain over-all totals for the entire synthetic organic chemical industry, statistics for all synthetic organic chemicals, except dyes, are given in terms of undiluted materials.

According to value of sales, plastics materials was the third largest group in the synthetic organic chemical industry in 1944, being exceeded only by miscellaneous chemicals and synthetic elastomers

(synthetic rubbers). Sales amounted to 211 million dollars. The quantity produced was 782 million pounds, and the quantity sold, 697 million pounds. In 1943, about 654 million pounds was produced and 568 million pounds, valued at 178 million dollars, was sold.

Most of the increase in the output of plastics materials in 1944 over previous years was in the acyclic subgroup. Included in this subgroup in 1944 are small amounts of nonbenzenoid resins, that is, non-coal-tar resins, which are nevertheless cyclic compounds. Production of materials in this subgroup totaled 378 million pounds compared with 273 million in 1943, the previous high. Alkyd resins (chiefly types such as abietic acid, maleic acid and anhydride, and fumaric acid), polyvinyl resins, acrylate resins, and polyamide condensation resins accounted for most of the increase. Production of urea-formaldehyde resins decreased.

The output of cyclic plastics materials, chiefly benzenoid condensation products such as alkyd resins derived from phthalic anhydride and coal-tar acid resins, amounted to 404 million pounds in 1944. This represents an increase of 24 million pounds over the output in 1943. Production of resins derived from phenols, cresols, xylenols, or mixtures of these materials (tar-acid resins) totaled 197 million pounds, an increase of 49 million over the output in 1943. Production of alkyd resins in this subgroup amounted to 132 million pounds in 1944 compared with 155 million in 1943. This decline in output oc-

TABLE 16.—*Synthetic organic chemicals: United States production and sales of plastics materials, grouped according to use, 1944*

[Quantities and values are based on net resin content only]

Use	Production		Sales			Unit value Per pound \$. 30
	Quantity	Percent of total	Quantity	Value	Percent of total	
	1,000 pounds 782, 352		1,000 pounds 697, 328	1,000 dollars 211, 342		
Grand total.....						
PLASTICS MATERIALS, CYCLIC						
Total.....	404, 113	100. 0	380, 822	83, 264	100. 0	. 22
For molding and casting.....	72, 270	17. 9	72, 124	26, 293	31. 6	. 36
For laminating.....	50, 883	12. 6	44, 531	9, 963	12. 0	. 22
For protective coatings.....	188, 685	46. 7	173, 434	33, 276	40. 0	. 19
For adhesives.....	26, 241	6. 5	25, 843	5, 365	6. 4	. 21
For textile, paper, and leather treatment.....	793	. 2	720	203	. 2	. 28
For miscellaneous uses ¹	65, 241	16. 1	64, 170	8, 164	9. 8	. 13
PLASTICS MATERIALS, ACYCLIC ²						
Total.....	378, 239	100. 0	316, 506	128, 078	100. 0	. 40
For molding and casting.....	47, 645	12. 6	38, 586	29, 279	22. 9	. 76
For laminating.....	6, 059	1. 6	5, 908	3, 490	2. 7	. 59
For protective coatings.....	102, 138	27. 0	97, 401	18, 912	14. 8	. 19
For adhesives.....	55, 544	14. 7	46, 982	14, 508	11. 3	. 31
For textile, paper, and leather treatment.....	25, 628	6. 8	26, 303	10, 753	8. 4	. 41
For miscellaneous uses ^{1, 2}	141, 225	37. 3	101, 266	51, 136	39. 9	. 50

¹ Includes small amount of resin reported for ion exchange.

² Includes small amounts of alicyclic and heterocyclic resins.

³ Includes resins reported for glazing, sheeting, and films.

curred partly because of a shortage in supplies of phthalic anhydride owing to an increase in the demand for this material for plasticizers and insect repellents.

Production and sales of plastics materials classified by use are shown in table 16.

Materials for protective coatings were the largest item in the total quantity produced, followed, in the order named, by materials for molding and casting; for adhesives; for laminating; and for treatment of textiles, paper, and leather. About 200 million pounds was produced for unspecified uses.

RUBBER-PROCESSING CHEMICALS

Rubber-processing chemicals (formerly reported under the name of rubber chemicals) include those organic compounds which are added to rubber in order to control its vulcanization and aging properties. This classification does not include chemicals (such as styrene and butadiene) used as raw materials for the manufacture of synthetic elastomers (synthetic rubbers).

The three principal groups of rubber-processing chemicals are the accelerators, the antioxidants, and the peptizers. The addition of an accelerator to an unprocessed rubber mixture materially shortens the time required for vulcanization and yields a finished product with higher tensile strength and better resistance to aging. The use of antioxidants lengthens the life of the rubber. Peptizers are used by the rubber-goods manufacturing industry to soften rubber more quickly during its processing.

Statistics on production and sales of these rubber-processing chemicals for 1944 are shown in table 17A (see also table 17B, part III, for an alphabetical list of these products in which the manufacturers are identified.)

Production of rubber-processing chemicals continued to increase in 1944, reaching a new high of 93 million pounds, an increase of 12 million pounds over the previous peak production of 1943. Sales in 1944 also reached a record high of 85 million pounds, valued at 42 million dollars, compared with 77 million pounds, valued at 31 million dollars, in 1943. The increase was due to a greater production of both synthetic rubber and rubber manufactures and to the larger amount of rubber-processing chemicals required to process synthetic rubber compared with natural rubber.

The output of cyclic rubber-processing chemicals, chiefly accelerators and antioxidants, rose from 62 million pounds in 1943 to 74 million in 1944, an increase of almost 20 percent. Sales of these cyclic compounds totaled 66 million pounds, valued at 27 million dollars, representing an increase over 1943 of 14 percent in the quantity sold.

Statistics for cyclic accelerators are shown in four chemical subgroups, of which the most important was the thiazole derivatives. In 1944, production of this group amounted to 29 million pounds; production of 2-mercaptobenzothiazole accounted for 11 million pounds of this amount. The output of guanidine accelerators was about 3 million pounds, which was above the level of the last 2 years, but less than the high of 4 million pounds reached in 1941. Di-

TABLE 17A.—*Synthetic organic chemicals: United States production and sales of rubber-processing chemicals, 1944*

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

Product	Production	Sales		
		Quantity	Value	Unit value
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total.....	92,639	84,725	42,075	\$0.50
RUBBER-PROCESSING CHEMICALS, CYCLIC				
Total.....	73,774	66,260	27,446	.41
Products for which separate statistics may not be shown.....	38,222	37,058	14,464	.39
Products for which separate statistics are shown below.....	35,552	29,202	12,982	.44
Accelerators, total.....	33,528	27,769	11,944	.43
Aldehyde-amines, total.....	833	792	461	.58
n-Butyraldehyde-aniline.....	510	476	287	.60
All other.....	323	316	174	.55
Dithiocarbamates.....	538	522	487	.93
Guanidines and guanidine mixtures, total.....	2,967	2,942	1,067	.36
Diphenylguanidine.....	2,459	2,331	809	.35
All other.....	508	611	258	.42
Thiazole derivatives, total.....	28,782	23,134	9,675	.42
2-Mercaptobenzothiazole.....	11,207			
All other.....	17,575			
All other.....	408	379	254	.67
Antioxidants, total.....	40,246	38,491	15,502	.40
Amino or hydroxy compounds.....	315			
Secondary amines: N,N'-Diphenyl-p-phenyl-enediamine.....	2,117	1,812	1,292	.71
All other.....	37,814	36,679	14,210	.39
RUBBER-PROCESSING CHEMICALS ACYCLIC				
Total.....	18,865	18,465	14,629	.79
Products for which separate statistics may not be shown.....	204	188	160	.85
Products for which separate statistics are shown below.....	18,661	18,277	14,469	.79
Accelerators, total.....	6,536	6,178	5,623	.91
Dithiocarbamates.....	612	511	709	1.39
Thiuram derivatives, total.....	5,720	5,479	4,754	.87
Tetramethylthiuram disulfide.....	773	664	786	1.18
All other.....	4,947	4,815	3,968	.82
All other.....	204	188	160	.85
Peptizers: Dodecyl mercaptan.....	12,329	12,287	9,006	.73

¹ Includes statistics of production and sales of rubber tackifiers.

phenylguanidine continued to be the leading individual guanidine compound.

The output of cyclic antioxidants continued its slow rise. In 1944, production totaled 40 million pounds, or 2 million pounds more than in 1943.

Acyclic rubber-processing chemicals include both accelerators and peptizers. No data have been reported for acyclic antioxidants. An apparent slight decrease in the output of acyclic compounds is due to the reclassification of several of them, particularly xanthates; these compounds are now included with miscellaneous chemicals (see table 21A) as flotation reagents, which is now their major use.

The production of dithiocarbamates has been irregular in recent years. It was 470,000 pounds in 1941, 150,000 pounds in 1942, and 612,000 pounds in 1944.

Dodecyl mercaptan was the rubber-processing chemical produced in the largest quantity in 1944. It is used both as a peptizer and as an agent to control the polymerization processes in manufacturing synthetic rubber. Production of dodecyl mercaptan, which was 12 million pounds in 1944, was very much larger than in 1943. The large output of this material (with an average sales value of 73 cents per pound) raised the average sales value for all acyclic rubber-processing chemicals from 40 cents per pound in 1943 to 79 cents in 1944. Sales of dodecyl mercaptan accounted for 67 percent of the total sales of acyclic rubber-processing chemicals in 1944.

ELASTOMERS (SYNTHETIC RUBBERS)

Synthetic elastomers¹ made the greatest gain in production of any group of synthetic organic chemicals in 1944. The relative importance of this group has increased with the mounting production of synthetic rubber. This group includes synthetic rubber of the polybutadiene-styrene (GR-S), polybutadiene-acrylonitrile (GR-A), and polychloroprene (GR-M) types for special purposes and for tire manufacture, and also products such as polyvinyl alcohol and polyvinyl alcohol-aldehyde copolymers which have been converted into elastomers by the addition of a plasticizer. Statistics on production and sales of synthetic elastomers are shown in table 18A (see also table 18B, part III, for an alphabetical list of these products in which the manufacturers are identified).

In 1944, the production of synthetic elastomers was three times that of 1943 (1.8 billion pounds compared with 573 million). Sales totaled 1.6 billion pounds, valued at 354 million dollars, in 1944, compared with 553 million pounds, valued at 156 million dollars, in the previous year.

Production of the cyclic elastomers, chiefly the polybutadiene-styrene (GR-S) type of synthetic rubber, reached a total of 1.5 billion pounds, or more than three and one-half times the output in 1943, which was 414 million pounds. This elastomer accounted for the greater part of the production of all synthetic rubbers in 1944. It is preferred because of its comparatively low cost and general suitability for use in tires. Raw materials for the polybutadiene-styrene elastomers may be obtained from either petroleum or grain and from either coke-oven gas or tar. This type of synthetic rubber is produced by emulsifying high-purity butadiene and styrene, adding a catalyst to promote polymerization, and coagulating to recover the final product, which is dried and pressed into blocks.

Production of acyclic elastomers, principally polychloroprene (GR-M or Neoprene), polyisobutylene-diolefin (GR-I), and polybutadiene-acrylonitrile (GR-A) types, increased from 159 million pounds in 1943 to 257 million in 1944. The average unit value of 37 cents per pound in 1944 represented a considerable decrease from that of 54 cents in 1943. The unit value of nearly all of the elastomers decreased in 1944.

¹ An elastomer is defined as a material that will stretch repeatedly to at least 150 percent of its original dimension and will return rapidly and with force to its approximate original shape.

TABLE 18A.—*Synthetic organic chemicals: United States production and sales of elastomers (synthetic rubbers),¹ 1944*

[Listed below are all synthetic elastomers for which any reported data on production or sales may be published. Table 18B in part III lists alphabetically all those elastomers for which data on production or sales were reported and identifies the manufacturer of each]

Chemical	Production	Sales ²		
		Quantity	Value	Unit value
Grand total.....	1,000 pounds 1,757,910	1,000 pounds 1,628,437	1,000 dollars 353,750	Per pound \$0.22
ELASTOMERS, CYCLIC				
Total.....	1,500,993	1,395,136	268,315	.19
Polybutadiene-styrene (GR-S type):				
Produced at Government plants ³	1,497,758	1,391,697	266,961	.19
Produced at private plants ⁴	3,235	3,439	1,354	.39
ELASTOMERS, ACYCLIC				
Total.....	256,917	233,301	85,435	.37
Elastomers for which separate statistics may not be shown.....	70,544	68,434	34,486	.50
Elastomers for which separate statistics are shown below.....	186,373	164,867	50,949	.31
Polybutadiene-acrylonitrile (GR-A type) (Buna N), total.....	37,731	31,704	14,954	.47
Produced at Government plant.....	4,617	46	23	.49
Produced at private plants.....	33,114	31,658	14,931	.47
Polychloroprene (GR-M type) (Neoprene) ⁵	105,957	98,435	27,070	.28
Polyisobutylene-diolefin (GR-I type) ⁶	42,315	34,362	8,857	.26
Polyisoprene ⁶	370	366	68	.18

¹ An elastomer is defined as a material which will stretch repeatedly to 150 percent or more and will return rapidly and with force to its approximate original shape. Synthetic elastomers include synthetic rubbers.

² Value of sales for some plants operated for the Rubber Reserve Company represent the value calculated from the quantity of sales and the average book value per pound for 1944 as supplied by the Rubber Reserve Company.

³ In addition, plants operated for Polymer Corporation, a Canadian Government corporation, produced 71,814,400 pounds and sold 71,814,400 pounds, valued at \$13,285,664.

⁴ Includes statistics for polystyrene and polyisoprene-styrene elastomers.

⁵ Data for Government plant only.

⁶ In addition, plants operated for Polymer Corporation, a Canadian Government corporation, produced 6,198,080 pounds and sold 6,198,080 pounds, valued at \$960,702.

Polychloroprene elastomers, which have been manufactured in the United States since 1932, have increased in use to such an extent that they have become one of the most important of the acyclic subgroup. Production in 1944 was 106 million pounds, or 31 million greater than in 1943. The stability of Neoprene under continued exposure to oils, chemicals, heat, freezing, and sunlight accounts for its widespread use even though it is higher in price than most of the other synthetic elastomers.

Important elastomers for which statistics are not separately shown are the polyvinyl alcohol-aldehyde copolymers and the polyalkylene-sulfide types. Polyvinyl polymers have proved to be especially adapted for certain uses. Their electrical properties and chemical resistance have promoted their use for tubing, wire, and cable insulation.

SURFACE-ACTIVE AGENTS

Table 19A shows production and sales of surface-active agents for 1944 (see also table 19B, part III, for an alphabetical list of these

TABLE 19A.—*Synthetic organic chemicals: United States production and sales of surface-active agents, 1944*

[Listed below are all surface-active agents 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 are reported.) Table 19B in part III lists alphabetically all those chemicals for which data on production or sales were reported and identifies the manufacturer of each.]

Chemical	Production	Sales		
		Quantity	Value	Unit value
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total.....	152,636	134,706	29,938	\$0.22
SURFACE-ACTIVE AGENTS, CYCLIC				
Total.....	74,264	70,880	11,905	.17
Chemicals for which separate statistics may not be shown.....	31,454	31,550	5,778	.18
Chemicals for which separate statistics are shown below.....	42,810	39,330	6,127	.16
Nonsulfated and nonsulfonated: Quaternary ammonium compounds.....	1,890	1,828	1,864	1.02
Sulfated and sulfonated:				
Naphthalene derivatives, sulfonated, total.....	11,401	11,143	1,978	.18
Isopropyl-naphthalenesulfonic acid (mono) and sodium salt.....	433	412	140	.34
All other.....	10,968	10,731	1,838	.17
Petroleum sulfonates.....	29,519	26,359	2,285	.09
SURFACE-ACTIVE AGENTS, ACYCLIC				
Total.....	78,372	63,826	18,033	.28
Chemicals for which separate statistics may not be shown.....	27,636	11,595	2,998	.26
Chemicals for which separate statistics are shown below.....	50,736	52,231	15,035	.29
Nonsulfated and nonsulfonated:				
Amides.....	1,133	519	267	.51
Salts of fatty acids.....	548	547	76	.14
Sulfated and sulfonated:				
Acids, sulfated and sulfonated, total.....	2,727			
Oleic acid, sulfonated.....	2,031	1,963	385	.20
All other.....	696			
Amides, sulfated and sulfonated, total.....	8,613	8,717	2,462	.28
Lauroyltaurine (Ethanol lauramide sulfonic acid) salts.....	315	333	169	.51
All other.....	8,298	8,384	2,293	.27
Alcohols, sulfated and sulfonated.....		14,049	3,706	.26
Esters, sulfated and sulfonated.....	8,945	7,536	5,553	.74
Oils, fats, and waxes, sulfated and sulfonated, total.....	28,770	18,900	2,586	.14
Castor oil, sulfonated.....	6,770	4,568	719	.16
Cod oil, sulfonated.....	1,639	1,638	215	.13
Corn oil, sulfonated.....	723	270	44	.16
Neat's-foot oil, sulfonated.....	2,616	2,542	340	.13
Peanut oil, sulfonated.....	1,928	571	90	.16
Soybean oil, sulfonated.....	661	657	102	.16
Sperm oil, sulfonated.....	1,232	575	87	.15
Tallow, sulfonated.....	3,769	2,599	248	.09
All other.....	9,432	5,480	741	.14

products in which the manufacturers are identified). In previous years, these chemicals have been included with miscellaneous chemicals; their totals are still included with that group in order to temporarily preserve comparability of the statistics of miscellaneous chemicals. Data are reported in terms of bulk surface-active agents, that is, in terms of 100-percent content of the surface-active agent, exclusive of all ingredients such as inorganic salts and water.

Surface-active agents include detergents (other than soap), wetting agents, and dispersing agents (other than waxes). In general, these chemicals contain a hydrophobic—or water-insoluble—radical and a hydrophylic—or water-soluble—radical which enable them to be partly soluble in both aqueous and nonaqueous mediums. This property alters the interfacial tension between these two mediums, thereby improving their miscibility. The selection of the proper radicals or chemical groups results in products that are active in a variety of mixtures where soaps would be quite ineffective. Subsequently these chemicals may be converted into finished preparations such as cleaning compounds, shampoos, prepared textile specialties, and dentifrices.

Production of surface-active agents totaled 153 million pounds in 1944. This was a large increase over 1943, but part of it was only apparent, being due to more complete reporting, especially of the cyclic products. Sales in 1944 were 135 million pounds, valued at 30 million dollars, with an average unit value of 22 cents per pound.

The 1944 output of cyclic surface-active agents, which accounted for slightly less than half of the total for all such agents, was 74 million pounds; sales of 71 million pounds amounted to 12 million dollars. Production of aromatic sulfonates from petroleum was 30 million pounds; sales were 26 million pounds, valued at 2 million dollars. Quaternary ammonium compounds, which are effective cationic germicides, had the highest average unit value of any surface-active agent—\$1.02 per pound.

Production of acyclic surface-active agents totaled 78 million pounds, a 31-percent increase over 1943. Sales were 64 million pounds, valued at 18 million dollars, in 1944, compared with 57 million pounds, valued at 15 million dollars, in 1943. Fats and oils—the raw materials for soaps—are also the most important raw materials for acyclic surface-active agents. The fatty acids obtained from these fats and oils may be hydrogenated, re-esterified, sulfonated, or converted to amides or other products. Production of sulfonated fats and oils—one of the oldest types of surface-active agents—totaled 29 million pounds, an increase of at least 150 percent over 1943. This increase, however, largely reflects more complete reporting of the statistics. Sales of sulfonated fats and oils were 19 million pounds, valued at 3 million dollars, in 1944 compared with 11 million pounds, valued at 4 million dollars, in 1943.

PLASTICIZERS

Plasticizers are relatively inert high-boiling liquids or low-melting solids which are added to plastics materials in order to make them more workable, more flexible, or more elastic. Table 20A shows production and sales of these products in 1944 (see also table 20B, part III, for an alphabetical list of these products in which the manufacturers are identified). In previous years, these chemicals have been included with miscellaneous chemicals; their totals are still included with that group in order to temporarily preserve comparability of the statistics on miscellaneous chemicals.

Production of plasticizers amounted to 187 million pounds in 1944, a 37-percent increase over 1943. Sales of plasticizers were 172 million

pounds, valued at 39 million dollars, compared with 129 million pounds, valued at 32 million dollars, in 1943.

About six times as much cyclic plasticizers—160 million pounds—as acyclic plasticizers was produced in 1944. Sales of 153 million pounds were valued at 32 million dollars. The most important group of cyclic plasticizers were the phthalates, and the most important individual items were dibutyl phthalate, with a production of 48 million pounds, and dimethyl phthalate (which is also used as an insect repellent), with a production of 43 million pounds. Tricresyl phosphate, the output of which amounted to 21 million pounds, ranked third in importance in the cyclic group.

Production of acyclic plasticizers totaled 27 million pounds in 1944. Sales of 19 million pounds were valued at 7 million dollars. The production of dibutyl sebacate, the most important acyclic plasticizer, was 5 million pounds; sales were slightly less than 5 million pounds, valued at 2 million dollars.

TABLE 20A.—*Synthetic organic chemicals: United States production and sales of plasticizers, 1944*

[Listed below are all plasticizers for which any reported data on production or sales may be published. Table 20B in part III lists alphabetically all those plasticizers for which data on production or sales were reported and identifies the manufacturer of each]

Chemical	Production	Sales		
		Quantity	Value	Unit value
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total.....	186,745	171,741	39,065	\$0.23
PLASTICIZERS, CYCLIC				
Total.....	160,235	153,120	32,257	.21
Chemicals for which separate statistics may not be shown.....	22,253	17,996	5,187	.29
Chemicals for which separate statistics are shown below.....	137,982	135,124	27,070	.20
Phosphoric acid esters: Tricresyl phosphate.....	21,172	20,409	4,979	.24
Phthalic acid or anhydride esters, total.....	116,810	114,715	22,091	.19
Dibutyl phthalate.....	47,810	47,232	9,533	.20
Diethyl phthalate.....	3,478	3,714	710	.19
Dimethyl phthalate ¹	42,837	42,163	6,609	.16
All other.....	22,685	21,606	5,239	.24
PLASTICIZERS, ACYCLIC				
Total.....	26,510	18,621	6,808	.37
Chemicals for which separate statistics may not be shown.....	12,495	7,416	2,530	.34
Chemicals for which separate statistics are shown below.....	14,015	11,205	4,278	.38
Lauric acid esters.....	946	927	354	.38
Oleic acid esters.....	3,544	2,049	431	.21
Phosphoric acid esters.....	1,104	1,085	452	.42
Sebacic acid esters: Dibutyl sebacate.....	5,455	4,522	2,216	.49
Stearic acid esters, total.....	2,966	2,622	825	.32
Butyl stearate.....	602	591	175	.30
Glyceryl monostearate.....	1,260	958	322	.34
All other.....	1,104	1,073	328	.31

¹ Includes dimethyl phthalate for use as an insect repellent.

MISCELLANEOUS SYNTHETIC ORGANIC CHEMICALS

Miscellaneous synthetic organic chemicals consist of acyclic intermediates and finished acyclic and cyclic products not included in any of the previous groups. Among these are chemicals such as solvents, photographic chemicals, insecticides, plasticizers, and surface-active agents. For the first time, in these reports, however, statistics on surface-active agents and on plasticizers are shown in separate groups (see tables 19A and 20A). In order to temporarily preserve comparability of the statistics, data for the totals of these two groups are also included among those of the miscellaneous chemical group in 1944. Production and sales of miscellaneous chemicals in 1944 are shown in table 21A (see also table 21B, part III, for an alphabetical list of these products in which the manufacturers are identified).

TABLE 21A.—*Synthetic organic chemicals: United States production and sales of miscellaneous chemicals, 1944*

[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 21B in part III lists alphabetically all those chemicals for which data on production or sales were reported and identifies the manufacturer of each]

Product	Production	Sales		
		Quantity	Value	Unit value
Grand total.....	1,000 pounds 9,927,464	1,000 pounds 5,874,728	1,000 dollars 957,347	Per pound \$0.16
MISCELLANEOUS CHEMICALS, CYCLIC				
Total.....	465,756	327,862	84,469	.26
Chemicals for which separate statistics may not be shown.....	183,142	61,818	20,713	.34
Chemicals for which separate statistics are shown below.....	282,614	266,044	63,756	.24
Plasticizers, cyclic ¹	160,235	153,120	32,257	.21
Surface-active agents, cyclic ²	74,264	70,880	11,905	.17
All other cyclic miscellaneous chemicals shown below, total.....	48,115	42,044	19,594	.47
Benzoic acid salts: Sodium benzoate.....	2,881	2,762	864	.31
Biological stains.....	18	18	201	11.06
Chemical indicators.....	1	1	52	73.00
Chemical reagents.....	12	10	55	5.45
Cyclopropane.....	36	32	457	14.25
N,N'-Diethyldiphenylurea.....	1,301	1,400	1,013	.72
Flotation reagents.....	4,839			
Gallic acid, tech.....		145	158	1.09
Insecticides, synthetic, total.....	19,107	16,205	11,195	.69
4,4'-Dichlorodiphenyl-1,1,1-trichloroethane (DDT).....	9,626	9,039	7,560	.84
All other.....	9,481	7,166	3,635	.51
Photographic chemicals, total.....	2,536	4,422	4,009	.91
Benzotriazole.....		1	8	7.23
Hydroquinone (Hydroquinol).....	1,899	3,682	2,425	.66
p-Hydroxyphenylglycine.....	4	4	10	2.77
All other.....	633	735	1,566	2.17
Plant hormones.....	19			
Pyrogallol (Pyrogallic acid).....	68	62	127	2.06
Tanning materials.....	17,297	16,987	1,463	.09

See footnotes at end of table.

TABLE 21A.—*Synthetic organic chemicals: United States production and sales of miscellaneous chemicals, 1944—Continued*

Product	Production	Sales		
		Quantity	Value	Unit value
MISCELLANEOUS CHEMICALS, ACYCLIC				
Total.....	1,000 pounds 9,461,708	1,000 pounds 5,546,866	1,000 dollars 872,878	Per pound \$.16
Chemicals for which separate statistics may not be shown.....	2,599,560	1,847,837	288,727	.16
Chemicals for which separate statistics are shown below.....	6,862,148	3,699,029	584,151	.16
Plasticizers, acyclic ¹	26,510	18,621	6,808	.37
Surface-active agents, acyclic ²	78,372	63,826	18,033	.28
All other acyclic miscellaneous chemicals shown below, total.....	6,757,266	3,616,582	559,310	.15
Acetaldehyde.....	20,917	2,028	2,028	.10
Acetic acid: Synthetic (100%).....	292,611	108,743	7,801	.07
Acetic acid salts.....	11,706	11,301	981	.09
Acetic anhydride, from all sources.....	495,522	7,129	2,050	.29
Acetin: Tri.....	7,530	57,278	4,103	.07
Acetone:				
By fermentation.....	56,386	57,278	4,103	.07
From isopropyl alcohol.....	328,428			
Amines, total.....	44,340	22,946	8,103	.35
Hexamethylenetetramine.....	18,309			
All other.....	26,031			
Amyl acetates, primary, total.....	15,088	11,539	1,857	.16
Normal (90%).....	11,734			
All other (90%).....	3,354			
Amyl alcohols, total.....	18,527	16,282	2,309	.14
Crude (Fusel oil) (100%).....	2,193	2,149	272	.13
All other.....	16,334	14,133	2,037	.14
Butadiene: Grade for rubber ³	723,814	725,502	273,917	.38
Butyl acetates: Normal (90%).....	69,987	67,965	10,608	.16
Butyl alcohols, total.....	246,444	161,044	23,564	.15
Primary: Normal (n-Propylcarbinol) (100%).....	150,320			
All other.....	96,124			
Carbon disulfide.....	291,807	284,425	10,124	.04
Cellulose derivatives.....	353,258	223,513	68,233	.31
Chloral (Trichloroacetaldehyde).....	2,608			
1-Diethylamino-4-aminopentane (Novoldiamine).....	223			
Diethyl malonate (Malonic ester).....	480			
Ethyl acetate (85%).....	108,196	90,203	9,586	.11
Ethylene (from ethyl alcohol and ether).....		202	154	.76
Ethylene glycol.....	202,451			
Ethylethers, technical, absolute, and U. S. P.....	76,192	70,415	6,933	.10
Ethyl formate.....	449	420	108	.26
Ethyl monochloroacetate.....	18			
Ethyl oxalate (Diethyl oxalate).....	592			
Fatty acid esters, not included with plasticizers.....	3,000	2,304	633	.27
Flotation reagents.....	20,487	19,206	3,604	.19
Formaldehyde (37% HCHO by weight).....	522,440	344,902	12,889	.04
Formic acid salts, total.....	2,520	2,912	408	.14
Sodium formate, tech.....		1,466	88	.06
All other.....		1,446	320	.22
Gases (poisonous, tear, etc.).....	3,409	3,478	963	.28

See footnotes at end of table.

TABLE 21A.—*Synthetic organic chemicals: United States production and sales of miscellaneous chemicals, 1944—Continued*

Product	Production	Sales		
		Quantity	Value	Unit value
MISCELLANEOUS CHEMICALS, ACYCLIC—Continued				
All other acyclic miscellaneous chemicals—Con.				
Halogenated hydrocarbons, total.....	1,000 pounds 1,842,082	1,000 pounds 939,044	1,000 dollars 82,274	P r pound \$0.09
Chlorides, total.....	1,688,813	788,087	54,096	.07
Carbon tetrachloride.....	209,802	201,074	8,302	.04
Chlorinated paraffin.....	43,560	41,911	4,179	.10
Chloroform:				
Technical.....	7,762	7,453	1,180	.16
U. S. P.....	1,985	1,918	445	.2
Hexachloroethane.....	76,526	77,833	6,987	.09
Methyl chloride (Chloromethane), crude and refined.....	24,299	22,000	3,888	.18
Methylene chloride (Dichloromethane), crude and refined.....	8,329	7,995	930	.12
Tetrachloroethylene (Perchloroethylene).....	75,128			
All other.....	1,241,422	427,900	28,185	.07
Bromides, fluorides, iodides, and mixtures, total.....	153,269	150,957	28,178	.19
Ethyl bromide.....	377			
Methyl bromide.....	3,678	3,511	1,907	.54
All other.....	149,214	147,446	26,271	.18
Isopropyl alcohol (100%).....	480,772			
Isopropyl ether.....		5,995	200	.03
Lactic acid:				
Edible (100%).....	4,161	4,208	987	.23
Technical (100%).....	4,458	4,215	589	.14
Lactic acid salts: Sodium lactate.....	324	350	66	.19
Maleic acid and anhydride.....	7,823	6,988	1,768	.25
Methanol (synthetic).....	472,686	360,741	12,853	.04
Oxalic acid.....	18,027	17,754	1,812	.10
Oxalic acid salts: Ammonium oxalate.....		95	23	.24
Pentaerythritol.....	12,440	10,856	3,807	.35
Stearic acid salts, total.....	13,719	13,628	3,512	.26
Aluminum stearate, di.....	3,453	3,299	743	.23
Aluminum stearate, tri.....	716	726	170	.23
Calcium stearate.....	2,354	2,358	609	.26
Magnesium stearate.....	663	658	204	.31
Zinc stearate.....	4,384	4,430	1,319	.30
All other.....	2,149	2,157	467	.22
Thioglycolic acid and salts.....	104	82	463	5.64
Thiourea.....	2,156			
Trimethylene chlorohydrin.....	1			

¹ See table 20A.

² See table 19A.

³ Data shown refer to butadiene produced from alcohol. Data for butadiene produced from petroleum are given in table 4A.

Production of all these miscellaneous items reached 9.9 billion pounds in 1944, an increase of 12 percent over 1943, and almost double the production in 1941. Sales of miscellaneous organic chemicals were 5.9 billion pounds, valued at 957 million dollars, in 1944 as against 4.9 billion pounds, valued at 660 million dollars, in 1943. Sales accounted for about 60 percent of production, the remaining output being consumed in the producing plants in the manufacture of other products.

Cyclic organic chemicals included constituted less than 5 percent of the total production of miscellaneous synthetic organic chemicals in 1944. The outstanding cyclic chemical was the new insecticide DDT, which was credited with preventing the spread of typhus

during the war. Production of DDT, publishable for the first time, totaled 9.6 million pounds in 1944; sales totaled 9.0 million pounds, valued at 7.6 million dollars.

Acyclic chemicals represented about 95 percent of the total production of miscellaneous organic chemicals, in part owing to the inclusion of all acyclic intermediates with that group, whereas cyclic intermediates are shown in a separate group. Acyclic miscellaneous chemicals also include solvents and other finished products produced in large volume. Production of miscellaneous acyclic organic chemicals totaled 9.5 billion pounds in 1944, a 10-percent increase over 1943 and almost double the production in 1941. More than half of the output of these chemicals was produced for sale. Sales were 5.5 billion pounds, valued at 873 million dollars in 1944, compared with 4.6 billion pounds, valued at 598 million dollars, in 1943. The average unit sales value in 1944 was 16 cents a pound, an increase of 3 cents over the average of 1943.

Production statistics are shown separately for about two-thirds of the acyclic miscellaneous organic chemicals. In 1944 a new subgroup was set up for halogenated hydrocarbons (bromides, chlorides, fluorides, and iodides). Production of this subgroup of chemicals, which includes various solvents, acyclic intermediates, and refrigerants, totaled 1.8 billion pounds; sales of 939 million pounds were valued at 82 million dollars. The most important chemicals in this group are carbon tetrachloride, ethyl chloride, sym.-tetrachloroethane (acetylene tetrachloride), and trichloroethylene.

The most important miscellaneous acyclic organic chemical was butadiene derived from ethyl alcohol and used in production of synthetic rubber. In 1944, about 724 million pounds of butadiene was produced from alcohol and 726 million pounds, valued at 274 million dollars, was sold. (Production of butadiene from petroleum, shown in table 4A, totaled 489 million pounds.)

Other important chemicals in this subgroup are synthetic acetic acid (with a production of 293 million pounds), acetone (385 million pounds), formaldehyde (522 million pounds), and isopropyl alcohol (481 million pounds). Acetic acid is used to make acetic anhydride and cellulose acetate; acetone is used as a solvent in the manufacture of cellulose acetate rayon and smokeless powder; formaldehyde, chiefly in the manufacture of tar-acid resins; and isopropyl alcohol, chiefly as a solvent.

Important chemicals for which production statistics are not publishable are synthetic ethyl alcohol¹ and tetraethyl lead. Before 1944, statistics on production and sales of recovered acetic acid were included with the totals for the miscellaneous chemicals group. Beginning with 1944, however, these data are not included in the group totals since the recovery of used acetic acid does not represent true production. Most of this acetic acid is recovered as a byproduct in the manufacture of cellulose acetate. In 1944, production of recovered acetic acid amounted to about 1 billion pounds. The total recovered is larger than the amounts reported in former years because of errors in reporting in those years. Sales of the recovered acid were 53 million pounds, valued at 1.6 million dollars.

¹ Statistics on the production of ethyl alcohol from natural sources by fermentation are not included in this report. They are, however, issued monthly and annually by the Alcohol Tax Unit, Bureau of Internal Revenue, U. S. Treasury Department.

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

Part III of this report consists of a series of tables (3B to 21B) which list alphabetically all the synthetic organic chemicals reported as produced in 1944, and a Directory of Manufacturers (table 22). Each table lists the individual items which are included in the totals shown in the tables for the different groups in parts I and II. Products for which separate statistics are given in part I and part II are indicated by an asterisk (*). Tables in part III have the same number (followed by the letter B) as the corresponding tables in part I or part II which are followed by the letter A.

The Directory of Manufacturers consists chiefly of companies which report production of synthetic organic chemicals to the United States Tariff Commission. The name of each manufacturer listed in the directory is preceded by an identifying number. Companies which manufacture the chemicals listed in the B series of tables in part III of this report are identified by these numbers except for a few companies which have specifically requested the Tariff Commission to withhold such information on certain items. The latter manufacturers are indicated only by the letter X.

TAR CRUDES

TABLE 3B.—*Organic chemicals: Tar crudes for which United States production or sales were reported, identified by manufacturer, 1944*

[Tar crudes for which separate statistics are given in table 3A are marked below with an asterisk (*); products not so marked do not appear in table 3A because the reported data are confidential and may not be published. Manufacturers are identified by numbers in the alphabetical list appearing in table 22. 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 22)
Tar ¹	31, 38, 51, 55, 56, 58, 59, 61, 72, 83, 106, 107, 108, 109, 139, 151, 238, 249, 259, 260, 264, 288, 289, 295, 303, 309, 310, 314, 323, 346, 353, 361, 362, 368, 369, 375, 387, 392, 401, 403, 422, 425, 453, 481, 491, 503, 504, 505, 510, X, X, X.
Light oil and distillates:	
*Crude light oil.....	31, 55, 61, 68, 83, 108, 109, 115, 139, 207, 232, 309, 353, 369, 386, 391, 425, X, X.
*Benzene (except motor benzene).....	43, 69, 96, 308, 458.
*Motor benzene.....	43, 361, 403, 458.
*Toluene:	
*All grades, except aviation grade.....	43, 96, 298, 335, 361, 403, 415, 433, 434, 458, 466, 515, X, X, X.
*Aviation grade.....	111, 265, 335, 354, 370, 434, 458, 466, 515.
*Solvent naphtha.....	43, 241, 321, 345, 361, 381, 403.
*Xylene.....	43, 361.
*All other.....	43, 59, 96, 254, 321, 345, 403, 458.
*Naphthalene, crude (solidifying at 76° to less than 79°).....	43, 115, 217, 241, 293, 308, 345, 361, 377, 391, 403, 457.
Anthracene, crude (less than 30%).....	241, 377.
Cresylic acid, crude (less than 75%).....	43, 377, 381.
Cumene.....	43.
*Pyridine, crude and refined.....	43, 277.
*Creosote oil.....	15, 43, 68, 114, 115, 133, 207, 217, 223, 232, 241, 249, 254, 293, 361, 377, 381, 391, 453, X.

TABLE 3B.—Organic chemicals: Tar crudes for which United States production or sales were reported, identified by manufacturer, 1944—Continued

Product	Manufacturers' identification numbers (according to list in table 22)
*Crude tar acids.....	15, 43, 114, 133, 207, 217, 223, 232, 241, 254, 293, 377, 391, 425, 452.
*Coal tar sold or consumed in coal-tar solution.	43, 223, 232, 241, 377, 293, 452.
*Tars, crude.....	15, 43, 115, 151, 241, 254, 369.
*Tars, refined.....	43, 115, 207, 241, 254, 361, 369, 377, 381, 391, 452.
*Tars, road.....	15, 31, 43, 133, 159, 207, 217, 223, 241, 254, 293, 361, 369, 377, 381, 391, 425, 452.
*Other distillates.....	43, 68, 108, 207, 241, 254, 377, 381.
*Pitch of tar.....	15, 43, 68, 114, 115, 133, 207, 217, 223, 232, 241, 254, 361, 369, 377, 381, 391, X.
*Pitch of tar coke.....	15, 43, 133, 223, 241, 293, 377, 381, 452.

¹ Only those manufacturers are identified by number who report production of oil-gas and water-gas tar to the U. S. Tariff Commission. For production and consumption, see tabulation, p. 7.

CRUDE PRODUCTS FROM PETROLEUM AND NATURAL GAS

TABLE 4B.—Organic chemicals: Crude products from petroleum and natural gas for chemical conversion for which United States production or sales were reported, identified by manufacturer, 1944.

[Crude products from petroleum and natural gas for chemical conversion 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 are identified by numbers in the alphabetical list appearing in table 22. 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 22)
Crude products from petroleum:	
Cresylic acid, crude.....	265, 411, 412, 433, 434.
*Naphthenic acid.....	385, 412, 433, 437, 447, 458, 466, X.
Benzene, all grades.....	354.
*Xylene, all grades.....	111, 208, 335, 433, 434, 436.
All other.....	527.
Hydrocarbons:	
C ₂ hydrocarbons:	
Ethane.....	74, 329.
*Ethylene.....	74, 124, 298, 436.
C ₃ hydrocarbons:	
Propane.....	74, 329, 354, 447.
Propylene.....	74, 124, 329, 435, 436.
C ₂ and C ₃ hydrocarbon mixture.....	434.
C ₄ hydrocarbons:	
n-Butane.....	74, 329, 354, 411, 447, 530.
Butanes, mixed.....	435.
*1,3-Butadiene, grade for rubber.....	74, 92, 124, 208, 307, 354, 410, 437, 525, 526, 528, 529.
1, 3-Butadiene, other grades.....	256, 329, 527, 528, 530, X.
*1-Butene and 2-butene, mixture.....	208, 436, 458, 530.
Isobutane.....	74, 329, 447.
Isobutylene.....	208, 435, 436, 530.
Di-isobutylene.....	435.
Isoheptene.....	354.
Isopentane.....	447.
Isoprene.....	X.
Isoprene-piperylene.....	X.
Methane.....	74, 329.
Methyl-acetone-acetal.....	92.
n-Pentane.....	354.
Piperylene.....	X.
Polybutene.....	433, 435.
Tri-isobutylene.....	435.
All other.....	435.

INTERMEDIATES

TABLE 6B.—*Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1944*

[Cyclic intermediates for which separate statistics are given in table 6A are marked below with an asterisk (*); cyclic intermediates not so marked do not appear in table 6A because the reported data are confidential and may not be published. Manufacturers are identified by numbers in the alphabetical list appearing in table 22. 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 22)
Acenaphthylene (Acenaphthene).....	241, 377.
5-Acetamido-2-aminobenzenesulfonic acid.....	171.
*5-Acetamido-8-amino-2- and 3-naphthalene sulfonic acid (Acetyl- amino Cleve's acid).....	127, 171, 304.
2-Acetamido-4-aminophenol hydrochloride.....	X.
2-Acetamido-3-chloroanthraquinone.....	171.
2-Acetamido-3-chloro-9,10-dihydro-9,10-anthradiol-9,10-disulfonic acid, diethyl ester.....	171.
5-Acetamido-2-naphthalenesulfonic acid.....	171.
5-Acetamido-8-nitro-2-naphthalenesulfonic acid.....	171.
2-Acetamido-4-nitrophenol.....	X.
5-Acetamidosalicylic acid.....	1.
*Acetanilide, tech.....	91, 124, 127, 171, 282, 298, 413.
o-Acetanilide (Acetyl- <i>ortho</i> -aniline).....	11.
p-Acetanilide (Acetyl- <i>para</i> -aniline).....	202.
Acetate leuco violet (1,4-Dihydroanthraquinone).....	28, 171, 193.
Acetoacetanilide.....	74.
Acetoaceto-1-naphthylamide.....	351.
o-Acetoacetotoluide.....	74, 193.
o-Acetotoluide.....	304, 467.
*p-Acetotoluide.....	69, 202, 413.
*N-Acetylsulfanilyl chloride (p-Acetamidobenzenesulfonyl chloride).....	69, 79, 91, 286, 298, 413, 501.
Acridine yellow.....	127, 304.
*p-Aminoacetanilide.....	91, 127, 171, 304.
4-Amino-o-acetanilide.....	171.
3-Amino-p-acetotoluide.....	202.
5-Amino-2-(4-amino-m-tolueno)benzenesulfonic acid.....	171.
*5-Amino-2-anilinobenzenesulfonic acid.....	91, 127, 171, 304.
*1-Aminoanthraquinone and salt.....	11, 28, 69, 127, 171, 281, 304.
*2-Aminoanthraquinone and salt.....	69, 127, 171, 304.
1-Aminoanthraquinone-2-sulfonic acid.....	171.
*6-Amino-3,4'-azobis(benzenesulfonic acid).....	11, 85, 171, 304.
8-Amino-1,2-benzacridin-7(12)-one.....	127.
p-Aminobenzaldehyde.....	171.
1-Amino-5-benzamidoanthraquinone.....	171.
*6-(m-Aminobenzamido)-1-naphthol-3-sulfonic acid (m-Aminobenzoyl J acid).....	11, 127, 171, 304, 351.
*6-(p-Aminobenzamido)-1-naphthol-3-sulfonic acid (p-Aminobenzoyl J acid).....	11, 85, 127, 171, 304, 351, X.
4-Amino-m-benzenedisulfonic acid.....	304.
*2-Amino-p-benzenedisulfonic acid (Anilino-2,5-disulfonic acid).....	91, 127, 351.
o-Aminobenzenesulfonic acid.....	171.
p-Aminobenzoic acid.....	127, 134, 405.
p-Aminobenzoic acid, ethyl ester (Ethyl p-aminobenzoate).....	501.
o-Aminobenzylsulfonic acid (o-Toluidine omega sulfonic acid).....	304.
1-Amino-4-bromo-2-anthraquinonesulfonic acid (Bromamine acid).....	127, 171.
1-Amino-2-bromo-4-(p-tolueno)anthraquinone.....	127.
p-Amino-N-(n-butyl)phenol.....	127.
Aminobutyramidodiethylhydroquinone.....	351.
2-Amino-3-chloroanthraquinone.....	171.
1-Amino-5-chloroanthraquinone and 1-amino-8-chloroanthraquinone.....	304.
1-Amino-5-chloroanthraquinone.....	304.
2-Amino-5-chlorobenzenesulfonic acid.....	11, 127, 304.
5-Amino-2-chlorobenzenesulfonic acid.....	91.
3-Amino-6-chlorobenzoic acid.....	91, 127, 171, 351.
3-Amino-4-chlorobenzoic acid.....	171.
Aminochloronitrophenol.....	91, 171.
2-Amino-4-chlorophenol.....	91, 171.
Amino-chlorophenolsulfonic acid.....	91.
6-Amino-4-chloro-m-toluenesulfonic acid.....	127.
*2-Amino-5-chloro-p-toluenesulfonic acid (Lake red C amine).....	53, 69, 204, 413, 439.
2-Amino-p-cresol (m-Amino-p-cresol).....	91.
2-Amino-1,3-dibromoanthraquinone.....	127.
1-Amino-2,4-dibromoanthraquinone.....	127, 171, 304;
4-Amino-2,5-dichloro-m-benzenesulfonic acid.....	127.
4-Amino-5-ethoxy-o-butylphenetide.....	351.
5-Amino-6-ethoxy-2-naphthalenesulfonic acid.....	171.
p-Amino-N-ethyl-N-1-naphthylbenzamide.....	171.

TABLE 6B.—*Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 22)
3-Aminoformanilide	171.
3-Amino-2-hydroxyanthraquinone	171.
3-Amino-4-hydroxybenzenearsonic acid	1, 501.
3-Amino-6-hydroxy-2-methylphenazine (Tolazine base)	91, 304.
8-Amino-6-methoxyquinoline (Amichim)	501.
4'-Amino-5'-methyl-p-toluenesulfon-o-aniside	171.
1-Aminonaphthalenedisulfonic acid	127.
2-Amino-1,5-naphthalenedisulfonic acid	413.
*3-Amino-1,5-naphthalenedisulfonic acid	91, 127, 171, 304.
3-Amino-2,7-naphthalenedisulfonic acid	85, 91.
4-Amino-1,5-naphthalenedisulfonic acid	127, 304.
4-Amino-1,6-naphthalenedisulfonic acid	304.
*6-Amino-1,3-naphthalenedisulfonic acid	91, 127, 171, 304.
*7-Amino-1,3-naphthalenedisulfonic acid (Amino G acid)	85, 91, 127, 171, 304, 413.
*8-Amino-1,6-naphthalenedisulfonic acid and salt	91, 127, 304.
1-Amino-2-naphthalenesulfonic acid (o-Naphthionic acid)	X.
*2-Amino-1-naphthalenesulfonic acid (Tobias acid)	18, 69, 91, 202, 413, 439.
*5-Amino-1-naphthalenesulfonic acid (Laurent's acid)	69, 85, 91, 127, 171, 304.
*5-Amino-2-naphthalenesulfonic acid	91, 127, 171, 304.
*5- and 8-Amino-2-naphthalenesulfonic acids (Cleve's acid)	69, 91, 127, 171, 304.
*6-Amino-2-naphthalenesulfonic acid (Broenner's acid)	18, 91, 304, 413.
7-Amino-2-naphthalenesulfonic acid, sodium salt	413.
*8-Amino-1-naphthalenesulfonic acid	85, 127, 171, 304.
*8-Amino-2-naphthalenesulfonic acid	91, 127, 171, 304.
7-Amino-1,3,6-naphthalenetrisulfonic acid	304.
8-Amino-1,3,5-naphthalenetrisulfonic acid	171.
*8-Amino-1,3,6-naphthalenetrisulfonic acid	127, 171, 304.
8-Amino-1-naphthol-5,7-disulfonic acid, monosodium salt (Chicago acid)	91, 127, 304.
7-Amino-1-naphthol-3,6-disulfonic acid, monosodium salt (2R acid)	127, 304.
*8-Amino-1-naphthol-3,6-disulfonic acid, monosodium salt (H acid)	127, 171, 298, 304.
5-Amino-1-naphthol	304.
*1-Amino-2-naphthol-4-sulfonic acid	91, 127, 134, 171, 304.
*6-Amino-1-naphthol-3-sulfonic acid, sodium salt (J acid)	11, 85, 91, 127, 171, 304.
*7-Amino-1-naphthol-3-sulfonic acid, sodium salt (Gamma acid)	11, 91, 127, 171, 304.
8-Amino-1-naphthoic acid	171.
8-Amino-2-naphthol	127, 171.
8-Amino-1-naphthol-3,5-disulfonic acid	171.
*8-Amino-1-naphthol-5-sulfonic acid, sodium salt (S acid)	91, 127, 171, 304.
*2-Amino-5-nitrobenzenesulfonic acid	91, 127, 304.
Aminonitrodiphenylsulfide	304.
4'-Amino-4-nitrodiphenylamino-2-sulfonic acid	11, 91, 304.
*2-Amino-4-nitrophenol	69, 85, 127, 171, 304, X.
2-Amino-5-nitrophenol	171.
4-Amino-2-nitrophenol	91.
2-Amino-4-nitro-1-phenol-6-sulfonic acid	91, 171.
*o-Aminophenol	48, 134, 274, 479.
*p-Aminophenol and salts	69, 127, 134, 479, 509.
p-Aminophenol oxalate	134.
*2-Amino-1-phenol-4-sulfonic acid	53, 91, 304, X.
*m-(p-Aminophenylazo)benzenesulfonic acid	11, 91, 127, 304.
*p-(p-Aminophenylazo)benzenesulfonic acid	53, 69, 85, 171, 351.
5(and 8)-Amino-8(and 5)-phenylazo-2-naphthalenesulfonic acid	171.
6-Amino-5-phenylazo-1-naphthol-3-sulfonic acid	171.
4-Amino-3-phenyl-m-cresol hydrochloride	134.
2-(m-Aminophenyl)-6-hydroxy-3-naphth[1, 2]imidazole-8-sulfonic acid.	171.
2-(p-Aminophenyl)-6-methylbenzothiazole	127, 304.
1-(m-Aminophenyl)-5-oxo-3-pyrazoline-4-carboxylic acid (m-Amino-phenylpyrazolonecarboxylic acid)	127, 304, 351.
Aminopyrazolone (4-Aminoantipyrine)	501.
2-Aminopyridine	372, 377.
2-Aminopyrimidine	286, X.
5-Aminosalicylic acid	11, 91, 304.
2-(4-Amino-3-sulfophenyl)-6-methylbenzothiazole	171.
2-(4-Amino-3-sulfophenyl)-6-methylbenzothiazolesulfonic acid	127, 171.
*2-Aminothiazole	69, 91, 274, 298, X.
1-Amino-4-toluenesulfonamidoanthraquinone-2-sulfonic acid	171.
*4-Amino-m-toluenesulfonic acid	69, 91, 127, 351, 413.
4-Amino-o-toluenesulfonic acid	91, 171.
5-Amino-o-toluenesulfonic acid	127.
4-(4-Amino-m-tolylazo)-m-toluenesulfonic acid and salt (o-Aminoazo-toluenesulfonic acid and salt).	304.
16-Aminoviolanthrene	171.
2-Amino-3,5-xylenesulfonic acid	171, 485.
Amylnaphthalenes	407.
o-Amylphenol	407.
p-tert-Amylphenol	407.
*Aniline (Aniline oil)	69, 124, 127, 282, 298, 304, 306, X.

TABLE 6B.—*Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 22)
Aniline hydrochloride	173.
Aniline hydrochloride and sulfate	69.
Aniline methane sulfonic acid, sodium salt	171, 351.
Aniline omega sulfonic acid	69, 85, 127, 304.
Aniline sulfate	286.
2-Anilinoethanol (Phenylethanolamine)	74.
6-Anilino-2-methoxymetanilic acid	91.
*6-Anilino-1-naphthol-3-sulfonic acid (Phenyl J acid)	11, 85, 91, 127, 171, 304, 351, X.
*7-Anilino-1-naphthol-3-sulfonic acid (Phenyl gamma acid)	11, 85, 127, 351.
2-Anilino-5-nitrobenzenesulfonic acid	53.
Anisic acid	165.
o-Anisidine	127, 298.
p-Anisidine	127, 298, 304.
o-Anisidinomethanesulfonic acid (o-Anisidine omega methanesulfonic acid)	85, 127, 304, 351.
o-Anisidine nitrate	171.
Anisoin	137.
*N-(p-Anisyl)-4-chloroanthranilic acid, potassium salt (3-Chloro-4'-methoxy-6-diphenylamine-carboxylic acid, potassium salt)	304, 351, 501.
α -(p-Anisyl)-p-methoxyacetophenone	255.
Anthracene, refined	241, 377.
Anthra[1,9]isothiazole-2-carbonyl chloride	127.
Anthranilic acid	124, 127.
Anthra[1,9]pyrazol-6(2)-one (Pyrazolanthrone)	127, 171.
Anthraquinone	69, 171.
Anthraquinone-1,5-disulfonic acid	69, 127, 171, 304.
Anthraquinone-1,8-disulfonic acid	171.
Anthraquinone-1,8-disulfonic acid, potassium salt	127, 171.
Anthraquinone-1,5- and 1,8-disulfonic acid	304.
*Anthraquinone-2,6-disulfonic acid and salt	69, 127, 171, 304.
α -Anthraquinonehydrazinedisulfonate	171.
*1-Anthraquinonesulfonic acid and salt	11, 69, 91, 127, 171, 281, 304.
2-Anthraquinonesulfonic acid, sodium salt (Silver salt)	11, 127, 304.
3-(1-Anthraquinonylamino)-7-benz(de)anthracen-7-one (Benzamide)	171.
*Anthraflavin (1,5-Dihydroxyanthraquinone)	85, 91, 127, 171, 304.
Arsanilic acid	1, 243, 286.
Arsanilic acid, sodium salt	88.
Arsphenamine	1, 501.
Azobenzene	134, 304.
p,p'-Azobis(N,N-dimethylaniline hydrochloride)	149.
4,4'-Azobisdiphenylamine (4'-Diazodiphenylamine)	149.
1,1'-Azobis(1-amino-2-naphthol-4-sulfonic acid)	85, 91, 304.
1,1'-Azobis(8-nitro-2-naphthol-4-sulfonic acid)	127, 304.
5,5'-Azobis(salicylic acid)	127, 304.
Azoxydianiline (Azoxybisaniiline)	351.
Benzal chloride	201, 205.
*Benzaldehyde, tech	48, 165, 201, 457, X.
Benzaldehydedisulfonic acid	171.
Benzaldehydemonosulfonic acid	171.
Benzaldehyde semicarbazone	137.
*1-(4-Benzamido-1-anthraquinonylimino)-5-benzamidoanthraquinone	69, 127, 171, 304.
1-Benzamido-4-chloroanthraquinone	171.
*1-Benzamido-5-chloroanthraquinone	69, 127, 171, 304.
2-(4-Benzamido-2,5-dimethoxy-N-methylphenyldiazoamino)ethanesulfonic acid	171.
2-(4-Benzamido-2,5-dimethoxy-N-methylphenyldiazoamino)ethanesulfonic acid	171.
4-Benzamido-6-methoxy-N-methyl-m-tolyldiazoaminoacetic acid	171.
6-Benzamido-4-methoxy-3-(p-toluenesulfonamido)toluene	171.
8-Benzamido-1-naphthol-3,5-disulfonic acid	171.
*6-Benzamido-1-naphthol-3-sulfonic acid (Benzoyl J acid)	53, 85, 91.
*7-Benz(de)anthracen-7-one (Benzanthrone)	11, 69, 127, 171, 304, 341.
Benzanthronedianthraquinonyldi-imide	171.
Benzenedisulfonic acid, sodium salt	127.
Benzenesulfonamide	298, 511.
*Benzenesulfonic acid and salt	43, 134, 171, 298.
Benzenesulfonyl chloride	134, 298, 511.
Benzidine, base	127, 304.
*Benzidine hydrochloride and sulfate	69, 79, 91, 127, 134, 157, 171, 304.
Benzil	286.
2-Benzofuryl cyanomethyl ketone	X.
Benzoic acid, tech	48, 201, 286, 298, 475.
Benzoic anhydride	157, 205.
Benzoin	134, 149, 157, 286.
Benzonaphthol	50, X.
α -Benzoylacetanilide	X.
o-Benzoylbenzoic acid	69, 127, 171, 304.
Benzoyl chloride	205, 457.

TABLE 6B.—*Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 2)
Benzyl alcohol, tech.....	48, 205, 414.
Benzyl disulfide.....	157.
Benzyl ether.....	414, X.
N-Benzyl-N-ethylaniline.....	127, 304.
N-Benzyl-N-ethyl-p-nitrosoaniline.....	171.
o-Benzylhydroxybenzoate, calcium salt.....	1.
Benzylidineaminopyrazolone (Benzylidene-4-amino antipyrine).....	501.
p,p'-Benzylidenebis(N,N-dimethylaniline) (Tetramethyl-diamino-triphenylmethane).....	274.
Benzyl mercaptan.....	205.
p,p'-Bi-acetoacetanilide.....	351.
(3,3'-Bi-7-benz[de]anthracen)-7,7'-dione (13,13-Dibenzanthronyl).....	127, 171.
(4,4'-Bi-7-benz[de]anthracen)-7,7'-dione (2,2-Dibenzanthronyl).....	127.
Bibenzyl.....	475, X.
Binaphthalenedicarboxylic acid.....	171.
Biphenyl.....	124, 298.
o-Biphenylamine.....	298.
p-Biphenylamine.....	298.
5,8-Bis(p-amino-benzamido)-2-naphthalenesulfonic acid.....	171.
p,p'-Bis(dimethylamino) benzophenone (Ethyl ketone base).....	127, 130, 202.
2,7-Bis(dimethylamino)acridinehydrochloride.....	351.
p,p'-Bis(dimethylamino) benzohydrol (Michler's hydrol).....	127, 171.
p,p'-Bis(dimethylamino) benzophenone (Michler's ketone).....	127, 130, 171, 202, 274.
Bis(p-dimethylaminophenyl) methanesulfonic acid and salt.....	304.
N,N-Bis(2-hydroxyethyl)-m-toluidine.....	171.
1,4-Bis(methylamino)anthraquinone.....	171.
*N,N'-Bis-6-(1-naphthol-3-sulfonic acid)urea (J acid urea).....	11, 69, 85, 91, 127, 171, 304.
5,8-Bis(p-nitrobenzamido)-2-naphthalenesulfonic acid.....	171.
Bis(o-nitrophenyl)disulfide.....	171.
Black base V.....	91.
*3-Bromo-7-benz[de]anthracen-7-one.....	11, 127, 171.
Bromobenzene.....	124.
Bromobenzyl chloride.....	157.
2-Bromodibenzofuran.....	171.
p-Bromomethylaminoanthraquinone.....	171.
6-Bromo-3-methyl-7-dibenz[f,i,l]isoquinoline-2,7(3)-dione (4-Bromo-N-methyl-1,9-anthrapyridone).....	171.
1-Bromonaphthalene.....	134.
p-Bromophenol.....	124.
3-tert-Butyl-p-cymene.....	X.
6-tert-Butyl-2,4-dimethylacetophenone.....	X.
2-tert-Butyl-5-methylanisole.....	X.
5-tert-Butyl-m-xylene (1,3-Dimethyl-5-tert-butylbenzene).....	X.
Butyl-naphthylamine.....	298.
Carbazole, refined.....	127, 377.
Carbazole-tetrasulfonic acid.....	171.
3-Carboxy-2- and 4-hydroxybenzenediazonium sulfate.....	171.
o-(Carboxymethylmercapto) benzoic acid.....	171.
3-Carboxy-1-(3'-nitrophenyl)-5-pyrazolone.....	304.
Chloranil (Tetrachloroquinone).....	124, 306.
o-Chloroacetoacetanilide (o-Acetoacetochloroanilide).....	193, 467.
p-Chloroacetoacetanilide (p-Acetoacetochloroanilide).....	467.
Chloroacetyl catechol.....	243, 501.
m-Chloroaniline.....	127, 298.
o-Chloroaniline.....	298.
p-Chloroaniline.....	298.
*4-Chloro-o-anisidine.....	127, 205, 479.
1-(4-Chloro-o-anisyl)-3-methyl-3-triazeneacetic acid.....	171.
3-Chloro-2-anthracenecarboxylic acid.....	171.
*1-Chloroanthraquinone.....	69, 127, 171, 281, 304.
*2-Chloroanthraquinone.....	69, 171, 304.
1-Chloro-2-anthraquinonecarboxylic acid.....	127, 304.
3-Chloro-2-anthraquinonecarboxylic acid.....	171.
*o-Chlorobenzaldehyde.....	127, 201, 304.
p-Chlorobenzaldehyde.....	171.
Chlorobenzanthrone.....	304.
*Chlorobenzene, mono.....	124, 127, 128, 140, 205, 298, 419.
p-Chlorobenzenesulfonic acid.....	171.
o-Chlorobenzoic acid.....	127, 201.
*Chlorobenzoyl benzoic acid.....	69, 127, 171, 304.
5-Chloro-2(3)-benzoxazolone.....	171.
6-Chloro-m-cresol.....	43.
5-Chloro-2,4-dimethoxyaniline.....	171.
5-Chloro-1,4-dimethoxy-2-nitrobenzene.....	171.
*1-Chloro-2,4-dinitrobenzene.....	11, 69, 127, 171, 274, 298, 304.
4-Chloro-3-hydrazinobenzenesulfonic acid.....	171.
5-Chloro-2-hydroxyacetanilide.....	171.
5-Chloro-2-hydroxy-3-nitroacetanilide.....	171.
Chlorohydroxyquinoline.....	91.

TABLE 6B.—*Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 22) 5
4-Chlorometanilic acid	304.
5-Chlorometanilic acid	127.
*Chloromethylanthraquinone	69, 127, 171, 304.
α-Chloro-1-methylnaphthalene	494.
Chloronaphthalenes	39, 188, 205.
8-Chloro-1-naphthol-3,6-disulfonic acid (Caloro H acid)	171, 304.
*2-Chloro-4-nitroaniline	11, 18, 69, 124, 127.
*4-Chloro-2-nitroaniline	124, 127, 479.
1-Chloro-5-nitroanthraquinone	127, 304.
1-Chloro-8-nitroanthraquinone	127.
1-Chloro-5- and 8-nitroanthraquinone	304.
Chloronitrobenzene, mixed (o and p)	127.
Chloro-m-nitrobenzene	298.
Chloro-o-nitrobenzene	127, 298.
Chloro-p-nitrobenzene	11, 127, 298.
4-Chloro-3-nitrobenzenesulfonic acid	85, 91, 304.
*2-Chloro-5-nitrobenzenesulfonic acid	11, 85, 91, 127, 171, 304.
2-Chloro-4-nitrobenzoic acid	171.
*2-Chloro-5-nitrobenzoic acid	91, 304, 351.
o-(4-Chloro-3-nitrobenzoyl)benzoic acid	171.
4-Chloro-2-nitrophenol	91, 171.
4-Chloro-2-nitrotoluene	127, 171, 304.
6-Chloro-2-nitrotoluene	127.
*o-Chlorophenol	124, 298, X.
p-Chlorophenol	124, 298.
4-Chloro-o-phenylenediamine	149.
o-Chlorophenyldiazine	171.
1-(o-Chlorophenyl)-3-methyl-5-pyrazolone	568.
2-Chloro-6-phenylphenol	124.
2-Chloro-6-phenylphenol, sodium salt	124.
2-[1-(m-Chlorophenyl)triazeno]4-sulfobenzoic acid	171.
p-Chloropropionanilide	171.
2-Chloroquinizarin	304.
2-Chloro-5-sulfobenzoic acid	171, 351.
1-(6-Chloro-3-sulfophenyl)-3-methyl-5-pyrazolone	127, 171.
2-Chloroterephthaloylbis-o-benzoic acid	171.
*α-Chlorotoluene (Benzyl chloride)	48, 201, 205, 298.
m-Chlorotoluene	171.
o-Chlorotoluene	127, 304.
p-Chlorotoluene	201, 205.
3-Chloro-p-toluenesulfonic acid, sodium salt	127, 298, 413.
3-Chloro-o-toluidine	127, 171.
3-Chloro-p-toluidine (4-Amino-2-chlorotoluene)	127.
4-Chloro-o-toluidine (Red KB base)	127, 304.
4-Chloro-o-toluidine hydrochloride	127.
5-Chloro-o-toluidine (2-Amino-4-chlorotoluene)	127, 171, 281, 304.
Chlorotolylbenzoic acid	171.
* (4-Chloro-o-tolylmercapto)acetic acid	127, 171, 304.
1-(5-Chloro-o-tolyl)-3-methyl-3-triazenoacetic acid	171.
2-Chloro-p-xylene	171.
Chloro-3,5-xyleneol	43.
(4-Chloro-2,5-xylylmercapto)acetic acid	171.
Chrysazin (1,8-Dihydroxyanthraquinone)	127, 171.
* Cresol (meta, para)	43, 69, 241, 377, 381.
* Cresol (ortho, meta, para)	43, 69, 377.
m-Cresol	43, 377.
o-Cresol	43, 69, 241, 377, 381.
p-Cresol	43, 201, 377, 413.
Cresols, chlorinated	43.
2,3-Cresotic acid	124.
* Cresylic acid, refined	43, 241, 377, 433.
m-Cresyl valerate	501.
8-Cyano-1-naphthalenesulfonic acid	171.
Cyclohexylacetic acid	205.
Cyclohexylamine	298.
2-Cyclohexyl-4,6-dinitrophenol	124.
4,4'-Cyclohexylidene-o-toluidine	171.
Cymene	X.
Decylbenzene	298.
1,5- and 1,8-Diacetamidoanthraquinone	11.
1,4-Diaminoanthraquinone	127, 171.
1,5-Diaminoanthraquinone	127, 171, 304.
*2,6-Diaminoanthraquinone	69, 171, 304.
Diaminoanthraquinone (1,5- and 1,8-)	11.
*4,4'-Diamino-3,3'-biphenyldisulfonic acid	11, 69, 85, 351.
*2,2'-Diamino-5,5'-bi-m-toluenesulfonic acid	11, 85, 91, 351.
m,m'-Diaminocarbanilide (1,3-(Di-m-aminophenyl)urea)	85.
*4,4'-Diamino-1,1'-dianthraquinonylamine	69, 127, 171, 281, 304.
4,4'-Diaminodiphenyl sulfone	304.

TABLE 6B.—*Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 2)
*4,4'-Diaminodiphenylamine-2-sulfonic acid	11, 85, 91, 171, 304, 512.
5,8-Diamino-2-naphthalenesulfonic acid	171.
7,8-Diamino-2-naphthalenesulfonic acid	171.
1,4-Diamino-5-nitroanthraquinone	171.
Diaminophenotole	69.
*N,N'-Di(m-aminophenyl)oxamide (Oxaly-l-m-phenylenediamine)	85, 127, 304, 351.
N,N'-Di(p-aminophenyl)oxamide (Oxaly-l-p-phenylenediamine)	127.
*4,4'-Diamino-2,2'-stilbenedisulfonic acid	127, 171, 304.
3,5-Diamino-p-toluenesulfonic acid	304.
Diamylphenol	407.
1,5-Diaminoanthraquinone-o-o'-dicarboxylic acid	127.
3,4-Di(p-anisyl)hexane	287.
1,2-Di(p-anisyl)1,2-hexanediol	243.
3,4-Dianisyl-3-hexanol	243.
*1,1'-Dianthraquinonylamine	127, 171, 281, 304.
1,5-Dibenzamidoanthraquinone	171.
Dibenzofuretol	171.
1,5-Dibenzoylnaphthalene	171.
Dibenzylidenehydrazine	137.
Dibenzylsulfanilic acid, sodium salt	171, 351.
3,9-Dibromo-7-benz[de]anthracen-7-one	171.
p-Dibromobenzene	124.
2,6-Dibromo-1,5-dihydroxynaphthalene	X.
*2',7'-Dibromofluorescein	18, 202, 290.
7,16-Dibromoindanthrene (1,2,1,2-Hydrazinedibromoanthraquinone)	127.
Dibromo-8,16-pyranthredione	127.
*2,5-Dichloroaniline	127, 205, 298, 304, 479.
1,5-Dichloroanthraquinone	127, 171, 304.
1,8-Dichloroanthraquinone	69, 127, 171.
1,5- and 1,8-Dichloroanthraquinone	304.
2,6-Dichlorobenzaldehyde	304.
o-Dichlorobenzene	124, 127, 128, 140, 205, 298, 419, 431.
p-Dichlorobenzene	124, 127, 128, 140, 205, 298, 419, 431.
3,4-Dichlorobenzenesulfonic acid	243.
*3,3'-Dichlorobenzidine and sulfate	79, 127, 193, 202, 413.
*2,4-Dichlorobenzoic acid	201, 205, 286, 304, 501.
2,6-Dichlorobenzylidene chloride	127.
1,8-Dichloro-4,5-dinitroanthraquinone	127.
Dichlorohydrazine	351.
Dichlorohydroxybenzoylbenzoic acid	304.
*6,9-Dichloro-2-methoxyacridine	202, 351, 304, 501.
2,6-Dichloro-4-nitroaniline	171.
*1,4-Dichloro-2-nitrobenzene	91, 298, 304, 479.
2,4-Dichlorophenol	124, 298.
2-[1-(2,5-Dichlorophenyl)-3-ethyl-3-triazene]-5-sulfobenzoic acid	171.
1-(2,5-Dichlorophenyl)-3-methyl-5-pyrazolone	53.
1-(2,5-Dichlorophenyl)-5-pyrazolone-3-carboxylic acid (Dichlorophenylpyrazolonecarboxylic acid)	351.
2,5-Dichlorosulfanilic acid (Aminodichlorobenzenesulfonic acid)	304, 351.
*1-(2,5-Dichloro-4-sulfohenyl)-3-methyl-5-pyrazolone	85, 91, 127, 351.
*2,4-Dichlorotoluene	201, 286, 304, 501.
Dieresyl disulfide	306.
Dicyclohexylamine	298.
Dicyclopentadiene	X.
2,5-Diethoxyaniline	171.
2,5'-Diethoxybenzamide	171.
1,4-Diethoxybenzene	171.
1,4-Diethoxy-2-nitrobenzene	171.
N-(2,5-Diethoxy-4-nitrophenyl)benzamide	171.
Diethylaminobenzaldehyde	304.
N-Diethylaminoisopentyl-8-amino-6-methoxyquinoline base (Plasmochin base)	501.
m-Diethylaminophenol	127, 304.
Diethylamino rosindone	304.
*N,N-Diethylaniline	124, 127, 202, 304, 407.
N,N-Diethylmetanilic acid and salt	127, 304.
N,N-Diethyl-p-nitrosoaniline	171, 304.
N,N-Diethyl-4-nitroso-m-toluidine	171.
N,N-Diethyl-p-phenylenediamine	171.
N,N-Diethyl-p-phenylenediamine hydrochloride (p-Aminodiethyl-aniline hydrochloride)	X.
2-(1-(5-Diethylsulfamyl-o-anisyl)-3-ethyl-3-triazene)-5-sulfobenzoic acid	171.
Diethyl-m-toluidine	127.
N ⁶ ,N ⁴ -Diethyl-2,5-toluenediamine hydrochloride	X.
N,N'-Diformyl-2,5-toluenediamine	91.
Dihydroxydibenzanthrone	127.
4,5-Dihydroxy-2,7-naphthalenedisulfonic acid (Chromotropic acid)	11, 127, 304.
*4,5-Dihydroxy-1-naphthalenesulfonic acid (Dioxy S acid)	11, 127, 171.

TABLE 6B.—*Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 22)
4,6-Dihydroxy-2-naphthalenesulfonic acid	171.
6,7-Dihydroxy-2-naphthalenesulfonic acid	171.
3,5-Dihydroxy-2-naphthoic acid	171.
16,17-Dihydroxyviolanthrone	171.
Di-isopropylbenzene	32.
2,5-Dimethoxyaniline	127, 171.
1,4-Dimethoxybenzene	171.
3,3'-Dimethoxybenzidine	91, 127
1,4-Dimethoxy-2-nitrobenzene	171.
N-(2,5-Dimethoxy-4-nitrophenyl)benzamide	171.
N-(2,5-Dimethoxyphenyl)benzamide	171.
3,3'-Dimethoxy-4,4'-diphenylbis(3-methyl-3-triazene-ethanesulfonic acid)	171.
Dimethylaminoacetylcatechol	243.
p-Dimethylaminobenzaldehyde	134, 157, 304.
*N,N-Dimethylaniline	69, 127, 202, 304.
*2,2'-Dimethyl-1,1'-bianthraquinone	69, 127, 171, 304.
N,N-Dimethylcyclohexylamine	298.
Dimethyldiphenylurea	127.
2,7'-Dimethylfluoran	499.
Dimethyl- α -naphthylamine	134.
N,N-Dimethyl-p-nitrosoaniline	304.
N,N-Dimethylphenylazoaniline	304.
*N,N'-Dimethyl-p-phenylenediamine and hydrochloride	149, 304, X.
Dimethylstyrene	311.
N,N-Dimethylsulfanilic acid	171.
2,4-Dinitroaniline	69, 298.
p-(2, 4-Dinitroanilino)phenol (Dinitrohydroxydiphenylamine)	91, 171, 304.
2,4-Dinitroaniline	274, 479.
Dinitroanthraquinone (1,5- and 1,8-)	11, 85.
4,8-Dinitroanthraquinone (1,5-Dihydroxy-4,8-dinitroanthraquinone)	127.
m-Dinitrobenzene	127, 304.
2,4-Dinitrobenzenesulfonic acid	91, 171.
3,5-Dinitrobenzoic acid	134.
3,5-Dinitrobenzoyl chloride	134.
Dinitro(3,3'-bi-7-benz[de]anthracen)-7,7'-dione (Dinitrodibenzanthronyl)	127.
4,4'-Dinitro-1,1'-dianthraquinonylamine	127, 281.
Dinitromonomethylaniline	69.
Dinitronaphthalene	171.
2,4-Dinitro- α -naphthol	157.
*2,4-Dinitrophenol, tech	127, 171, 304.
N,N'-Di(p-nitrophenyl)oxamide (Oxalyl-p-nitroaniline)	127.
*4,4'-Dinitro-2,2'-stilbenedisulfonic acid	85, 91, 127, 171, 304.
2,4-Dinitrotoluene	127, 304.
Di-o-tolylthiourea	127.
1,5-Dioxamidoanthraquinone	171.
Dipentene (dl-Limonene)	127, 311.
1,5-Diphenoxanthraquinone	127.
Diphenylamine	124, 127, 134.
*8-Diphenylamino-1,6-naphthalenedisulfonic acid	91, 127, 171, 304.
1,5-Diphenylcarbonylhydrazide	134.
1,3-Diphenyltriazene (Diazoaminobenzene)	127, 304.
Dipyrazoledianthrone	127, 171.
Di-tert-butyl-m-cresol	241.
Di-tert-butyl-p-cresol	165.
1,4-Di(p-toluidino)anthraquinone	127.
Dodecylbenzene	298.
6-Ethoxy-3-hydroxythianaphthene	127.
2-Ethoxynaphthalene	171.
2-Ethoxy-1-naphthylamine	171.
2-Ethoxy-1-nitronaphthalene	171.
N-(p-Ethoxyphenyl)-4-nitroanthranilic acid	171.
3-Ethylamino-p-cresol	127.
3-Ethylamino-p-toluenesulfonic acid (N-Ethyl-o-toluidine-p-sulfonic acid)	127.
Ethylaniline, mono, crude and refined	69, 127, 202, 304.
2-(N-Ethylanilino)ethanol (Hydroxyethylethylaniline)	171.
* α -(N-Ethylanilino)-p-toluenesulfonic acid	69, 91, 127, 171, 304, 485.
Ethylbenzene	124, 298, 515.
Ethylbenzyl-m-toluidine	127, 304.
*Ethylbenzyl-m-toluidinesulfonic acid	127, 171, 304.
3,3'-Ethylenebis[1-(5-chloro-1-anisyl)-3-triazene-acetic acid]	351.
2-[3-Ethyl-1-(5-nitro-o-anisyl)-3-triazene]-5-sulfobenzoic acid (2-(N-Ethyl-5-nitro-o-anisyl-diazoamino)-5-sulfobenzoic acid)	171.
*Ethylphenylmalonic acid, diethyl ester	1, 48, 286, 501.
Ethylsilyl carbonate	124.
N-Ethyl-5-sulfoanthranilic acid	171.
N-2-Ethyl-2,5-toluenediamine	171.

TABLE 6B.—*Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 22)
N-Ethyl-m-toluidine	127, 304.
N-Ethyl-o-toluidine	127, 304.
Fluorene	241, 377.
α -Fluorenone	137.
o-Formylbenzenesulfonic acid (o-Sulfobenzaldehyde)	127.
Formanilide	171.
8-(3-Guanylguanidino)-2-naphthol hydrochloride	171.
Hexachlorobenzene	124, 205.
Hexachlorodiphenyl oxide	124.
m-Hydrazinobenzenesulfonic acid	171.
*p-Hydrazinobenzenesulfonic acid	171, 351, 441.
4-Hydrazino-m-toluenesulfonic acid	171.
*Hydroquinone, tech.	78, 127, 134, 456, 479, 513.
1-Hydroxy-4-aminoanthraquinone	171, 304.
3-Hydroxy-2-anthracenecarboxylic acid	171.
1-Hydroxyanthraquinone	304.
p-Hydroxybenzoic acid	201.
2-Hydroxy-11-benzof[carbazole]-3-carboxylic acid	171.
2-Hydroxy-3-carbazolecarboxylic acid	171.
8-Hydroxy-3-naphth[1,2]imidazole hydrochloride	171.
2-Hydroxy-1-naphthoic acid	127.
1-Hydroxy-2-naphthoic acid, ethyl carbonate	171.
1-Hydroxy-2-naphthoic acid, methyl ester	171.
3-Hydroxy-2-naphthoic acid	171, 304, 413.
N-(7-Hydroxy-1-naphthyl)benzamide	171.
β -(2-Hydroxynaphthyl)-3-thianaphthenol (β -Naphtholthioindoxyl)	91.
4-Hydroxy-3-nitro-1-phenylarsonic acid	1, 286.
1-Hydroxy-N-octadecyl-2-naphthamide	171.
2-Hydroxyphenetole	298.
p-Hydroxyphenylarsonic acid	1, 134, 286.
β -(p-Hydroxyphenyl)- α -phenylpropionic acid	165.
8-Hydroxyquinoline, crude	48.
p-(8-Hydroxy-6-sulfo-2-naphthylamino)benzoic acid	171.
3-Hydroxy-5-sulfo-2-naphthoic acid	171.
5-Hydroxy-m-toluenesulfonic acid	255.
*1,1'-Iminobis(4-benzamidoanthraquinone)	69, 127, 171, 281.
*6,6'-Iminobis(1-naphthol-3-sulfonic acid) (I or J acid imide) (Rhoduline acid)	69, 85, 127, 304, 351.
Indene	155, X.
*Indophenol, blue and green	37, 127, 304.
7-Iodo-8-hydroxyquinoline-5-sulfonic acid	501.
Isatin	304.
p-Isobutylaminophenol (p-Amino-N-isobutylphenol)	127.
Isophorone	74, 410.
Isopropyl ester p-toluenesulfonate	127.
p,p'-Isopropylidenediphenol (p,p'-Dihydroxydiphenyldimethylmethane)	124, 171.
Isophthalic acid (1,3-Benzenedicarboxylic acid)	304.
Isoviolanthrone (Isodibenzanthrone)	127, 171.
Leuco 1,4-di(methylamino)anthraquinone	127.
Leuco indophenol BCFN	127.
*Leuco quinizarin	11, 69, 127, 274, 304, X.
Leuco tetrahydroxyanthraquinone	171.
2,6-Lutidine	241, 377.
2,4-Lutidine	241.
*Metanilic acid	53, 69, 85, 91, 127, 171, 304.
2-Methoxy-4-aminodiphenylamine-2-sulfonic acid	171.
p-Methoxy- α -(p-anisyl)butyrophenone	255.
1-Methoxyanthraquinone	11, 171.
p-Methoxybutyrophenone	137.
2-(6-Methoxy-N-methyl-4-nitro-m-tolyldiazoamino)-5-sulfobenzoic acid	171.
2-Methoxy-4-nitrodiphenylamine-2'-sulfonic acid	171.
4-Methoxy-4-nitrodiphenylamine-2'-sulfonic acid	171.
5-Methoxy-m-phenylenediamine (m-Diaminoanisole)	69, 274, 479.
6-Methoxy-m-toluidine (2-Amino-p-cresol methyl ether)	91.
Methyl acetylsalicylate	287.
1-Methylaminoanthraquinone	28, 69, 91, 127, 171, 193.
Methylaminosulfobenzoic acid	171.
Methylaniline, mono	91, 127.
2-(N-Methylanilino)ethanol (Hydroxyethylmethylaniline)	171.
5-Methyl-o-anisidine (Cresidine)	172.
m-Methylanisole (m-Cresol methyl ether)	278.
N-Methylantranilic acid	171, 278.
2-Methylantraquinone	69, 127, 304.
2-Methyl-7-benz[de]anthracen-7-one (2-Methylbenzanthrone)	304.
Methylbenzoxazole	134, 149.
Methylbenzyl alcohol	311.
3,3'-Methylenebis(1-o-anisyl-3-triazeneacetic acid)	351.

TABLE 6B.—*Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 2)
3,3'-Methylenebis(1-o-anisyl-3-triazenepropionic acid)	351.
2,2'-Methylenebis(4-chlorophenol)	171.
3,3'-Methylenebis[1-(5-chloro-o-anisyl)-3-triazeneacetic acid]	351.
3,3'-Methylenebis[1-(4-chloro-o-tolyl)-3-triazeneacetic acid]	351.
3,3'-Methylenebis[1-(5-chloro-o-tolyl)-3-triazeneacetic acid]	351.
3,3'-Methylenebis[1-(5-chloro-o-tolyl)-3-triazenepropionic acid]	351.
p,p'-Methylenebis(N,N - diethylaniline) (Tetraethyldiaminodiphenylmethane)	69, 274.
p,p'-Methylenebis(N,N-dimethylaniline) (Tetramethyldiaminodiphenylmethane)	127, 171, 274, 304.
p,p'-Methylenebis(N,N - dimethyl-2-nitroaniline) (Dinitrotetramethyldiaminodiphenylmethane)	171, 304.
p,p'-Methylenebis(N-ethylaniline) [Di(ethylamino)diphenylmethane]	298.
4,4'-Methylenebis(3-hydroxy-2-naphthoic acid) sodium salt (Methane salt)	501.
N,N'-Methylenebis(4-methylaminoantipyrine)	501.
Methylenebis(toluenediamine) (Tetra-aminoditolylmethane)	304.
4,4'-Methylenebis(m-toluidine) (4,4'-Diamino-2,2'-dimethyldiphenylmethane)	127.
Methyl p-hydroxy-m-nitrobenzoate	501.
N-Methyl-N-(3-methyl-o-anisyl)diazo)glycine	171.
2-Methylnaphthalene	377.
N-Methyl-p-nitroacetanilide	171.
4-Methyl-o-nitroanisole	127.
2-(N-Methyl-p-nitrosoanilino)ethanol	171.
N-(5-Methyl-4-nitro-o-anisyl)-p-toluenesulfonamide	171.
2-Methyl-1-nitroanthraquinone	171.
2-(N-Methyl-4-nitro-o-tolyldiazoamino)-5-sulfobenzoic acid	171.
(N-Methyl-p-phenethyldiazoamino)acetic acid	171.
*3-Methyl-1-phenyl-5-pyrazolone (Developer Z)	11, 69, 85, 127, 171, 304, 351, 501.
Methylphenylpyrazolone	124, 127.
Methylphenylpyrazolone-3-sulfonic acid	171.
*Methylphenylpyrazolone-4-sulfonic acid	69, 91, 171.
6-Methylquinoline	171.
3-Methyl-1-(m-sulfophenyl)-5-pyrazolone	53.
3-Methyl-1-(p-sulfophenyl)-5-pyrazolone (Methylsulphonylpyrazolone)	127, 351.
3-Methyl-1-(4-sulfo-o-tolyl)-5-pyrazolone	171.
Methylstyrene	124, X.
Methyl-p-toluenesulfonate	171.
5'-Methyl-p-toluenesulfon-o-aniside	171.
4-Methylumbelliferone	134, X.
*Naphthalene, solidifying at 79° C. or above, refined, flake	43, 69, 115, 127, 241, 361, 377, 413, 432.
Naphthaleneacetic acid	413.
1,5-Naphthalenediol (1,5-Dihydroxynaphthalene)	171, 304.
*1,5-Naphthalenedisulfonic acid	91, 127, 171, 304.
2,7-Naphthalenedisulfonic acid	127, 274, 304, 413.
1-Naphthalenesulfonic acid	171.
1-Naphthalenesulfonic acid, aniline salt	171.
2-Naphthalenesulfonic acid	91, 157, 298, 304.
2-Naphthalenesulfonic acid, sodium salt	69.
Naphthalenesulfonic acids, sodium salt, mixture	91.
1,3,6-Naphthalenetrisulfonic acid	171.
Naphthalic anhydride	134.
Naphthenic acid	134.
3-Naphth[1,2]imidazole-8-sulfonic acid	171.
*Naphthenic acid (4-Amino-1-naphthalenesulfonic acid) and salt	69, 91, 127, 171, 304.
* α -Naphthol	91, 127, 171, 304.
1-Naphthol, tech	69, 304, 413.
1-Naphthol-3,6-disulfonic acid and salt	85, 91, 304.
*2-Naphthol-3,6-disulfonic acid and salt	91, 171, 304, 413, 485.
*2-Naphthol-6,8-disulfonic acid and salt	91, 127, 171, 304.
1-Naphthol-8-sulfamide	91.
1-Naphthol-4-sulfonic acid (Neville and Winther's acid)	91, 127, 304.
*1-Naphthol-5-sulfonic acid	91, 171, 127, 304.
1-Naphthol-8-sulfonic acid	171.
*2-Naphthol-6-sulfonic acid (Schaeffer's acid)	18, 69, 91, 127, 171, 304, 485.
2-Naphthol-7-sulfonic acid	91, 127, 413.
2-Naphthol-8-sulfonic acid	91.
1-8-Naphthosultone	85, 91.
1,8-Naphthosultone-3,6-disulfonic acid	274.
Naphth(1,2)oxadiazole-5-sulfonic acid	171.
*1-Naphthylamine	127, 171, 304.
*2-Naphthylamine	127, 157, 274, 304.
1-Naphthylamine hydrochloride	157, 171.
1-(1-Naphthylamino)-2-anthraquinonecarboxylic acid	127.
N-(1-Naphthyl)ethylenediamine hydrochloride	134.
1-Naphthyl isocyanate	134.

TABLE 6B.—*Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 22)
2-Naphthylmercaptoacetic acid (2-Naphthalenemercaptoacetic acid)	69, 127, 171.
p-Nitroacetanilide	91, 171.
4-Nitro-o-acetanilide	171.
4-Nitroaminobenzene-2-sulfoethyl-anilide	304.
*m-Nitroaniline	69, 85, 91, 127, 304.
o-Nitroaniline	298.
p-Nitroaniline	11, 127, 298, 304.
*2-Nitro-p-anisidine	127, 171, 202, 304.
4-Nitro-o-anisidine	127, 171, 281, 304.
5-Nitro-o-anisidine	127, 171, 281, 304.
o-Nitroanisole	127, 298.
p-Nitroanisole	127, 157.
9-Nitroanthra[1,9-de, 4,10-d'e']bis(1,2,3-oxathiazine)-2,7-bisdioxide	171.
1-Nitro-2-anthraquinonecarboxylic acid	171.
5-Nitro-1-anthraquinonesulfonic acid	127.
5- and 8-Nitroanthraquinonesulfonic acid	304.
2(1'-Nitro-2'-anthraquinonyl)anthra[2,3]oxazole-5,10-dione	171.
m-Nitrobenzaldehyde	171.
*6-(m-Nitrobenzamido)-1-naphthol-3-sulfonic acid (m-Nitrobenzoyl J acid)	127, 171, 351.
*6-(p-Nitrobenzamido)-1-naphthol-3-sulfonic acid (p-Nitrobenzoyl J acid)	127, 171, 351.
*Nitrobenzene	69, 127, 171, 298, 304, 306.
2-Nitro-p-benzenedisulfonic acid	91.
Nitrobenzenesulfonic acid	85, 304.
*m-Nitrobenzenesulfonic acid	91, 127, 171, 304, X.
o-Nitrobenzenesulfonic acid	171.
p-Nitrobenzenesulfonic acid, potassium salt	69.
m-Nitrobenzenesulfonyl chloride	304.
m-Nitrobenzoic acid	127, 205.
p-Nitrobenzoic acid	127.
p-Nitrobenzoic acid, ethyl ester (Ethyl p-nitrobenzoate)	501.
m-Nitrobenzoyl chloride	127, 205.
p-Nitrobenzoyl chloride	127, 134, 205.
m-Nitrobenzoylsulfonic acid	11.
Nitrobenzoyltoluenediaminesulfonic acid	171, 304.
o-Nitrobiphenyl	298.
p-Nitrobiphenyl	298.
Nitrocresol (isomer not specified)	127.
m-Nitrocresol	1.
2-Nitro-p-cresol	91.
4-Nitro-2-diphenylaminesulfonic acid	171.
4-Nitro-5-ethoxy-o-butyrophenetide	351.
Nitronaphthalene	127, 171, 304.
7-Nitro-1,5-naphthalenedisulfonic acid	91, 171.
8-Nitronaphthalenetrisulfonic acid	171.
7,8-Nitronaphth(1,2)oxadiazole-5-sulfonic acid	171.
o-Nitrophenole	127.
*o-Nitrophenol	48, 127, 479.
p-Nitrophenol	127, 298.
o-Nitrophenoxybenzene	351.
p-Nitrophenylhydrazine	134.
1-(m-Nitrophenyl)-5-pyrazolone-3-carboxylic acid	171.
Nitropyrazolonecarboxylic acid	351.
5-Nitrosalicylic acid	171.
1-Nitroso-2-naphthol	69, 157, 304.
1-Nitroso-2-naphthol-7-sulfonic acid	171.
Nitrosophenol	304.
*p-Nitrosophenol	37, 69, 91, 127, 171.
m-Nitrotoluene	127, 171, 304.
o-Nitrotoluene	127, 171, 304.
p-Nitrotoluene	127, 171, 304.
Nitrotoluene mixtures	127, 171, 304.
1-Nitro-p-toluenesulfonic acid	85.
*3-Nitro-p-toluenesulfonic acid	11, 69, 91, 171.
*5-Nitro-o-toluenesulfonic acid	91, 127, 171, 304.
3-Nitro-p-toluic acid	171.
*2-Nitro-p-toluidine	69, 127, 202, 304, 413.
4-Nitro-o-toluidine	171.
5-Nitro-o-toluidine	127, 351, 413.
3-Nitro-p-tolunitrile	171.
3-Nitro-p-tolyl chloride	171.
4-Nitro-N-tolyl-naphthalimide	171.
N-(4-Nitro-o-tolyl)-p-toluenesulfonamide	171.
Nitroviolanthrene	69, 171.
4-Nitro-m-xylene	91.
Nitroxylene	127, 171, 304.
Pentachlorophenol and sodium salt	124, 298.

TABLE 6B.—*Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 2)
9,10-Phenanthrenequinone	304.
Phenazine	171.
o-Phenetidine	127, 298.
p-Phenetidine	127, 165, 298.
p-Phenetidine citrate	88.
*Phenol:	
Natural:	
*From coal tar:	
U. S. P.	377.
37° C. m. p.	69.
*39° C. m. p.	43, 69, 241, 377.
82 to 84 percent	43, 241.
All other	43, 69, 241, 377, 381.
*Synthetic:	
By caustic fusion:	
U. S. P.	43, 298.
82 to 84 percent	43.
All other	43, 376.
From benzol by oxidation: U. S. P.	419.
From chlorobenzene by liquid-phase hydrolysis: U. S. P.	124.
From chlorobenzene by vapor-phase hydrolysis: U. S. P.	128.
Phenol, sodium salt	157.
*Phenolsulfonic acid	124, 157, 298, X.
Phenothioxin	124.
o-Phenoxyaniline	351.
*Phenylacetic acid, tech.	48, 186, 229, X, X.
Phenylacetic acid and ester	501.
2-Phenylanthra[2,3]oxazole-5,10-dione	171.
*p-Phenylazoaniline (Aminoazobenzene) and hydrochloride	11, 69, 127, 171, 304.
N-Phenyldibenzylamine (Dibenzylaniline)	127.
*m-Phenylenediamine	69, 85, 91, 127, 171, 304, 363.
o-Phenylenediamine	137, 149.
p-Phenylenediamine	69, 413.
*m-Phenylenediaminesulfonic acid	91, 127, 171, 304.
*p-Phenylenediaminesulfonic acid	85, 91, 171.
Phenylene nerol acid (6-(p-Aminoanilino)metanilic acid)	53.
Phenyl ether (Diphenyl oxide)	124.
*Phenylglycine and salt	124, 127, 304.
Phenylhydrazine	124.
Phenylhydrazine and hydrochloride	134, 157.
*2,2'-Phenyliminodiethanol (Phenyldiethanolamine) (N,N'-Bis(2-hydroxyethyl)aniline)	74, 124, 127, 171, 304.
Phenylisocyanate	134.
*Phenylmalonic acid, diethyl ester	1, 286, 501.
N-Phenyl-1-naphthylamine	127.
N-Phenyl-2-naphthylamine	127, 171.
*N-Phenyl-1-naphthylamine-8-sulfonic acid (Phenyl peri acid)	69, 127, 171, 304.
o-Phenylphenol	124.
p-Phenylphenol	124.
o-Phenylphenol, sodium salt	124.
N-Phenyl-p-phenylenediamine	127, 171.
1-Phenyl-5-pyrazolone-3-carboxylic acid, ethyl ester	171.
Phthalamide	124, 127.
Phthalic acid	171.
*Phthalic anhydride	13, 43, 127, 298, 304, 376.
Phthalonitrile	127.
Phthaloyl chloride	298.
*2-Picoline (alpha)	43, 241, 377.
3-Picoline (beta)	43, 241, 377.
4-Picoline (gamma)	43, 241, 377.
3- and 4-Picoline (beta-gamma mixture)	43, 241, 377.
*Picramic acid and salt	69, 127, 304.
Picric acid (Trinitrophenol)	127, 304.
Piperidine	127, 205, 298.
Piperidinopropanediol	287.
Piperidinopropyl alcohol	255.
Polychlorobiphenyl	298.
Primuline, base	304.
Primuline sulfonic acid	341.
Proflavine, base (3,6-Diaminoacridine)	1.
Propiophenone	X.
Pseudocutimidine	44, 304.
Pyrazolone	11.
Pyridine, refined	43, 241, 377.
Pyridine, salts, bases, and residues	241.
Quinaldine (2-Methylquinoline)	43, 241, 274, 304.
Quinaldine yellow, base	304, 377.
*Quinizarin (1,4-Dihydroxyanthraquinone)	11, 28, 69, 85, 91, 127, 171, 193, 274, 304, 513, X.

TABLE 6B.—*Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 22)
Quinoline.....	134, 241, 377.
Quinoline, 2°.....	43.
Quinolinic acid.....	91.
Resorcinol, tech.....	127, 312, X.
β-Resorcylic acid.....	X.
Salicylic acid, tech.....	124, 127, 201, 298.
Styphnic acid (2,4,6-Trinitroresorcin).....	X.
Styphnic acid, lead salt.....	X.
*Styrene (Vinylbenzene).....	74, 124, 298, 515, 522, X.
p-Sulfamylbenzoic acid (p-Carboxybenzenesulfonamide).....	298.
Sulfanilic acid and salt.....	11, 69, 91, 304.
p-Sulfoanthranilic acid.....	171.
o-Sulfobenzoyl anhydride.....	134, 340.
p-Sulfo-o-benzoylbenzoic acid (Sulfo BB acid).....	127.
p,p'-Sulfonyldiphenol (4,4'-Dihydroxydiphenylsulfone).....	171, X.
Sulfophenyl-m-pyrazolone.....	85.
1-(o-Sulfophenyl)-5-pyrazolone-3-carboxylic acid.....	351.
1-(p-Sulfophenyl)-5-pyrazolone-3-carboxylic acid (Pyrazolone T).....	11, 171.
Tetrabromo-8,16-pyranthredione.....	171.
*1,4,5,8-Tetrachloroanthraquinone.....	127, 171, 304.
Tetrachlorobenzene.....	124.
Tetrachlorophenol, sodium salt.....	124.
*1,4,5,8-Tetrakis(1-anthraquinonylamino)anthraquinone (Penta-anthramide).....	28, 127, 171, 304.
3-(2)-Thianaphthenone.....	171.
3,3'-Thiobis(7-benz[de]anthracen 7-one).....	171.
p,p'-Thiobis(4-amino-o-benzenesulfonic acid) (Thioaniline disulfonic acid).....	304.
p,p'-Thiodianiline.....	127, 304.
Thiophenylsulfonic acid.....	255.
Tolidine and salts.....	304.
o-Tolidine and salts.....	91, 127, 157.
2-(o-Toloxyl)ethanol (Cresylglycol).....	171.
o-Toluenesulfonamide.....	298.
p-Toluenesulfonamide.....	298.
p-Toluenesulfonic acid.....	134, 157, 413.
Toluenesulfonic acid, tech.....	298.
p-Toluenesulfonic acid, crude.....	413.
p-Toluenesulfonic acid, ethyl ester.....	134, 479.
o-Toluenesulfonyl chloride.....	298.
p-Toluenesulfonyl chloride.....	298.
*α-Tolucic acid, ethyl ester (Phenylacetic acid, ethyl ester) (Ethyl phenylacetate).....	48, 286, 501.
m-Toluidine.....	127, 171, 304.
o-Toluidine.....	127, 171, 304.
*p-Toluidine.....	127, 201, 304.
Toluidine, mixed.....	69, 241.
*8-(p-Toluino)-1-naphthalenesulfonic acid (Tolyl peri acid).....	127, 171, 304.
m-(p-Toluino)phenol.....	171.
α-Tolunitrile (Benzyl cyanide).....	48, 229.
p-Tolunitrile.....	171.
*4-(o-Tolylazo)-o-toluidine (o-Aminoazotoluene).....	11, 91, 127, 171, 304.
*o-(p-Tolyl)benzoic acid.....	69, 127, 304.
*m-Tolylenediamine.....	69, 91, 127, 171, 304.
m-Tolylenediamine sulfate.....	69, 127.
m-Tolylenediaminesulfonic acid.....	304.
Trianthraquinonyl di-imide.....	171.
Tribromophenol.....	124.
*Trichlorobenzenes.....	124, 205, 298.
Trichlorocumene.....	205.
Trichlorophenol, sodium salt.....	124.
Trichlorophenoxyethoxychloroethane (Trichlorophenoxyethoxyethyl chloride).....	124.
*α-Trichlorotoluene (Benzotrichloride).....	201, 205, 298.
1,2,4-Trihydroxyanthraquinone.....	85, 171.
6-Valeryl-m-cresol.....	501.
o-Vanillin (2-Hydroxy-3-methoxybenzaldehyde).....	298.
o-Veratraldehyde (3,4-Dimethoxybenzaldehyde).....	298, 398.
Vinylcarbazole.....	171.
Violanthrene.....	171.
Violanthrone (Dibenzanthrone).....	69, 127, 341.
*m-Xylene.....	127, 135, 278, X.
*Xylene, ortho and para.....	43, 127, 278.
Xylenols:	
Low b. p.....	377, 381.
High b. p.....	377.
Not classified as to b. p.....	43, 69, 377.

TABLE 6B.—*Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 22)
Xylidines:	
2,3-Xylidine	304.
*2,4-Xylidine (m-4-Xylidine)	11, 127, 286, 304.
2,5-Xylidine (p-Xylidine)	11, 127, 304.
*Xylidine mixture, original	91, 127, 171, 274, 304.
*Xylidine mixtures, other (ortho and para)	69.
m-Xylidine acetate	304.
p-Xylidine hydrochloride	304.
2,4-Xylidinesulfonic acid	304.
m-Xylidinesulfonic acid	127.
4-(2,4-Xylylazo)-o-toluidine (Aminoazoxylenetoluidine)	304.
4-(2,4-Xylylazo)-2,5-xylidine (Aminoazoxylene)	11, 304.
All other	127.

DYES

TABLE 7B.—*Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1944*

[Dyes for which separate statistics are given in table 7A are marked below with an asterisk (*); dyes not so marked do not appear in table 7A because the reported data are confidential and may not be published. Manufacturers are identified by numbers in the alphabetical list appearing in table 22. An X signifies that the manufacturer did not consent to the publication of his identification number with the designated product]

Colour Index or Prototype No.	Dye	Manufacturers' identification numbers (according to list in table 22)
DYES GROUPED BY COLOUR INDEX NUMBERS		
<i>Nitroso Dyes</i>		
2	Fast printing green	171.
5	Naphthol green B	69, 171.
<i>Nitro Dyes</i>		
10	Naphthol yellow S	69, 91, 304.
11	Amido yellow E	171.
<i>Azo Dyes</i>		
Monoazo Dyes		
15	Spirit yellow G	171.
16	Acid yellow G	69.
17	*Spirit yellow R	11, 69, 104, 162, 171, 304.
19	Oil yellow	11, 69, 104, 127, 162, 171, 304.
20	*Chrysoidine Y	69, 104, 127, 171, 304.
21	*Chrysoidine R	69, 171, 304.
23	Sudan G	104.
24	*Sudan I	11, 69, 91, 104, 127, 162, 171, 304.
26	Croceine orange G	91, 304.
27	*Orange G	69, 91, 127, 171, 304.
29	Chromotrope 2R	304.
30	*Fast acid fuchsine B	11, 304, 512.
31	*Amido naphthol red G	11, 69, 91, 104, 127, 171, 304.
32	Brilliant sulphon red	512.
36	*Chrome yellow 2G	11, 69, 85, 91, 171, 274.
40	*Chrome yellow R	11, 69, 91, 171.
52	*Azo alizarin yellow GP	11, 91, 171, 304.
53	*Victoria violet 4BS	91, 127, 171, 304.
54	Lanafuchsine	91.
56	Chromotrope 6B	91, 304.
57	*Amido naphthol red 6B	11, 69, 85, 91, 127, 171, 304.
68	Fast scarlet G base	171.
73	*Sudan II	11, 69, 104, 162, 171, 304.
79	*Ponceau R	69, 91, 127, 171, 304.
84	Double ponceau	171.
88	*Fast red B	69, 91, 171, 304.
90	Chromotrope 10B	127.
98	*Chrome brown R	91, 171, 304.
99	Chrome green 2G	171.
101	Chromate brown B	69, 85, 363.

TABLE 7B.—*Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Colour Index or Prototype [No.	Dye	Manufacturers' identification numbers (according to list in table 22)
DYES GROUPED BY COLOUR INDEX NUMBERS—Continued		
Azo Dyes—Continued		
Monocazo Dyes—Continued		
104	Metachrome olive brown G.....	274.
105	Acid chrome brown R.....	127.
110	Chrome flavine G.....	171, 363.
114	Azo eosine G.....	127, 171.
117	Fast red B base.....	171, 274.
119	Eosamine G.....	127.
122	Chrome yellow 5G.....	91.
126	Direct pink 2GN.....	127.
128	Direct pink.....	171, 304.
130	Direct fast pink EBN.....	127.
134	Janus black B.....	171.
138	*Metanil yellow.....	127, 171, 304.
142	Methyl orange.....	127.
145	*Azoflavine RS.....	11, 91, 171.
146	*Azo yellow.....	11, 171, 304.
148	Resorcin yellow.....	304.
151	*Orange II.....	69, 91, 104, 171, 304, 512.
160	Hansa rubine.....	171.
161	Orange R.....	69, 127, 304.
163	Pigment rubine B.....	91, 127, 304.
165	Lake red C.....	69.
167	Acid chrome brown B.....	69, 304.
168	*Acid chrome garnet R.....	91, 171, 304.
169	*Acid chrome violet N.....	91, 304, 363.
170	Chrome black PV.....	69, 85, 171, 304.
172	Acid chrome black R.....	171.
173	Metachrome violet B.....	85.
175	Naphthylamine brown.....	171.
176	*Fast red A.....	69, 91, 127, 171, 304.
179	*Azo rubine.....	11, 91, 127, 171, 304.
180	*Fast red VR.....	69, 91, 171, 304.
183	Croceine scarlet 3BX.....	91.
184	*Amaranth.....	91, 240, 304.
185	*Cochineal red A.....	69, 91, 171, 304.
195	Mordant yellow O.....	85, 171, 304.
197	Chrome yellow RN.....	91, 171, 304.
201	*Chrome blue black B.....	91, 171, 304.
202	*Chrome blue black R.....	91, 127, 171, 304, 363.
203	*Chrome black T.....	91, 127, 171, 304.
204	*Chrome black A.....	91, 171, 304, 363.
208	*Fast acid blue R.....	69, 127, 171, 304.
209	*Fast acid blue B.....	127, 171, 304.
216	*Acid chrome red B.....	69, 91, 127, 171, 304, 513.
219	*Chrome flavine A.....	85, 91, 127, 171, 304, 351.
225	Direct pink 2B.....	127.
Disazo Dyes		
234	*Resorcin brown.....	11, 69, 91, 104, 127, 171, 304, 512.
235	*Resorcin dark brown.....	11, 69, 91, 104, 171, 304, 512.
238	Chrome brown G.....	127, 304.
246	*Acid black 10B.....	11, 69, 91, 127, 171, 304, 512.
247	*Azo dark green A.....	91, 127, 512.
249	Cloth red G.....	91.
252	*Brilliant croceine M.....	69, 127, 171, 304.
253	Ponceau SS ex.....	304.
256	Cloth red 3G ex.....	69.
258	Sudan IV.....	91, 104, 127, 162, 171.
262	*Cloth red B.....	91, 171, 304.
267	Neutral gray G.....	127.
274	*Milling orange.....	11, 69, 91, 171.
275	*Cloth scarlet G.....	11, 69, 91, 512.
278	*Direct fast red 8BL.....	11, 53, 69, 85, 127, 171, 304, 351, 512, X.
280	*Scarlet FC.....	11, 171, 304.
288	Fast acid cyanine G.....	171, 304.
289	*Fast acid cyanine 5R ex.....	69, 127, 171, 304.
290	Naphthalene acid black 4B.....	171.
294	Acid black B.....	304.
299	*Acid chrome black F.....	69, 91, 127, 171, 304.

TABLE 7B.—*Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Colour Index or Prototype No.	Dye	Manufacturers' identification numbers (according to list in table 22)
DYES GROUPED BY COLOUR INDEX NUMBERS—Continued		
Azo Dyes—Continued		
Diazo Dyes—Continued		
302	*Acid chrome green SS.....	69, 127, 171.
304	*Fast acid black 2BN.....	91, 127, 171, 304.
306	Fast acid black F.....	171.
307	*Fast acid cyanine black B.....	69, 85, 127, 171, 304.
308	Naphthylamine black D.....	171.
315	Brilliant black B.....	171.
316	*Developed blue NA.....	91, 127, 171, 304.
317	Developed blue B.....	91, 127, 171, 304.
319	Direct fast heliotrope.....	91, 127, 171.
324	Developed brilliant orange GR ex.....	127, 351.
324a	*Rosanthrene.....	127, 171, 304.
325	*Direct brilliant violet.....	11, 171, 304.
326	*Direct fast scarlet.....	11, 69, 85, 91, 127, 171, 304, X.
327	Direct fast scarlet 4BA.....	91, 171.
331	*Bismarck brown G.....	69, 127, 171, 304.
332	*Bismarck brown R.....	69, 91, 127, 171, 304.
336	Acid chrome black SE.....	171.
343	*Chrome fast yellow G.....	69, 85, 274, 304, 351.
346	*Direct fast yellow 5GL.....	69, 127, 171, 304, X.
349	Direct fast yellow 4GL ex.....	85.
349a	Direct fast yellow RL.....	85, 304.
353	*Direct fast pink 2BL.....	69, 127, 171, 304.
364	*Brilliant yellow.....	69, 127, 173, 304.
365	Chrysophenine G.....	127, 171, 304.
370	Congo red.....	127, 304.
375	*Congo corinth G.....	11, 53, 69, 91, 127, 171, 304, 512.
376	Congo rubine.....	91, X.
377	Direct orange G.....	304.
382	*Direct scarlet B.....	11, 53, 69, 91, 171, 304, 512.
385	Direct violet.....	91.
387	*Direct violet B.....	69, 91, 127, 171, 304.
393	Benzo violet O.....	171.
394	*Direct violet N.....	11, 69, 91, 127, 171, 304.
395	Direct black RO.....	11.
400	Direct brilliant Bordeaux R.....	304.
401	*Developed black BH.....	53, 69, 91, 127, 171, 304, 512.
405	Direct cyanine R.....	304.
406	*Direct blue 2B.....	11, 69, 91, 104, 127, 171, 304, 512.
409	Brilliant orange G.....	127.
410	Chrysamine G.....	127.
411	*Cresotine yellow G.....	91, 304, 512.
415	*Direct orange R.....	91, 127, 171, 304.
419	*Direct fast red F.....	11, 53, 69, 85, 91, 127, 171, 304, 512.
420	*Direct brown M.....	11, 53, 69, 91, 127, 171, 304, 512, X.
423	Direct brown B.....	69, 512.
430	*Polar red.....	69, 85, 91, 127, 171, 304, 512, X.
431	Acid chrome red.....	85, 127.
441	Chrome fast yellow RD.....	171, 351.
443	Milling red G.....	11, 69, 91, 171.
446	Direct orange R.....	11, 304.
448	Benzopurpurine 4B.....	91, 127, 304.
464	Direct blue 3R.....	127.
471	Direct blue 4R.....	91, 304.
472	*Direct blue BX.....	91, 127, 171, 304.
477	*Direct blue 3B.....	11, 91, 104, 127, 304.
478	Direct orange G.....	11, 304.
487	*Acid anthracene red 3B.....	11, 69, 85, 91, 171, 351.
495	*Benzopurpurine 10B.....	91, 127, 304, 512.
499	Fast blue B base and salt.....	171, 304.
502	*Direct azurine G.....	11, 91, 127, 171, 304, 512.
508	Direct brilliant blue G.....	127.
512	*Direct blue RW.....	11, 91, 127, 171, 304.
515	Direct blue B.....	304.
516	Chicago blue B.....	171.
518	*Direct sky blue FF.....	11, 53, 91, 127, 171, 304.
520	*Direct pure blue.....	53, 91, 127, 171, 304.

TABLE 7B.—*Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1944*—Continued

Colour Index or Prototype No.	Dye	Manufacturers' identification numbers (according to list in table 22)
DYES GROUPED BY COLOUR INDEX NUMBERS— Continued		
<i>Azo Dyes</i> —Continued		
Trisazo Dyes		
533	Direct fast blue FR.....	11, 69, 91, 127.
539	*Direct fast black FF.....	91, 127, 171, 304.
545	Plutoform black.....	69, 85, 91.
552	Diazo blue black RS.....	127, 304.
559	Direct bronze G.....	171.
561	*Direct brown BT.....	11, 53, 91, 127, 171, 304, 512, X.
576	Direct fast blue B.....	127, 304.
581	*Direct black EW.....	69, 91, 127, 171, 304, 512.
582	*Direct black RX.....	69, 91, 127, 171, 304, 512.
583	*Direct green ET.....	11, 69, 91, 127, 171, 304, 512.
589	*Chloramine green B.....	91, 127, 171, 304, 512.
590	Direct steel blue G.....	127.
593	*Direct green B.....	11, 69, 85, 91, 127, 171, 304, 512.
594	*Direct green G.....	69, 91, 127, 171, 304, 512.
595	Direct olive G.....	171.
596	*Direct brown 3GO.....	11, 69, 91, 127, 171, 304, 512.
598	*Congo brown G.....	11, 91, 127, 171, 304, X.
601	Congo brown R.....	127.
Tetrakisazo Dyes		
606	Direct brown G.....	171, 512.
619	Naphthamine fast black RS.....	171.
<i>Stilbene Dyes</i>		
620	*Direct yellow R.....	69, 91, 127, 171, 304.
621	*Chloramine orange G.....	69, 91, 127, 171, 304.
622	*Stilbene yellow.....	69, 127, 171.
628	Diphenyl catechine G.....	304.
631	Diphenyl chrysoine G.....	91.
<i>Pyrazolone Dyes</i>		
636	*Fast light yellow G.....	11, 127, 171, 304, 351.
639	*Xylene light yellow.....	53, 69, 85, 91, 127, 171, 304, 351.
640	*Tartrazine.....	11, 69, 171, 202, 304, 351.
642	Polar yellow.....	85, 91, 171, 351.
652	*Chrome red B.....	69, 85, 91, 127, 171, 304.
653	*Pyrazol orange.....	11, 53, 91, 304, 351, X.
654	Developed fast yellow 2G.....	127.
<i>Ketonimine Dyes</i>		
655	*Auramine.....	69, 127, 274, 304.
<i>Triphenylmethane and Diphenylnaphthylmethane Dyes</i>		
657	*Malaebite green.....	69, 130, 274, 304.
658	*Rhoduline blue 6G.....	127, 130, 171, 202, 304.
662	Brilliant green.....	69, 130, 304.
663	Setocyanine.....	127, 171.
666	*Acid green B.....	69, 91, 127, 171, 304.
667	*Fast acid green B.....	69, 127, 171, 304.
670	Acid light green.....	127, 171.
671	*Acid glaucine blue.....	69, 127, 171, 202, 304.
676	*Para fuchsine.....	69, 312, 439.
677	*Magenta.....	69, 312, 413.
678	New fuchsine.....	69.
680	*Methyl violet B and base.....	69, 127, 130, 171, 304.
681	*Crystal violet.....	69, 127, 130, 171, 202, 304.
682	Ethyl violet.....	127, 130, 171.
683	Benzyl violet.....	130.
690	Victoria blue 4R.....	171.
692	Acid magenta.....	171.
696	*Fast acid violet 10B.....	127, 274.
698	*Acid violet.....	69, 91, 127, 171, 202, 304.
699	Acid fast violet BG.....	274, 304.
703	Alkali blue 6B.....	312.

TABLE 7B.—*Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Colour Index or Proto-type No.	Dye	Manufacturers' identification numbers (according to list in table 22)
DYES GROUPED BY COLOUR INDEX NUMBERS— Continued		
<i>Triphenylmethane and Diphenylmethane Dyes— Continued</i>		
705	Methyl blue.....	171, 312.
706	Methyl cotton blue.....	171, 312.
707	*Soluble blue.....	69, 171, 439.
710	Brilliant sky blue 5G.....	171.
712	Patent blue V.....	171, 304.
714	*Patent blue A.....	69, 171, 202, 304.
720	*Acid chrome azurol B.....	91, 127, 171, 304.
722	Acid chrome cyanine R.....	127, 171, 304.
724	Aurine.....	127.
728	*Victoria blue R.....	127, 171, 202.
729	Victoria blue B.....	127, 171, 202, 304.
735	*Naphthalene green V.....	127, 274, 304.
737	*Wool green S.....	69, 127, 171.
<i>Xanthene Dyes</i>		
749	Rhodamine B, 20%.....	127.
749	Rhodamine B conc., 100%.....	127.
752	Rhodamine 6G conc., 100%.....	127.
758	Fast acid violet A2R.....	186.
766	*Fluorescein.....	18, 69, 186, 202, 304.
766	Uranine (Fluorescein, alkali salt).....	69, 312.
768	*Tetrabromofluorescein.....	18, 69, 202, 225, 312.
768	Eosin G (Tetrabromofluorescein, alkali salt).....	69, 312.
773	Erythrosine bluish.....	69, 312.
774	Phloxine.....	312.
779	Rose bengale B.....	69, 312.
<i>Acridine Dyes</i>		
788	Acridine orange NO.....	127, 171, 351.
793	*Phosphine.....	69, 91, 127, 304, 351.
794	Phosphine 2G.....	351.
797	Euchrysrine 2G.....	171, 351.
<i>Quinoline Dyes</i>		
800	Quinoline yellow, spirit-soluble.....	274.
801	*Quinoline yellow.....	127, 274, 304.
802	Quinoline yellow KT.....	274.
<i>Thiazole Dyes</i>		
812	Primuline.....	127, 304.
813	Direct pure yellow M.....	127.
814	*Direct fast yellow.....	91, 127, 171, 304, 341.
815	Thioflavine T.....	127.
816	Direct brilliant flavine S.....	341.
<i>Azine Dyes</i>		
833	*Wool fast blue.....	91, 127, 171, 304.
841	*Safranine.....	127, 171, 304.
843	Safranine MN.....	304.
853	Acid cyanine.....	171.
860	Induline, spirit-soluble.....	69, 171, 304.
861	Induline, water-soluble.....	69, 171, 304.
864	*Nigrosine, spirit-soluble.....	69, 171, 304.
865	*Nigrosine, water-soluble.....	69, 171, 304.
<i>Aniline Black and Allied Dyes</i>		
873	New fast gray.....	69.
875	Fur black.....	69.
<i>Oxazine Dyes</i>		
883	Gallocyanine.....	513.
909	New blue R.....	69, 304.
913	Nile blue A.....	171.

TABLE 7B.—*Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Colour Index or Prototype No.	Dye	Manufacturers' identification numbers (according to list in table 22)
DYES GROUPED BY COLOUR INDEX NUMBERS— Continued		
<i>Thiazine dyes</i>		
922	*Methylene blue.....	69, 130, 171, 304.
924	Methylene green B.....	69.
927	New methylene blue N.....	69.
931	Brilliant chrome blue.....	171.
<i>Sulfur or Sulfide Dyes</i>		
Derivatives of Carbazole		
969	Carbazole vat blue R.....	127.
971	Carbazole vat blue G.....	171.
Other Sulfur or Sulfide Dyes		
	*Sulfur black.....	37, 69, 127, 171, 304, 423.
	*Sulfur blue.....	37, 69, 91, 127, 171, 213, 304, 423.
	*Sulfur brown.....	37, 69, 91, 113, 127, 171, 213, 304, 423.
	*Sulfur green.....	37, 69, 127, 171, 213, 304.
	*Sulfur maroon.....	37, 69, 127, 117, 304.
	*Sulfur olive.....	37, 69, 91, 127, 171, 213, 304, 423.
	*Sulfur tan.....	37, 69, 91, 127, 171, 213.
	*Sulfur yellow.....	37, 69, 127, 171, 213, 304, 423.
	*All other.....	91, 127, 171, 304.
<i>Anthraquinone Dyes</i>		
1027	Alizarin VI.....	11, X.
1033	Alizarin orange A D.....	171.
1034	*Alizarin red S.....	11, 69, 171, 304.
1035	Alizarin brown.....	304, 513.
1040	Alizarin SX.....	304.
1053	*Acid alizarin blue SE.....	69, 127, 171, 304.
1054	*Acid alizarin blue B.....	28, 69, 85, 91, 127, 171, 304, 513.
1060	Anthracene blue SWGG.....	28.
1062	Anthracene blue WR.....	85, 171.
1063	Anthracene blue SWX.....	28.
1073	Alizarin irisol R.....	28, 127, 513.
1075	Alizarin astrol B.....	127, 171.
1076	Cyananthrol R.....	127.
1078	*Alizarin cyanine green.....	11, 28, 69, 85, 127, 171, 304, 339, 513.
1080	Acid anthraquinone violet.....	28, 127.
1085	*Anthraquinone blue black B.....	11, 69, 85, 91, 171, 274, 304, 363, 513.
1088	Acid anthraquinone sky blue B.....	127, 171, 304.
1089	Anthraquinone blue SR.....	28.
1091	Acid alizarin rubine.....	171.
<i>Anthraquinone Vat Dyes</i>		
1095	*Anthraquinone vat yellow GC, 12½%.....	69, 127, 171.
1096	*Anthraquinone vat golden orange G, 12%.....	69, 127, 171, 304.
1097	*Anthraquinone vat golden orange R, 12%.....	69, 127, 171, 304.
1098	Anthraquinone vat scarlet G, 16¾%.....	69, 171.
1099	*Anthraquinone vat dark blue BO, 25%.....	69, 127, 171, 304, 341.
1101	Anthraquinone vat jade green, 6%.....	127, 171.
1102	*Anthraquinone vat green B and black B, 12½%.....	69, 127, 171, 304, 341.
1104	*Anthraquinone vat violet 2R, 12½%.....	11, 127, 171, 304.
1106	*Anthraquinone vat blue RS, 10%.....	69, 127, 171.
1109	Anthraquinone vat blue 3G, 10%.....	127.
1113	*Anthraquinone vat blue GCD, 8¼%.....	127, 171, 304.
1114	*Anthraquinone vat blue BCS, 20%.....	69, 127, 171, 304.
1118	Anthraquinone vat yellow G, 12½%.....	127, 171, 304.
1120	Anthraquinone vat brown B, 22%.....	127, 304.
1128	Anthraquinone vat pink R, 12½%.....	171.
1132	Anthraquinone vat yellow GK, 12½%.....	127, 171.
1135	Anthraquinone vat brilliant violet RK, 12½%.....	127.
1150	*Anthraquinone vat olive R, 12½%.....	11, 69, 127, 171, 281, 304.
1151	*Anthraquinone vat brown R, 12½%.....	69, 127, 171, 304.
1152	*Anthraquinone vat brown G, 12½%.....	69, 127, 304.
1161	Anthraquinone vat red violet RRN, 12½%.....	127, 171, 304.
1162	Anthraquinone vat red BN extra, 12½%.....	127, 304.
1163	Anthraquinone vat violet BN, 25%.....	127, 171.
1167	Anthraquinone vat olive G.....	341.
1170	Anthraquinone vat yellow R, 12½%.....	127, 341.
1173	Anthraquinone vat blue 3G, 12½%.....	171.

TABLE 7B.—Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1944—Continued

Colour Index or Proto-type No.	Dye	Manufacturers' identification numbers (according to list in table 22)
DYES GROUPED BY COLOUR INDEX NUMBERS—Continued		
<i>Indigoid and Thioindigoid Dyes</i>		
1177	*Indigo, synthetic, 20%-----	124, 127, 171, 304.
1178	Indigo white, 20%-----	304.
1180	Indigotin IA-----	127, 304.
1183	Tribromindigo RB, 20%-----	124, 304.
1184	*Bromindigo blue 2BD, 16%-----	124, 171, 304.
1207	Ciba pink B, 20%-----	124.
1212	*Vat red 3B, 20%-----	69, 124, 127, 171, 304.
1217	Vat orange R, 10%-----	69, 127, 171, 304.
1228	Vat fast scarlet G, 20%-----	124.
<i>Food, Drug, and Cosmetic Dyes</i>		
	*Blue #1-----	44, 304, 485.
	*Blue #2-----	44, 240, 304, 441.
	*Green #1-----	44, 304, 485.
	Green #2-----	44, 304, 485.
	Green #3-----	485.
	*Orange #1-----	44, 240, 304, 441, 485.
	Orange #2-----	304.
	*Red #1-----	44, 304, 485.
	*Red #2-----	44, 240, 304, 441, 485.
	*Red #3-----	44, 304, 485.
	Red #4-----	304, 485.
	Red #32-----	304.
	Yellow #1-----	240.
	Yellow #3-----	131, 304.
	Yellow #4-----	131, 304.
	*Yellow #5-----	44, 240, 304, 441, 485.
	*Yellow #6-----	44, 240, 304, 441, 485.
<i>Drug and Cosmetic Dyes</i>		
	Black #1-----	304.
	Blue #4-----	304.
	Blue #6-----	240, 304.
	Blue #9-----	304.
	Brown #1-----	304.
	Green #1-----	304.
	Green #5-----	304.
	Green #6-----	304.
	Green #7-----	304.
	Orange #3-----	304.
	*Orange #4-----	18, 193, 240, 304.
	Orange #5-----	18.
	Orange #8-----	240.
	Orange #11-----	304.
	Orange #15-----	18.
	Orange #17-----	18.
	Red #1-----	240.
	Red #2-----	240, 304.
	Red #3-----	240.
	Red #5-----	18, 240.
	Red #6-----	18.
	*Red #7-----	18, 193, 240, 304.
	Red #8-----	18.
	Red #9-----	18.
	Red #10-----	18, 240.
	Red #11-----	18, 193, 240.
	Red #12-----	18, 240.
	Red #13-----	18.
	Red #14-----	18, X.
	Red #18-----	304.
	*Red #19-----	18, 193, 240, 304.
	*Red #21-----	18, 193, 225, 240.
	Red #22-----	304.
	Red #28-----	304.
	Red #29-----	X.
	Red #30-----	240.
	Red #31-----	18, 240.
	Red #33-----	304.
	Red #34-----	18, 193, 240.
	*Red #35-----	18, 193, 240.

TABLE 7B.—*Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1944*—Continued

Colour Index or Prototype No.	Dye	Manufacturers' identification numbers (according to list in table 22)
DYES GROUPED BY COLOUR INDEX NUMBERS—Continued		
<i>Drug and Cosmetic Dyes—Continued</i>		
	Red #36.....	18.
	Red #37.....	304.
	Red #39.....	338.
	Violet #1.....	18, 304.
	Yellow #1.....	240, 304.
	Yellow #5.....	18, 240.
	Yellow #6.....	240.
	Yellow #7.....	240, 304.
	Yellow #8.....	304.
	Yellow #10.....	304.
	Yellow #11.....	304.
<i>Drug and Cosmetic Dyes, External</i>		
	Blue #1.....	304.
	Green #5.....	304.
	Red #1.....	304.
	Red #3.....	304.
	Red #8.....	304.
	Red #10.....	304.
	Red #11.....	304.
	Red #13.....	304.
	Yellow #3.....	18.
	Yellow #5.....	18.
DYES GROUPED BY FOREIGN PROTOTYPE NUMBERS		
1	*Acid alizarin flavine R.....	69, 127, 171, 304.
2	Acid anthracene brown B.....	69.
4	*Acid anthracene brown PG.....	11, 69, 85, 91, 127, 171, 351, 512.
7	Acid chrome blue 2R.....	91, 171.
10	Alizarin direct blue A2G.....	171.
11	Alizarin direct blue AR.....	171.
12	Alizarin supra blue A.....	127, 171.
13	Alkali fast green 10G.....	171.
14	*Anthracene chromate brown EB.....	69, 85, 91, 127, 171, 304, 512.
16	Artificial silk black G.....	91, 171, 304, 512.
19	Benzo Bordeaux 6B.....	11, 91, 171, 304.
20	*Benzo chrome black blue B.....	91, 127, 171, 304.
21	Benzo chrome brown BS.....	69, 171.
22	Benzo copper blue B.....	171.
23	Benzo dark brown ex.....	171.
24	*Benzo fast black L.....	11, 69, 91, 127, 171, 304.
26	*Benzo fast blue 4GL.....	85, 171, 351.
27	Benzo fast blue 8GL.....	351.
28	Benzo fast brown 3GL.....	69, 171, 304.
30	Benzo red 12B.....	127.
31	Benzo rhodulline red B.....	127.
33	Brilliant acid blue 3B.....	11.
35	*Brilliant benzo violet B.....	11, 127, 171.
37	Brilliant milling blue B.....	127, 171.
40	*Brilliant wool blue FFR.....	127, 171, 304.
42	Cellitazol B.....	69.
43	*Celliton orange GR.....	69, 127, 171.
45	Celliton red violet R.....	127.
47	*Chlorantine fast brown BRL.....	53, 91, 127, 304, 351, X.
50	Direct fast red 5BL.....	91.
53	*Chlorantine fast yellow 4GL.....	69, 91, 127, 351.
54	*Chlorantine fast yellow RL.....	91, 127, 357, X.
55	Chrome yellow DS.....	91.
56	Chrome yellow G.....	69.
58	Cibacete diazo black B.....	91, 127, 512.
59	Cibacete diazo black GN.....	91.
61	Cibacete red 3B.....	127.
62	Cibacete sapphire blue G.....	69, 91.
63	Cibacete scarlet G.....	69.
64	Cotton black 3G.....	171.
65	Cross dye green B.....	69.
66	Diamine azo Bordeaux B.....	304.
67	*Diamine Bordeaux B.....	11, 171, 304, X.

TABLE 7B.—*Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Colour Index or Prototype No.	Dye	Manufacturers' identification numbers (according to list in table 2)
DYES GROUPED BY FOREIGN PROTOTYPE NUMBERS—Continued		
68	Diamine catechine B	127, 304.
69	Diamine catechine G	11, 127, 304.
70	*Diamine catechine 3G	11, 69, 127, 304.
71	*Diamine fast blue FFB	91, 127, 171, 304.
72	*Diamine fast orange EG	69, 85, 91, 127, 171.
73	*Diamine fast orange ER	69, 85, 127, 171, 213.
74	Diaminogen blue N2B	304.
77	*Diazo Bordeaux 7B	127, 171, 351.
78	Diazo brilliant green 3G	171.
79	*Diazo brilliant scarlet 2BL, ex	127, 171, 304, 351.
80	*Diazo brilliant scarlet ROA	127, 171, 351.
81	Diazo brown 6G	171.
82	Diazo brown NR	171.
83	Diazo brown 3RB	171, 304.
84	Diazo fast red 5BL	85, 127.
85	Diazo fast red 7BL	85, 127, 351.
86	Diazo indigo blue 4GL	171.
87	Diazo indigo blue 4RL	171.
88	Diazo olive G	171.
89	Diazo rubine B	171, 351.
90	Diazo sky blue B	171.
91	Diazo sky blue 3GL	171.
94	*Fast scarlet 2G base, salt	11, 171, 274, 281, 304, 351.
95	Fastusol brown L3R	171.
96	Fastusol gray R	171.
97	Fastusol orange L5G	171.
99	Fastusol yellow L5G	171.
101	*Guinea fast red BL	69, 85, 127, 171, 304.
102	Guinea fast red 4BL	127.
106	Helindone fast scarlet B	127.
107	Helindone fast scarlet G	127.
108	Helindone pink B ex	69.
109	Helindone pink R ex	69, 127, 171.
112	Helio red RMT	171.
116	Indanthrene brilliant orange RK	171.
118	Indanthrene brown BR	171.
121	*Indanthrene brown RRD	69, 91, 127, 171, 351.
122	*Indanthrene khaki 2G	11, 127, 171, 304.
124	Indanthrene rubine R dbl	127, 171.
126	Indo carbon CL	171.
127	Indo carbon CLG cone	171.
128	Indocyanine B	171.
129	Katigen chrome blue 5G	171.
134	Metachrome Bordeaux R	85.
135	Metachrome red G	513.
137	Milling orange G	11.
138	Milling yellow H5G	11, 171.
139	Milling yellow O	304.
140	Monochrome blue black B	91.
141	Naphthol blue black S	304.
142	Naphthogene blue B	91.
143	Neolan black WA	91.
144	Neolan blue GG	69, 85, 91, 171.
145	Neolan Bordeaux R	91.
146	Neolan orange R	91.
147	*Oxydiaminogen OB	11, 53, 171, 304.
148	Paper red A ex	171.
151	Polar orange GS	91.
152	*Polar orange R	85, 91, 127, 171, 304.
163	Rapidogen blue BN	171, 351.
164	*Rapidogen blue D	127, 171, 351.
165	Rapidogen Bordeaux R	171, 351.
166	Rapidogen brown GN	171, 351.
168	Rapidogen red GS	69, 171.
169	*Rapidogen red RS	127, 171, 351.
170	Rapidogen scarlet RS	69, 171, 351.
171	Rapidogen yellow G	127, 171.
172	*Rosanthrene fast Bordeaux 2BL	11, 91, 127, 171, 351.
173	Rosanthrene orange R	127, 171, 351.
174	Setacyl direct orange 2R	127.
175	Setacyl direct violet B	127.
177	Sudan blue G	171.
178	Sudan brown 5B	171.

TABLE 7B.—*Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Colour Index or Prototype No.	Dye	Manufacturers' identification numbers (according to list in table 22)
DYES GROUPED BY FOREIGN PROTOTYPE NUMBERS—Continued		
180	Sudan orange 2R.....	69.
181	Sudan orange RT.....	171.
182	Sudan red BB.....	171.
186	Sulphon orange G.....	11, 171.
187	*Sulphon yellow R.....	11, 69, 91, 171, 351.
188	*Supra light rubine BL.....	69, 171, 304.
189	Supramine black BR.....	11, 171.
190	Supramine blue R.....	171.
191	Supramine Bordeaux B.....	171.
192	Supramine brown R.....	11.
193	Supramine red 3B.....	11, 171.
194	Supramine red 2G.....	171.
195	Supramine yellow R.....	171.
197	*Victoria fast violet 2R ex.....	69, 171, 304.
198	Victoria pure blue B.....	171.
199	Victoria violet RL.....	91, 127.
201	*Zambesi black D.....	91, 171, 304.
202	*Zambesi black V.....	91, 127, 171, 304.
203	Acid anthracene brown KE.....	171.
204	Acid anthracene brown LE-CF.....	171.
205	Acid anthracene brown WSG.....	171.
206	Alizarin fast gray BBLW.....	171.
207	Alizarin supra sky R.....	171.
208	Alphanol brown B.....	171.
209	Amido naphthol brown 3G.....	171.
210	Anthralan red B-CF.....	171.
211	Azazol fast orange G.....	171.
212	Azazol fast orange RR.....	171.
213	Azazol fast red 3B.....	171.
214	Azazol fast scarlet CR.....	171.
216	Azazol fast yellow GR.....	171.
217	Benzo fast Bordeaux 6BL.....	171.
218	Benzo fast brown RL.....	171.
219	Benzoform blue BBL.....	171.
220	Benzo new blue 5B.....	171.
221	Pyramine yellow R.....	171.
222	Brilliant indocyanine 6B-CF.....	171.
223	Brilliant indocyanine G.....	171.
224	Brilliant sulpho flavine FFA.....	171.
225	Celliton blue G.....	127, 171.
226	Celliton fast blue B.....	171.
227	Celliton fast blue FR.....	171.
228	Celliton fast blue FFR.....	69, 171.
229	Celliton fast blue green B.....	171.
230	Celliton fast brown 3R.....	171.
231	Celliton fast brown 5R.....	171.
232	Celliton fast navy blue B.....	171.
233	Celliton fast navy blue BR.....	171.
234	Celliton fast pink B.....	171.
235	Celliton fast pink FF3B.....	171.
236	Celliton fast red GG.....	69, 171.
237	Celliton fast red violet RN.....	171.
238	Celliton fast rubine B.....	171.
239	Celliton fast rubine 3B.....	171.
240	Celliton fast violet B.....	171.
241	Celliton fast violet 6B.....	171.
242	Celliton fast yellow G.....	127, 171.
243	Celliton fast yellow RR.....	171.
244	*Celliton scarlet B.....	69, 127, 171, 512.
245	Celliton yellow 5G.....	171.
247	Chrome fast orange 3RL.....	171.
248	Diamine orange F.....	171.
249	Dianil yellow 5G.....	171.
250	Diazo brown 3R.....	171.
251	Diazo fast yellow 2G.....	171.
252	Diazo fast yellow 3G.....	171.
255	Fast black B salt.....	171.
256	Fast black K salt.....	171.
257	Fast black LB base.....	171.
258	Fast blue BB base, salt.....	171.
259	Fast Bordeaux BD salt.....	171.
260	*Fast Bordeaux GP base, salt.....	11, 69, 171, 281, 304, 351.
261	Fast corinth V salt.....	171.

TABLE 7B.—*Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Colour Index or Prototype No.	Dye	Manufacturers' identification numbers (according to list in table 22)
DYES GROUPED BY FOREIGN PROTOTYPE NUMBERS—Continued		
262	Fast garnet GBC base, salt.....	11, 171, 281.
263	Fast garnet GC salt.....	171.
264	*Fast orange GC base, salt.....	11, 171, 274, 281, 304.
265	Fast orange GR salt.....	171, 281.
266	Fast orange RD salt.....	171.
267	Fast red AL salt.....	171, 304.
268	Fast red GL base, salt.....	11, 69, 171.
269	*Fast red 3GL salt.....	11, 171, 274, 281.
270	*Fast red KB base.....	11, 69, 171.
271	Fast red RC base, salt.....	171, 281, 304.
272	Fast red RL salt.....	171.
273	*Fast red TR base, salt.....	11, 171, 281, 304.
274	Fast violet B base, salt.....	171.
275	*Fast yellow GC base, salt.....	171, 274, 281.
276	Fastusol orange LGGL.....	171.
277	Fastusol red violet LRL.....	171.
278	Fastusol turquoise blue LGL.....	171.
285	Immedial new blue FBL ex.....	171.
286	Immedial new blue 3GL ex.....	171.
287	Indanthrene brilliant orange GR.....	171.
288	Indanthrene brilliant violet 3B.....	127, 171.
289	Indanthrene direct black RB.....	171, 304.
290	Indanthrene golden orange 3G.....	171.
291	Indanthrene golden yellow GK.....	171.
292	Indanthrene golden yellow RK.....	171.
293	*Indanthrene olive green B.....	69, 127, 171, 304.
296	Indanthrene red FBB.....	171.
299	Monochrome black blue G.....	127, 171.
300	Monochrome red FG.....	171.
301	Monochrome violet FB.....	171.
302	*Naphthol AS.....	11, 69, 127, 171, 304.
303	Naphthol AS-BO.....	11, 171, 281, 304.
304	Naphthol AS-BR.....	11, 171.
305	*Naphthol AS-BS.....	11, 69, 127, 171, 304.
306	*Naphthol AS-D.....	11, 69, 127, 171, 304, 351.
307	Naphthol AS-DB.....	171.
308	Naphthol AS-E.....	171.
309	Naphthol AS-G.....	11, 171.
310	Naphthol AS-ITR.....	171.
311	Naphthol AS-OL.....	171, 304, 351.
312	*Naphthol AS-RL.....	11, 171, 304.
313	Naphthol AS-SW.....	11, 69, 171, 304.
314	*Naphthol AS-TR.....	11, 171, X.
315	Neolan orange G.....	91.
316	Neolan yellow GR conc.....	91.
318	Palatine fast blue BN.....	69, 171.
321	Palatine fast green BLN.....	171.
322	Palatine fast marine blue REN.....	171.
323	Palatine fast orange GEN.....	171.
324	Palatine fast orange GN.....	171, 304.
325	Palatine fast orange RN.....	171.
326	Palatine fast pink BN.....	171.
327	Palatine fast red RN.....	171.
328	Palatine fast violet 3RN.....	171.
329	Palatine fast violet 5RN.....	171.
330	Palatine fast yellow ELN.....	171.
331	Palatine fast yellow GRN.....	171.
332	Pluto black G.....	171, 512.
334	Rapid fast orange RH.....	171.
335	Rapid fast red FGH.....	171.
336	Rapid fast red RH.....	171.
338	Rapid fast yellow GGH.....	171.
339	Rapidogen black MG.....	171.
341	Rapidogen blue N.....	171.
342	Rapidogen blue R.....	127, 171.
344	Rapidogen browu IPT.....	171.
345	Rapidogen golden yellow R.....	171.
347	Rapidogen green B.....	171.
348	Rapidogen orange G.....	127, 171.
349	Rapidogen orange R.....	171.
350	Rapidogen red violet RR.....	117.
351	Rapidogen violet B.....	171.
352	Rapidogen yellow G.....	171.

TABLE 7B.—*Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Colour Index or Proto-type No.	Dye	Manufacturers' identification numbers (according to list in table 22)
DYES GROUPED BY FOREIGN PROTOTYPE NUMBERS—Continued		
353	Rapidogen yellow 2G.....	171.
354	Rapidogen yellow GGP.....	171.
356	Solamine blue FFG.....	171.
357	Variamine blue BD salt.....	171.
358	Variamine blue RT salt.....	171.
UNGROUPED DYES		
Acetate rayon dyes:		
	*Black, IV, IV ex., B, BND, BNF, 2G, 3G, 3GNF, GS, J, NS, RB, SN, SS.....	11, 127, 171, 304, 456, 512.
	*Blue, IV, XII, BB, BGF, BNN, G, 2G, GR, R, 3R.....	11, 69, 171, 304, 456.
	Bordeaux BF, FJA.....	69.
	Brilliant blue, B, B ex., NR.....	11, 127, 304, 513.
	Brilliant Bordeaux 3B.....	69.
	Brilliant red.....	127.
	Brilliant yellow FFA.....	171.
	Brown B, BR, G, JS, Y.....	69, 127, X.
	Developed black AD, B, BAM, BBN, BGD, GFS, SOL.....	85, 127, 162.
	Developed navy SD.....	11.
	Diazo black, BDN, G conc., NS.....	53, 69, 91.
	Direct red BP.....	91.
	Direct scarlet GP.....	91.
	Fast pink RFA.....	171.
	Fast yellow GL, GLF, L3G.....	127, 171, 456.
	Fluorescent yellow HEB.....	69.
	Golden orange I, III.....	11.
	Golden yellow VIII, IX, XI, XII, XIII, FSI.....	11.
	Gray NBN.....	11.
	Heliotrope I.....	11.
	Light orange FSI.....	11.
	Navy blue B, BP, BXX, R.....	11, 127, 456.
	*Orange, BL, GR, GRN conc., JER, R, 2R, 3R, 4R, RB, TF.....	11, 69, 127, 304, 456, 512, X.
	Pink II, B.....	11, 304.
	Pure blue B ex.....	11.
	Purple.....	127.
	*Red, III, VI ex., VII, VIII, B, 2B, BX, FSI, NB, R, RP, VOL, Y.....	11, 127, 162, 171, 304, 456, X.
	*Rubine IX, B, C, G, R.....	11, 127, 456, 512.
	Saphirole blue FFG.....	85.
	*Scarlet III, BG, BS, CSB, G, GY.....	11, 162, 304, 456, 512.
	*Violet II, 3B, 4B, BA, BGF, FSI, 2R, 4R, 3RA, 5RLF.....	11, 127, 171, 304, 456.
	*Yellow #8, #38, G, 5G, 6G, 3GM, GN, 6GN, GS, GX, JT, 4RL, RN.....	11, 69, 91, 162, 171, 304, 456.
	Acid alizarin Bordeaux BLT.....	171.
	Acid anthracene yellow GR.....	85.
	*Acid black, 640, 773, AR, 3G, GRF conc., J, RB, RCW.....	104, 127, 304.
	Acid blue D, R.....	351.
	Acid blue black RC.....	127.
	Acid brilliant red 3B, 4BL.....	304, 351.
	Acid brown R, R conc., ROO, SF.....	53, 69, 351.
	Acid chrome black blue G.....	91.
	Acid chrome blue 3GNA.....	171.
	Acid chrome brown DKL, RLL.....	91.
	Acid chrome olive BL.....	91.
	Acid chrome yellow ME.....	91.
	Acid dark green B.....	91.
	Acid fast brown CGS.....	127.
	Acid fast orange LW.....	11.
	Acid fast yellow L.....	69.
	Acid garnet BG conc.....	363.
	Acid golden yellow R conc.....	351.
	Acid green GR, S.....	351, 363.
	Acid leather brown EBR.....	171.
	Acid milling orange 4R.....	69.
	Acid milling yellow GN.....	127.
	Acid navy B, FN.....	512.
	Acid navy blue, M4B.....	69, 127.
	Acid neutral brown 2RS.....	127.
	Acid neutral red 3G ex. conc.....	11.
	Acid orange 2R.....	351.

TABLE 7B.—*Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Colour Index or Prototype No.	Dye	Manufacturers' identification numbers (according to list in table 22)
UNGROUPED DYES—Continued		
	Acid pink BA.....	91.
	*Acid red A-100, 3B, 3BX, G, GL, OA, RB.....	53, 91, 127, 351.
	Acid scarlet G, Y.....	351.
	Acid violet RNL, 2R.....	363, 512.
	Acid yellow BE, CW, G, 3G, GR.....	91, 304, 351.
	Alizarin blue GS.....	304.
	Alizarin fast blue RB.....	304.
	Alphazurine B conc.....	304.
	Amido brilliant red BBA.....	171.
	Anthracene blue SWN.....	304.
	Anthracene chrome brown RL.....	513.
	Anthraquinone blue BGA, 3G, SWB, WSA.....	127.
	Anthraquinone vat black 2G, J, R.....	69, 304.
	Anthraquinone vat black brown VA.....	171.
	*Anthraquinone vat blue CLX, GR, IBC.....	127, 171, 304.
	Anthraquinone vat blue green B, Y.....	127, 304.
	Anthraquinone vat brilliant red B.....	127.
	Anthraquinone vat brilliant yellow 4G.....	127.
	Anthraquinone vat brown NR, RRD, VR.....	11, 127, 304.
	Anthraquinone vat dark olive B.....	11.
	Anthraquinone vat direct black 3G.....	127.
	Anthraquinone vat flavine GC.....	304.
	Anthraquinone vat golden orange YL.....	127.
	Anthraquinone vat gray 4G, R, M.....	69, 304.
	*Anthraquinone vat navy blue, BN, BRA, NRD, NTP.....	11, 69, 127, 171.
	Anthraquinone vat olive, G, GGL, TA.....	127, 171.
	Anthraquinone vat olive green B.....	11.
	Anthraquinone vat orange A-100, A-200.....	127.
	Anthraquinone vat printing violet 4R.....	11.
	Anthraquinone vat red brown DBL.....	11.
	Anthraquinone vat violet A-100, A-200.....	127.
	Anthraquinone vat yellow 8G, 3R.....	127.
	Azoanthrene dyes:	
	Black NV.....	X.
	Golden orange R.....	X.
	Green G.....	X.
	Navy BR, CW, LN.....	X.
	Royal blue L, S.....	X.
	Rubine S.....	X.
	Turquoise B.....	X.
	Scarlet Y.....	X.
	Yellow G, GSB, S.....	X.
	Azo Bordeaux BL.....	351.
	Azo brilliant orange GRN.....	351.
	Azo brown BY.....	351.
	Azo ceresine B.....	69.
	Azo eosine 2B.....	127.
	Azo fast blue B.....	304.
	Azo fast brilliant red BA.....	171.
	Azo fast yellow RCA.....	171.
	Azo oil black.....	304.
	Azo oil blue black B.....	304.
	Azo olive green BL.....	351.
	Azo orange GCW, GN, GR new, RNC #90, 3RP, RS.....	351.
	Azo scarlet RBN.....	351.
	Azoic dyes and their components:	
	Dyes:	
	Rapid fast:	
	Blue B.....	171.
	Brown IRH.....	171.
	Orange G.....	351.
	Orange GNR.....	69.
	Scarlet RH.....	171.
	Rapidogen:	
	Black DM.....	127.
	Blue C, G, GDNN, GNN, MSG.....	127, 351.
	Bordeaux MR.....	127.
	Brown.....	351.
	Dark brown AR, R.....	127, 171.
	Golden yellow MRS, N.....	127, 351.
	Navy blue FFR.....	171.
	Orange FFR.....	171.
	Red FFBB, FFG, FFR, G, GNN, IP, ITR.....	127, 171, 351.
	Scarlet, FFG, FFR, R, RBY.....	127, 171, 351.
	Yellow, FFG.....	171, 351.

TABLE 7B.—*Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Colour Index or Prototype No.	Dye	Manufacturers' identification numbers (according to list in table 22)
UNGROUPED DYES—Continued		
Azoic dyes and their components—Continued		
Components:		
Fast color bases:		
	Ponceau L.....	11.
	Red, B, PDC.....	11, 171, 281.
	Scarlet GG, RC.....	11, 171, 274, 281.
Fast color salts:		
	Blue B.....	11, 171, 281, 351.
	Ponceau L.....	11.
	Red B, G, 2G, 3G.....	171, 274, 281, 304, 351.
	Scarlet R.....	11, 171, 274, 281, 304.
Fur dyes:		
	Nyanzol NZA, NZDA, NZDP, NZF.....	85.
	Nyanzol berry blue.....	85.
	Nyanzol fusion #W387.....	85.
	Nyanzol gray #602A, BCA.....	85.
Naphthols:		
	AS-BG.....	11, 171.
	AS-GR.....	171.
	AS-OP.....	351.
	AS-PN.....	69.
Benzoform dyes:		
	Blue GGA ex., GS.....	171.
	Blue green BA.....	171.
	Brown L3RA.....	171.
	Gray M.....	171.
	Red 7B, G.....	171.
	Rubine BA.....	171.
	Violet BB.....	171.
	Benzol brown R.....	104.
	Brilliant acid blue 3B.....	304.
	Brilliant benzo green BA, BACF.....	171.
	Brilliant blue 5B.....	304.
	Brilliant wool blue G ex., N.....	304.
	Chromate brilliant brown RL.....	85.
	Chromate brown.....	513.
	Chrome black FA ex., 3G.....	304.
	Chrome blue ATX.....	127.
	Chrome brilliant orange 2R.....	11.
	Chrome brown 2AB, B, DK, HN, O, PD, PG.....	91, 127, 304.
	Chrome fast black SG.....	171.
	Chrome fast green SP.....	513.
	Chrome fast red 2RL.....	127.
	Chrome fast yellow R.....	127.
	Chrome green B, CB, G.....	91, 304.
	Chrome orange, RL, 3R.....	127, 304.
	Chrome red G.....	304.
	* Chrome yellow FTL, 2G, 2GN, SSN, SW.....	85, 127, 171, 304.
	Ciba blue BR.....	124.
	Cloth red Y.....	91.
	Cotton black 3G.....	512.
	Croceine scarlet FP.....	304.
	Developed black G.....	91.
	Developed blue B, 3G, 6G, 5GL.....	91, 127.
	* Developed Bordeaux 7B, 2BL.....	11, 85, 304.
	Developed brilliant orange GRS.....	85.
	Developed brilliant scarlet 2BL, GL.....	85.
	Developed brown R.....	127.
	Developed fast Bordeaux 2BL.....	85.
	Developed fast brown RK.....	127.
	Developed fast violet BL.....	127.
	Developed fast yellow 2G.....	304.
	Developed green BL, 2GL, GW.....	127.
	Developed indigo blue BRR.....	171.
	Developed orange DD, GRN, 2R, 3R, RFW, WD.....	11, 127, 171, 304.
	* Developed red 2B, BFW, 7BL.....	11, 91, 127, 304.
	Developed rubine B.....	85.
	Developed scarlet A, 2BLN, FW, GFW, N.....	11, 127.
	Developed violet BRD, RR.....	11, 127.
	Diaminogen NAA.....	171.
	Diazophen red BTB.....	62.
	Diazophen yellow BTB.....	69.
	* Direct black CAM, CW, 3G, 5G, NCW.....	91, 171, 304, 512, X.
	* Direct blue 2B, BR, FFGL, 5G, KHB, NR, RDW, VRS.....	11, 53, 69, 85, 304.
	Direct blue green B, CW.....	11, 304.

TABLE 7B.—*Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Colour Index or Prototype No.	Dye	Manufacturers' identification numbers (according to list in table 22)
UNGROUPED DYES—Continued		
	Direct Bordeaux B	304.
	Direct brilliant blue BFL	304.
	Direct brilliant cerise	69.
	Direct brilliant orange RS	91.
	Direct brilliant red 12B	304.
	* Direct brilliant violet B, 4B, R	11, 91, 304.
	Direct brilliant yellow 8G	304.
	* Direct brown BGA/CF, CWR/GB, GKA, G2R, 3GS, KRS, N, R, RB, RBA.	11, 69, 85, 91, 171, 304, 512.
	Direct copper blue RRX	127.
	Direct fast black AM, FOR, FTC, G, PG	11, 127, 171, 304.
	* Direct fast blue 6GKS, GL, 8GL, R, RL, SRL	127, 304, X.
	Direct fast Bordeaux 2B	304.
	* Direct fast brown BRL, FW, 4GL, LBRSA, R, 4R, 2RL, 3YL.	11, 85, 127, 171, 304, X.
	Direct fast catechine GA	85.
	* Direct fast gray BL, GL, 2GL, LVGLA, LVL, RLN	127, 171, 304, X.
	Direct fast olive brown RL	11.
	* Direct fast orange G, 2G, 4G, GL, 2GL, R, 4RL, 5RL, 2RN, RT.	85, 91, 127, 304, X.
	Direct fast pink 2B	11.
	* Direct fast red, 3BL, 8BLN, 8BLSW	11, 85, 171, X.
	Direct fast rubine B, LB	127, 304.
	Direct fast scarlet G	304.
	Direct fast violet 5BL, BRL	11, 304.
	Direct fast yellow 4GL, 5GL, LRA	171, 304.
	Direct golden yellow R	351.
	Direct gray BBC	X.
	Direct green B, GB, 5GSC, 2Y	11, 69, 127, 304.
	Direct light yellow RL	91.
	Direct navy G, R	11, 69.
	* Direct navy blue B, DB, RY	91, 127, 512.
	Direct neutral blue G	351.
	Direct new blue 5B	91.
	Direct orange BA	171.
	Direct red G, R	11.
	Direct rhoduline BA/CF	171.
	Direct rubine G	11.
	Direct scarlet G	11.
	Direct silk blue NR	171.
	Direct speck dye red SW	304.
	Direct violet 2R	11.
	Direct violet black	91.
	Direct viscose blue GGS, GS, RS	171.
	Direct yellow S3G, S5GP	304.
	Fast acid brown RG	304.
	Fast acid light red B	91.
	Fast acid orange RW	91.
	Fast acid red BBLA	171.
	Fast acid yellow GS	304.
	Fast black G	69.
	Fast Bordeaux BN	69.
	Fast brown FN, MF	69.
	Fast crimson R	304.
	Fast light red BL, 4BA	171, 304.
	Fast olive brown G	69.
	Fast orange 4RN, YF	69.
	Fast pink N	69.
	Fast spirit black R	69.
	Fast spirit brown G	69.
	Fast spirit orange R	69.
	Fast spirit yellow 2R	69.
	Fast yellow 2G, N	69.
	Fluorescent green	499.
	Fluorescent purple 2G	304.
	Fluorol 5G	171.
	Formaldehyde black B	91.
	Formaldehyde fast black GR	53.
	Formaldehyde scarlet Y	91.
	Formalide brown RD	512.
	Formalide deep blue R	512.
	Formanol black RW	X.
	Gasoline blue	69, 85.
	Gasoline yellow 2G	69.
	Helio fast rubine 4BLA	171.
	Igenal brown CRTA, ITGA, PGMA	171.

TABLE 7B.—*Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Colour Index or Prototype No.	Dye	Manufacturers' identification numbers (according to list in table 22)
UNGROUPED DYES—Continued		
	Indigo vat black.....	124.
	Indigo vat brown G.....	304, 471.
	Indigo vat printing black G.....	304.
	Indigo vat scarlet 2GN.....	304.
	Jet black APX.....	127.
	Lake pink RL.....	304.
	Lake yellow PL.....	304.
	Leather brown 5RTA.....	171.
	Methyl violet 3RA.....	171.
	Milling fast garnet R.....	85.
	Milling fast red FF, GD.....	85.
	Milling navy blue 4B.....	304.
	Milling orange G.....	351.
	Milling red B.....	304, 351.
	Milling yellow 3G, 2GCW, NGS, XX.....	304.
	Mordant green SN.....	69.
	Naphthol navy blue M.....	91.
	Neutral brown GH.....	304.
	Neutral silk brown RHS, RWA.....	85.
	Neutral silk yellow CGA.....	85.
	Oil brown #79, #102, D, M, Y.....	162, 304.
	Oil fast blue R.....	11.
	Oil fast yellow EG.....	127.
	Oil mahogany #51.....	69.
	*Oil orange, #30, MT, 2R.....	69, 104, 162, 339.
	Oil pink B.....	304.
	*Oil red, #322, EGN, G, I-1471, N-1700, OB, XO, Y-202.....	11, 69, 104, 162, 304, 339.
	Oil scarlet X-9995.....	69.
	Oil soluble azoic yellow.....	X.
	Oil yellow, PIW.....	69, 339.
	Palatine fast blue 5RNA/CF.....	171.
	Paper white GDC.....	171.
	Phosphine PB.....	69.
	Pigment rubine 3G.....	171.
	Polyform dyes:	
	Blue BRF, 2RF.....	127.
	Bordeaux RF.....	127.
	Dark brown 3BF.....	127.
	Dark maroon GF.....	127.
	Orange RF.....	127.
	Scarlet RF.....	127.
	Yellow GF.....	127.
	Pyrazol fast orange GL.....	91.
	Pyrazoline dyes:	
	Black.....	351.
	Blue CF.....	351.
	Blue R.....	351.
	Blue 2RCF.....	351.
	Red BLW.....	351.
	Resin brilliant red R.....	304.
	Resin brown Z.....	304.
	Resin royal blue #51591.....	304.
	Resin sky blue #51590.....	304.
	Resorein brown RP, 2YDS.....	69, 171.
	Rosanthere orange.....	127.
	Rubber colors.....	127.
	Silk black 4BF.....	91.
	Spirit soluble blue.....	513.
	Spirit soluble fast black.....	304.
	Spirit soluble fast blue B.....	304.
	Spirit soluble fast orange A.....	304.
	Spirit soluble fast red M, Y.....	304.
	Spirit soluble fast yellow 3G.....	304.
	Spirit soluble green.....	513.
	Spirit soluble violet.....	513.
	Stilbene orange E36.....	69.
	Sudan corinth B.....	171.
	Sudan dark brown BG.....	171.
	Supranol yellow RA.....	171.
	Toluylene fast brown 3GA.....	171.
	Victoria blue BGO.....	202.
	Visco blue RS.....	91.
	Wool navy B.....	304.
	Zambesi black BG.....	91.

LAKES AND TONERS

TABLE 12B.—*Synthetic organic chemicals: Lakes and toners for which United States production or sales were reported, identified by manufacturer, 1944*

[Lakes and toners for which separate statistics are given in table 12A are marked below with an asterisk (*); those not so marked do not appear in table 12A because the reported data are confidential and may not be published. Manufacturers are identified by numbers in the alphabetical list appearing in table 22. 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 22)
LAKES OR LAKE COLORS	
*Black lakes:	
Nigrosine.....	190.
All other.....	35, 89, 193, 240, 277, 513.
*Blue lakes:	
Brilliant wool blue.....	235.
Indanthrene blue.....	127, 193, 212, 232.
Methylene blue.....	127, 266, 416, 446.
Peacock blue (Patent blue).....	3, 18, 60, 69, 71, 132, 190, 202, 204, 212, 225, 240, 252, 266, 277, 376, 389, 413, 416, 446, 490, 513.
Turquoise blue.....	46, 413.
*Victoria blue.....	69, 190, 266, 277, 498.
All other.....	21, 36, 60, 89, 101, 132, 212, 277.
*Brown lakes:	
Bismarck brown, tannic.....	240.
All other.....	36, 101, 513.
*Green lakes:	
Acid green.....	18, 190, 212, 240, 266.
Malachite green.....	212.
*Naphthol green.....	54, 132, 193, 490.
*Pigment green.....	54, 235, 413, 498.
All other.....	36, 60, 89, 101, 127, 132, 153, 277, 463.
Maroon lakes:	
*Alizarin maroon.....	46, 193, 235, 285, 513.
Amaranth.....	71, 240, 413.
*Azo Bordeaux.....	18, 60, 127, 132, 204, 212, 232, 285, 357, 376, 413, 463, 490.
*Helio fast rubine.....	18, 60, 101, 127, 132, 204, 212, 232, 357, 413, 463, 490.
Hypernic.....	212.
Quinizarine maroon.....	513.
All other.....	89, 132, 190, 498.
*Orange lakes:	
Acid orange.....	190, 498.
*Persian orange.....	18, 69, 71, 76, 101, 202, 212, 225, 240, 252, 266, 277, 376, 389, 416, 446, 490.
All other.....	21, 60, 89, 212, 235, 277, 416.
Red lakes:	
*Alizarin red.....	18, 69, 127, 193, 212, 240, 277, 357, 413, 416.
Cochineal lake.....	174.
*Eosine and phloxine.....	60, 69, 89, 132, 212, 277, 416, 446.
Pigment scarlet.....	18, 36, 60, 127, 204, 240, 277, 357, 376, 490, 513.
Naphthol red.....	69, 235.
*Rhodamine.....	127, 190, 212, 277.
*Rose and pink lakes.....	21, 36, 71, 232, 277, 413, 490, X.
*Scarlet 2R.....	18, 21, 60, 69, 76, 89, 127, 132, 190, 212, 232, 240, 277, 413, 463, 490, 498.
All other.....	60, 69, 127, 132, 235, 277, 413, 416.
*Violet lakes:	
Acid violet.....	101, 266.
*Methyl violet.....	18, 60, 69, 101, 132, 190, 240, 266, 277, 376, 413, 446, 463, 490, 513.
All other.....	21, 89, 204.
*Yellow lakes:	
Auramine.....	101, 277.
*Fast light yellow.....	18, 69, 204, 240, 266, 277, 446.
*Naphthol yellow.....	18, 153, 204, 212, 266, 416, 446.
Quercitron.....	127, 212.
*Quinoline yellow.....	212, 225, 252, 266, 376, 416, 446.
*Tartrazine.....	18, 69, 71, 101, 132, 202, 204, 212, 225, 240, 252, 266, 277, 376, 416, 446.
All other.....	36, 89, 204.

TABLE 12B.—*Synthetic organic chemicals: Lakes and toners for which United States production or sales were reported, identified by manufacturer, 1944*—Continued

Product	Manufacturers' identification numbers (according to list in table 22)
TONERS OR FULL-STRENGTH COLORS	
Black toners: PMA black.....	463.
*Blue toners:	
Alkali blue.....	69, 204, 252, 439.
Dianisidine blue.....	193.
Phthalocyanine blue B.....	171, 193, 204, 212, 416, 463, 490.
Phthalocyanine blue G.....	490.
Phthalocyanine blue SBL.....	171, 490.
Pigment blue, WNL and GNL.....	171.
PMA Peacock blue.....	212, 240.
*PMA Victoria blue.....	18, 71, 127, 204, 212, 240, 252, 266, 446, 463.
PMA Blue, other.....	60, 132, 202.
*PTA Peacock blue.....	69, 101, 153, 202, 277, 416.
*PTA Victoria blue.....	3, 69, 101, 127, 153, 193, 204, 212, 266, 277, 413, 416, 463, 490, 513.
*PTA Blue, other.....	60, 101, 127, 202, 266.
All other.....	21, 202.
*Brown toners:	
Havana brown.....	71.
PMA Brown.....	235.
All other.....	101.
*Green toners:	
*PMA Brilliant green.....	71, 202, 240, 252, 416, 463.
*PTA Brilliant green.....	3, 69, 101, 127, 212, 277, 413, 490, 513.
*Brilliant green, other.....	21, 101, 266, 446, 490.
*PMA Malachite green.....	153, 202, 252, 416, 446.
*PTA Malachite green.....	69, 101, 127, 153, 204, 212.
PTMA Malachite green.....	18.
PMA Green, other.....	60, 132, 212.
*PTA Green, other.....	60, 132, 212, 413.
Phthalocyanine green.....	171, 204, 490.
Pigment green.....	127, 212, 413, 490.
All other.....	266.
Maroon toners:	
Indo maroon.....	193.
*Lithol maroon.....	18, 127, 193, 202, 212, 240, 357, 413, 463.
Lithosol Bordeaux.....	498.
* α -Naphthylamine maroon.....	212, 232, 357.
*Toluidine maroon.....	127, 193, 212, 232, 413, 463.
All other.....	127.
Orange toners:	
Benzidine orange.....	212.
Dianisidine orange.....	439.
*2,4-Dinitroaniline orange.....	18, 127, 204, 212, 376, 413, 513.
*o-Nitroaniline orange.....	153, 204, 212, 232, 357, 376, 413, 446, 463, 490.
Vulcan fast orange G.....	171.
All other.....	202, 204.
*Red toners:	
*o-Chloronitroaniline red.....	18, 132, 204, 212, 240, 376, 413, 439, 490, 498, 513.
p-Chloronitroaniline red.....	127, 204, 212, 490.
*Eosine and phloxine.....	69, 76, 153, 202, 225, 252, 416, 446.
Gentex red.....	171.
Lithol scarlet 2YLN.....	127.
*Lithol red.....	18, 69, 71, 101, 127, 153, 193, 202, 204, 212, 240, 252, 376, 389, 413, 416, 439, 446, 463, 490, 498, 513.
*Lithol rubine.....	18, 60, 101, 127, 153, 193, 202, 204, 212, 232, 240, 266, 376, 413, 416, 439, 446, 463, 490.
Naphthanil red.....	127.
*Para red, light.....	18, 60, 69, 71, 127, 132, 193, 202, 204, 212, 232, 240, 252, 357, 376, 439, 463, 490, 498, X.
*Para red, dark.....	18, 21, 60, 69, 71, 127, 132, 153, 193, 202, 204, 212, 232, 240, 252, 357, 376, 389, 416, 439, 463, 490, 498, X.
*Permanent red 2B.....	127, 153, 171, 212, 416.
*PMA Red.....	101, 212, 252, 446.
*PTA Rhodamine B.....	69, 71, 101, 127, 153, 204, 212, 240, 277, 413, 416, 463.
*PTA Rhodamine Y.....	18, 69, 71, 101, 127, 153, 193, 204, 212, 240, 277, 413, 416, 513.
*PTA Red, other.....	60, 69, 202, 416.
*Red lake C.....	3, 18, 69, 71, 76, 101, 127, 153, 193, 202, 204, 212, 225, 240, 252, 376, 389, 413, 416, 439, 446, 463.
*Red lake D.....	71, 193, 212, 240, 252, 376, 416, 513.
Red lake P.....	513.
Rubine 3G.....	212.
*Toluidine red.....	18, 21, 69, 71, 127, 132, 153, 193, 204, 212, 232, 240, 357, 376, 389, 413, 416, 439, 463, 490, 498, X.
Vulcan fast red B.....	171.
All other.....	60, 69, 101, 127, 132, 193, 212, 232, 439.

TABLE 12B.—*Synthetic organic chemicals: Lakes and toners for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Product	Manufacturers' identification numbers (according to list in table 22)
TONERS OR FULL-STRENGTH COLORS—Continued	
Violet toners:	
*Methyl violet, other than PMA or PTA.....	3, 18, 60, 101, 130, 204, 212, 252, 266, 439, 464.
*PMA Methyl violet.....	3, 71, 101, 127, 204, 212, 277, 416, 446, 490.
*PMA Violet, other.....	60, 130, 132, 202, 240, 252, 266, 357, 376, 463.
*PTA Methyl violet.....	69, 101, 127, 193, 204, 212, 277, 416, 446, 490.
*PTA Violet, other.....	60, 127, 153, 240, 266, 376, 413, 463.
All other.....	277, 446.
*Yellow toners:	
*Benzidine yellow.....	69, 127, 193, 204, 212, 376, 413, 416, 446, 513.
p-Chloro-o-nitroaniline yellow.....	376.
Genlex yellow.....	171.
*Hansa yellow.....	18, 71, 127, 171, 193, 202, 204, 212, 225, 240, 252, 376, 413, 416, 446, 513.
Lithol yellow.....	171.
Vulcan fast yellow G.....	171.
All other.....	101, 204.
EXTENDED OR REDUCED TONERS	
Black toners, reduced:	
PTA Black.....	101.
*Blue toners, reduced:	
Alkali blue.....	69.
PMA Peacock blue.....	18, 212.
*PMA Victoria blue.....	18, 101, 190, 204.
*PMA Blue, other.....	60, 69, 101, 204.
*PTA Peacock blue.....	101, 204, 212, 416.
PTA Blue, other.....	60, 101, 127, 212.
*Phthalocyanine blue B.....	54, 101, 127, 132, 193, 204, 232, 235, 240, 318, 490, 498.
*Phthalocyanine blue G.....	171, 190, 490.
Phthalocyanine blue, other.....	235, 498.
All other.....	127, 463.
Brown toners, reduced:	
Pigment khaki.....	171.
Green toners, reduced:	
Nitroso green.....	235.
*PMA Brilliant green.....	18, 89, 101, 127, 277.
PMA Malachite green.....	190, 204, 266.
PMA Green, other.....	212.
*PTA Brilliant green.....	101, 127, 212.
PTA Malachite green.....	190.
PTA Green, other.....	60, 101, 127.
Phthalocyanine green.....	127, 132, 490.
Pigment green B.....	127.
Shamrock green.....	413.
All other.....	190, 204, 232.
*Maroon toners, reduced:	
α -Naphthylamine maroon.....	54.
p-Phenetidine maroon.....	490.
*Orange toners, reduced:	
o-Nitroaniline orange.....	54, 413, 490.
All other.....	101, 153.
*Red toners, reduced:	
p-Chloronitroaniline red.....	127.
Eosine and phloxine.....	416.
*Lithol red.....	18, 60, 101, 127, 153, 190, 204, 240, 389, 416, 490.
*Lithol rubine.....	18, 60, 101, 127, 204, 212, 389, 416.
p-Nitro-o-anisidine-naphthanal.....	127.
p-Nitro-o-toluidine-naphthanal.....	127.
*Para red, light.....	18, 60, 71, 132, 204, 212, 240, 357, 490, X.
*Para red, dark.....	60, 71, 127, 132, 204, 212, 232, 240, 357, 389, 490, 498.
Permaton red.....	69.
Permanent red 2B.....	127.
Phenylmethylpyrazolone dianisidine.....	127.
Red lake 2B.....	127, 490.
*Red lake C.....	18, 153, 204, 240, 490.
Red lake D.....	416.
PMA Red.....	60, 101.
*PTA Rhodamine B.....	101, 127, 416.
*PTA Rhodamine Y.....	54, 101, 204, 277, 416, 446.
PTA Rubine 3G.....	127.
PTA Red, other.....	60, 101, 127.
Scarlet 2YL.....	127.
*Toluidine red.....	18, 54, 60, 101, 127, 132, 190, 204, 212, 240, 357, 413, 490, X.
All other.....	69, 101, 153, 190, 204, 266, 463.

TABLE 12B.—*Synthetic organic chemicals: Lakes and toners for which United States production or sales were reported, identified by manufacturer, 1944*—Continued

Product	Manufacturers' identification numbers (according to list in table 22)
EXTENDED OR REDUCED TONERS—Continued	
Violet toners, reduced:	
PMA Methyl violet.....	71, 153, 190, 202, 204.
*PMA Violet, other.....	18, 101, 446.
*PTA Methyl violet.....	127, 212.
*PTA Violet, other.....	60, 101.
Methyl violet, other than PMA or PTA.....	69.
*Yellow toners, reduced:	
Benzidine yellow.....	212, 413.
*Hansa yellow.....	18, 54, 127, 132, 212, 235, 413.
All other.....	101.
All other.....	204, 251.

NOTE.—The abbreviations PMA, PTA, and PTMA stand for phosphomolybdic acid, phosphotungstic acid, and phosphotungstomolybdic acid, respectively.

MEDICINALS

TABLE 13B.—*Synthetic organic chemicals: Medicinals for which United States production or sales were reported, identified by manufacturer, 1944*

[Medicinals for which separate statistics are given in table 13A are marked below with an asterisk (*); medicinals not so marked do not appear in table 13A because the reported data are confidential and may not be published. Manufacturers are identified by numbers in the alphabetical list appearing in table 22. 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 22)
MEDICINALS, CYCLIC	
<i>Benzenoid</i>	
*Acetanilide.....	94, 124, 282, 298.
Acetol salicylate (1-Hydroxy-2-propanone salicylate).....	88.
Acetophenetidin (Phenacetin).....	124, 165, 298.
2-Acetoxymercuri-4-di-isobutylphenol.....	397.
*Acetyl-p-aminophenyl salicylate (Phenetsal).....	50, 86, 157, 165, 501.
Acetylarsan.....	198.
Acetylglucol salicylate.....	165.
*N-Acetyl-4-hydroxy-m-arsanilic acid (Acetarson) (Stovarsol).....	1, 286, 501.
*Acetylsalicylic acid (Aspirin).....	45, 124, 142, 222, 298, X.
*Acetyltannic acid (Tannigen) (Tannyl acetate).....	88, 157, 234, 244, 501.
3-Amino-4-acetoxyphenylarsonic acid.....	501.
Amino acids, derived from proteins:	
3,5-Di-iodotyrosine.....	149.
dl-Phenylalanine.....	286.
l-Tyrosine.....	286.
*p-Aminobenzoic acid derivatives:	
n-Amylaminoethyl p-aminobenzoate hydrochloride (Amylsine hydrochloride).....	325.
n-Butyl p-aminobenzoate (Butesin).....	1.
Di(n-butyl-p-aminobenzoate)trinitrophenol (Butesin picrate).....	1.
3-Di-n-butylaminopropyl p-aminobenzoate (Butacaine base).....	1.
3-Di-n-butylaminopropyl p-aminobenzoate hydrochloride (Butacaine hydrochloride).....	1.
3-Di-n-butylaminopropyl p-aminobenzoate sulfate (Butacaine sulfate).....	1.
β-Diethylaminoethyl p-aminobenzoate (Procaine base).....	1, 169, 501.
β-Diethylaminoethyl p-aminobenzoate derivatives:	
Procaine borate.....	1, 406, 501.
*Procaine hydrochloride.....	1, 48, 69, 165, 169, 501, X.
α-Dimethylamino-α,β-dimethylpropyl p-aminobenzoate hydrochloride (Tutocaine hydrochloride).....	501.
2-Dimethylaminoethyl p-butylaminobenzoate hydrochloride (Tetracaine hydrochloride).....	501.
*Ethyl p-aminobenzoate (Benzocaine) (Anaesthesine).....	1, 48, 165, 169, 286, 325, 405, 501.
Isobutyl p-aminobenzoate.....	165.
Isobutylaminoethyl p-aminobenzoate (Monocaine).....	48, 325.
Propyl p-aminobenzoate.....	165.
p-Aminohippuric acid.....	304.
3-Amino-4-hydroxyphenylarsine oxide hydrochloride (Mapharsen).....	338.

TABLE 13B.—*Synthetic organic chemicals: Medicinals for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 22)
MEDICINALS, CYCLIC—Continued	
<i>Benzenoid—Continued</i>	
*3-Amino-4-hydroxyphenyldichloroarsine hydrochloride (Dichlorophenarsine hydrochloride)	1, 338, 426, 501.
4-Amino-2-methyl-1-naphthol hydrochloride (Synkamin)	338.
Arsphenamine	121, 286, 501.
*Benzaldehyde	165, 201, 457, 475.
Benzochrome	396.
Benzoic acid	127, 205, 298.
*Benzoic acid salts:	
Lithium benzoate	88, 198, X.
Magnesium benzoate	405.
Benzoyl ethyldimethylaminoisopropanol (Stovaine)	280.
Benzopyrene	135.
*Benzyl benzoate	157, 165, 229, 278, 414, 474, X.
Benzyl methyl ketone	165, 418.
Benzyl succinate	157, 286, 405.
Bismuth arspenaminesulfonate	1.
Bismuth iodosubgallate	88, 198.
Bismuth- β -naphthol	286.
Bismuth subbenzoate	286.
*Bismuth subgallate	269, 286, 313, 350, 426.
*Bismuth subsalicylate	269, 286, 313.
Bismuth tetrabromopyrocatechol	198.
Bismuth tribromophenate	88, 157, 286, 396, X.
m-Bromoacetophenyl benzoate (Neoxyn)	124.
tert-Butylresol (Cresophan)	165.
Calcium benzyl phthalate	157.
Calcium cresolsulfonate	501.
Calcium iodoxybenzoate	418.
p-Carbamidobenzeneearsonic acid (Carbasone)	65, 198, 255, 280.
Catechol (Pyrocatechin), resublimed	X.
Chloromercuri-4-nitro-o-cresol	1.
o-Chloromercuriphenol	137.
Chlorothymol	286.
m-Cresyl acetate (Cresatin)	406.
*dl-Desoxyephedrine, d-desoxyephedrine hydrochloride (Methedrine), and dl-desoxyephedrine hydrochloride.	57, 65, 144, 234.
Diacetylaminoazotoluene	137.
3,4'-Di(acetylamino)-4-hydroxy-2'-phenoxyacetic acid arsenobenzene, sodium salt (Solusalvarsan)	501.
p,p'-Diaminodiphenylsulfone-N,N'-di(dextrose sodium sulfonate)	338.
2,5-Diaminotoluene sulfate	134.
1,2,5,6-Dibenzanthracene	135.
γ -Diethylaminopropyl cinnamate hydrochloride (Apothesine hydrochloride)	338.
*Diethylstilbestrol	1, 57, 65, 255, 426, 483, X.
Diethylstilbestrol dimethyl ether	57, 243, 255.
Diethylstilbestrol dipropionate	57, X.
m-Dihydroxy-di-(sec)hexylbenzene (Dihexylin)	338.
3,4-Dihydroxy- α -methylaminoacetophenone hydrochloride (Kephrene hydrochloride)	501.
1,3-Dihydroxynaphthalene (Naphthorescinol)	400.
2,4-Di(p-hydroxyphenyl)-3-ethylhexane (Octafollin)	397, X.
3,4-Dihydroxyphenylethylmethylamine (Epinine)	65.
β -(3,5-Di-iodo-4-hydroxyphenyl)- α -phenylpropionic acid	X.
1-Dimethylamino-2-(dimethylaminomethyl)-2-butanol benzoate hydrochloride (Alypin hydrochloride)	501.
dl-Dimethylaminoethanolicatechol (Methadren)	243.
Dioxyanthranol (Anthralin)	1.
Diphenylacetyldiethylaminoethanol hydrochloride	90.
Diphenyleneglycolylurea sodium	287.
Disodium acetarsonate	501.
Disodium hydroxymercurisalicyloxy acetate (Mercurosal)	335.
Disodium-4-sulfaminophenyl-2-azo-7-acetylamino-1-hydroxynaphthalene-3,6-disulfonate	501.
*Dyes, medicinal:	
Acriviolet	304.
Brilliant green	304.
3,6-Diaminoacridine dihydrochloride	1, 269.
3,6-Diaminoacridine sulfate (Proflavine)	1, 269, 304.
3,6-Diamino-10-methylacridine chloride (Acriflavine)	1, 304.
Dibromohydroxymercurifluorescein, sodium salt (Mercurochrome)	88, 211.
Gentian violet	304.
Methylene blue	69, 304.
Methyl violet	304.

TABLE 13B.—*Synthetic organic chemicals: Medicinals for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 22)
MEDICINALS, CYCLIC—Continued	
<i>Benzenoid—Continued</i>	
* Dyes, medicinal—Continued	
Parafuchsin	304.
Scarlet red (Phenol red)	304.
Tetraiodophenolphthalein and sodium salt	48, 65, 269, 286, 304.
Trypan blue	304.
l-Ephedrine, synthetic, and salts	286.
Ephedrine, racemic, and salts	286.
Ephedrine derivatives:	
Ephedrine benzoate	255.
Ephedrine cinnamate	255.
Ephedrine ethylmercurithiosalicylate	255.
pseudo-Ephedrine hydrochloride	65.
Ethyl-p-diethoxydiphenylamidine hydrochloride	501.
n-Ethylephedrine hydrochloride	287.
Ethylodiphenylundecylate (Pantopaque)	134.
Gallic acid	269.
Germanin	501.
Guaiaicol	298.
Guaiaicol, liquid	201.
Hexamethyleneamine acetaminosalicylic acid (Salihexin)	1.
Hexestrol (3',4-Di-p-hydroxyphenyl-n-hexane)	287, 483, X.
Hexylresorcinol	406.
Homoveratrylamine	165.
Hydroquinone n-amyl ether (Amol)	406.
p-Hydroxybenzoic acid esters:	
n-Butyl p-hydroxybenzoate (Butoben)	165, 201, 286.
Ethyl p-hydroxybenzoate	201.
Methyl p-hydroxybenzoate	165, 201.
Propyl p-hydroxybenzoate	165, 201.
Hydroxymercuri-4-nitro-o-cresol anhydride	1.
p-Hydroxyphenylisopropylamine hydrobromide	418.
o-Hydroxyphenylmercuric chloride	65, 137.
o-Iodobenzoic acid	134, 418.
o-Iodosobenzoic acid	418.
Lithium hippurate	338.
Mandelic acid	269, 286.
Mandelic acid salts:	
Ammonium mandelate	286, 426.
Calcium mandelate	1, 269, 286.
Sodium mandelate	269, 286.
l-Methylaminoethanol catechol (Epinephrine)	278, 501.
Methyl m-amino-p-hydroxybenzoate (Orthoform)	501.
3-3'-Methylenebis(4-hydroxycoumarin) (Dicumarol)	287.
Monoethanolamine mandelate	255.
α -Naphthol	157.
β -Naphthoxyacetic acid	134.
β -Naphthyl benzoate	86, 157, 286.
β -Naphthyl salicylate	157, 198.
* Neosphenamine	1, 121, 286, 426, 501.
Neo-synephrin hydrochloride	444.
Phenacaine hydrochloride (Di-(p-ethoxyphenyl)acetamidine)	169, 488.
Phenolphthalein	298.
* Phenolsulfonic acid salts:	
Ammonium phenolsulfonate	124.
Bismuth phenolsulfonate	286.
Calcium phenolsulfonate	124, 269, 286.
Copper phenolsulfonate	269, 286.
Sodium phenolsulfonate	124, 269, 286.
Zinc phenolsulfonate	124, 269, 286.
[β -Phenylisopropylamine and sulfate (Amphetamine and sulfate)	234, 418, X.
Phenylmercuric acetate	189.
Phenylmercuric benzoate	189.
Phenylmercuric borate	189.
Phenylmercuric chloride	189.
Phenylmercuric nitrate	189.
Phenylmercuric salicylate	189.
Phenylpropanolamine hydrochloride (Propadrine hydrochloride)	406.
Phenyl salicylate (Salol)	124.
Propenylmethylguaethol	165.
Resorcinol	127, X.
Resorcinol monoacetate	134, 157, 405.
* Salicylic acid	124, 201, 286, 298.

TABLE 13B.—*Synthetic organic chemicals: Medicinals for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 22)
MEDICINALS, CYCLIC—Continued	
<i>Benzenoid—Continued</i>	
*Salicylic acid salts:	
Ammonium salicylate	88, 124, 269.
Calcium salicylate	88, 124, 269.
Lithium salicylate	88, X.
Magnesium salicylate	88, 124, 269.
*Sodium salicylate	124, 201, 298.
Strontium salicylate	124, 269.
Salicylsalicylic acid	286.
Silver arsphenamine	501.
Sodium p-aminophenylarsonate	65.
Sodium antimony III bis-catechol-2,4-disulfonate (Fuadin)	501.
Sodium ethylmercurithiobenzene sulfonate	255.
Sodium ethylmercurithiosalicylate	255.
Sodium o-iodohippurate	269.
Sodium methylenesulfonaminohydroxyphenyl arsonate (Aldarson)	1.
Sodium p-toluenesulfonchloramine (Chloramine T)	298.
Stilbamine glucoside (Neostam)	65.
*Sulfa drugs:	
Acetylsulfathiazole	298.
p-Benzylaminobenzenesulfonamide	286.
Phthalylsulfathiazole	298.
Succinylsulfathiazole	298.
Sulfa-acetamide (N-acetylsulfanilamide)	69.
Sulfadiazine	69, X.
Sulfadiazine, sodium	69, X.
Sulfaguandine	69.
Sulfamerazine, sodium	69.
Sulfamerazine (2-Sulfanilamido-4-methylpyrimidine)	69.
*Sulfanilamide (p-Aminobenzenesulfonamide)	65, 69, 94, 286, 298, 413, 501.
Sulfanilamide ascorbate	157.
Sulfapyridine (2-Sulfanilamidopyridine)	69, 286.
Sulfapyridine, sodium	286.
*Sulfathiazole	69, 91, 255, 286, 298, 426, 501, X.
Sulfathiazole ascorbate	157.
*Sulfathiazole, sodium	69, 255, 286, 501, X.
*Sulfoarsphenamine	1, 121, 286, 426, 501.
4-Sulfonamido-2,4-diaminoazobenzene	501.
*Tannin albuminate (Tannalbin)	88, 157, 198, 244.
Tannin-formaldehyde (Tannoform)	88, 157.
Tetrachlorophenol	124.
N,N,N',N'-Tetraethylphthalamide (Neospiran)	198.
Thiosalicylic acid	255.
Thymol	353, X, X.
Thymol iodide	269, 286, 313.
p-Toluenesulfondichloramine (Dichloroamine T)	298.
α-Toluic acid (Phenylacetic acid)	X.
Trichlorophenol	124.
Tryparsamide	243, 286, 426.
Tyramine ethanesulfonate	65.
*Vitamin K, all forms:	
K (Menadione) (2-Methyl-1,4-naphthoquinone)	1, 69, 144, 170, 483.
K [(2-Methyl-1,4-naphthoquinone)diphosphoric ester, tetra sodium salt] (Thyloquinone)	203, 426.
K ₁ (2-Methyl-3-phytyl-1,4-naphthoquinone)	286.
Zinc sulfanilate	65.
<i>Alicyclic and Heterocyclic</i>	
Adenine hydrochloride	400.
Adenine sulfate	134, 400.
Adenylic acid	400.
Allantoin (5-Ureidohydantoin)	137, 399.
Allylcamphoric acid	157.
*Amino acids derived from proteins:	
Histamine, free base	338, 473.
Histamine phosphate	473.
l-Histidine	243, 473.
Histidine monohydrochloride	203.
l-Hydroxyproline	268, 349.
l-Proline	286.
dl-Tryptophane	286.
l-Tryptophane	124, 286, 349, 473.
Antipyrine	124.
*Antipyrine salicylate	88, 124, 157, 198, 286.
Atropine amineoxide hydrochloride	116.
Barbituric acid	1.

TABLE 13B.—*Synthetic organic chemicals: Medicinals for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 22)
MEDICINALS, CYCLIC—Continued	
<i>Alicyclic and Heterocyclic—Continued</i>	
*Barbituric acid derivatives:	
5-Allyl-5-cyclopentenylbarbituric acid and salt (Cyclopal)	169.
5-Allyl-5-isopropylbarbituric acid (Allurate)	203.
5-Allyl-5-phenylbarbituric acid and salt (Alphenal)	169.
Aminopyrine diethylbarbiturate (Veramon) (Peralga)	88, 234.
5-n-Butyl-5-ethylbarbituric acid (Neonal)	1.
5-(1-Cyclohexenyl)-5-ethylbarbituric acid and salt (Phanodorn)	501.
5,5-Diallylbarbituric acid (Dial)	90, 169.
5,5-Diethylbarbituric acid (Barbital)	1, 169, 203.
5,5-Diethylbarbituric acid, sodium salt	1, 203.
5-Ethyl-5-(sec)butylbarbituric acid and salt	X.
5-Ethyl-5-n-hexylbarbituric acid and salt (Ortal)	338.
5-Ethyl-5-isoamylbarbituric acid and salt (Amytal)	255.
5-Ethyl-5-isopropylbarbituric acid and salts (Ipral)	255, X.
5-Ethyl-5-(1-methyl-n-butyl)barbituric acid (Pentobarbital)	1, 169, 325.
5-Ethyl-5-(1-methyl-n-butyl)barbituric acid, sodium salt	1, 48, 255, 325, 365.
5-Ethyl-5-(1-methyl-n-butyl)-2-thiobarbituric acid and salt (Pentothal)	1.
*5-Ethyl-5-phenylbarbituric acid (Phenobarbital) (Luminal)	1, 48, 169, 229, 269, 286, 501.
5-Ethyl-5-phenylbarbituric acid, calcium salt (Phenobarbital calcium)	48.
*5-Ethyl-5-phenylbarbituric acid, sodium salt (Phenobarbital sodium)	1, 48, 169, 255, 269, 286, 501.
N-Methyl-5-cyclohexenyl-5-methylbarbituric acid and salt	501.
1-Methyl-5-ethyl-5-phenylbarbituric acid	501.
5-Methyl-5-phenethylbarbituric acid and salt	501.
Methylpropylcarbinyllallylbarbituric acid, sodium salt	255.
Methylpropylcarbinyllallylbarbituric acid	255.
*Bile acids and salts:	
Bilron (Iron bile salts)	255.
*Cholic acid	57, 144, 243, 278, 473, 500, X.
*Dehydrocholic acid	57, 243, 270, 278, 473, 500.
*Dehydrocholic acid, sodium salt	57, 144, 473, 500.
Desoxycholic acid	57, 500.
Desoxycholic acid, sodium salt	57, 473.
Mixed bile acids	144.
All other	144, 444.
Bismuth camphocarboxylate	
Bromocamphor (mono)	124, 269, X.
2-Butyloxycinchoninic acid diethylethylenediamide and hydrochloride	90.
*Caffeine (from theobromine)	176, 282, 298, X.
*Caffeine derivatives, natural and synthetic:	
*Caffeine citrate	88, 198, 269, 286, 298, 313.
Caffeine hydrobromide	286.
*Caffeine sodium benzoate	88, 198, 269, 286, 313.
*Caffeine sodium salicylate	198, 269, 286.
Camphor, synthetic, U. S. P.	127, 311.
Camphoric acid	157, 390.
Camphoric anhydride	157, 269.
*Camphosulfonic acid and salts	88, 134, 157, 198, 244.
Cinchophen hydroiodide	255.
Desoxycorticosterone acetate (Cortate)	90, X.
N-Diethylaminoisopentyl-8-amino-6-methoxyquinoline (Plasmochin)	501.
Dihydrocodeinone bitartrate	144.
3,5-Di-iodo-N-methyl-4-pyridoxyl-2,6-dicarboxylic acid, disodium salt (Neo-iopax)	X.
3,5-Di-iodo-4-pyridon-N-acetic acid diethanolamine	501.
4-Dimethylaminoantipyrine (Aminopyrine)	304, 501.
Emetine hydrochloride, synthetic	286, X.
Eserine salicylate	116, 214.
Estradiol	198, X.
Estradiol esters:	
α-Estradiol-3-benzoate	X.
α-Estradiol-17-benzoate	198.
α-Estradiol-3,17-dipropionate	X.
Estrone (Ketohydroxyestrin)	77.
2-Ethoxy-6,9-diaminoacridine and salts	501.
Ethyl-1-methyl-4-phenylpiperidine	278.
Ethyl-1-methyl-4-phenylpiperidine-4-carboxylate (Demerol)	501.
Ethynyltestosterone	X.
Eucatropine hydrochloride	396, 488.
Hexamethylenemethyl iodide	243.
Hexamethylenetetramine	127, 201.

TABLE 13B.—*Synthetic organic chemicals: Medicinals for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 22)
MEDICINALS, CYCLIC—Continued	
<i>Alicyclic and Heterocyclic—Continued</i>	
*Hexamethylenetetramineanhydromethylene citrate (Helmitol).....	137, 157, 198, 234, 244, 501.
Hexamethylenetetramine camphorate.....	234.
Hexamethylenetetramine mandelate.....	372.
Hexamethylenetetraminemethylene citrate.....	157.
Hexamethylenetetramine monobromide.....	198.
Hexamethylenetetramine monoiodide.....	198.
Hexamethylenetetramine tetraiodide.....	355.
Homatropine and salts.....	214, 278, 286.
Homatropine methyl bromide (Novatropine).....	144, 390, X.
8-Hydroxyquinoline derivatives:	
8-Hydroxyquinoline (Oxyquinoline base).....	48, 286.
8-Hydroxyquinoline benzoate.....	48, 286.
8-Hydroxyquinoline citrate.....	286.
8-Hydroxyquinoline hydrochloride.....	48.
8-Hydroxyquinoline sulfate.....	48, 286.
8-Hydroxyquinoline sulfate, potassium salt.....	48.
8-Hydroxyquinoline tannate.....	48.
8-Hydroxyquinoline-5-sulfonic acid.....	48, 286.
Iodochloro-8-hydroxyquinoline.....	90.
*7-Iodo-8-hydroxyquinoline-5-sulfonic acid (Yatren acid) and salt.....	48, 65, 286, 501, X.
Iodopyrine.....	269.
Menthol ethoxyacetate (Coryfin).....	501.
homo-Menthyl salicylate.....	165.
*2-Methoxy-6-chloro-9-diethylaminopentylaminoacridine (Quinacrine hydrochloride) (Atebrin).....	1, 193, 202, 255, 286, 304, 501.
β -Methoxy-8-hydroxymercuri-propylamide of camphoric acid and salts.....	157.
Methylcholanthrene.....	134, 135.
*p-Methylphenyleinchoninic ethyl ester (Neocinchophen).....	1, 48, 69.
γ -(2-Methylpiperidino)propyl benzoate hydrochloride.....	255.
Methyltestosterone.....	90, X.
*Nikethamide (Niacin diethylamide).....	90, 169, 198, 234, 243, 244, 280.
Nucleic acid (from yeast).....	400.
Nucleic acid salts.....	400.
Papaverine hydrochloride.....	255.
Papaverine, synthetic.....	286, 313.
Phenylazo-diaminopyridine hydrochloride (Pyridium).....	372.
1-Phenyl-2,3-dimethyl-4-methylamino-5-pyrazolone formaldehyde bisulphite (Novaldin).....	501.
2-Phenyl-4-quinolinecarboxylic acid (Cinchophen) (Phenylcinchoninic acid).....	69.
2-Phenylquinoline-4-carboxylic acid, sodium salt.....	48.
Piperazine derivatives:	
Piperazine hexahydrate (Piperazine hydrate).....	280, 359.
Piperazine salicylate.....	280, 359.
Piperazine tartrate.....	280, 359.
3-(1-Piperidyl)propanediol-1,2-diphenylurethane base and hydrochloride (Diothane).....	287.
*Progesterone.....	144, 180, 243, 338, X.
Scopolamine amineoxide hydrobromide.....	116.
Sodium diphenylhydantoinate (Dilantin).....	286, 501.
Sulfallantoin.....	399.
Terpin hydrate.....	127, 405.
Testosterone.....	X.
Testosterone esters: Testosterone propionate.....	90, X.
sym-N-Tetramethylpiperazine di-iodide.....	390.
*Theobromine derivatives:	
Theobromine calcium gluconate.....	270.
Theobromine calcium salicylate.....	88.
Theobromine salicylate.....	286.
Theobromine sodium acetate.....	269, 286, 313.
*Theobromine and sodium salicylate.....	88, 269, 286, 313.
*Theophylline (1,3-Dimethylxanthine) and derivatives:	
Theophylline aminoisobutanol.....	287.
*Theophylline base.....	48, 169, 269.
*Theophylline ethylenediamine (Aminophylline).....	48, 126, 169, 243, 268, 286, 365, X, X.
Theophylline methyl glucamine (Glucophylline).....	1.
Theophylline monoethanolamine (Theamine).....	255.
Theophylline sodium acetate.....	269, 501.
Theophylline sodium salicylate.....	269.
Uric acid.....	137, 399.
*Vitamins:	
*B ₁ (Thiamin chloride and hydrochloride).....	203, 286.
*B ₂ (Riboflavin, for human consumption) (100%).....	13, 103, 203, 286, 350.
B ₂ (Riboflavin, for animal and poultry consumption) (100%).....	13, 103, 350, 489.

TABLE 13B.—*Synthetic organic chemicals: Medicinals for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 22)
MEDICINALS, CYCLIC—Continued	
<i>Alicyclic and Heterocyclic—Continued</i>	
*Vitamins—Continued	
*B ₆ (Pyridoxine).....	203.
*D ₂ (Irradiated ergosterol) (Viosterol).....	1, 127, 170, 177, 283, 327, 338, 426, 429, 483, 501.
D ₃ (Irradiated or activated animal sterol) (Delsterol).....	127.
E (α -Tocopherol).....	286.
E (α -Tocopherol acetate).....	203, 286.
Inositol.....	X.
Inositol hexaphosphate, calcium magnesium.....	88, 90.
*Niacin (Nicotinic acid).....	43, 172, 286, 372.
*Niacinamide (Nicotinic acid amide).....	1, 169, 170, 172, 198, 243, 372.
MEDICINALS, ACYCLIC	
Acetylcholine bromide.....	134, 390.
Acetylcholine chloride.....	234, 286, 390.
Acetyl- β -methylcholine bromide.....	286.
Acetyl- β -methylcholine chloride.....	286, 390.
Amino acids derived from proteins:	
β -Alanine.....	
dl- α -Alanine.....	69, 170, 286, 338.
Aminoacetic acid (Glycocol) (Glycin).....	286, 349.
Arginine monohydrochloride.....	48, 124.
l-(+)-Arginine monohydrochloride.....	284, 473.
dl-Aspartic acid.....	286.
l-Cystine.....	286, 304.
Cystine hydrochloride.....	349, 472.
l-(+)-Glutamic acid.....	340, 349, 473.
dl-Glutamic acid.....	286.
Glutathione.....	400.
dl-Isoleucine.....	286.
l-Leucine.....	286, 349.
dl-Leucine.....	286.
d-Lysine monohydrochloride.....	473.
dl-Lysine monohydrochloride.....	286.
l-Lysine monohydrochloride.....	286.
dl-Methionine.....	286.
dl-Norleucine.....	286.
dl-Serine.....	286.
dl-Threonine.....	286.
dl-Valine.....	286.
Amyl nitrite (Isoamyl nitrite).....	134, 269, 286, 338.
Auro-thioglucoase (Solgenal- β oleum).....	X.
Azochloramide.....	X.
Barium hexose diphosphate.....	400.
Bismuth octyloxyacetate (Lipo bismol).....	338.
Bismuth tri- α -ethyl caproate (Lipobin).....	243.
Bromodiethylacetylcarbamide.....	86, 501.
Bromoisovalerylurea (Bromural).....	50, 86.
Cacodylic acid and derivatives:	
* Cacodylic acid.....	
Guaiacol cacodylate.....	135, 234, 244.
Strychnine cacodylate.....	135, 234.
.....	198, 234, 244.
* Cacodylic acid salts:	
Barium cacodylate.....	135.
Bismuth cacodylate.....	244.
Calcium cacodylate.....	135, 244.
Iron cacodylate.....	135, 198, 234, 244, 338.
Magnesium cacodylate.....	135, 234, 244.
Sodium cacodylate.....	135, 198, 234, 244, 338.
Calcium hexose diphosphate.....	400.
Calcium iodobenenate.....	157, 501.
Calcium lactophosphate.....	88, 234, 269.
* Calcium levulinate.....	65, 88, 157, 165, 244, 340, 349.
Chloral hydrate.....	286, 298.
Choline chloride.....	103, 286.
Diallylmalonic acid.....	390.
Disodium methylarsionate (Arrhenal).....	198, 234.
Erythrityl tetranitrate.....	286.
Ethyl chaulmoograte.....	157, 501.
Ethyl di-iodobrassidate.....	90.
Ethylenediamine derivatives:	
Ethylenediamine dihydrochloride.....	355.
Ethylenediamine di-iodide.....	355.
* Ethyl iodide.....	134, 137, 269, 286.

TABLE 13B.—*Synthetic organic chemicals: Medicinals for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 22)
MEDICINALS, A CYCLIC—Continued	
Ethyl mercuric chloride.....	255.
Ethyl morrhuate.....	157.
Ethyl nitrite.....	269, 286, 343.
Formaldehyde sodium sulfoxylate.....	286.
Gluconic acid salts:	
Calcium gluconate.....	255, 269, 350.
Copper gluconate.....	350.
Iron (ferrous) gluconate.....	269, 350, 444.
Manganese gluconate.....	350.
Potassium gluconate.....	350.
Glycerophosphoric acid.....	201, 298.
Glycerophosphoric acid salts:	
Calcium glycerophosphate.....	201, 298.
Iron glycerophosphate.....	201, 298.
Magnesium glycerophosphate.....	201, 298.
Manganese glycerophosphate.....	201, 298.
Potassium glycerophosphate.....	201, 298.
Sodium glycerophosphate.....	201, 298.
Hexamethyldiaminoisopropanol di-iodide.....	157, 501.
Humic acid and salts.....	157.
Iodized fatty acids:	
Calcium salts of iodized fatty acids.....	255.
Iodized castor oil (Riodine).....	165.
* Iodoform.....	269, 286, 313.
Iodomethanesulfonic acid, sodium salt.....	501.
n-Isovaleric acid salts:	
Ammonium isovalerate.....	88.
Zinc isovalerate.....	149.
Lithium lactate.....	222.
Lysidine bitartrate.....	165.
Methoxyximercuri-propylsuccinyl urea (Mercurydrin).....	243.
Methyleneacetic acid and salts.....	157, 501.
Methylene iodide.....	134, 135.
* Methyl iodide.....	134, 137, 198, 269, 286.
Morrhuae acid, sodium salt.....	65, 157.
Potassium bismuth saccharate.....	57.
d-Ribose.....	400.
* Silver preparations, colloidal:	
Silver protein, mild.....	201, 338, 406, 426.
Silver protein, strong.....	201, 501.
Sodium aurothiomalate (Myochrysin).....	286.
Sodium bismuth thioglycolate (Thiobismol).....	338.
Sodium ricinoleate.....	222.
Sodium succinate.....	269.
l-Sorbose.....	400.
Sulfonethylmethane (Trional).....	269.
Sulfonmethane (Sulfonal).....	269.
* Tartaric acid salts:	
Antimony sodium tartrate.....	65.
Bismuth potassium tartrate.....	1.
Bismuth sodium tartrate.....	198, 243.
Potassium sodium bismuth tartrate (Bismosol).....	286.
Potassium tartrate.....	88.
* Thiosinamine (Allylurea).....	137, 165, 269.
2,2,2-Tribromoethanol.....	501.
Tribromomethane (Bromoform).....	124, 290.
* tert-Trichlorobutyl alcohol (Chloretone) (Chlorobutanol).....	48, 165, 286, 338, X.
Urethane.....	349, 467.
Vinethene (Divinyl ether).....	286.
* Vitamins:	
* A acetate, concentrate.....	122.
* A acetate, crystalline.....	122.
* A alcohol concentrate.....	473, 483.
* C (Ascorbic acid).....	203, 350.
* C (Ascorbic acid, sodium salt).....	157, 286.
*d-Calcium pantothenate.....	13, 286.
*d-Calcium pantothenate.....	1, 170.
* Isoascorbic acid.....	203.
*d-Sodium pantothenate.....	338.

FLAVOR AND PERFUME MATERIALS

TABLE 14B.—*Synthetic organic chemicals: Flavor and perfume materials for which United States production or sales were reported, identified by manufacturer, 1944*

[Flavor and perfume materials for which separate statistics are given in table 14A are marked below with an asterisk (*); those not so marked do not appear in table 14A because the reported data are confidential and may not be published. Manufacturers are identified by numbers in the alphabetical list appearing in table 22. 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 22)
FLAVOR AND PERFUME MATERIALS, CYCLIC	
<i>Benzenoid</i>	
Acetophenone.....	167, 229, X.
Amyl benzoate.....	X, X.
* α -Amylcinnamaldehyde.....	155, 229, 278, 472, 478, X.
Amyl cinnamate.....	X.
α -Amylcinnamyl acetate.....	478.
α -Amylcinnamyl alcohol.....	478.
*Amyl salicylate.....	278, 282, 414, 474, X, X.
Amyl- α -toluate (Amyl phenylacetate).....	478, X.
*Anethole.....	67, 311, 474, X, X, X.
*Anisaldehyde.....	127, 165, 478, X, X, X.
*Anisole (Methyl phenyl ether).....	157, 165, 390, X.
*Anisyl acetate.....	127, 155, X, X.
*Anisyl alcohol.....	127, 165, X, X.
Anisyl formate.....	155, X, X.
Anisylideneacetone.....	478.
Anisyl propionate.....	X.
Benzophenone.....	167, 229, 278, X.
*Benzyl acetate.....	229, 278, 414, 475, X.
*Benzyl alcohol.....	229, 278, 414, 474, X.
Benzyl butyl phthalate.....	474.
*Benzyl butyrate.....	155, 168, 278, 474, X, X.
*Benzyl cinnamate.....	48, 168, 278, 472, 474, X.
Benzyl p-cresyl ether.....	478.
Benzyl ether (Dibenzyl ether).....	278, 414.
*Benzyl formate.....	155, 278, 472, 474, X, X.
Benzylideneacetone.....	282, 472, 475, X.
Benzylidene glycerol.....	404.
Benzyl isoamyl ether.....	127, X.
Benzyl isobutyrate.....	155, X, X.
Benzyl isoeugenyl ether (Benzyl isoeugenol).....	478, X, X.
Benzyl methyl ketone.....	137.
*Benzyl propionate.....	127, 155, 168, 278, 282, 404, 472, X, X.
*Benzyl salicylate.....	167, 278, 474, X, X.
Benzyl α -toluate (Benzyl phenylacetate).....	155.
Benzyl valerate.....	155, X.
β -Bromostyrene.....	X.
Butyl α -toluate (Butyl phenylacetate).....	155.
*Cinnamaldehyde.....	165, 229, 404, 414, 475, X.
*Cinnamic acid.....	48, 165, 278, 474, X.
*Cinnamyl acetate.....	168, 278, 478, X, X.
*Cinnamyl alcohol.....	167, 168, 278, 478, X, X.
Cinnamyl anthranilate.....	155.
Cinnamyl butyrate.....	168, X.
Cinnamyl cinnamate.....	X.
Cinnamyl formate.....	155.
Cinnamyl isobutyrate.....	155, 404, X.
Cinnamyl isovalerate.....	404, X.
*Cinnamyl propionate.....	155, 168, 404, X, X.
Cinnamyl valerate.....	155.
p-Cresyl acetate.....	155, 478, X, X.
p-Cresyl caprylate.....	155, 472.
p-Cresyl isobutyrate.....	472.
p-Cresyl methyl ether.....	127, 168, X.
p-Cresyl phenyl ether.....	478.
m-Cresyl α -toluate (m-Cresyl phenylacetate).....	X.
*p-Cresyl α -toluate (p-Cresyl phenylacetate).....	472, 478, X, X.
p-Cresyl valerate.....	155, 474.
Cumaldehyde (p-Isopropylbenzaldehyde).....	127, X.
Di-isopropylthymol, hydrogenated.....	205.
3,4-Dimethoxybenzaldehyde (Veratraldehyde).....	165.
2,4-Dimethylacetophenone.....	X.
Dimethyl- β -phenethyl acetate.....	472.
Dimethyl- β -phenethyl alcohol (Dimethylbenzyl carbinol).....	472.
2,6-Dinitro-3-tert-butylcymene.....	X.
Diphenylmethane.....	X.
p-Ethoxybenzaldehyde.....	478.
Ethyl anisate.....	X.
*Ethyl anthranilate.....	155, 278, 474.

TABLE 14B.—*Synthetic organic chemicals: Flavor and perfume materials for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Material	Manufacturers' identification numbers (according to list in table 22)
FLAVOR AND PERFUME MATERIALS, CYCLIC—Con.	
<i>Benzenoid—Continued</i>	
*Ethyl benzoate.....	165, 324, 467, X, X.
*Ethyl cinnamate.....	155, 165, 168, 278, 474, X.
*Ethyl methylphenylglycidate.....	165, X, X.
Ethyl phenylglycidate.....	165.
*Ethyl salicylate.....	124, 168, X, X.
Ethyl α -toluate (Ethyl phenylacetate).....	48, 168, 229, 278, 478.
Ethylvanillin.....	298.
*Eugenol.....	155, 262, X, X, X.
Eugenyl acetate.....	168.
Eugenyl formate.....	478.
Eugenyl α -toluate (Eugenyl phenylacetate).....	472.
*Guaiacyl acetate.....	155, 478, X.
Hexylcinnamaldehyde.....	X.
Hydroquinone dimethyl ether (Dimethyl hydroquinone).....	127, 165.
Hydroquinone monomethyl ether.....	165.
Isobutyl benzoate.....	155, 282, X.
Isobutyl cinnamate.....	155.
Isobutyl salicylate.....	X, X.
Isobutyl α -toluate (Isobutyl phenylacetate).....	282, X, X.
*Isoeugenol.....	155, X, X, X.
Isoeugenyl acetate.....	X.
Isopropyl-o-cresol (Carvacrol).....	333, X.
Isothymol, hydrogenated.....	205, X.
p-Methoxyacetophenone (Novatone).....	165.
p-Methylacetophenone (Methyl-p-tolyl ketone).....	165, 311, X.
Methyl anthranilate.....	124, 127, 278, X.
N-Methylanthranilic acid methyl ester (Dimethyl anthranilate).....	127, 478, X.
p-Methylbenzaldehyde (p-Tolualdehyde).....	165.
*Methyl benzoate.....	165, 205, 278, 324, 475, X.
α -Methylbenzyl acetate (Styralyl acetate).....	167, 472, X.
* α -Methylbenzyl alcohol (Methylphenyl carbinol) (Styralyl alcohol).....	167, 472, X, X.
α -Methylbenzyl propionate (Styralyl propionate).....	478.
Methylcinnamaldehyde.....	165.
*Methyl cinnamate.....	48, 165, 168, 278, 478.
p-Methyl cresyl ether.....	478.
*Methyl eugenyl ether (Methyl eugenol).....	155, 165, 168, X.
*Methyl isoeugenyl ether.....	155, 165, 474, X.
α -Methyl-p-isopropylhydrocinnamaldehyde.....	X.
*Methyl salicylate (Artificial wintergreen oil).....	124, 201, 298.
Methyl- α -toluate (Methyl phenylacetate).....	48, 168, 278, 474, X.
Musk ambrette.....	278, X.
Musk ketone.....	278, X.
*Musk xylene.....	127, 278, X.
Phenethyl acetate.....	1, 155, 404, 472, X, X.
*Phenethyl alcohol (Phenylethyl alcohol).....	124, 229, 472, 479, X.
Phenethyl anthranilate.....	168.
Phenethyl butyrate.....	155, 282, X.
Phenethyl cinnamate.....	155, X.
Phenethyl formate.....	X, X.
Phenethyl isobutyrate.....	X, X.
Phenethyl isovalerate.....	X, X.
*Phenethyl propionate.....	155, 282, 472, X, X.
Phenethyl salicylate.....	X, X.
Phenethyl α -toluate (Phenethyl phenylacetate).....	155, X, X.
p-Phenethylurea.....	165.
Phenethyl valerate.....	155, 404.
Phenylacetone.....	167.
Phenyl benzoate.....	X, X.
Phenylpropionaldehyde (Hydratropaldehyde).....	155, 167, X.
*3-Phenyl-1-propyl acetate (Hydrocinnamyl acetate).....	478, X, X.
3-Phenyl-1-propyl alcohol (Hydrocinnamic alcohol).....	167, 205, X.
Propyl cinnamate.....	155.
Salicylaldehyde.....	124, 127.
α -Tolualdehyde (Phenylacetaldehyde).....	167, X.
α -Tolualdehyde dimethylacetal (Phenylacetaldehyde dimethylacetal).....	155, 167, X.
α -Tolonic acid (Phenylacetic acid).....	278, X.
Thymol, hydrogenated.....	205, X.
Trichloromethylphenylcarbinyl acetate (Rosetone).....	165.
1,3,4-Trimethyl-5-tert-butyl-2,6-dinitrobenzene.....	X.
*Vanillin.....	282, 298, 393, X, X.

TABLE 14B.—*Synthetic organic chemicals: Flavor and perfume materials for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Material	Manufacturers' identification numbers (according to list in table 22)
FLAVOR AND PERFUME MATERIALS, CYCLIC—Con.	
<i>Naphthalenoid</i>	
Ethyl β -naphthyl ether (Nerolin).....	167, 229.
Methyl β -naphthyl ether (Yara yara).....	167, X.
Methyl β -naphthyl ketone.....	167, X.
Methyl naphthyl ketone, mixed.....	167.
β -Naphthyl anthranilate.....	155.
<i>Terpenoid</i>	
Bornyl acetate.....	155, X.
Carvomenthol, hydrogenated.....	206.
Cedrol.....	127, 155, 472, 478, X.
*Cedryl acetate.....	155, 472, 478, X, X.
*Cedryl formate.....	478.
*Citral.....	67, 127, 155, 168, 262, 306, 472, X, X, X.
Citrapene.....	404.
Citronellal.....	168, 322, 472, 474, 478.
*Citronellol.....	127, 155, 168, 278, 404, 472, 474, X.
*Citronellyl acetate.....	155, 278, 472, 478, X, X.
Citronellyl butyrate.....	X.
Citronellyl formate.....	155.
Citronellyl propionate.....	472, X.
Cyclogeranyl acetate.....	478.
Dihydrocitronellol (3,7-Dimethyl-1-octanol).....	404.
Farnesol.....	478.
*Geraniol.....	127, 155, 167, 168, 278, 404, 472, 474, 478, X, X.
Geraniol, hydrogenated.....	167.
*Geranyl acetate.....	127, 155, 278, 404, 472, 474, X, X.
Geranyl benzoate.....	149, X, X.
*Geranyl butyrate.....	155, 472, 478, X.
*Geranyl formate.....	155, 278, 472, 478, X.
Geranyl isobutyrate.....	472.
Geranyl isovalerate.....	X.
Geranyl propionate.....	155, X.
Geranyl α -toluate (Geranyl phenylacetate).....	X.
Hexahydropseudoionone.....	X.
Hydroxycitronellal.....	127, 404, 472, 479, X.
Hydroxycitronellol.....	278, X.
Hydroxycitronellol dimethylacetal.....	127, 168, X.
* α -Ionone.....	127, 306, 472, X, X.
* β -Ionone.....	127, 472, X, X.
*Ionone, mixed.....	127, 282, 479.
Isobornyl acetate.....	127.
Isobornyl alcohol (Isborneol).....	127.
Isopulegol.....	127, 322, X.
Isopulegyl acetate.....	127, X.
Isosafrol.....	X, X.
*Linalool, natural.....	155, 168, 262, 306, 472, 474, 478, X, X.
Linalool, synthetic.....	278.
*Linalyl acetate.....	149, 155, 322, 472, 474, 478, X, X, X.
Linalyl anthranilate.....	149, 478.
Linalyl benzoate.....	149, 478.
*Linalyl butyrate.....	155, 168, 478, X, X.
Linalyl cinnamate.....	478, X.
*Linalyl formate.....	155, 168, 472, 478, X, X.
*Linalyl isobutyrate.....	149, 472, X, X.
*Linalyl propionate.....	155, 168, 472, 478, X, X.
*Menthol, synthetic, tech.....	165, 278, 322, X.
Menthol, synthetic, racemic.....	X.
*Menthol, synthetic, U. S. P.....	278, X.
Menthone.....	165, 278, 322, 478, X.
Menthyl acetate.....	165, 322, X.
Menthyl anthranilate.....	X.
Metahomenthol.....	165.
*Methylionone.....	127, 282, 306, 472, 479, X, X.
*Nerol.....	155, 168, 472, 474, 478, X.
Neryl acetate.....	X.
*Rhodinol (2,6-Dimethylocten(2)ol).....	127, 155, 165, 168, 262, 278, 472, 474, X, X.
*Rhodinyll acetate.....	155, 167, 472, X, X.
Rhodinyll formate.....	155, X.
Rhodinyll α -toluate (Rhodinyll phenylacetate).....	478.
Safrol.....	333, X.
*Santalol.....	155, 472, 478, X.

TABLE 14B.—*Synthetic organic chemicals: Flavor and perfume materials for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Material	Manufacturers' identification numbers (according to list in table 22)
FLAVOR AND PERFUME MATERIALS, CYCLIC—Con.	
<i>Terpenoid—Continued</i>	
Santalyl acetate.....	155, 168.
* α -Terpineol.....	127, 311, X, X.
* β -Terpineol.....	311.
*Terpin hydrate, tech.....	X.
*Terpinolene.....	127, X.
*Terpinyl acetate.....	127, 155, 404, 474, X, X, X.
Terpinyl butyrate.....	478.
Terpinyl propionate.....	127, X.
Vetivenol.....	306, 478, X.
*Vetivenyl acetate.....	155, 168, 472, 478, X, X.
<i>Heterocyclic</i>	
*Coumarin, synthetic.....	124, 127, 282, 298.
Hydrocoumarin.....	165.
*Indole.....	124, 127, X.
Isobutylquinoline.....	149.
Isopropylquinoline.....	149.
3-Methylcoumarin.....	282, X.
Methylhydrocoumarin.....	165.
*Piperonal (Heliotropin).....	X, X, X.
Saccharin.....	295.
Saccharin, sodium salt.....	298.
Skatole.....	127, 149.
FLAVOR AND PERFUME MATERIALS, ACYCLIC	
Acetal.....	168.
*Allyl caproate.....	155, 165, 404, 478, X, X, X
Allyl enanthate (Allyl heptanoate).....	149, 165, 404.
Allyl isothiocyanate (Mustard oil).....	137, 165.
Amyl butyrate.....	155.
Amyl caproate.....	233, 404.
Amyl caprylate.....	478.
Amyl formate.....	155.
Amyl propionate.....	X.
Amyl valerate.....	155.
2,3-Butanedione (Diacetyl) (Biacetyl).....	48, 149, 165.
n-Butyl butyrate.....	X.
Capryl butyrate.....	149.
1-Carbomethoxyheptene (Methyl heptene carbonate).....	278, 472, X.
Cetyl alcohol.....	322, 478, X.
Decyl acetate (C ₁₀).....	404.
n-Decyl alcohol.....	X, X.
*Decyl aldehyde (C ₁₀).....	404, 472, 478, X, X.
Di-n-butylcarbinol.....	404.
Dibutyl sulfide.....	478.
Diethyl succinate.....	404.
Di-n-propyl ketone.....	404.
Dodecyl acetate (C ₁₂).....	168, 478.
Dodecyl aldehyde (C ₁₂).....	X, X.
*Ethyl butyrate.....	155, 168, 324, 343, X.
*Ethyl caproate.....	155, 168, 324, X.
*Ethyl enanthate.....	168, 324, X.
Ethyl isobutyrate.....	X.
Ethyl isovalerate.....	324, X.
Ethyl laurate.....	X.
Ethyl myristate.....	404.
*Ethyl pelargonate.....	155, 165, X.
*Ethyl sebacate.....	149, 155, X.
Glutamic acid, monosodium salt (Ajinomoto).....	17, 177, 209.
Heptaldehyde (C ₇).....	306.
2,3-n-Heptanedione (Acetylvaleryl).....	149.
n-Heptanyl acetate.....	478.
Hexaldehyde (C ₆).....	478.
2,3-n-Hexanedione (Acetylbutyryl).....	149.
3-Hydroxy-2-butanone (Acetoin).....	149.
*Isoamyl butyrate.....	168, 324, 343, X.
Isoamyl caproate.....	324, X.
*Isoamyl formate.....	168, 324, X.
Isoamyl isovalerate.....	168, X.
Isoamyl propionate.....	168, X.
Isobutyl acetate.....	324, X.
Isobutyl butyrate.....	324, X.
Isobutyl caproate.....	X.

TABLE 14B.—*Synthetic organic chemicals: Flavor and perfume materials for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Material	Manufacturers' identification numbers (according to list in table 22)
FLAVOR AND PERFUME MATERIALS, ACYCLIC—Con.	
Isobutyl isovalerate.....	X.
Isopropyl caproate.....	155.
Isopropyl pelargonate.....	155.
Methylheptenone.....	168, X.
Methyl homo jasmone.....	478.
Methyl nonenoate.....	X.
*Methylnonylacetaldehyde.....	478, X, X.
Methyl nonylinate.....	165.
Methyl nonyl ketone.....	478, X, X.
4-Methyl-2,3-pentanedione (Acetyliso-butyl).....	149.
Methyl undecylenate.....	472, X.
Myristyl alcohol.....	X.
Nonalactone.....	165, 478, X, X.
Nonyl acetate (C ₉).....	478, X.
Nonyl aldehyde (C ₉).....	478, X, X.
Octanol-1.....	X.
n-Octyl acetate.....	X.
n-Octyl aldehyde (C ₈).....	478, X.
n-Octyl butyrate.....	404.
n-Octyl isobutyrate.....	X.
2,3-n-Pentanedione (Acetylpropionyl).....	149.
Propylacetal.....	X.
Propyl propionate.....	155.
*Undecalactone.....	155, 165, 168, 306, 477, X, X.
Undecyl aldehyde (C ₁₁).....	472, 478.
Undecylenic alcohol.....	478, X.
Undecylenic aldehyde.....	155, 478, X, X.
Undecylic acid, hydrogenated.....	205.
*CHEMICALLY MODIFIED ESSENTIAL OILS	
Citronella, acetylated.....	X.
Citronella, hydrogenated.....	205.
Citronella oil fraction, acidulated.....	278.
Ethyl oxyhydrate.....	155, 262, 474, X.
Lemon-grass oil, hydrogenated.....	205.
Peppermint oil, synthetic.....	324.
Sassafras oil, hydrogenated.....	265.
Ylangol.....	478.

PLASTICS MATERIALS

TABLE 15B.—*Synthetic organic chemicals: Plastics materials for which United States production or sales were reported, identified by manufacturer, 1944*

[Plastics materials for which separate statistics are given in table 15A are marked below with an asterisk (*); products not so marked do not appear in table 15A because the reported data are confidential and may not be published. Manufacturers are identified by numbers in the alphabetical list appearing in table 22. 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 22)
PLASTICS MATERIALS, CYCLIC	
<i>Condensation Resins, Benzoid</i>	
*Alkyd resins:	
*Saturated polyesters type:	
*Phthalic anhydride-glycerol: †	
*For molding and casting.....	10, 39, 98, 175.
*For protective coatings.....	4, 6, 13, 22, 63, 70, 71, 73, 112, 127, 138, 150, 161, 163, 175, 178, 179, 180, 184, 216, 221, 226, 258, 263, 291, 301, 302, 320, 327, 337, 357, 360, 376, 379, 382, 394, 413, 440, 445, 467, 470, 496, 507, X, X, X, X, X, X, X, X, X, X.
For adhesives.....	175.
For textile, paper, and leather treatment.....	10, 13, 373.
For miscellaneous uses.....	X, X, X.

See footnotes at end of table.

TABLE 15B.—*Synthetic organic chemicals: Plastics materials for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Material	Manufacturers' identification numbers (according to list in table 22)
PLASTICS MATERIALS, CYCLIC—Continued	
<i>Condensation Resins, Benzenoid—Continued</i>	
*Alkyd resins—Continued	
*Saturated polyesters type—Continued	
Phthalic anhydride-glycol:	
For protective coatings.....	13.
For textile, paper, and leather treatment.....	376.
Phthalic anhydride-pentaerythritol: For protective coatings.....	227, 291, 413.
All other, unspecified:	
For protective coatings.....	413, X.
For miscellaneous uses.....	X.
*Unsaturated polyesters type:	
Phthalic anhydride-allyl alcohol: For protective coatings.....	156, 175.
Cyclopentadiene-maleic anhydride-alcohol:	
For protective coatings.....	39, 150.
For adhesives.....	175.
*Coal-tar acid resins:	
*Phenolic resins:	
*p-tert-Amylphenol-aldehyde:	
For protective coatings.....	70, 163, 180, 413, 467, X.
For miscellaneous uses.....	467, X.
Bis-phenol: For protective coatings.....	413.
*p-tert-Butylphenol-aldehyde:	
For protective coatings.....	70, 200, 320, 376, 413, 467.
For miscellaneous uses.....	467.
*Cresols-formaldehyde:	
For molding and casting.....	476.
*For laminating.....	39, 81, 110, 152, 175, 336, 376, 455, 492, X.
For protective coatings.....	39, 301, 394, 476.
Diamylphenol and hexamethylene: For miscellaneous uses.....	435.
Diphenylpropanol-formaldehyde: For protective coatings.....	6.
*Phenol-formaldehyde:	
*For molding.....	39, 84, 98, 102, 110, 129, 200, 267, 298, 476.
For casting.....	42, 81, 84, 239, 271.
*For laminating.....	39, 81, 84, 110, 152, 219, 247, 298, 336, 376, 382, 492, X.
For protective coatings.....	13, 39, 70, 180, 200, 242, 337, 421, 476, X, X.
For adhesives.....	39, 80, 81, 84, 219, 246, 298, 358, 376, 382, 476, X.
For textile, paper, and leather treatment.....	81, 376, 421.
For miscellaneous uses.....	39, 84, 129, 298, 382, X, X.
*Phenol-formaldehyde, modified by abietic acid: For protective coatings.....	163, 180, 221, 242, 376, 496.
*Phenol-formaldehyde, modified by abietic acid ester:	
For protective coatings.....	163, 199, 376, 382, 467.
For textile, paper, and leather treatment.....	199.
For miscellaneous uses.....	199.
Phenol-furfural:	
For molding and casting.....	129, 220.
For laminating.....	220.
Resorcinol-formaldehyde:	
For adhesives.....	80, X.
For miscellaneous uses.....	129.
Xylenol-formaldehyde:	
For molding and casting.....	110, 476.
For protective coatings.....	175, 376, 413, 476.
*Mixed phenolic (tar acid) resins:	
Cashew nut shell oil:	
For molding and casting.....	129, 220.
For laminating.....	220.
For protective coatings.....	220.
For miscellaneous uses.....	220.
*Cresylic acid-formaldehyde:	
For molding and casting.....	128.
For laminating.....	81, 492.
For protective coatings.....	128, 178, X.
For adhesives.....	81.
For miscellaneous uses.....	128.
*Cresols- and xylenols-aldehyde:	
For molding and casting.....	128.
For laminating.....	129.
For protective coatings.....	129, 175, 384.
For miscellaneous uses.....	X.

See footnotes at end of table.

TABLE 15B.—*Synthetic organic chemicals: Plastics materials for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Material	Manufacturers' identification numbers (according to list in table 22)
PLASTICS MATERIALS, CYCLIC—Con.	
<i>Condensation Resins, Benzenoid—Con.</i>	
*Coal-tar acid resins—Con.	
*Mixed phenolic (tar acid) resins—Con.	
Phenols- and cresols-aldehyde:	
For molding and casting.....	2, 128, 487.
For laminating.....	384.
For protective coatings.....	112, 128, 301.
For adhesives.....	297.
For miscellaneous uses.....	2, 128.
Phenols-, cresols-, and xylenols-formaldehyde:	
For laminating.....	110, 394.
For protective coatings.....	301.
Furfural-acetone resins: For ion exchange.....	13.
Organic nitrogen resins: Aniline-formaldehyde:	
For molding and casting.....	91.
For laminating.....	336.
Organic sulfur resins: p-Toluenesulfonamide: For miscellaneous uses.	298.
Petroleum condensation resins: For laminating.....	163, 370.
Styrene polyesters:	
For laminating.....	39.
For protective coatings.....	74, 178.
<i>Polymerization Resins, Benzenoid</i>	
Petroleum polymer resins:	
For protective coatings.....	370.
For miscellaneous uses.....	370, 433, X.
*Polyaromatic resins:	
Coumarone-indene resins:	
For molding and casting.....	308.
For protective coatings.....	43, 308.
For adhesives.....	308.
For miscellaneous uses.....	43, 345.
Cyclopentadiene: For protective coatings.....	357.
Polydichlorostyrene: For molding and casting.....	298.
*Polystyrene resins:	
For molding and casting.....	39, 81, 124, 298.
For protective coatings.....	403.
For adhesives.....	81, 465.
For glazing, sheeting, and films.....	74.
For miscellaneous uses.....	39, 345, X.
Polyvinyl carbazole: For molding and casting.....	171.
All other, unspecified: For protective coatings.....	220.
PLASTICS MATERIALS, ACYCLIC ²	
<i>Condensation Resins</i>	
*Alkyd resins:	
*Abietic acid:	
For protective coatings.....	184, 199, 221, 302, 357, 376, 413, 467, 496, X.
For adhesives.....	199.
For textile, paper, and leather treatment.....	199.
For miscellaneous uses.....	199, 467.
*Abietic acid and maleic acid:	
For protective coatings.....	6, 70, 73, 163, 184, 199, 227, 291, 302, 357, 376, 413, 445, 467, X, X, X, X.
For textile, paper, and leather treatment.....	199.
For miscellaneous uses.....	199, 467.
Adipic acid: For protective coatings.....	13, 70.
Azelaic acid: For protective coatings.....	70, 357.
Citric acid:	
For protective coatings.....	70.
For miscellaneous uses.....	X.
Congo ester:	
For protective coatings.....	242, 467, 496.
For miscellaneous uses.....	467.
Ester gums: For protective coatings.....	13.
*Fumaric acid:	
For protective coatings.....	175, 227, 376, 413, 465, 467, 496, X.
For miscellaneous uses.....	467.

See footnotes at end of table.

TABLE 15B.—*Synthetic organic chemicals: Plastics materials for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Material	Manufacturers' identification numbers (according to list in table 22)
PLASTICS MATERIALS, A CYCLIC—Con.	
<i>Condensation Resins—Con.</i>	
*Alkyd resins—Con.	
*Maleic acid or anhydride:	
For molding and casting	413.
For laminating	13, 298, 306, 358.
For protective coatings	4, 13, 70, 71, 112, 180, 184, 226, 227, 242, 258, 275, 357, 376, 382, 394, 445, 496, X, X, X.
*Maleic anhydride-terpene:	
For protective coatings	199, 226.
For adhesives	199.
For textile, paper, and leather treatment	199.
For miscellaneous uses	199.
Octohydric polymer: For protective coatings	242.
Rosin: For protective coatings	376, 467.
Sebacic acid:	
For molding and casting	382.
For protective coatings	2, 13, 227, 357, 376, 382, 445, 467, X.
For textile, paper, and leather treatment	227, 376.
Succinic acid: For protective coatings	413.
Tall oil: For adhesives	376.
All other, unspecified: For laminating	272.
*Organic nitrogen resins:	
Melamine-formaldehyde:	
For molding and casting	13, 298, 358.
For laminating	13, 39.
For protective coatings	13, 382.
For adhesives	13.
For textile, paper, and leather treatment	13.
For ion exchange	13.
Melamine-urea-formaldehyde:	
For laminating	13, 81.
For adhesives	13.
*Urea-formaldehyde:	
*For molding and casting	13, 39, 358, 448.
For laminating	39.
For protective coatings	13, 127, 358, 376.
*For adhesives	13, 39, 246, 358.
*For textile, paper, and leather treatment	13, 358, 373, 376, 382, 388, 448.
For miscellaneous uses	358.
Urea- and thiourea-formaldehyde:	
For adhesives	80, X.
For textile, paper, and leather treatment	267, 468.
Petroleum condensation resins	X.
Polyamide resins	127.
Silicone resins	124.
<i>Polymerization Resins</i>	
*Alcohol polymerization resins:	
Allyl alcohol:	
For molding and casting	357.
For laminating	272.
Furfural-furfuryl alcohol:	
For molding and casting	220.
For protective coatings	180.
For miscellaneous uses	220.
Polyacrylic and methacrylic acid resins:	
For textile, paper, and leather treatment	388.
For miscellaneous uses	127.
Polyacrylic and polymethacrylic acid ester resins:	
For molding and casting	127, 388.
For laminating	388.
For textile, paper, and leather treatment	13, 127, 388.
For glazing, sheeting, and films	127.
For miscellaneous uses	127, 388, X.
Polyolefin resins: Polyethylene, unplasticized	74.
Polyterpene resins	220, 345.
*Polyvinyl alcohol, ester, ether, and halide resins:	
Polyvinyl alcohol:	
For molding and casting	127.
For adhesives	127.
For textile, paper, and leather treatment	127.

See footnotes at end of table.

TABLE 15B.—*Synthetic organic chemicals: Plastics materials for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Material	Manufacturers' identification numbers (according to list in table 22)
PLASTICS MATERIALS, ACYCLIC—Con.	
<i>Polymerization Resins—Con.</i>	
*Polyvinyl alcohol, ester, ether, and halide resins—Con.	
Polyvinyl alcohol—Con.	
For glazing, sheeting, and films.....	127.
For miscellaneous uses.....	127.
Polyvinyl acetate:	
For protective coatings.....	73, 74, X.
For adhesives.....	74, 127, X.
For textile, paper, and leather treatment.....	X.
For miscellaneous uses.....	127, X.
Polyvinyl chloride:	
For molding and casting.....	74.
For protective coatings.....	127.
For textile, paper, and leather treatment.....	127.
For miscellaneous uses.....	182.
Polyvinyl chloride-acetate copolymer:	
For molding and casting.....	74.
For protective coatings.....	74, 220.
For adhesives.....	74.
For textile, paper, and leather treatment.....	74.
For glazing, sheeting, and films.....	74.
For miscellaneous uses.....	74.
Polyvinyl ether resins: For adhesives.....	
	171.
Polyvinylidene chloride-polyvinyl chloride copolymer:	
For molding and casting.....	124.
For glazing, sheeting, and films.....	124.
For miscellaneous uses.....	74.
*Polyvinyl alcohol-aldehyde resins:	
Polyvinyl acetal: For adhesives.....	
	408.
Polyvinyl butyral:	
For laminating.....	74, 408.
For protective coatings.....	408.
For adhesives.....	74, 127, 408.
For textile, paper, and leather treatment.....	74, 127.
For glazing, sheeting, and films.....	127.
For miscellaneous uses.....	74, 127.
Polyvinyl formal:	
For molding and casting.....	408.
For protective coatings.....	408.

¹ Includes phthalic anhydride-abietic acid glycerol and phthalic anhydride maleic anhydride glycerol resins.

² Includes small amounts of alicyclic and heterocyclic resins.

RUBBER-PROCESSING CHEMICALS

TABLE 17B.—*Synthetic organic chemicals: Rubber-processing chemicals for which United States production or sales were reported, identified by manufacturer, 1944*

[Rubber-processing chemicals for which separate statistics are given in table 17A are marked below with an asterisk (*); chemicals not so marked do not appear in table 17A because the reported data are confidential and may not be published. Manufacturers are identified by numbers in the alphabetical list appearing in table 22. 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 22)
RUBBER-PROCESSING CHEMICALS, CYCLIC	
*Accelerators:	
*Aldehyde-amines:	
Acetaldehyde-aniline.....	127, 298, 306.
*n-Butyraldehyde-aniline.....	127, 182, 298, 306.
* α -Ethyl- β -propylacrolein-aniline.....	87.
Formaldehyde-aniline (Methylene aniline).....	127, 198.
Formaldehyde-monoethylamine (Triethyltrimethylenetriamine).....	306.

TABLE 17B.—*Synthetic organic chemicals: Rubber-processing chemicals for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Chemical	Manufacturers' identification numbers (according to list in table 22)
RUBBER-PROCESSING CHEMICALS, CYCLIC—Con.	
*Accelerators—Con.	
*Aldehyde-amines—Con.	
Formaldehyde-p-toluidine (Methylene-p-toluidine).....	127.
Heptaldehyde-aniline.....	306.
Hexamethylenetetramine (Aldehyde-ammonia).....	127.
Urea-butylaldehyde-aniline.....	306.
*Dithiocarbamates:	
Carbon disulfide-methylenedipiperidine.....	298.
Dimethyl ethylenediphenyl dithiocarbamic acid, lead salt.....	87.
Dimethyl ethylenediphenyl dithiocarbamic acid, zinc salt.....	87.
2,4-Dinitrophenyl dimethyl dithiocarbamate.....	306.
Piperidinium pentamethylene dithiocarbamate.....	298, 306.
Piperidinium pentamethylene dithiocarbamic acid, potassium salt.....	127.
*Guanidines:	
*Diphenylguanidine.....	
Diphenylguanidine and mercaptobenzothiazole dinitrophenyl ester.....	13, 127, 298.
Diphenylguanidine phthalate.....	298.
Di-o-tolylguanidine.....	298, 306.
Triphenylguanidine.....	13, 127.
Triphenylguanidine.....	304.
*Thiazole derivatives:	
Alkyl 2-mercaptothiazole.....	182.
2-(Benzoylthio)benzothiazole (Benzothiazole thiobenzoate).....	298.
Bis-N,N'-(2-benzothiazylthiomethyl)urea.....	298.
N-Cyclohexyl-2-benzothiazole sulfenamide.....	298.
Diphenylguanidine phthalate, diphenylguanidine, and mercaptobenzothiazole dinitrophenyl ester.....	298.
Disulfide alkylated-2-mercaptothiazole.....	182.
2,2'-Dithiobisbenzothiazole (2,2'-Benzothiazyl disulfide).....	69, 183, 298.
*2-Mercaptobenzothiazole.....	69, 183, 298, 306.
2-Mercaptobenzothiazole, copper salt.....	183.
Mercaptobenzothiazole hexamethylenetetramine ester.....	127.
2-Mercaptobenzothiazole, lead salt.....	127.
Mercaptobenzothiazolemethylene aniline.....	306.
Mercaptobenzothiazolemethylene-o-toluidine.....	306.
2-Mercaptobenzothiazole, sodium salt.....	183.
2-Mercaptobenzothiazole, zinc salt.....	69, 306.
2-Mercaptobenzothiazole.....	69, 127.
Thiuram derivatives: Di-N-pentamethylenethiuram tetrasulfide.....	127.
Miscellaneous:	
Dibenzylamine.....	306.
p-Quinone dioxime.....	306.
p-Quinone dioxime dibenzoate.....	306.
*Antioxidants:	
Aldehyde- and acetone-amines:	
Acetaldehyde-aniline hydrochloride.....	306.
p-Aminodiphenyl-acetone.....	298.
Aniline-acetone, acid derivatives.....	298.
Butylaldehyde-aniline.....	127.
Crotonilidene- α -naphthylamine.....	182.
Diphenylamine-acetone.....	306.
Phenyl- β -naphthylamine-acetone.....	306.
*Amino or hydroxy compounds:	
2,4-Diaminodiphenylamine.....	298.
p,p'-Diaminodiphenylmethane.....	306.
2,4-Di-tert-butylhydroquinone.....	298.
Di-o-tolylethylenediamine.....	87.
Hydroquinone monobenzyl ether.....	182.
p-Hydroxydiphenylamine.....	127, 182.
Guanidine: Dicatechol borate, di-o-tolylguanidine salt.....	127.
Secondary amines:	
Alkylated diphenylamine.....	182.
p,p'-Dimethoxydiphenylamine.....	127.
Di- β -naphthol-p-phenylenediamine.....	182.
N,N'-Diphenylethylenediamine.....	87.
*N,N'-Diphenyl-p-phenylenediamine.....	127, 182, 298, 306.
p-Isopropoxydiphenylamine.....	182.
p-Methyl-p-(p-tolylsulfonylamino)diphenylamine.....	306.
Phenyl- α -naphthylamine.....	127.
Phenyl- β -naphthylamine.....	127, 182, 183.
p-(p-Toluenesulfonamino)diphenylamine.....	306.
Thiophenyl- β -naphthylamine.....	183.

TABLE 17B.—*Synthetic organic chemicals: Rubber-processing chemicals for which United States production or sales were reported, identified by manufacturer, 1944*—Continued

Chemical	Manufacturers' identification numbers (according to list in table 22)
RUBBER PROCESSING CHEMICALS, CYCLIC—Con.	
*Antioxidants—Continued	
Miscellaneous:	
p-tert-Butyl-m-cresol monosulfide.....	298.
β-Di-p-hydroxyphenylpropane.....	183.
Diphenyl-p-phenylenediamine-p-aminodiphenyl-acetone.....	298.
p-Hydroxy-N-phenylmorpholine.....	127.
Phenol-cyclohexanone.....	298.
2,2,4-Trimethylidihydroquinoline polymers.....	182.
Tackifiers: Amylphenyl sulfide.....	407.
RUBBER-PROCESSING CHEMICALS, ACYCLIC	
Accelerators:	
Aldehyde-amines: Butyraldehyde-monobutylamine.....	127.
*Dithiocarbamates:	
Amyl-ammonium dimethyldithiocarbamic acid, zinc salt.....	183.
Dibutyl dithiocarbamic acid, sodium salt.....	407.
Diethyl dithiocarbamic acid, zinc salt.....	306.
Diethyl dithiocarbamic acid, selenium salt.....	407, 509.
Diethyl dithiocarbamic acid, zinc salt.....	183, 306, 407.
Diethyl dithiocarbamic acid, sodium salt.....	509.
Dimethyl dithiocarbamic acid, zinc salt.....	306, 407.
*Thiuram derivatives:	
Tetra-amylthiuram monosulfide.....	298.
Tetra-butylthiuram monosulfide.....	306.
Tetraethylthiuram disulfide.....	127, 183, 407, 509.
*Tetramethylthiuram disulfide.....	127, 298, 306, 407.
Tetramethylthiuram monosulfide.....	127, 306.
Tetramethylthiuram tetrasulfide.....	127.
Xanthates:	
Di-n-butyl xanthodisulfide.....	306.
Di-isopropyl xanthodisulfide.....	182, 298.
Zinc butyl xanthate.....	183, 306.
Miscellaneous:	
tert-Butylhydroperoxide.....	465.
Keryl mercaptan.....	304.
*Peptizers: Dodecyl mercaptan.....	127, 205, 298, 306, 531.

ELASTOMERS (SYNTHETIC RUBBERS)

TABLE 18B.—*Synthetic organic chemicals: Elastomers (synthetic rubbers) for which United States production or sales were reported, identified by manufacturer, 1944*

[Elastomers (synthetic rubbers) for which separate statistics are given in table 18A are marked below with an asterisk (*); products not so marked do not appear in table 18A because the reported data are confidential and may not be published. Manufacturers are identified by numbers in the alphabetical list appearing in table 22. 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 22)
ELASTOMERS, CYCLIC	
Polybutadiene-styrene (GR-S type):	
*Produced at Government plants.....	514, 517, 518, 519, 520, 523, 524, 531.
*Produced at private plants.....	124, 183, 210, 437, 465, 517, X, X.
ELASTOMERS, ACYCLIC	
Polyalkylene-sulfide (Thiokol type).....	
124.	
*Polybutadiene-acrylonitrile (GR-A type) (Buna N):	
*Produced at Government plant.....	519.
*Produced at private plants.....	124, 158, 183, 210, 437.
Polychloroprene (GR-M type) (Neoprene):	
*Produced at Government plant.....	516.
Produced at private plant.....	127.
Polyisobutylene.....	436.
*Polyisobutylene-diolefin (GR-I type).....	436, 521, 524.
*Polyisoprene.....	520.

TABLE 18B.—*Synthetic organic chemicals: Elastomers (synthetic rubbers) for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Chemical	Manufacturers' identification numbers (according to list in table 22)
ELASTOMERS, ACYCLIC—Continued	
Polyisoprene-acrylonitrile	X.
Polyvinyl alcohol	127.
Polyvinyl alcohol-aldehyde: Polyvinyl butyral (Butvar) (Butacite)	74, 127, 298.
Polyvinyl chloride-acetate copolymer	74, 357.
Reaction products of natural rubber:	
Polymerized chlorinated rubber (Parlon)	199.
Polymerized rubber hydrochloride (Plioform)	183.

SURFACE-ACTIVE AGENTS

TABLE 19B.—*Synthetic organic chemicals: Surface-active agents for which United States production or sales were reported, identified by manufacturer, 1944*

[Surface-active agents for which separate statistics are given in table 19A are marked below with an asterisk (*); products not so marked do not appear in table 19A because the reported data are confidential and may not be published. Manufacturers are identified by numbers in the alphabetical list appearing in table 22. 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 22)
SURFACE-ACTIVE AGENTS, CYCLIC	
Nonsulfated and nonsulfonated:	
Polyhydric alcohol esters and ethers:	
Diamylphenyl polyether alcohol	171.
Iso-octylphenyl polyether alcohol	171.
Iso-octyltolyl polyether alcohol	171.
*Quaternary ammonium compounds:	
Cetyldimethylbenzylammonium chloride	250, 388.
Cetylpyridinium bromide	137.
Cetylpyridinium chloride	137, 287.
Cetylpyridinium iodide	137.
2-Lauroxyethylcarbonylmethylpyridinium chloride (Lauryl ester of colaminoformylmethylpyridinium chloride)	143.
Lauryldimethylbenzylammonium chloride	383, 501.
Laurylpyridinium chloride	205.
Stearoxymethylpyridinium chloride, mixture	486.
Trimethylbenzylammonium chloride	103.
Trimethylbenzylammonium hydroxide	103.
All other	157.
Sulfated and sulfonated:	
Benzene derivatives, sulfonated:	
Alkyl phenyl ethers, sulfonated	250, 388.
Decylbenzenesulfonic acid, sodium salt	298.
Di-isopropylbenzenesulfonic acid	32.
Dodecylbenzenesulfonic acid, sodium salt	298, 304.
Polyalkylbenzenesulfonic acid, sodium salt	32.
Diphenyl derivatives, sulfonated:	
5-Chloro bis (3,5-dichloro-2-hydroxyphenyl)-o-toluenesulfonic acid, sodium salt	171.
Dibutylphenylphenoldisulfonic acid, sodium salt	298.
Monobutylbiphenylmonosulfonic acid, sodium salt	298.
Monobutylphenylphenolmonosulfonic acid, sodium salt	298.
*Naphthalene derivatives, sulfonated:	
Amylnaphthalenesulfonic acid, sodium salt	5, 8, 305.
Benzyl naphthalene sulfonic acid (di and mono)	171.
Butyl ester of 1-naphthalenesulfonic acid, sodium salt	23.
Butylnaphthalenesulfonic acid, sodium salt	430.
Dibutyl naphthalenesulfonic acid, sodium salt	171.
Di-isopropyl naphthalenesulfonic acid, sodium salt	171.
Dilauryl naphthalenesulfonic acid, sodium salt	305.
Dimethylhexylnaphthalenesulfonic acid	5.
Hexylnaphthalenesulfonic acid	5.
*Isopropyl naphthalenesulfonic acid (mono) and sodium salt	13, 197, 304, 383, 450, 464, X.
2-Naphthalenesulfonic acid formaldehyde condensate	X.
Oleylnaphthalene sulfonic acid	366.
All other	X.

TABLE 19B.—*Synthetic organic chemicals: Surface-active agents for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 22)
SURFACE-ACTIVE AGENTS, CYCLIC—Continued	
Sulfated and sulfonated—Continued	
*Petroleum derivatives, sulfonated:	
Naphthenic acid, sulfonated	447.
Naphthenic acid, sulfonated, aluminum salt	434.
Naphthenic acid, sulfonated, sodium salt	433, 434, 466.
Petroleum sulfonate, ammonium salt	208, 415.
Petroleum sulfonate, barium salt	32.
Petroleum sulfonate, calcium salt	32, 415.
Petroleum sulfonate, sodium salt	32, 415, 420, 433, 437, 458, 521.
Petroleum sulfonates, other	411, 521.
SURFACE-ACTIVE AGENTS, ACYCLIC	
Nonsulfated and nonsulfonated:	
*Amides:	
N-(Aminoethyl)-N-(hydroxyethyl)oleamide (Aminoethyl-ethanol mono-oleylamide)	197.
N-(Aminoethyl)-N-(hydroxyethyl)stearamide (Aminoethyl-ethanol monostearylamide)	197.
N-(Aminoethyl)lauramide	305.
N-(Aminoethyl)oleamide	305.
N-(Aminoethyl)stearamide	305.
Coconut oil fatty acid amide and ester mixture	X.
N,N-Di(2-hydroxyethyl)lauramide (Diethanol lauramide)	305.
N,N-Di(2-hydroxyethyl)oleamide (Diethanol oleamide, amide and ester mixtures)	X.
N-(2-Hydroxyethyl)lauramide (Ethanol lauramide)	450.
N-(2-Hydroxyethyl)oleamide (Ethanol oleamide)	305.
N-(2-Hydroxyethyl)ricinoleamide (Ethanol ricinoleamide)	40, 305.
N-(2-Hydroxyethyl)stearamide (Ethanol stearamide)	305.
12-Hydroxy-N-(2-hydroxyethyl)stearamide (Ethanol hydroxystearamide)	305.
Tall oil amide	192.
Nitrogen-containing surface-active agents other than amides:	
Betaine hydrochloride	157.
Castor oil amine, polyether alcohol	171.
Diethanolamine laurate	8.
Ethylendinitrilotetra-acetic acid, tetrasodium salt	171.
Hexadecyl, octadecenyl amineacetate mixture	24.
Hexadecyl, octadecadienyl, octadecenyl amineacetate mixture	24.
Monobutylamine oleate	407.
Nitrioltriacetic acid, trisodium salt	171.
Oleoylsarcosine (n-Methyloleoylglycine), sodium salt	171.
Oleylamine polyether alcohol	171.
Oleyl glyoxilidene	464.
Stearoylsarcosine (n-Methylstearoylglycine), sodium salt	171.
Stearylbiguanide hydrochloride	171.
Stearyl glyoxilidene (2-(2-Heptadecyl-2-imidazoline-1)ethanol)	464.
Triethanolamine, coconut oil fatty acid ester	X.
Triethanolamine palmitate	8.
Trihexylammonium tricarballylate	171.
Polyhydric alcohol esters and ethers:	
Glucose polyglycol ether di-(cottonseed fatty acid) ester	34.
Glucose polyglycol ether distearate	34.
Glucose polyglycol ether oleate	34.
Mannitan monolaurate	34.
Mannitan monolaurate polyglycol ether	34.
Mannitan mono-oleate	34.
Mannitan monopalmitate	34.
Olein polyether alcohol	171.
Oleyl polyether alcohol	171.
Peanut oil polyethylene glycol	171.
Polyglycol laurate	8, 171.
Polyglycol monostearate	34, 233, 305.
Polyglycol lauryl ether	34.
Polyglycol mono-oleate	34, 305.
Propyleneglycol, glycerol mono-(cottonseed fatty acid) ester	34.
Propyleneglycol monostearate	34.
Propyleneglycol monostearate polyglycol ether	34.
Sorbitan dioleate	34.
Sorbitan, glycerol, propyleneglycol ricinoleate polyglycol ether	34.
Sorbitan monolaurate	34.
Sorbitan monolaurate polyglycol ether	34.
Sorbitan mono-oleate	34.
Sorbitan mono-oleate polyglycol ether	34.
Sorbitan monopalmitate	34.
Sorbitan monopalmitate polyglycol ether	34.
Sorbitan monostearate	34.

TABLE 19B.—*Synthetic organic chemicals: Surface-active agents for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 22)
SURFACE-ACTIVE AGENTS, ACYCLIC—Continued	
Nonsulfated and nonsulfonated—Continued	
Polyhydric alcohol esters and ethers—Continued	
Sorbitan monostearate polyglycol ether	34.
Sorbitan tetrapropionate	34.
Sorbitan trioleate	34.
Sorbitan triricinoleate	34.
Sorbitol monolaurate polyglycol ether	34.
*Salts of fatty acids:	
Ammonium linoleate	181.
Ammonium oleate	181.
Potassium laurate	300, 305.
Sodium oleate	464.
*Sulfated and sulfonated:	
*Acids, sulfated and sulfonated:	
Fish oil fatty acids, sulfonated	273.
*Oleic acid, sulfonated (Sulfonated red oil)	8, 171, 192, 195, 197, 300, 305, 373, 398, 420, 486, 497.
Ricinoleic acid, sulfonated, sodium salt	91.
Ricinoleic acid, sulfonated, potassium salt	305.
*Alcohols, sulfated and sulfonated:	
Cetyl, lauryl, and oleyl alcohol, sulfated	383.
Coconut fatty acid ester ethyleneglycolsulfate ethanolamine salt	X.
3, 9-Diethyl-6-tridecylsulfate, sodium salt	74.
2-Ethylhexylsulfate, sodium salt	74.
7-Ethyl-2-methyl-4-undecylsulfate, sodium salt	74.
Lauryl sulfate, sodium salt	127, 366.
Lauryl sulfate, triethanolammonium salt	366.
N-Methyleyleaminopolyethoxyethylsulfuric acid, sodium salt (Methyl polyethanolamine)	171.
Oleyl sulfate	383.
*Amides, sulfated and sulfonated:	
Lauric acid ester of potassium sulfoacetethanolamide	143.
*Lauroyltaurine (Ethanol lauramide sulfonic acid) salts	8, 197, 464, 486.
Methylene-diethanolamide of stearic and coconut oil fatty acids	5.
N-Methyleyleyltaurine	171.
N-Methylpalmitoyltaurine	171.
N-Octadecyldisodium sulfosuccinamate	13.
N-Octadecyltetrasodium N ⁻ 1, 2-dicarboxysulfosuccinamate	13.
Oleoyltaurine (Ethanol oleamide sulfonic acid) and salts	305, 430, 464.
Ricinoleyltaurine, sodium salt (Ricinoleylamidehydroxyethane-sulfonate, sodium salt)	464.
Spermacite amide, sulfonated	383.
Stearoyltaurine, sodium salt (Stearicamidehydroxyethane sulfonate, sodium salt)	464.
All other	5, 300.
*Esters, sulfated and sulfonated:	
Butyl acetylricinoleate, sulfated, sodium salt	197.
Butyl oleate, sulfated	305, 383.
Diamyl sodium sulfosuccinate	13.
Dibutyl sodium sulfosuccinate	13.
Diethyleneglycol oleate sulfate	X.
Dihexyl sodium sulfosuccinate	13.
Diocetyl sodium sulfosuccinate	13.
Lauryl sulfoacetate	304.
Methyl, ethyl, and propyl oleate, sulfated	206.
Sulfated monoglycerides from coconut fatty acids, ammonium salt	X.
Sulfated monoglycerides from coconut fatty acids, sodium salt	5, X.
Monostearine sodium sulfoacetate	143.
Sulfoethyl oleate	171.
All other	300.
Glyceryl phosphate ester of cottonseed oil fatty acids, sodium salt	143.
*Oils, fats, and waxes, sulfated and sulfonated:	
*Castor oil, sulfonated	8, 13, 35, 64, 171, 195, 197, 206, 248, 300, 305, 373, 378, 383, 420, 464, 486, 497.
Coconut oil, sulfonated	195, 464.
*Cod oil, sulfonated	35.
*Corn oil, sulfonated	8, 13, 206, 248, 305, 373, 464, 486.
Cottonseed oil, sulfonated	35, 305.
Fish oils, mixed, sulfonated	195, 273, 497.
Herring oil, sulfonated	35, 195, 273, 305, 497.
Lard oil, sulfonated	300, 464.
Menhaden oil, sulfonated	273.
Mustardseed oil, sulfonated	305, 383.
*Neat's-foot oil, sulfonated	35, 195, 206, 248, 305, 373, 378, 383.

TABLE 19B.—*Synthetic organic chemicals: Surface-active agents for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 22)
SURFACE-ACTIVE AGENTS, ACYCLIC—Con.	
*Sulfated and sulfonated—Con.	
*Oils, fats, and waxes, sulfated and sulfonated—Con.	
*Peanut oil, sulfonated.....	197, 206, 248, 305, 373, 383, 420, 430, 486.
Recovered grease, sulfonated.....	273.
Rice bran oil, sulfonated.....	305.
Seal oil, sulfonated.....	273.
*Soybean oil, sulfonated.....	8, 195, 197, 206, 248, 273, 373, 383, 497.
*Sperm oil, sulfonated.....	13, 35, 195, 197, 248, 273, 305, 378, 383, 464, 486, 497.
*Tallow, sulfonated.....	13, 35, 195, 197, 206, 248, 305, 373, 378, 383, 420, 464, 486, 497.
Whale oil, sulfonated.....	273.
All other.....	273, 430, 497.
Petroleum, alkyl, sulfonated; Petroleum sulfonate, sodium salt.....	127.
All other.....	300.

PLASTICIZERS

TABLE 20B.—*Synthetic organic chemicals: Plasticizers for which United States production or sales were reported, identified by manufacturer, 1944*

[Plasticizers for which separate statistics are given in table 20A are marked below with an asterisk (*); products not so marked do not appear in table 20A because the reported data are confidential and may not be published. Manufacturers are identified by numbers in the alphabetical list appearing in table 22. 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 22)
PLASTICIZERS, CYCLIC	
Camphor, synthetic.....	127.
β -Chloro- β' -(2-xenoxy)diethyl ether.....	124.
Coumarone-indene plasticizer.....	308, 345.
Cyclohexyl levulinate.....	298.
Di-tert-amylphenoxyethanol.....	407.
Dibenzyl sebacate.....	382.
Diethylene glycol dibenzoate.....	X.
Ethyl o-benzoylbenzoate.....	13.
N-Ethyltoluenesulfonamide, o, p mixture.....	298.
Methyl abietate.....	199.
Methyl abietate, hydrogenated.....	199.
Naphthalene derivatives:	
Amylnaphthalene, mono.....	407.
Diamylnaphthalene.....	407.
Polyamylnaphthalene.....	407.
Phenolic coumarone-indene plasticizer.....	308.
Phosphoric acid esters:	
Diphenyl mono-o-xenyl phosphate.....	124.
Di-o-xenyl monophenyl phosphate.....	124.
Tri-(p-tert-amylphenyl) phosphate.....	124.
*Tricresyl phosphate.....	298, 299, 328, X.
Triphenyl phosphate.....	124, 298.
*Phthalic acid or anhydride esters:	
Butyl phthalyl butyl glycolate.....	298.
Castor oil phthalate, hydrogenated.....	127.
Diallyl phthalate.....	328.
Di-n-amyl phthalate.....	467.
Di-(butylcellulosolve)phthalate (Di-(butoxyethyl)phthalate).....	127, 328.
*Dibutyl phthalate.....	13, 43, 103, 127, 229, 298, 308, 413, 467, 474, X.
Dicapryl phthalate.....	43, 382.
Dicarbitol phthalate (Bis-(diethylene glycol monoethyl ether) phthalate).....	328.
Dicellosolve phthalate (Diethoxyethyl phthalate).....	328.
Dicyclohexyl phthalate.....	43, 127.
Di-2-ethylhexyl phthalate.....	74, 328.
*Diethyl phthalate.....	13, 103, 127, 229, 298, 467, X.
Di-(fusel oil) phthalate.....	127.
Dihexylcellulosolve phthalate (Di-(ethyleneglycol monohexyl ether) phthalate).....	328.

TABLE 20B.—*Synthetic organic chemicals: Plasticizers for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Chemical	Manufacturers' identification numbers (according to list in table 22)
PLASTICIZERS, CYCLIC—Con.	
*Phthalic acid or anhydride esters—Con.	
Di-isobutyl phthalate	127.
Dimethylcellosolve phthalate (Di-(ethylene glycol monomethyl ether) phthalate)	127, 328.
Di-(methylecyclohexyl) phthalate	127.
*Dimethyl phthalate	13, 16, 127, 166, 199, 229, 298, 322, 376, 499, X.
Di-n-octyl phthalate	328.
Diphenyl phthalate	298.
Ethyl phthalyl ethyl glycolate	298.
Glyceryl tributyl triphthalate	13.
Methyl phthalyl ethyl glycolate	298.
Polyoxypropylene phenyl propionate	34.
Styrene, polymerized plasticizer	124.
Tetrahydrofurfuryl oleate	205.
Toluenesulfonamide, o, p mixture	298.
PLASTICIZERS, ACYCLIC	
Azelaic acid esters:	
Di-isobutyl azelate	187, 328.
Monomethyl azelate	141.
Citric acid esters:	
Acetyltri-n-butyl citrate	350.
Acetyltriethyl citrate	350.
Tributyl citrate	103, 127, 350.
Triethyl citrate	127, 350, X, X.
Diethylene glycol ester of mixed fatty acids	141.
Diethylene glycol dipropionate	328.
Fraternity oil, hydrogenated	205.
Glyceryl tributyrate	478.
Glyceryl tripropionate	X.
*Lauric acid esters:	
Butylcellosolve laurate (Ethylene glycol monobutyl ether laurate) (Butoxyethyl laurate)	187, 233.
Butyl laurate	233.
Diethylene glycol dilaurate	305.
Diethylene glycol monolaurate	143, 165, 181, 233.
Glyceryl monolaurate	181, 233.
1,2-Propylene glycol monolaurate	233.
Triethylene glycol laurate	450.
All other	181.
Mannitol hexa-acetate	34.
Octadecadiene, octadecene nitrile mixture	24.
*Oleic acid esters:	
Amyl oleate	407.
Butyl oleate	233, 305, 328.
Diethylene glycol mono-oleate	181, 233, X.
Ethyl oleate	233.
Glyceryl diacetyl tartrate mono-oleate	143.
Glyceryl mono-oleate	233, X.
Methylcellosolve oleate (Ethylene glycol monomethyl ether oleate) (Methoxyethyl oleate)	328.
Methyl oleate	305.
Polyglyceryl oleate	143.
1,2-Propyleneglycol mono-oleate	233.
All other	181.
Pelargonic acid esters:	
Butylcellosolve pelargonate (Ethylene glycol monobutyl ether pelargonate) (Butoxyethyl pelargonate)	187.
Diethylene glycol dipelargonate	141.
*Phosphoric acid esters:	
Tributylcellosolve phosphate (Tri-(ethylene glycol monobutyl ether) phosphate)	328.
Tributyl phosphate	103, 298.
Triethyl phosphate	298, X.
Polyethylene glycol	74.
Ricinoleic acid esters:	
n-Butyl acetylricinoleate	40.
n-Butyl acetylricinoleate, polymerized	40.
Butyl ricinoleate	40.
Cellosolve ricinoleate (Ethylene glycol monoethyl ether ricinoleate) (Ethoxyethyl ricinoleate)	181.
Diethylene glycol monoricinoleate	305.
Ethyl acetylricinoleate	40.
Glyceryl monoricinoleate	181, 233, 305.
Glyceryl triacetylricinoleate (Castor oil, acetylated)	40.

TABLE 20B.—*Synthetic organic chemicals: Plasticizers for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Chemical	Manufacturers' identification numbers (according to list in table 22)
PLASTICIZERS, ACYCLIC—Continued	
Ricinoleic acid esters—Continued	
Methyl acetylricinoleate.....	40.
Methylcellosolve acetylricinoleate (Ethylene glycol monomethyl ether acetylricinoleate) (Methoxyethyl acetylricinoleate).....	40, 328.
Methylcellosolve ricinoleate (Ethylene glycol monomethyl ether ricinoleate) (Methoxyethyl ricinoleate).....	40.
Methyl ricinoleate.....	40, 233.
Sebacic acid esters:	
Dibutylcellosolve sebacate (Di-(ethylene glycol monobutyl ether) sebacate) (Di-(butoxyethyl) sebacate).....	127.
*Dibutyl sebacate.....	103, 127, 192, 382, X.
Diethyl sebacate.....	233.
Dimethyl sebacate.....	103, 127, 192.
Sorbitan tetrapropionate.....	34.
*Stearic acid esters:	
Amyl stearate.....	407.
Butylcellosolve stearate (Ethylene glycol monobutyl ether stearate) (Butoxyethyl stearate).....	328.
*Butyl stearate.....	103, 233, 305, X.
Cellosolve stearate (Ethylene glycol monoethyl ether stearate) (Ethoxyethyl stearate).....	127.
Diethylene glycol distearate.....	181, 383.
Diethylene glycol monostearate.....	143, 165, 233, 305, 474.
Diethylene glycol monohydroxystearate.....	305.
Glyceryl distearate.....	181.
Glyceryl monohydroxystearate.....	305.
*Glyceryl monostearate.....	143, 165, 181, 233, 305, 430, 474.
Isopropyl stearate.....	233.
Methylcellosolve stearate (Ethylene glycol monoethyl ether stearate) (Methoxyethyl stearate).....	181, X.
Methyl dichlorostearate.....	205.
Methyl pentachlorostearate.....	205.
Methyl stearate.....	165, 205, 305.
Polyethylene glycol monostearate.....	181.
Polyglyceryl stearate.....	143.
1, 2-Propylene glycol monostearate.....	143, 233.
All other.....	181.
Sucrose octa-acetate.....	315.
Tartaric acid esters:	
Dibutylcellosolve tartrate (Di-(ethylene glycol monobutyl ether) tartrate) (Di-(butoxyethyl) tartrate).....	127.
Dibutyl tartrate.....	103, 233.
Triethylene glycol di-2-ethylbutyrate.....	74.
Triethylene glycol di-2-ethylhexoate.....	74.
All other.....	220, 328.

MISCELLANEOUS SYNTHETIC ORGANIC CHEMICALS

TABLE 21B.—*Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1944*

[Miscellaneous 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 are identified by numbers in the alphabetical list appearing in table 22. 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 22)
MISCELLANEOUS CHEMICALS, CYCLIC	
Acetyl-p-aminophenol.....	137, 157.
2-Aminobenzothiazole.....	137.
Aniline-acetone.....	298.
Barium iso-octylphenol sulfide and stearol.....	437.
Benzoic acid salts:	
Ammonium benzoate.....	205, 298.
*Sodium benzoate.....	127, 201, 205, 298, 457.
α-Benzoin oxime.....	134, 149.
Benzothiazole.....	298.
Benzoyl peroxide.....	261.

TABLE 21B.—*Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Chemical	Manufacturers' identification numbers (according to list in table 22)
MISCELLANEOUS CHEMICALS, CYCLIC—Continued	
o- and p-Benzylphenol.....	298.
*Biological stains.....	196, 304, X.
Bis-tert-amyphenol sulfide, calcium salt.....	407.
n-Butylcatechol.....	298.
p-tert-Butylcatechol.....	124.
tert-Butyl perbenzoate.....	465.
p-tert-Butylphenol.....	124.
Camphene.....	127.
Camphocarboxylic acid.....	1.
p-Carboxybenzenesulfondichloramide (Halozone).....	1.
*Chemical indicators:	
o-Cresolphthalein.....	157.
o-Cresolsulfonphthalein (Cresol red).....	134, 157, 304, 449.
m-Cresolsulfonphthalein (m-Cresol purple).....	134, 304, 340, 449.
Dibromo-o-cresolsulfonphthalein (Bromocresol purple).....	134, 304, 340, 449.
Dibromothymolsulfonphthalein (Bromothymol blue).....	134, 304, 340, 449.
Dichlorophenolsulfonphthalein (Chlorophenol red).....	134, 304, 449.
Methyl red.....	157, 304.
Phenolsulfonphthalein (Phenol red).....	48, 134, 211, 304, 340, 449.
Tetrabromo-m-cresolsulfonphthalein (Bromocresol green).....	134, 304, 449.
Tetrabromophenolsulfonphthalein (Bromophenol blue).....	134, 304, 449.
Thymolphthalein.....	134, 157.
Thymolsulfonphthalein (Thymol blue).....	134, 304, 449.
All other.....	99, 245, 304.
*Chemical reagents:	
p-Aminodiphenylamine diazosulfate.....	137.
Aurintricarboxylic acid.....	134, 449.
Barium diphenylamine sulfonate.....	134.
p-Diazodiphenylamine magnesium sulfate mixture.....	137.
p-Diazodiphenylamine zinc chloride double salt.....	137.
1-Diazo-2-naphthol-4-sulfonic acid.....	137.
2,6-Dibromoquinone chloroimide.....	134, 304.
Diphenylbenzidine.....	134.
Diphenylcarbazon.....	157.
Diphenylthiocarbazon (Dithizone).....	134, 157.
α,α' -Dipyridyl (2,2'-Bipyridine).....	134, 149.
p-Nitrobenzeneazoresorcinol.....	134.
Nitrosophenylhydroxylamine (Cupferron).....	134.
Potassium biphthalate.....	173, 286.
Quinhydrone.....	134, 286.
Sodium 2,6-dichlorobenzenoneindophenol.....	134.
Sulfosalicylic acid.....	157, 286.
All other.....	304.
Cyclohexane.....	43, 124, 127.
Cyclohexanol.....	127, 205, 298.
Cyclohexanone.....	43, 127.
Cyclohexyl phosphite.....	43.
*Cyclopropane.....	136, 269, 329, 426.
Decahydronaphthalene (Decalin).....	127.
Diazodinitrophenol.....	199.
Dibenzyl disulfide.....	157, 205.
Dichlorobenzyl disulfide.....	205.
N,N'-Diethyldiphenylurea.....	91, 127, 202, 407.
Diethylene oxide (Dioxan).....	74.
2,2'-Dihydroxy-5,5'-dichlorodiphenylmethane.....	X.
2,2'-Dihydroxy-3,5,6,3',5',6'-hexachlorodiphenylmethane.....	X.
2,2'-Dihydroxy-3,3',5,5'-tetra-amyldiphenylmonosulfide, barium salt.....	13.
Di-isobutylene-phenolsulfur monochloride.....	13.
6,12-Dimethylcrotonyl acetate.....	499.
Diphenylcarbazine.....	157.
Ergosterol, crystalline.....	299, 429.
Ethyl benzoylacetate.....	467.
Ethyleneglycol monophenyl ether.....	74.
*Flotation reagents:	
Dicesyl dithiophosphoric acid.....	X.
Dicesyl dithiophosphoric acid, ammonium salt.....	X.
Dicesyl dithiophosphoric acid, sodium salt.....	X.
Di-o-tolylthiourea.....	X.
Thiocarbamide.....	13, 127, 298, 304.
Fluorobenzene.....	134.
Furan derivatives:	
Furfural.....	374.
Furfuryl alcohol.....	205, 374.
Furfuryl mercaptan.....	137.
Hydrofuramide.....	374.
Tetrahydrofurfuryl alcohol.....	205, 374.

TABLE 21B.—*Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1944*—Continued

Chemical	Manufacturers' identification numbers (according to list in table 22)
MISCELLANEOUS CHEMICALS, CYCLIC—Con.	
*Gallic acid, tech.....	134, 269, 513.
Gases (poisonous, tear, etc.): Chloroacetophenone.....	154, X.
Gasoline antioxidants.....	127, 208.
Gasoline inhibitors.....	456.
Guanine.....	284.
1-Hydrocyclohexylhydroperoxide-1.....	465.
*Insecticides, synthetic:	
N,N-Benzoylthylcyclohexylamine.....	298.
Benzyl thiocyanate.....	205.
4,4'-Dichlorodiphenyl-1,1,1-trichloroethane (DDT).....	41, 91, 127, 140, 173, 274, 286, 290, 298, 306, 351, 413, X.
2,4-Dinitroanisole.....	165, 479.
4,6-Dinitro-o-cresol.....	X.
4,6-Dinitro-o-cresol, sodium salt.....	X.
Fenethyl thioxyanoacetate.....	X.
Phenothiazine.....	124, 127, 241, 308.
Xanthone.....	124, 173.
Mesoxalylurea (Alloxan).....	137.
Methylcyclohexane.....	43, 306.
Methylcyclohexanol (Methyl hexalin).....	127, 205.
4-Methyl-5-(β -hydroxyethyl)thiazole.....	286.
Methylphloroglucinol.....	137.
Morpholine.....	74.
Naphthenic acid salts:	
Chromium naphthenate.....	326.
Cobalt naphthenate.....	194, 326.
Copper naphthenate.....	194.
Iron naphthenate.....	326.
Lead naphthenate.....	326.
Manganese naphthenate.....	194, 326.
Mercury naphthenate.....	326.
Nickel naphthenate.....	194.
Naphthenic, oleic, and coconut fatty acid mixture, aluminum soap.....	193.
Octylphenol.....	X.
Octylresorcinol.....	157.
Phenol, hydrogenated.....	205.
2-Phenylbutyric acid.....	137.
Phenyl mercuric derivatives: ¹	
Phenyl mercuric acetate.....	49.
Phenyl mercuric chloride.....	49, 189.
Phenyl mercuric cyanamide.....	X.
Phenyl mercuric hydroxide.....	49.
Phenyl mercuric nitrate.....	49.
Phenyl mercuric salicylate.....	49.
All other.....	49.
Phenylphosphoric acid, disodium salt.....	340.
Phenylsemicarbazide.....	137, 157.
Phloroglucinol.....	137.
*Photographic chemicals:	
p-Aminophenol hydrochloride.....	134.
p-Aminophenol sulfate.....	137.
Benzotriazole.....	134, 137, 149.
Catechol (Pyrocatechin).....	X.
Chlorobenzotriazole.....	149.
Chlorohydroquinone.....	137.
2,4-Diaminophenol dihydrochloride (Amidol).....	30, 479.
Hydroquinone (Hydroquinol).....	78, 127, 134, 456, 479, 513.
p-Hydroxyphenylglycine.....	30, 127, 130, X.
p-Methylaminophenol sulfate (Metol) (Rhodol).....	127, 134, 479, 513, X.
Phthalic acid, sodium salt.....	171.
*Plant hormones:	
2,4-Dichlorophenoxyacetic acid.....	12.
α -Indole-3-n-butylric acid.....	286.
Naphthaleneacetamide (N-Acetylnaphthylamine).....	12, 494.
Naphthaleneacetic acid.....	12, 13, 124, 173, 494.
2,4,5-Trichlorophenoxyacetic acid.....	12.
*Plasticizers. See table 20B.	
Propylcyclohexanol.....	205.
*Pyrogallol (Pyrogallic acid).....	134, 269, 513.
Quinoidine, sulfurized.....	127.
Quinone.....	513.
Research chemicals.....	65, 134, 157, 284, 390.
Rosin acid salts:	
Calcium resinate.....	13.
Manganese resinate.....	13.
Zinc resinate.....	13.

¹ See table 13B for medicinal grades.

TABLE 21B.—*Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Chemical	Manufacturers' identification numbers (according to list in table 22)
MISCELLANEOUS CHEMICALS, CYCLIC—Con.	
Salicylanilide (Shirlan).....	127.
Sulfosalicylic acid.....	134, 157.
*Surface-active agents. See table 19B.	
*Tanning materials, synthetic:	
Isopropylidenediphenolsulfonic acid, formaldehyde condensate.....	171.
Naphthaleuesulfonic acid, formaldehyde condensate.....	117, 250, 298, 304, 388.
2-Naphthalenesulfonic acid, formaldehyde condensate, ammonium salt.....	X.
1-Naphthalenesulfonic acid, formaldehyde condensate, sodium salt.....	23.
2-Naphthalenesulfonic acid, formaldehyde condensate, sodium salt.....	X.
Phenolsulfonic acid, formaldehyde condensate.....	91.
Phenolthiosulfonic acid.....	171.
Styrene maleic anhydride interpolymers, partial sodium salt.....	127.
Terphenyl glycol ether.....	X.
Terphenyl methyl ether.....	X.
Tetrahydronaphthalene (Tetralin).....	127.
Tetraphenylarsonium chloride.....	137.
Tetraphenyl tin.....	205.
Textile chemicals, other than surface-active agents:	
Derived from naphthalene.....	127.
Derived from pyridine.....	127.
Thionalid.....	137.
Thiophene (Thiofuran).....	134.
o-Tolylbiguanide.....	298.
Tri-tert-amyphenyl phosphite.....	298.
Trimethyl cyclohexanol.....	205.
Triphenyl phosphite.....	298.
Veratyl aldehyde bisulfite compound.....	127, X.
o-Xenylbiguanide.....	298.
MISCELLANEOUS CHEMICALS, ACYCLIC	
Acetaldehyde.....	92, 315, 367, 457, X, X.
*Acetamide.....	315.
*Acetic acid: Synthetic (100%).....	74, 103, 127, 315, 367, 456, 467.
*Acetic acid salts:	
Aluminum acetate.....	13, 127, 173, 286, 315.
Ammonium acetate.....	13, 173.
Cadmium acetate.....	173.
Calcium acetate.....	173.
Chromium acetate.....	13, 194.
Cobalt acetate.....	173, 194.
Copper acetate.....	173, 194, 315.
Lead acetate.....	173.
Magnesium acetate.....	173.
Manganese acetate.....	194, 315.
Mercuric acetate.....	173.
Nickel acetate.....	194.
Potassium acetate.....	173, 315.
Sodium acetate.....	124, 127, 173, 269, 286, 298, 315.
Zinc acetate.....	173, 194.
*Acetic anhydride:	
From acetylene (100%).....	127.
From ethylene (100%).....	74.
From ketene (100%).....	74.
From recovered acetic acid by the vapor-phase process (100%).....	456, X.
From acetic acid (other than recovered) by the vapor-phase process (100%).....	456.
Acetin:	
Mono.....	171, 233.
Di.....	233.
*Tri.....	166, 199, 202, 233, 261, 305, 456, X.
Acetoin (Methyl acetylcarbinol).....	149.
Acetone:	
*By fermentation.....	29, 103, 129, 367, 467.
*From isopropyl alcohol.....	74, 367, 410, 435, 456.
Acetonitrile.....	286, 315.
Acetylacetone.....	74.
Acetoxime.....	137.
Acetylacetone (2,4-Pentanedione).....	134.
Acetyl bromide.....	134.
α -Acetylbutyrolactone.....	467.
Acetyl chloride.....	165, 171, 205.
Acetyl iodide.....	137.
Acetylpropyl chloride.....	467.
Acetic acid.....	171.
Acrylonitrile.....	13, 127, 388.

TABLE 21B.—*Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Chemical	Manufacturers' identification numbers (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC—Continued	
Adipic acid	127.
Adiponitrile	127.
β -Alanine	1.
Aldol (Acetaldo)	315
Alkyl mercaptans, mixed	417.
Allyl alcohol	70, 410.
Allyl mercaptan (2-Propene-1-thiol)	137.
α -Allyl- β -succinylurea	243.
Allylurea	243.
Aluminum isopropylate	134.
*Amines:	
Allylamine	137.
2-Aminoheptane	298.
Amylamines:	
Mono	407.
Di	407.
Tri	407.
Butylamines:	
Mono	407, X.
Di	407.
Tri	407.
Iso	127.
Decylamine, dodecylamine, octadecenylamine, octylamine, tetradecylamine mixture	24.
Diethylenetriamine	52, 74.
Dioctylamine	74.
Dipropylenetriamine	52.
Dodecylamine	24.
Ethylamines:	
Mono	407.
Di	407.
Tri	407.
Ethylenediamine, tech	52, 74.
Hexadecylamine, tech	24.
Hexadecylamine, octadecenylamine, octadecylamine mixture	24.
Hexamethylenediamine	127.
*Hexamethylenetetramine, tech	39, 127, 128, 201, 487.
Methylamine:	
Mono	103, 127, 250, 388.
Di	103, 127.
Tri	103, 127.
Octadecylamine	24.
Polyethylenamines	74.
Propylenediamine	52, 74.
Stearylamine	430.
Tetraethylenepentamine	74.
Triethylenetetramine	74.
Aminoacetic acid, tech. (Glycine)	48.
Amino acid mixture	X.
2-Amino-1-butanol	103.
2-(Aminoethyl)aminoethanol (Hydroxyethyl ethylenediamine)	74.
2-Amino-2-ethyl-1,3-propanediol	103.
Aminoguanidine sulfate	171.
2-Amino-2-methyl-1-propanol (A minoisobutanol)	103.
2-Amino-2-methyl-1,3-propanediol	103.
*Amyl acetates, primary:	
*Normal (90%)	103, 127, 407.
Active (90%)	127.
Isoamyl (90%)	168, 324, 343, 467.
*Amyl alcohols:	
*Crude (Fusel oil) (100%)	103, 127, 292, 467.
Refined fusel oil	467.
Refined:	
Primary:	
Active (2-Methylbutanol-1) (100%)	127.
Isoamyl (3-Methylbutanol-1) (100%)	168, 343, X.
Normal (n-Butylcarbinol) (100%)	367.
Secondary:	
Pentanol-2 (Methylpropylcarbinol) (100%)	407, 438.
Pentanol-3 (Diethylcarbinol)	407.
Tertiary: Amyl (2-Methylbutanol-2) (100%)	501.
Amylenes, mixed	407.
Amyl ether	407.
Amyl formate	155.
Amyl mercaptan (Pentanethiol)	407.
n-Amyl ultrate	286.

TABLE 21B.—*Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Chemical	Manufacturers' identification numbers (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC—Continued	
Anhydromethylenecitric acid (β -(Hydroxymethyl)tricarballic acid lactone)	137.
Azelaic acid	141.
Barium dihexyl dithiophosphate	X.
Barium dilauryl dithiophosphate	X.
1-Bromo-2,3-epoxypropane	329.
*Butadiene, from alcohol: Grade for rubber (elastomers)	74, 522, X.
Butyl acetates:	
*Normal (90%)	74, 103, 127, 157, 343, 367, 467, X.
Iso (90%)	127.
Secondary (90%)	438.
*Butyl alcohols:	
Primary:	
*Normal (n-Propylcarbinol) (100%)	29, 74, 103, 367, 467.
Iso (Isopropylcarbinol) (100%)	74, 127.
Secondary (Ethylmethylcarbinol) (100%)	410, 438.
Tertiary (Trimethylcarbinol) (100%)	410, 524.
Butyl chloroacetate	298.
Butyl formate	155.
Butyl lactate	103.
Butyl methacrylate	388.
Butyl vinyl ether	171.
n-Butyraldehyde	74, X.
n-Butyraldoxime	304.
n-Butyric acid	74, 324, X.
Butyric anhydride	74, X.
Butyryl chloride	205.
n-Caproic acid	74, 278, 824.
Caprylic acid	X.
Caprylyl chloride	205.
*Carbon disulfide	124, 382, 443, 454, 493, X.
*Cellulose derivatives:	
Cellulose esters:	
Cellulose acetate	14, 16, 127, 199, 456, X, X.
Cellulose acetate butyrate	456.
Cellulose acetate propionate	456.
Cellulose nitrate	199.
Cellulose ethers:	
Ethyl cellulose	124, 199.
Methyl cellulose	124.
Sodium carboxymethylcellulose	199.
Chemical reagents: Girard's reagent P 1	243.
*Chloral (Trichloroacetaldehyde)	127, 173, 298, 493.
Chloroacetamide	286.
Chloroacetic acid, primary:	
Mono	124.
Di	124.
Tri	124.
Chloroacetyl chloride	124.
β -Chloro- α -diethylaminoethane hydrochloride (Novolid salt)	407, 501.
1-Chloro-3-hydroxypropane	329.
2-Chloroisopropyl-2-chloroethyl ether	329.
Chlorokerosene, sulfurized	437.
Chloromaleic anhydride, mono	304.
Chromium acetylacetonate	137.
Citric acid:	
Crude, fermentation	350.
Refined, fermentation	94, 350.
Cobalt acetylacetonate	137.
Crotonaldehyde	315, X, X
Cyanoacetamide	48, 229.
Cyanoacetic acid	48, 124, 278.
Diacetone alcohol (4-Hydroxy-4-methyl-2-pentanone)	74, 103, 298, 410.
Diallyl succinate	137.
Diallyl sulfide	137.
Diamyl sulfide	407.
1,3-Dibromo-2-hydroxypropane	329.
Dibutyl ether (n-Butyl ether)	74, 103.
Dibutyl oxalate	467.
Dichlorodiethyl ether (Bis-(2-chloroethyl) ether)	74, 124.
Dichloroethyl acetate	91.
Dichloroethyl formal	74.
Dichloroisopropyl ether	74, 124.
1,3-Dichloro-2-propanol (Glycerol dichlorohydrin)	329, 410.
Dichlorostearic acid	205.
Dicyandiamide	13.
Diethylaminoethanol	74, 407.

TABLE 21B.—*Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Chemical	Manufacturers' identification numbers (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC—Con.	
*1-Diethylamino-4-aminopentane (Novoldiamine).....	202, 407, 501 ²
1-Diethylamino-4-pentanol (Novol alcohol).....	501.
1-Diethylamino-4-pentanone (Novol ketone).....	407, 467, 501.
Diethyl carbonate (Diatol).....	467.
Diethylene glycol.....	74, 124.
Diethylene glycol diethyl ether (Diethyl carbitol).....	74.
Diethylene glycol monobutyl ether (Butyl carbitol).....	74.
Diethylene glycol monobutyl ether acetate (Butyl carbitol acetate).....	74.
Diethylene glycol monoethyl ether (Carbitol).....	74.
Diethylene glycol monoethyl ether acetate (Carbitol acetate).....	74.
Diethylene glycol monomethyl ether.....	74.
Diethyl maleate.....	304.
*Diethyl malonate (Malonic ester).....	1, 48, 124, 255.
Diethylmalonic ester (Diethyl diethylmalonate).....	1.
Diethyl sulfate (Ethyl sulfate).....	74.
Diglycolic acid.....	127.
Di-isobutyl adipate.....	127.
Di-isopropanolamine.....	74.
Dimethyl ether.....	127.
Dimethylformamide.....	127.
Dimethyl glutarate.....	127.
Dimethylglyoxime.....	134.
Dimethyl maleate.....	304.
Dimethylolurea.....	127, 486.
Dimethyl sulfate.....	127.
Dimethylurea.....	48, 169, 383.
Dioctanyl disulfide.....	437.
Dioleyl maleate.....	298.
Dipropylene glycol (Bis-(2-hydroxy-1-propyl) ether).....	74, 124.
Drying oil.....	127, 389.
Dulcitol.....	34.
Epichlorohydrin (1-Chloro-2,3-epoxypropane).....	127, 329, 410.
Erucic acid.....	157, 501.
Ethane sulfonic acid.....	65.
Ethanolamine:	
Mono.....	74, 124.
Di.....	74, 124.
Tri.....	74, 124.
*Ethyl acetate (85%).....	74, 103, 127, 161, 298, 324, 343, 367, 408, 450, 467.
Ethyl acetoacetate.....	74, 467.
Ethyl acrylate.....	13, 388.
Ethyl alcohol, synthetic.....	69, 74, 127, 438, X.
Ethyl bromoacetate.....	124, 134.
α-Ethylbutyl acetate.....	74, 127.
α-Ethylbutyl alcohol.....	74.
α-Ethylbutyraldehyde.....	74.
α-Ethylbutyric acid (Diethylacetic acid).....	74.
Ethyl chloroacetate.....	298.
Ethyl chloroformate (Ethyl chlorocarbonate).....	467.
Ethyl cyanoacetate.....	48, 229.
*Ethylene (from ethyl alcohol and ether).....	124, 146, 257, 329, 388, 467, 515, 522.
Ethylene chlorohydrin.....	74.
Ethylene cyanohydrin.....	13.
N, N'-Ethylenediglycine.....	351.
*Ethylene glycol.....	74, 124, 127.
Ethylene glycol diethyl ether (Diethyl cellosolve).....	74.
Ethylene glycol diacetate.....	74.
Ethylene glycol dinitrate.....	199.
Ethylene glycol monoacetate.....	134.
Ethylene glycol monobutyl ether (Butyl cellosolve).....	74.
Ethylene glycol monoethyl ether (Cellosolve).....	74.
Ethylene glycol monoethyl ether acetate (Cellosolve acetate).....	74.
Ethylene glycol monomethyl ether (Methyl cellosolve).....	74.
Ethylene glycol monomethyl ether acetate (Methyl cellosolve acetate).....	74.
Ethylene oxide.....	74, 124.
*Ethyl ether.	
Technical.....	74, 199, 438, 467, 522, X.
U. S. P.....	269, 426.
Absolute.....	467.
*Ethyl formate.....	103, 168, 269, 324, 343, 467, X.
2-Ethylhexanal.....	74.
2-Ethyl-1,3-hexanediol.....	74.
2-Ethylhexanol (Octyl alcohol).....	74, 157.
2-Ethylhexoic acid.....	74.
2-Ethylhexyl acetate.....	74.
Ethyl hydroxybutyrate.....	13.

TABLE 21B.—*Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Chemical	Manufacturers' identification numbers (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC—Con.	
Ethylidene diacetate	127.
Ethyl lactate	13.
Ethyl levulinate	149.
Ethylmalonic ester (Ethyl ethylmalonate)	169, X.
Ethyl mercaptan	269, 417.
Ethyl-1-methylbutylmalonic ester	1.
Ethyl monobromoacetate	124.
* Ethyl monochloroacetate	124, 165, 286, X.
* Ethyl oxalate (Diethyl oxalate)	48, 343, 467.
Ethyl propionate	127, 168, X.
Ethyl silicate	74.
Ethyl sodium acetone oxalate	467.
Fats and oils, modified:	
Castor oil, dehydrated	508.
Castor oil, hydrogenated	127, 205.
Linseed oil, accelerated	508.
Linseed oil, conjugated	508.
Tall oil, modified	300.
Fatty acids, chemically modified:	
Castor oil fatty acids, dehydrated	508.
Coconut oil fatty acid chloride	171.
Linseed oil fatty acids, conjugated	508.
Soybean oil fatty acids, conjugated	508.
* Fatty acid esters, not included with plasticizers:	
Butyl palmitate	233, 305.
Diethylene glycol mono-soybean	233.
Ethylene glycol mono-oleate	192.
Ethylene glycol monostearate	233.
Ethylene glycol and glycerol esters of tall oil	508.
Ethyl esters of linseed oil fatty acids	233.
Ethyl laurate	233.
Glucose polyglycol ether pentastearate	34.
Glyceryl tall oil esters	305, 508.
Glyceryl tritallow	233.
Isopropyl laurate	143.
Isopropyl laurate and myristate	X.
Isopropyl oleate	192.
Isopropyl palmitate	143.
Methyl tallow	305.
Pentaerythritol esters linseed fatty acid	508.
Pentaerythritol soybean fatty acid, esters	508.
Polyglycol stearate	383.
Sorbitan linseed fatty acid ester	34.
Sorbitol polyglycol ether hexastearate	34.
Fatty alcohols:	
Heptadecanol	74.
Hexadecanol	192.
Lauryl alcohol	X.
Octadecanediol	127.
Tetradecanol	74.
2-Undecanol	74.
All other	127.
Fenchone	311.
* Flotation reagents:	
Thiophosphates:	
Ammonium di-sec-butyl dithiophosphate	X.
Sodium di-sec-butyl dithiophosphate	X.
Sodium diethyl dithiophosphate	X.
Sodium di-isopropyl dithiophosphate	X.
Xanthates:	
Butylxanthogen ethyl formate	296.
Chloronaphtha xanthate	298.
Ethylxanthogen ethyl formate	296.
Potassium amyl xanthate	124, 298.
Potassium butyl xanthate	124, 306.
Potassium ethyl xanthate	124, 298.
Potassium isopropyl xanthate	124, 306.
Potassium pentasol xanthate	124.
Sodium butyl xanthate	X.
Sodium sec-butyl xanthate	X.
Sodium ethyl xanthate	13, 124.
Sodium isopropyl xanthate	X.
* Formaldehyde (37% HCHO by weight)	39, 92, 103, 127, 201, 229, 388, X.
Formamide	127.
Formic acid (90%)	127, 201, 480.

TABLE 21B.—*Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Chemical	Manufacturers' identification numbers (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC—Continued	
*Formic acid salts:	
Aluminum formate.....	127, 480.
Chromic formate.....	171.
Nickel formate.....	194.
*Sodium formate, crude.....	127, 201, 480.
Sodium formate, refined.....	173, 269, 286, 501.
Fumaric acid.....	298, 304, 350.
*Gases (poisonous, tear, etc.):	
Carbonyl chloride (Phosgene).....	205, 316.
Chloropierin.....	19, 124, 215.
Gluconic acid, tech.....	350.
Glucose polyglycol ether.....	34.
Glyceric acid and calcium salt.....	157.
Glycerol chlorohydrin, mono.....	410, X.
Glycerol epichlorohydrin.....	165.
Glycol borl-borate.....	181.
Glycol diformate.....	74.
Glycolic acid (Hydroxyacetic acid).....	127.
Glyoxal.....	171.
Guanidine carbonate.....	13, 157.
Guanidine hydrochloride.....	157.
Guanidine nitrate.....	308.
Guanylnitrosamineguanyltetrazene.....	X.
*Halogenated hydrocarbons:	
*Chlorides:	
Allyl chloride.....	329, 410.
Amyl chlorides, mixed.....	407.
Butyl chloride:	
Normal.....	74, 407.
Secondary.....	134.
Tertiary.....	134, X.
*Carbon tetrachloride.....	120, 124, 317, 454, 493, X.
Cetyl chloride.....	137, 287.
Chlorinated methane and homologs.....	47.
*Chlorinated paraffin.....	9, 120, 199, 202, 205, 433, 437.
Chlorinated propane, liquid.....	205.
Chlorinated propane, wax.....	205.
Chloroform:	
*Technical.....	62, 124, 127.
*U. S. P.....	62, 124, 127.
1,2-Dichloroethane (Ethylene dichloride).....	74, 124, 388, 467.
Dichloropentane (Amylene dichloride).....	407.
1,2-Dichloropropane (Propylene dichloride).....	74, 124, 410.
Ethyl chloride:	
Technical.....	124, 145.
U. S. P.....	124.
Hexachlorobutadiene.....	205.
*Hexachloroethane.....	124, 127, 205, X.
Hexachloropropylene.....	205.
Isoamyl chloride (1-Chloro-3-methylbutane).....	255.
Isopropyl chloride.....	205.
Methylallyl chloride.....	410.
*Methyl chloride (Chloromethane):	
Crude.....	47.
Refined, refrigerant grade.....	19, 47, 124, 127, 298, 329, 356, 482.
*Methylene chloride (Dichloromethane):	
Crude.....	47, 124.
Refined, refrigerant grade.....	47, 124, 127.
Pentachloroethane.....	127.
sym.-Tetrachloroethane (Acetylene tetrachloride).....	124, 127, 493.
*Tetrachloroethylene (Perchloroethylene).....	124, 127, 493.
1,1,2-Trichloroethane (Methyl chloroform).....	74, 124.
Trichloroethylene.....	127, 493.
Vinyl chloride, monomer.....	74, 124, 127, 182.
Vinylidene chloride, monomer.....	124, 182.
All other.....	205.
*Bromides, fluorides, iodides, and mixtures:	
Allyl bromide.....	124, 290.
Allyl iodide.....	134, 137.
n-Amyl bromide.....	124.
2-Bromo-1-chloropropane.....	329.
2-Bromopentane.....	255.
Butyl bromide:	
Normal.....	124, 134, 157, 290.
Iso.....	124.
Secondary.....	134, X.
Tertiary.....	134.

TABLE 21B.—*Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Chemical	Manufacturers' identification numbers (according to list in table 2)
MISCELLANEOUS CHEMICALS, ACYCLIC—Continued	
*Halogenated hydrocarbons—Continued	
*Bromides, fluorides, iodides, and mixtures—Continued	
Cetyl bromide.....	134, 137.
Cetyl iodide.....	137.
1-Chloro-2,3-dibromopropane.....	329.
Chlorodifluoromethane, mono.....	237.
1,3-Dibromopropane (Trimethylene bromide).....	329.
Dichlorodifluoromethane.....	237.
Dichloromonofluoromethane.....	237.
Dichlorotetrafluoroethane.....	237.
*Ethyl bromide.....	1, 124, 146, 169, 290.
Ethylene dibromide (1,2-Dibromoethane).....	124, 145, 146, 493.
Isopropyl bromide.....	124, 329, X.
*Methyl bromide.....	124, 290, 356, 493.
1-Methylbutyl bromide.....	1.
Methylene bromide (Dibromomethane).....	124, 134.
Methylene iodide, tech.....	286, 501.
Methyl iodide, tech.....	390.
sec-Octyl bromide.....	137.
n-Propyl bromide.....	124, 134, 329.
Tetrabromoethane (Acetylene tetrabromide).....	124, 157, 329.
1,2,3-Tribromopropane.....	329.
Trichloromonofluoromethane.....	237.
Trichlorotrifluoroethane.....	237.
Trimethylene bromide.....	1, 124, 329.
Trimethylene chlorobromide.....	124, 136, 329.
Heptane.....	74.
Hexadecanamide.....	24.
Hexamethylenediammonium adipate.....	127.
n-Hexyl alcohol.....	74.
n-Hexyl ether.....	74.
Hydrocarbon mixture, high molecular weight.....	X.
2-Hydroxyethanesulfonic acid.....	171.
α -Hydroxyisobutyronitrile (Acetone cyanhydrin).....	127.
12-Hydroxystearic acid salts:	
Aluminum (di) 12-hydroxystearate.....	218.
Zinc (di) 12-hydroxystearate.....	218.
Insecticides:	
Aliphatic thiocyanates.....	358.
Cyclohexyl caprate.....	233.
Indalone.....	467.
Isobutylundecylenamide.....	127.
Lorol rhodanate.....	127.
Isoamylethylmalonic ester.....	255.
Isobutyl propionate.....	127.
Isobutyraldehyde.....	127.
Isobutyric acid.....	127.
Iso-octane cutting oil.....	205.
Isoprene.....	311, 436.
Isopropyl acetate.....	74, 438.
*Isopropyl alcohol (Isopropanol) (100%).....	74, 410, 438.
*Isopropyl ether.....	74, 410, 438.
Isopropylethylmalonic ester.....	X.
Isopropyl vinyl ether.....	171.
Isovaleric acid.....	50, 324, X.
Lactic acid:	
*Edible (100%).....	20, 25, 95, 127, 409.
*Medicinal (100%).....	20, 127.
*Technical (100%).....	20, 25, 95, 127, 409.
Lactic acid salts:	
Calcium lactate.....	25, 409.
Ferrous lactate.....	269.
*Sodium lactate.....	20, 25, 202, 269, 286, 409.
Strontium lactate.....	269, 286.
Lauroyl peroxide.....	261.
Levulinic acid (β -Acetylpropionic acid).....	427.
Linoleic acid salts:	
Cobalt linoleate.....	13.
Lead manganese linoleate.....	13.
Manganese linoleate.....	13.
Lorol chloride.....	127.
*Maleic acid and anhydride.....	13, 298, 304.
Maleic acid.....	304.
Malonic acid.....	124, 157, 165, ¹ X.
Mannitol.....	34.
Mannitol hexanitrate.....	34.

TABLE 21B.—*Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Chemical	Manufacturers' identification numbers (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACRYLIC—Con.	
Melamine	69.
Mercury disinfectants:	
Seed	127.
All other	127.
Mesityl oxide (Isopropylideneacetone)	74, 410.
Metaldehyde	103.
Methacrylates, above methyl	127.
Methacrylic acid	127.
Methallyl alcohol (2-Methyl-2-propen-1-ol)	410.
*Methanol (synthetic)	69, 74, 92, 103.
Methoxymethoxyethanol	127.
Methoxytriglycol acetate	74.
Methyl acetate	74, 127, 315.
Methyl acrylate, monomer	388.
Methyl amyl ketone	74.
Methyl borate	127.
Methyl diethanolamine	74.
N,N'-Methylenedialanine	351.
N,N'-Methylenediglycine	351.
Methyl ethyl ketone (2-Butanone) (Methyl acetone)	74, 410, X.
Methyl formate	127.
Methyl hydroxyacetate	127.
Methyl isobutyl carbinol	74.
Methyl isobutyl carbinol acetate	74.
Methyl isobutyl ketone	74, 410.
Methyl isobutyl ketone and methyl isobutyl carbinol and ketone blend.	410.
Methyl lactate	95.
Methyl methacrylate	127, 388.
2-Methyl-2,4-pentanediol	103.
Methyl propyl ketone (2-Pentanone)	438.
Methyl succinate	168.
N-Methylaurine	171.
Methyl vinyl ether	171.
Monoethanolamine sulfite	269.
Monoethyl-ethylmalonic acid	1.
Myrcene (7-Methyl-3-methylene-1,6-octadiene)	465.
Nitrohydroxy compounds:	
2-Nitro-1-butanol	103.
2-Nitro-2-ethyl-1,3-propanediol	103.
2-Nitro-2-methyl-1,3-propanediol	103.
2-Nitro-2-methyl-1-propanol	103.
Tris-(hydroxymethyl)nitromethane	103.
Nitroparaffins:	
Nitroethane	103.
Nitromethane	103.
1-Nitropropane	103.
2-Nitropropane	103.
Nonenoic acid	X.
Nonyl alcohol	478, X.
Octadecane amide (mixtures)	24.
Octadecanenitrile	24.
Octanol-1 (N-Capryl alcohol)	192.
Octyl oleyl maleate	298.
Oleic acid salts:	
Aluminum oleate	13.
Lead oleate	13.
Oleic chloride	143, 171.
*Oxalic acid	173, 331, 350, 480.
Oxalic acid salts:	
*Ammonium oxalate	173, 269, 286, 350.
Ferric ammonium oxalate	350.
Ferric sodium oxalate	350.
Ferrous oxalate	269, 350.
Potassium binoxalate	173.
Potassium oxalate	173, 350.
Sodium oxalate	173, 269, 286, 480.
Palmitic acid salts:	
Aluminum palmitate	13.
Zinc palmitate	13, 495.
Palmitoyl chloride	171.
Paracetaldehyde	315.
Paraformaldehyde	39, 127, 201.
Pelargonic acid	141.
Polargonyl chloride	205.
Pelviren acid	501.
*Pentaerythritol	199, 201, 459, X.

TABLE 21B.—*Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1944—Continued*

Chemical	Manufacturers' identification numbers (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC—Con.	
Pentaerythritol tetranitrate	199, 459, X.
Phorone (Di-isobutylene ketone)	74.
Phosphorus derivatives of high molecular weight hydrocarbons	X.
α , β -Pinene, polymerized	205.
Pine oil, synthetic	199.
*Plasticizers. See table 20B.	
Polyethylene	127.
Polypropylene glycol	74.
Propionaldehyde	127.
Propionic acid	127, X.
Propionic acid salts:	
Calcium propionate	127.
Sodium propionate	127.
Propionic anhydride	74, X.
Propionyl chloride	205.
n-Propyl acetate	127, 155, 157, 163, X.
n-Propyl alcohol (Propanol)	127.
Propylene	127.
Propylene chlorohydrin	X.
Propylene glycol	74, 124, 127.
Propylene glycol glucoside	34.
Propylene oxide	74, 124.
Propyl mercaptan (1-Propanethiol)	417.
Pyruvic acid	69.
Research chemicals	65, 105, 134.
Saccharic acid	157.
Saccharic acid, calcium salt	157, 269, 350.
Sarcosine	171.
Sebacic acid	192, 305.
Semicarbazide hydrochloride	149, 157.
Sodium ethoxide	467.
Sodium methylate	127, 279.
Sodium oxalacetate	467.
Sorbitol	34, 350.
Starch solution, hydrogenated	205.
*Stearic acid salts:	
Aluminum stearate:	
Mono	164, 194, 269, 305, 486.
*Di	13, 164, 194, 218, 269, 305, 451, 486, 495.
*Tri	13, 164, 194, 269, 305, 486, 495.
Ammonium stearate	181, 194, 305.
Barium stearate	164, 495.
*Calcium stearate	13, 164, 194, 269, 305, 451, 486, 495.
Copper stearate	194.
Cupric stearate	486.
Iron stearate	194, 486.
Lead stearate	194, 486.
*Magnesium stearate	13, 164, 194, 269, 305, 451, 486, 495.
*Zinc stearate	13, 164, 194, 269, 305, 451, 486, 495.
Stearoyl chloride	171.
Stearyl peroxide	X.
Succinic acid	304.
Succinichlorimide	304.
Succinic anhydride	134, 298, 304, 340.
Succinimide	304.
Sulfoacetic acid	127.
Sulfonated thiocarbanilide	298.
Sulfurized thialkene wax olefins	111.
*Surface-active agents. See table 19B.	
Tartaric acid salts:	
Antimony potassium tartrate	350.
Potassium sodium tartrate	350.
Tetraethyleneglycol dimethyl ether	74.
Tetraethyl lead	145.
Tetramethyl ammonium formate	390.
Tetramethylethyleneglycol	X.
Textile chemicals, other than surface-active agents:	
Ethylaminoethylethanol-fatty-amide	5.
Methylaminoethylethanol-fatty-amide	5.
Thioglycerol	147.
*Thioglycolic acid and salts	134, 147, 149, 276, 442, 501, X.
Thioglycolic acid anhydride	137.
*Thiourea	69, 274, 295.
Triamyl borate	407.
Tribromoacetaldehyde (Bromal)	501.
Tributyl phosphite	127.
Triethylene glycol	74, 124.

TABLE 21B.—*Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1944—Con.*

Chemical	Manufacturers' identification numbers (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC—Continued	
Triethyl orthoacetate.....	134.
Triethyl orthoformate.....	229.
Triethyl orthopropionate.....	134.
Triglycol dichloride.....	74.
Tri-isobutylene.....	165.
Tri-isopropanolamine.....	74.
•Trimethylene chlorohydrin.....	134, 255, 329.
Trimethylene glycol.....	329.
Tris-(hydroxymethyl)aminomethane.....	163.
Turpentine sulfide.....	205.
Undecylenic acid.....	40, X.
Urea (solid).....	127.
Urea in solid fertilizer.....	127.
Urea in urea-ammonia solution.....	127.
Urea in feed compound.....	127.
Valerolactone, gamma.....	298.
Vinyl acetate, monomer.....	127, 315.
All other.....	205, 343.

DIRECTORY OF MANUFACTURERS

In 1944 the directory of manufacturers was compiled from more than 530 companies producing synthetic organic chemicals which reported to the Tariff Commission, compared with 500 companies in 1943 and about 300 in the immediate prewar years. Not all the companies which report production to the Tariff Commission manufacture synthetic organic chemicals for sale; some consume their entire output.

The directory of manufacturers is given in table 22.

TABLE 22.—*Synthetic organic chemicals: Directory of manufacturers, 1944*

[Names of synthetic organic chemical manufacturers who reported production and sales to the United States Tariff Commission, 1944, or who are listed as manufacturers of synthetic organic chemicals in other directories or publications available to the public. These companies do not necessarily produce synthetic organic chemicals for sale; some consume their entire production in further processing]

Number	Name of company	Office address (location of plant given in parentheses if not in same city as office)
1	Abbott Laboratories.....	14th St. and Sheridan Rd., North Chicago, Ill.
2	A. C. Spark Plug Division, General Motors Corp.....	1300 N. Dort Highway, Flint 2, Mich.
3	Ad-Co Color Corp.....	66 Lister Ave., Newark 5, N. J.
4	Advance Paint Co.....	545 W. Abbott St., Indianapolis 7, Ind.
5	Alframine Corp.....	155 E. 44th St., New York 17, N. Y. (Paterson 4, N. J.)
6	Alkydol Laboratories, Inc.....	3242 S. 50th Ave., Cicero 50, Ill.
7	Althouse Chemical Co.....	540 Pear St., Reading, Pa.
8	Amalgamated Chemical Corp.....	Ontario and Rorer Sts., Philadelphia 34, Pa.
9	Amecco Chemicals, Inc.....	75 Rockwood St., Rochester 10, N. Y.
10	American Alkyd Industries, Inc.....	Broad and 14th St., Carlstadt, N. J.
11	American Aniline Products, Inc.....	50 Union Square, New York 3, N. Y. (Lock Haven Pa.)
12	American Chemical Paint Co.....	Brookside Ave., Ambler, Pa.
13	American Cyanamid Co.....	30 Rockefeller Plaza, New York 20, N. Y. (Azusa, Calif.; Bound Brook, Warners and Woodbridge, N. J.; Bridgeville, Pa.; Charlotte, N. C.; Wallingford, Conn.; and Pearl River, N. Y.)
14	American Molding Powder & Chemical Corp.....	44 Hewes St., Brooklyn 11, N. Y.
15	American Tar & Chemical Co.....	2240 Sun Life Bldg., Montreal 2, Canada (Duluth, Minn.)
16	American Viscose Corp.....	Delaware Trust Bldg., Wilmington 99, Del. (Meadville, Pa.) ¹

TABLE 22.—*Synthetic organic chemicals: Directory of manufacturers, 1944—*
Continued

Number	Name of company	Office address (location of plant given in parentheses if not in same city as office)
17	Amino Products Division, International Minerals & Chemical Corp.	20 N. Wacker Drive, Chicago, Ill.
18	Anshacher-Siegle Corp.	92 Chestnut Ave., Rosebank, Staten Island, N. Y.
19	Ansul Chemical Co.	P. O. Box 231, Marinette, Wis.
20	Apex Chemical Co., Inc.	225 W. 34th St., New York 1, N. Y. (Elizabethport, N. J.)
21	Appleton Coated Paper Co.	1200 N. Meade St., Appleton, Wis.
22	Arco Co.	7301 Bessemer Ave., Cleveland 4, Ohio.
23	Arkansas Co., Inc.	185 Foundry St., Newark 5, N. J.
24	Armour Chemical Division, Armour & Co.	1355 W. 31st St., Chicago 9, Ill.
25	Armstrong, C. M., Inc.	9 E. 46th St., New York, N. Y.
26	Armstrong Cork Co.	Lancaster, Pa. (Pittsburgh, Pa.)
27	Armstrong Paint & Varnish Works	1330 S. Kilbourne St., Chicago 23, Ill.
28	Arnold, Hoffman & Co., Inc.	55 Canal St., Providence 1, R. I. (Dighton, Mass.)
29	Asociación Azucarera Cooperativa Lafayette.	342 Madison Ave., New York 17, N. Y. (Arroyo, P. R.)
30	Associated Chemists, Inc.	North Collins, N. Y.
31	Atlantic City Gas Co.	80 Park Pl., Newark 1, N. J. (Atlantic City, N. J.)
32	Atlantic Refining Co.	260 S. Broad St., Philadelphia 1, Pa. (Port Arthur, Tex.)
33	Atlas Oil & Refining Corp.	P. O. Box 1607, Shreveport, La.
34	Atlas Powder Co.	9th and Market Sts., Wilmington 99, Del. (Reynolds, Pa., and Atlas Point, Del.)
35	Atlas Refinery, Inc.	142 Lockwood St., Newark 5, N. J.
36	Atlas Wall Paper Mills, Inc.	Coal City, Ill.
37	Augusta Chemical Co.	P. O. Box 660, Augusta, Ga.
38	Ault & Wiborg Division, Interchemical Corp.	1754 Dana Ave., Cincinnati 7, Ohio.
39	Bakelite Corp.	30 E. 42d St., New York 17, N. Y. (Bound Brook and Bloomfield, N. J.)
40	Baker Castor Oil Co.	120 Broadway, New York 5, N. Y. (Bayonne, N. J.)
41	Baker, J. T., Chemical Co.	Phillipsburg, N. J.
42	Baker Oil Tools, Inc.	6000 Boyle Ave., Los Angeles 11, Calif.
43	Barrett Division, Allied Chemical & Dye Corp.	40 Rector St., New York 6, N. Y. (Bethlehem, Frankford, and Philadelphia, Pa.; Buffalo, Rochester, Syracuse, and Troy, N. Y.; Chicago, Ill.; Cincinnati, Cleveland, Toledo, and Youngstown, Ohio; Detroit, Mich.; Edgewater, N. J.; Fairfield, Ala.; Malden, Mass.; Minneapolis, Minn.; St. Louis, Mo.; and Savannah, Ga.)
44	Bates Chemical Co., Inc.	Scottdale Rd., Lansdowne, Pa.
45	Bayer Co. Division, Sterling Drug Co.	170 Varick St., New York 13, N. Y. (Rensselaer, N. Y.)
46	Beaudry Wall Paper Corp.	46 Elm St., Cortland, N. Y.
47	Belle Alkali Co.	P. O. Box 615, Belle, W. Va.
48	Benzol Products Co.	237 South St., Newark 5, N. J. (Piscataway, N. J.)
49	Berk, F. W., & Co., Inc.	Railroad Ave., Wood-Ridge, N. J.
50	Berkeley Chemical Corp.	942 Summit Ave., Berkeley Heights, N. J.
51	Berry Brothers, Inc.	211 Leih St., Detroit 7, Mich.
52	Bersworth, F. C., Laboratories	609 Waverly St., Framingham, Mass.
53	Bick & Co., Inc.	1820 N. 12th St., Reading, Pa.
54	Birge Co., Inc.	390 Niagara St., Buffalo 1, N. Y.
55	Blackstone Valley Gas & Electric Co.	55 High St., Fawtucket, R. I.
56	Boston Consolidated Gas Co.	100 Arlington St., Boston 16, Mass. (Everett, Mass.)
57	Bron, Geo. A., & Co.	2000 Baltimore Ave., Kansas City, Mo.
58	Bridgeport Gas Light Co.	815 Main St., Bridgeport 1, Conn.
59	Brooklyn Borough Gas Co.	17th St. and Merald Ave., Brooklyn 24, N. Y.
60	Brooklyn Color Works, Inc.	Morgan and Norman Aves., Brooklyn 22, N. Y.
61	Brooklyn Union Gas Co.	176 Rensen St., Brooklyn 2, N. Y.
62	Brown Co.	650 Main St., Berlin, N. H.
63	Brown, Andrew, Co.	5431 South Riverside Dr., Los Angeles, Calif.
64	Burkart-Schier Chemical Co.	1202 Chestnut St., Chattanooga 2, Tenn.
65	Burroughs Wellcome & Co., Inc.	9 E. 41st St., New York 17, N. Y. (Tuckahoe, N. Y.)
66	Bush, Burton T., Inc.	201 Delawanna Ave., Delawanna, N. J.
67	Bush, W. J., & Co., Inc.	11 E. 38th St., New York 16, N. Y. (Linden, N. J.)
68	Cabot, Samuel, Inc.	141 Milk St., Boston 9, Mass. (Chelsea, Mass.)
69	Calco Chemical Division, American Cyanamid Co.	Bound Brook, N. J. (Newark, N. J., and Damascus, Va.)
70	California Flaxseed Products Co.	3135 E. 26th St., Los Angeles 23, Calif.
71	California Ink Co., Inc.	545 Sansome St., San Francisco 11, Calif. (Berkeley, Calif.)
72	Cambridge Gas Light Co.	354 3d St., Cambridge 42, Mass.
73	Capitol Paint & Varnish Works, Inc.	47-55 Rodney St., Brooklyn 11, N. Y.
74	Carbide & Carbon Chemical Corp.	30 E. 42d St., New York 17, N. Y. (South Charleston, W. Va.; Niagara Falls, N. Y.; Whiting, Ind.; Texas City, Tex.; Institute, W. Va.; and Louisville, Ky.)
75	Carlsen, John G., & Co.	1446 W. Kenzie St., Chicago 22, Ill.
76	Carlson, John P., Inc.	420 Carroll St., Brooklyn 15, N. Y.
77	Carnick, G. W., Co.	20 Mt. Pleasant Ave., Newark 4, N. J.
78	Carus Chemical Co., Inc.	1335 8th St., La Salle, Ill.

TABLE 22.—*Synthetic organic chemicals: Directory of manufacturers, 1944—*
Continued

Number	Name of company	Office address (location of plant given in parentheses if not in same city as office)
79	Carwin Co.	1310 W. Elizabeth Ave., Linden, N. J.
80	Casein Co. of America Division, Borden Co.	350 Madison Ave., New York 17, N. Y. (Bainbridge, N. Y., and Seattle, Wash.).
81	Catalin Corp. of America	Meadow Road, Fords, N. J.
82	Celanese Corp. of America	180 Madison Ave., New York 16, N. Y. (Amcelle, Md.; Celco, Va.; and Newark, N. J.).
83	Central Hudson Gas & Electric Corp.	South Road, Poughkeepsie, N. Y. (Newburgh and Kingston, N. Y.).
84	Central Process Corp.	1900 Union Commerce Bldg., Cleveland 14, Ohio (Forest Park, Ill.).
85	Chemical Manufacturing Co., Inc.	Ashland, Mass.
86	Chemical Specialties, Inc.	151 N. Centennial St., Zeeland, Mich.
87	Chemico, Inc.	1745 Front St., Cuyahoga Falls, Ohio.
88	Chemo Puro Manufacturing Corp.	48th Ave. and 5th St., Long Island City 1, N. Y.
89	Childs Pulp Colors, Inc.	43 Summit St., Brooklyn 31, N. Y.
90	Ciba Pharmaceutical Products, Inc.	Lafayette Park, Summit, N. J.
91	Cincinnati Chemical Works, Inc.	P. O. Box 20, Evanston Station, Cincinnati 7, Ohio (Norwood and St. Bernard, Ohio).
92	Cities Service Oil Co.	Masonic-Empire Bldg., Bartlesville, Okla. (Tallant, Okla.).
93	Cities Service Refining Co.	Lake Charles, La.
94	Citro Chemical Co.	Maywood Ave., Maywood, N. J.
95	Clinton Co.	P. O. Box 340, Clinton, Iowa.
96	Coastwise Petroleum Co.	1127 Munsey Bldg., Baltimore 2, Md. (Goodhope, La.)
97	Coca-Cola Co.	310 North Ave., Atlanta 1, Ga.
98	Colasta Co., Inc.	1 Mechanic St., Hoosick Falls, N. Y.
99	Coleman & Bell Co., Inc.	4101 Main St., Norwood, Ohio.
100	Colgate-Palmolive-Peet Co.	105 Hudson St., Jersey City 2, N. J.
101	Collway Colors, Inc.	15 Market St., Paterson, N. J.
102	Colt's Patent Fire Arms Manufacturing Co.	17 Van Dyke Ave., Hartford 15, Conn.
103	Commercial Solvents Corp.	17 E. 42d St., New York 17, N. Y. (Peoria, Ill.; Terre Haute, Ind.; Harvey, La.; and Agnew, Calif.).
104	Commonwealth Color & Chemical Co.	223 Nevins St., Brooklyn 17, N. Y.
105	Connecticut Hard Rubber Co.	407 East St., New Haven 9, Conn.
106	Connecticut Light & Power Co.	36 Pearl St., Hartford 1, Conn. (Norwalk, Putnam, Waterbury, Willimantic, and Winsted, Conn.).
107	Connecticut Power Co.	31 Union St., New London, Conn. (Stamford, Conn.).
108	Consolidated Edison Co. of New York, Inc.	4 Irving Pl., New York 3, N. Y.
109	Consolidated Gas Electric Light & Power Co. of Baltimore.	Lexington Bldg., Baltimore, Md.
110	Continental-Diamond Fibre Co.	70 S. Chapel St., Newark, Del. (Bridgeport, Pa.).
111	Continental Oil Co.	1000 S. Pine St., Ponca City, Okla.
112	Cook Paint & Varnish Co.	P. O. Box 389, Kansas City 10, Mo. (Detroit, Mich., and Houston, Tex.).
113	Cooks Falls Dye Works	Cooks Falls, N. Y.
114	Coopers Creek Chemical Corp.	River Road, West Conshohocken, Pa.
115	Crown Tar Works, Division of Colorado Public Service.	900 15th St., Denver 2, Colo.
116	Debrulle Chemical Corp.	1841 Broadway, New York 23, N. Y.
117	Dennis, Martin, Co.	859 Summer Ave., Newark 4, N. J.
118	Detroit Edison Co.	2000 2d Ave., Detroit 26, Mich. (Marysville, Mich.).
119	Dewey & Almy Chemical Co.	62 Whittemore Ave., Cambridge 40, Mass.
120	Diamond Alkali Co.	535 Smithfield St., Pittsburgh 22, Pa. (Painesville, Ohio).
121	Diarsenol Co., Inc.	72 Kingsley St., Buffalo 8, N. Y.
122	Distillation Products, Inc.	755 Ridge Rd. W., Rochester 13, N. Y.
123	Dodge & Olcott Co.	180 Varick St., New York 14, N. Y. (Bayonne, N. J.).
124	Dow Chemical Co.	Midland, Mich. (Pittsburg, Calif., and Freeport, Tex.).
125	Dow Corning Corp.	Midland, Mich.
126	Dubin, H. E., Laboratories, Inc.	250 E. 43d St., New York 17, N. Y.
127	DuPont de Nemours, E. I., & Co., Inc.	10th and Market Sts., Wilmington 98, Del. (Carneys Point, New Brunswick; Perth Amboy, Arlington, and Newark, N. J.; Waynesboro and Martinsville, Va.; Seaford, Del.; Leominster, Mass.; Belle and Moundsville, W. Va.; Niagara Falls, N. Y.; El Monte, Calif.; and Wyandotte, Mich.).
128	Durez Plastics & Chemicals, Inc.	Walek Road, North Tonawanda 4, N. Y.
129	Durite Plastics, Inc.	5000 Summerdale Ave., Philadelphia 24, Pa.
130	Dye Specialties Corp.	924 Bergen Ave., Jersey City 6, N. J.
131	Dykem Co.	2307 North 11th St., St. Louis 6, Mo.
132	Eakins, J. S. & W. R., Inc.	55 Berry St., Brooklyn 11, N. Y.
133	Eastern Tar Products Corp.	605 Lexington Bldg., Baltimore 1, Md.
134	Eastman Kodak Co.	343 State St., Rochester 4, N. Y.
135	Edean Laboratories	10 Pine St., South Norwalk, Conn.
136	Edison, Thomas A., Inc.	P. O. Box 45, Bloomfield, N. J.
137	Edwal Laboratories, Inc.	732 Federal St., Chicago 5, Ill. (Ringwood, Ill.).
138	Electro Technical Products, Inc.	113 E. Centre St., Nutley 10, N. J.

TABLE 22.—*Synthetic organic chemicals: Directory of manufacturers, 1944—*
Continued

Number	Name of company	Office address (location of plant given in parentheses if not in same city as office)
139	Elizabethtown Consolidated Gas Co.	16 W. Jersey St., Elizabeth 4, N. J.
140	Elko Chemical Works, Inc.	60 E. 42d St., New York 17, N. Y. (Pittstown, N. J.).
141	Emery Industries, Inc.	4300 Carew Tower, Cincinnati 2, Ohio (St. Bernard, Ohio).
142	Empire Chemical Co., Inc.	399 Codwise Ave., New Brunswick, N. J.
143	Emulsol Corp.	59 E. Madison St., Chicago 3, Ill.
144	Endo Products, Inc.	84-40 101st St., Richmond Hill 18, N. Y.
145	Ethyl Corp.	405 Lexington Ave., New York 17, N. Y. (Deepwater, N. J., and Baton Rouge, La.).
146	Ethyl-Dow Chemical Co.	Midland, Mich. (Wilmington, N. C.; Freeport, Tex.).
147	Evans Chemetics, Inc.	250 E. 43d St., New York 17, N. Y. (Waterloo, N. Y.).
148	Factor, Max, & Co.	1666 N. Highland Ave., Los Angeles 28, Calif.
149	Fairmount Chemical Co., Inc.	600 Ferry St., Newark 5, N. J.
150	Falk & Co.	P. O. Box 1075, Pittsburgh 30, Pa. (Carnegie, Pa.);
151	Fall River Gas Works Co.	155 N. Main St., Fall River, Mass.
152	Farley & Loetscher Manufacturing Co.	7th and White Sts., Dubuque, Iowa.
153	Federal Color Laboratories, Inc.	4633 Forest Ave., Cincinnati 12, Ohio.
154	Federal Laboratories, Inc.	185 41st St., Pittsburgh 1, Pa.
155	Felton Chemical Co., Inc.	599 Johnson Ave., Brooklyn 6, N. Y.
156	Ferbert-Schorndorfer Co.	12815 Elmwood Ave., Cleveland 11, Ohio.
157	Fine Organics, Inc.	211 E. 19th St., New York 3, N. Y. (Lodi, N. J.).
158	Firestone Tire & Rubber Co.	1200 Firestone Parkway, Akron 17, Ohio.
159	Fitchburg Gas & Electric Light Co.	89 Broad St., Boston 10, Mass.
160	Forbes Varnish Co.	3800 W. 143d St., Cleveland 11, Ohio.
161	Ford Motor Co.	3000 Schaefer Rd., Dearborn, Mich. (Iron Mountain and Kingsford, Mich.).
162	Foster-Heaton Co.	16 E. 5th St., Paterson 4, N. J.
163	France, Campbell & Darling, Inc.	Michigan Ave. and Monroe St., Kenilworth, N. J.
164	Franks Chemical Products Co., Inc.	55 33d St., Brooklyn 32, N. Y.
165	Fries Bros., Inc.	92 Reade St., New York 13, N. Y. (Bloomfield, N. J.).
166	Fries & Fries, Inc.	13 E. 37th St., New York 16, N. Y. (Cincinnati 16, Ohio).
167	Fries, George G., & Co., Inc.	11-25 44th Rd., Long Island City 1, N. Y.
168	Fritzsche Bros., Inc.	76 9th Ave., New York 11, N. Y. (Clifton, N. J.).
169	Gane's Chemical Works, Inc.	43 W. 16th St., New York 11, N. Y. (Carlstadt, N. J.).
170	Gelatin Products Corp.	9425 Grinnell Ave., Detroit 13, Mich.
171	General Aniline Works Division, General Aniline & Film Corp.	435 Hudson St., New York 14, N. Y. (Grasselli, N. J. and Rensselaer, N. Y.).
172	General Biochemicals, Inc.	Laboratory Park, Chagrin Falls, Ohio.
173	General Chemical Co.	40 Rector St., New York 6, N. Y. (Buffalo, N. Y.; Marcus Hook, Pa.; and Edgewater, N. J.).
174	General Color Co.	24 Avenue B, Newark 5, N. J.
175	General Electric Co.	1 River Road, Schenectady 5, N. Y. (Pittsfield, Mass.).
176	General Foods Corp.	250 Park Ave., New York 17, N. Y. (Hoboken, N. J.).
177	General Mills, Inc.	400 S. 4th St., Minneapolis 15, Minn. (Keokuk, Iowa).
178	George, P. D., Co.	500 N. 2d St., St. Louis 7, Mo.
179	Gilman Paint & Varnish Co.	W. 8th and Pine Sts., Chattanooga 1, Tenn.
180	Glidden Co.	11001 Madison Ave., Cleveland 2, Ohio (Chicago, Ill.).
181	Glyco Products Co., Inc.	26 Court St., Brooklyn, N. Y.
182	Goodrich, B. F., Co.	500 S. Main St., Akron 18, Ohio (Niagara Falls, N. Y., and Louisville, Ky.).
183	Goodyear Tire & Rubber Co.	1144 E. Market St., Akron 16, Ohio.
184	Grand Rapids Varnish Corp.	565 Godfrey Ave., SW., Grand Rapids 2, Mich.
185	Gulf Oil Corp.	Gulf Bldg., Pittsburgh, Pa.
186	Guyana Color & Chemical Works.	Box 1088, Huntington, W. Va.
187	Hall, C. P., Co.	2510 First-Central Tower, Akron 8, Ohio.
188	Halowax Products Division, Union Carbide & Carbon Corp.	30 E. 42d St., New York 17, N. Y. (Wyandotte, Mich.).
189	Hamilton Laboratories, Inc.	120 Patton Ave., Asheville, N. C.
190	Hamden Color & Chemical Co.	161 Armory St., Springfield, Mass.
191	Harbor Plywood Corp.	Hoquiam, Wash. (Aberdeen, Wash.).
192	Hardesty, W. C., Co., Inc.	41 E. 42d St., New York, N. Y. (Dover, Ohio).
193	Harmon Color Works, Inc.	P. O. Box 1158, Paterson, N. J. (Haledon, N. J.).
194	Harshaw Chemical Co.	1945 E. 97th St., Cleveland 6, Ohio (Elyria, Ohio, and Philadelphia, Pa.).
195	Hart & Harrington, Inc.	925-929 W. Weed St., Chicago 22, Ill.
196	Hartman-Leddon Co., Inc.	6010 Haverford Ave., Philadelphia 31, Pa.
197	Hart Products Corp.	1440 Broadway, New York 13, N. Y. (Woodbridge, N. J.).
198	Hema Drug Co., Inc.	66-38 Clinton Ave., Maspeth, N. Y.
199	Hercules Powder Co., Inc.	900 Market St., Wilmington 99, Del. (Parlin, N. J., and Hopewell, Va.).
200	Heresite and Chemical Co.	822 S. 14th St., Manitowoc, Wis.
201	Heyden Chemical Corp.	393 7th Ave., New York 1, N. Y. (Fords and Garfield, N. J.).
202	Hilton-Davis Chemical Co.	2235 Langdon Farm Rd., Cincinnati 12, Ohio.
203	Hoffman-LaRoche, Inc.	324-424 Kingsland Rd., Nutley 10, N. J.
204	Holland Color & Chemical Co.	P. O. Box 1001, Holland, Mich.
205	Hooker Electrochemical Co.	Buffalo Ave. and 47th St., Niagara Falls, N. Y.

TABLE 22.—*Synthetic organic chemicals: Directory of manufacturers, 1944—*
Continued

Number	Name of company	Office address (location of plant given in parentheses if not in same city as office)
206	Houghton, E. F., & Co.....	303 W. Lehigh Ave., Philadelphia 33, Pa.
207	Huggins, James, & Son.....	239 Medford St., Malden 48, Mass.
208	Humble Oil & Refining Co.....	Humble Bldg., Houston 1, Tex. (Baytown and Ingle- side, Tex.).
209	Huron Milling Co.....	9 Park Pl., New York, N. Y.
210	Hyear Chemical Co.....	335 S. Main St., Akron, Ohio.
211	Hynson, Westcott & Dunning, Inc.....	1030 N. Charles St., Baltimore 1, Md.
212	Imperial Paper & Color Corp.....	Glens Falls, N. Y.
213	Industrial Dyestuff Co.....	Massasoit Ave., East Providence, R. I.
214	Inland Alkaloid Co.....	Tipton, Ind.
215	Innis, Spelden & Co.....	117 Liberty St., New York 6, N. Y. (Niagara Falls, N. Y.).
216	Inter-Coastal Paint Corp.....	1248 Walnut Ave., East St. Louis, Ill.
217	Interlake Chemical Corp.....	1900 Union Commerce Bldg., Cleveland 14, Ohio (Chi- cago, Ill.).
218	International Lubricant Corp.....	P. O. Box 390, New Orleans 1, La.
219	Ironsides Co.....	270 W. Mound St., Columbus 16, Ohio.
220	Irvington Varnish & Insulator Co.....	6 Argyle Ter., Irvington 11, N. J.
221	Jamestown Paint & Varnish Co.....	Jamestown, Pa.
222	Jamieson, C. E., & Co.....	1962-1980 Trombly Ave., Detroit 11, Mich.
223	Jennison-Wright Corp.....	2463 Broadway, Toledo 1, Ohio.
224	Jersey Central Power & Light Co.....	501 Grand Ave., Asbury Park, N. J. (Long Branch, Dover, Belmar, Toms River, Ocean City, and Wild- wood, N. J.).
225	Johnson, Charles Eneu, & Co.....	10th and Lombard Sts., Philadelphia 47, Pa.
226	Johnson, S. C., & Son, Inc.....	1535 Howe St., Racine, Wis.
227	Jones-Dabney Co. Division of Devoe & Reynolds Co., Inc.....	1481 S. 11th St., Louisville 8, Ky.
228	Kay & Ess Co.....	825 Kiser St., Dayton 1, Ohio.
229	Kay-Fries Chemicals, Inc.....	180 Madison Ave., New York 16, N. Y. (West Haver- straw, N. Y.).
230	Keery, Thomas, Co., Inc.....	Cadosia, N. Y.
231	Kennecott Copper Corp., Chino Mines Division.....	Hurley, N. Mex.
232	Kentucky Color & Chemical Co.....	600 N. 34th St., Louisville 12, Ky.
233	Kessler Chemical Co., Inc.....	State Rd. and Cottman Ave., Philadelphia 35, Pa.
234	Keto Chemical Co., Inc.....	40-33 23d St., Long Island City 1, N. Y.
235	Keystone Color Works, Inc.....	151 W. Gay Ave., York, Pa.
236	Keystone Varnish Co.....	71 Otsego St., Brooklyn 31, N. Y.
237	Kinetic Chemicals, Inc.....	duPont Bldg., Wilmington 98, Del. (East Chicago, Ill., and Penn's Neck, N. J.).
238	Kings County Lighting Co.....	6740 4th Ave., Brooklyn 20, N. Y.
239	Knoedler, A., Co.....	651 High St., Lancaster, Pa.
240	Kohnstamm, H., & Co., Inc.....	83-93 Park Pl., New York 7, N. Y. (Brooklyn, N. Y.).
241	Koppers Co.....	430 7th Ave., Pittsburgh 19, Pa. (Buffalo and Utica, N. Y.; Hamilton and Youngstown, Ohio; Chicago, Ill.; Everett, Mass.; Kearny, N. J.; New Haven, Conn.; St. Louis, Mo.; St. Paul, Minn.; Woodward, Ala.; Swedeland, Pa.; Houston, Tex.; Carrollville, Wis.; Follansbee, W. Va.; and East Providence, R. I.).
242	Krumbhaar Chemicals, Inc.....	24-30 Jacobus Ave., South Kearny, N. J.
243	Lakeside Laboratories, Inc.....	1707 E. North Ave., Milwaukee 1, Wis.
244	Lamex Chemical Corp.....	19 W. 44th St., New York 18, N. Y.
245	LaMotte Chemical Products Co.....	McCormick Bldg., Baltimore, Md. (Towson, Md.).
246	Laucks, Inc.....	Lockport, N. Y.
247	Laucks, I. F., Inc.....	911 Western Ave., Seattle 4, Wash.
248	Leatex Chemical Co.....	2722 N. Hancock St., Philadelphia 33, Pa.
249	Lehigh Briquetting Co.....	First National Bank Bldg., Dickinson, N. Dak. (Le- high, N. Dak.).
250	Lennig, Charles, & Co.....	222 W. Washington Sq., Philadelphia 5, Pa. (Brides- burg, Pa.).
251	Lever, C., Co., Inc.....	Howard and Huntingdon Sts., Philadelphia 33, Pa.
252	Levey, Frederick H., Co., Inc.....	41 E. 42d St., New York 17, N. Y. (Brooklyn, N. Y.)
253	Lewis, John T., & Bros. Co.....	910 Widener Bldg., Philadelphia 7, Pa.
254	Lewis Tar Products Co.....	P. O. Box A, Lyons, Ill. (McCook, Ill.).
255	Lilly, Eli, & Co.....	740 S. Alabama St., Indianapolis 6, Ind.
256	Lion Oil Refining Co.....	Exchange Bldg., El Dorado, Ark.
257	Liquid Carbonic Corp.....	2929 E. 67th St., Cleveland 4, Ohio.
258	Long, Charles R., Jr., Co., Inc.....	1630 W. Hill St., Louisville 10, Ky.
259	Long Island Lighting Co.....	250 Old Country Rd., Mineola, N. Y. (Bay Shore, N. Y.).
260	Lowell Gas Light Co.....	22 Shattuck St., Lowell, Mass.
261	Lucidol Corp.....	1740 Military Rd., Buffalo 5, N. Y.
262	Lueders, George, & Co.....	427 Washington St., New York 13, N. Y. (Brooklyn, N. Y.).
263	Maas & Waldstein Co.....	438 Riverside Ave., Newark 4, N. J.
264	Madison Gas & Electric Co.....	100 N. Fairchild St., Madison 1, Wis.
265	Magnolia Petroleum Co.....	P. O. Box 900, Dallas 1, Tex. (Beaumont, Tex.).

TABLE 22.—*Synthetic organic chemicals: Directory of manufacturers, 1944—*
Continued

Number	Name of company	Office address (location of plant given in parentheses if not in same city as office)
266	Magruder Color Co., Inc.	2385 Richmond Ter., Staten Island 2, N. Y.
267	Makalot Corp.	262 Washington St., Boston 9, Mass. (Waltham, Mass.)
268	Mallard, A. E., Laboratories, Inc.	3021 Wabash Ave., Detroit 16, Mich.
269	Mallinckrodt Chemical Works	3600 N. 2d St., St. Louis 7, Mo.
270	Maltbie Chemical Co.	240 High St., Newark 2, N. J. (Morristown, N. J.).
271	Marblette Corp.	37-21 30th St., Long Island City 1, N. Y.
272	Marco Chemicals, Inc.	Sewaren, N. J.
273	Marden Wild Corp.	500 Columbia St., Somerville 43, Mass.
274	Marietta Dyestuffs Co.	401 People's Bank Bldg., Marietta, Ohio.
275	Marietta Paint & Color Co.	Greene and Acme Sts., Marietta, Ohio.
276	Martin Laboratories	251 E. 139th St., New York 51, N. Y. (Newark, N. J.).
277	Marx, Max, Color & Chemical Co.	192-194 Coit St., Irvington 11, N. J.
278	Maschmeijer, A., Jr., Inc.	43 W. 16th St., New York 11, N. Y. (Newark, N. J.).
279	Mathieson Alkali Works, Inc.	60 E. 42d St., New York 17, N. Y.
280	Maxim Chemical Co., Inc.	44 Cliff St., New York 7, N. Y.
281	May, Otto B., Inc.	198-214 Niagara St., Newark 5, N. J.
282	Maywood Chemical Works	100 W. Hunter Ave., Maywood, N. J.
283	Mead, Johnson & Co.	St. Joseph Ave. and Pennsylvania St., Evansville 21, Ind.
284	Mearl Corp.	153 Waverly Pl., New York 14, N. Y. (Eastport, Maine).
285	Mephram, George S., Corp.	2001 Lynch Ave., East St. Louis, Ill.
286	Merck & Co., Inc.	Lincoln Ave., Rahway, N. J. (Elkton, Va.; Rahway, N. J.; and Philadelphia, Pa.).
287	Merrell, Wm. S., Co.	Amity Rd., Cincinnati 15, Ohio.
288	Metropolitan Edison Co.	412 Washington St., Reading, Pa. (Easton, Pa.).
289	Metropolitan Utilities Co.	18th and Harney Sts., Omaha 2, Nebr.
290	Michigan Chemical Corp.	500 N. Bankston St., St. Louis, Mich.
291	Midland Industrial Finishes Co.	E. Water St., Waukegan, Ill.
292	Midwest Solvents Co.	1300 Main St., Atchison, Kans.
293	Mid-West Tar Products Corp.	332 S. Michigan Ave., Chicago 4, Ill. (East Chicago, Ind.).
294	Miles Laboratories, Inc.	1127 Myrtle St., Elkhart, Ind.
295	Milwaukee Gas Light Co.	626 E. Wisconsin Ave., Milwaukee 1, Wis.
296	Minerec Corp.	120 Broadway, New York 5, N. Y. (Baltimore 25, Md.).
297	M & M Wood Working Co.	2301 Columbia Blvd., Portland 3, Oreg.
298	Monsanto Chemical Co.	1700 S. 2d St., St. Louis, Mo. (Everett and Springfield, Mass.; Texas City, Tex.; Nitro, W. Va.; Anniston, Ala.; and Monsanto, Ill.).
299	Montrose Chemical Co.	120 Lister Ave., Newark 5, N. J.
300	Morton Chemical Co.	2110 High Point Rd., Greensboro, N. C.
301	Murphy Finishes Corp.	224 McWhorter St., Newark 1, N. J.
302	Nason, R. N., & Co.	151 Potrero St., San Francisco 3, Calif.
303	Nassau & Suffolk Lighting Co.	250 Old Country Rd., Mineola, N. Y. (Hempstead, N. Y.).
304	National Aniline Division, Allied Chemical & Dye Corp.	40 Rector St., New York 6, N. Y. (Buffalo, N. Y.).
305	National Oil Products Co.	1st and Essex Sts., Harrison, N. J.
306	Naugatuck Chemicals Division, U. S. Rubber Co.	1230 6th Ave., New York 20, N. Y. (Naugatuck, Conn.).
307	Neches Butane Products Co.	Box 1535, Port Neches, Tex.
308	Neville Co.	Neville Island, Pittsburgh 25, Pa.
309	New Bedford Gas & Edison Light Co.	693 Purchase St., New Bedford, Mass.
310	New England Power Association	441 Stuart St., Boston, Mass. (Athol, Gloucester, Lawrence, Leominster, Malden, Northampton, North Adams, Salem, Spencer, and Webster, Mass.; Burlington, Vt.; and Westerly, R. I.).
311	Newport Industries, Inc.	P. O. Box 911, Pensacola, Fla.
312	New York Color & Chemical Co., Inc. (Division of American Dyewood Co.)	374 Main St., Belleville 9, N. J.
313	New York Quinine and Chemical Works, Inc.	99-117 N. 11th St., Brooklyn 20, N. Y.
314	New York & Richmond Gas Co.	691 Bay St., Staten Island, N. Y.
315	Niacet Chemicals Division, U. S. Vanadium Corp.	30 E. 42d St., New York 17, N. Y. (Niagara Falls, N. Y.).
316	Niagara Chlorine Products Co.	N. Transit Road, Lockport, N. Y.
317	Niagara Smelting Corp.	420 Lexington Ave., New York 17, N. Y. (Niagara Falls, N. Y.).
318	Niagara Wall Paper Co.	Walnut Ave. and 2d St., Niagara Falls, N. Y.
319	Ninol Laboratories	1719 S. Clinton St., Chicago 16, Ill.
320	Nonweiler, A. P., Co.	P. O. Box 1007, Oshkosh, Wis.
321	Nord & Co., Inc.	Broadway and Clark St., Keyport, N. J.
322	Norda Essential Oil & Chemical Co., Inc.	601 W. 26th St., New York 1, N. Y. (Boonton, N. J.).
323	Northern Indiana Public Service Co.	5265 Hohman Ave., Hammond, Ind. (South Bend and La Porte, Ind.).
324	Northwestern Chemical Co.	1263 N. 70th St., Wauwatosa 13, Wis.
325	Novocol Chemical Manufacturing Co., Inc.	2923 Atlantic Ave., Brooklyn 7, N. Y.

TABLE 22.—*Synthetic organic chemicals: Directory of manufacturers, 1944—*
Continued

Number	Name of company	Office address (location of plant given in parentheses if not in same city as office)
326	Nuodex Products Co., Inc.	Elizabeth, N. J.
327	Nutrition Research Laboratories	4210 Peterson Ave., Chicago 30, Ill.
328	Ohio-Apex, Inc.	P. O. Box 98, Nitro, W. Va.
329	Ohio Chemical & Manufacturing Co.	1177 Marquette St., Cleveland, Ohio.
330	Ohio Oil Co.	539 S. Main St., Findlay, Ohio (Robinson, Ill.).
331	Oldbury Electro Chemical Co.	Buffalo Ave., Niagara Falls, N. Y.
332	Old Hickory Chemical Co.	P. O. Box 1480, Richmond 12, Va. (Old Hickory, Tenn.).
333	Orbis Products Corp.	215 Pearl St., New York 7, N. Y. (Newark, N. J.).
334	Osborn, C. J., Co.	132 Nassau St., New York 7, N. Y. (Linden, N. J.).
335	Pan American Refining Corp.	P. O. Box 401, Texas City, Tex.
336	Panelyte Division, St. Regis Paper Co.	230 Park Ave., New York 17, N. Y. (Trenton, N. J.).
337	Paramet Corp.	10-17 44th Ave., Long Island City 1, N. Y.
338	Parke, Davis & Co.	McDougall Ave., Detroit 32, Mich.
339	Patent Chemicals, Inc.	335 McLean Blvd., Paterson 4, N. J.
340	Paul-Lewis Laboratories, Inc.	918 N. 4th St., Milwaukee 3, Wis.
341	Peerless Color Co.	521-535 North Ave., Plainfield, N. J.
342	Penick, S. B., & Co.	50 Church St., New York 7, N. Y. (Lyndhurst, N. J.).
343	Pennsylvania Alcohol & Chemical Corp.	Berry Ave., Carlstadt, N. J.
344	Pennsylvania Coal Products Co.	P. O. Box 4, Petrolia, Pa.
345	Pennsylvania Industrial Chem. Corp.	20 State St., Clairton, Pa.
346	Pennsylvania Power & Light Co.	9th and Hamilton Sts., Allentown, Pa.
347	Pennsylvania Salt Manufacturing Co.	1000 Widener Bldg., Philadelphia, Pa. (Wyandotte, Mich.).
348	Peoples Gas Light & Coke Co.	122 S. Michigan Ave., Chicago 3, Ill.
349	Pfanstiehl Chemical Co.	104 Lakeview Ave., Waukegan, Ill.
350	Pfizer, Chas., & Co., Inc.	81 Maiden Lane, New York 7, N. Y. (Brooklyn 6, N. Y.).
351	Pharma Chemical Corp.	175 5th Ave., New York 10, N. Y. (Bayonne, N. J.).
352	Pharmedic Corp.	239 W. Broadway, New York 13, N. Y.
353	Philadelphia Gas Works Co.	1800 N. 9th St., Philadelphia 22, Pa.
354	Phillips Petroleum Co.	Phillips Bldg., Bartlesville, Okla. (Borger, Tex.).
355	Pitman-Moore Co., Division of Allied Laboratories, Inc.	1200 Madison Ave., Indianapolis 6, Ind.
356	Pittsberg Chemical Co.	3100 E. 26th St., Los Angeles 23, Calif.
357	Pittsburgh Plate Glass Co.	2000 Grant Bldg., Pittsburgh 19, Pa. (Barberton Ohio).
358	Plaskon Division, Libbey-Owen-Ford Glass Co.	2112 Sylvan Ave., Toledo 6, Ohio.
359	Polychemical Co.	1938 Park Ave., New York 35, N. Y.
360	Pontiac Varnish Co.	30 Brush St., Pontiac 12, Mich.
361	Portland Gas & Coke Co.	Public Service Bldg., Portland 4, Oreg.
362	Portland Gas Light Co.	5 Temple St., Portland 6, Maine.
363	Poughkeepsie Dyestuff Corp.	77 Water St., Poughkeepsie, N. Y.
364	Pratt & Lambert, Inc.	75 Tonawanda St., Buffalo 7, N. Y.
365	Premo Pharmaceutical Laboratories, Inc.	443 Broadway, New York 13, N. Y.
366	Procter & Gamble Co.	Gwynne Bldg., Cincinnati 2, Ohio (Ivorydale, Ohio).
367	Publicker Industries, Inc.	1429 Walnut St., Philadelphia 2, Pa.
368	Public Service Co. of N. C., Inc.	119 S. Salisbury St., Raleigh, N. C.
369	Public Service Electric & Gas Co.	80 Park Pl., Newark 2, N. J. (Harrison, Jersey City, Paterson, Piscataway, Trenton, and Camden, N. J.).
370	Pure Oil Co.	35 East Wacker Dr., Chicago 1, Ill. (Cabin creek, W. Va.).
371	Purocalne, Inc.	Packard Bldg., Philadelphia, Pa.
372	Pyridium Corp.	21 Gray Oaks Ave., Yonkers 2, N. Y. (Harriman, N. Y.).
373	Quaker Chemical Products Corp.	Lime, Elm, and Sandy Sts., Conshohocken, Pa.
374	Quaker Oats Co.	141 W. Jackson Blvd., Chicago 4, Ill. (Cedar Rapids, Iowa).
375	Queens Borough Gas & Electric Co.	250 Old Country Rd., Mineola, N. Y. (Rockaway Park, N. Y.).
376	Reichhold Chemicals, Inc.	601 Woodward Heights Blvd., Detroit 20, Mich. (Elizabeth, N. J.; San Francisco, Calif.; Brooklyn, N. Y.; and Tuscaloosa, Ala.).
377	Reilly Tar & Chemical Corp.	500 5th Ave., New York 18, N. Y. (Newark, N. J.; Chicago and Granite City, Ill.; Indianapolis, Ind.; Belle and Fairmont, W. Va.; Cleveland and Dover, Ohio; and Chattanooga, Tenn.).
378	Reilly-Whiteman Walton Co.	P. O. Box 188, Conshohocken, Pa.
379	Reliance Varnish Co., Inc.	915 E. Kentucky St., Louisville 4, Ky.
380	Remington Arms Co., Inc.	939 Barnum Ave., Bridgeport, Conn.
381	Republic Creosoting Co.	1615 Merchants Bank Bldg., Indianapolis 4, Ind. (St. Louis Park, Minn.; Mobile, Ala.; Norfolk, Va.; Ironton, Utah; Lima, Ohio; and Seattle, Wash.).
382	Resinous Products & Chemical Co.	222 W. Washington Sq., Philadelphia 5, Pa. (Bridenburg, Pa.).
383	Richards Chemical Works, Inc.	Warren and Morris Sts., Jersey City 2, N. J.
384	Richardson Co.	27th and Lake Sts., Melrose Park, Ill.

TABLE 22.—*Synthetic organic chemicals: Directory of manufacturers, 1944—*
Continued

Number	Name of company	Office address (location of plant given in parentheses if not in same city as office)
385	Richfield Oil Corp.....	555 S. Flower St., Los Angeles 13, Calif. (Watson, Calif.).
386	Richmond, City of (Department of Public Utilities).....	City Hall, Richmond 19, Va.
387	Rochester Gas & Electric Co.....	89 East Ave., Rochester 4, N. Y.
388	Rohm & Haas Co.....	222 W. Washington Sq., Philadelphia 5, Pa. (Bristol, Pa.).
389	Roosen, H. D., Co.....	78 20th St., Brooklyn 32, N. Y.
390	R. S. A. Corp.....	690 Sawmill River Rd., Ardsley, N. Y.
391	Ruberoid Co.....	500 5th Ave., New York 18, N. Y. (Joliet, Ill., and Erie, Pa.).
392	St. Louis County Gas Co.....	231 W. Lockwood Ave., Webster Grove 19, Mo.
393	Salvo Chemical Corp.....	Rothschild, Wis.
394	Schenectady Varnish Co., Inc.....	P. O. Box 1046, Schenectady 1, N. Y.
395	Schering Corp.....	2 Broad St., Bloomfield, N. J. (Union, N. J.).
396	Schering & Glatz, Inc.....	113 W. 18th St., New York 11, N. Y.
397	Schieffelin & Co.....	16-26 Cooper Sq., New York 3, N. Y.
398	Scholler Bros., Inc.....	Collins and Westmoreland Sts., Philadelphia 34, Pa.
399	Schuykill Chemical Co.....	2346 Sedgley Ave., Philadelphia 32, Pa.
400	Schwarz Laboratories, Inc.....	202 E. 44th St., New York 17, N. Y. (Brooklyn, N. Y.).
401	Scranton-Spring Brook Water Service Co.....	30 N. Franklin St., Wilkes-Barre, Pa. (Scranton, Pa.).
402	Searle, G. D., & Co.....	P. O. Box 5110, Chicago 80, Ill.
403	Seattle Gas Co.....	1511 4th Ave., Seattle 11, Wash.
404	Seelye & Co., Inc.....	136 Liberty St., New York 6, N. Y. (Farmingdale, N. Y.).
405	Seydel Chemical Co.....	225 Mercer St., Jersey City, N. J.
406	Sharp & Dohme, Inc.....	640 N. Broad St., Philadelphia 1, Pa.
407	Sharples Chemicals, Inc.....	123 S. Broad St., Philadelphia 9, Pa. (Wyandotte, Mich.).
408	Shawinigan Resins Corp.....	644 Monsanto Ave., Springfield 2, Mass.
409	Sheffield Farms Co., Inc.....	524 W. 57th St., New York 19, N. Y. (Woods Corners, N. Y.).
410	Shell Chemical Division of Shell Union Oil Corp.....	100 Bush St., San Francisco 6, Calif. (Houston, Tex.; Pittsburg, Martinez, and Dominguez, Calif.).
411	Shell Oil Co., Inc.....	50 W. 50th St., New York 20, N. Y. (Houston, Tex., and Roxana, Ill.).
412	Shell Oil Co., Inc.....	100 Bush St., San Francisco 6, Calif. (Wilmington, Calif.).
413	Sherwin-Williams Co.....	101 Prospect Ave., NW, Cleveland 1, Ohio (Chicago, Ill.; Newark and Gibbshoro, N. J.; Oakland, Calif.; Detroit, Mich.; Dallas, Tex.; and Dayton, Ohio).
414	Simons, Harold L., Inc.....	11-25 44th Rd., Long Island City 1, N. Y.
415	Sinclair Refining Co.....	630 5th Ave., New York 20, N. Y. (Marcus Hook, Pa., and Sand Springs, Okla.).
416	Sinclair & Valentine Co.....	611 W. 129th St., New York 27, N. Y.
417	Skelly Oil Co.....	P. O. Box 1650, Tulsa 2, Okla. (Eunice, N. Mex.).
418	Smith, Kline & French Laboratories.....	5th and Arch Sts., Philadelphia 5, Pa.
419	Solvay Process Co.....	P. O. Box 271, Syracuse 1, N. Y. (Geddes, N. Y.).
420	Sonneborn, L., Sons, Inc.....	88 Lexington Ave., New York 16, N. Y. (Petrolia, Pa., and Nutley, N. J.).
421	Sonoco Products Co.....	Hartsville, S. C.
422	South Carolina Electric & Gas Co.....	328 Main St., Columbia, S. C.
423	Southern Dyestuff Corp.....	P. O. Box 1045, Charlotte 1, N. C. (Sodyeco, N. C.).
424	Spaulding Fibre Co., Inc.....	310 Wheeler St., Tonawanda, N. Y.
425	Springfield Gas Light Co.....	35 State St., Springfield 2, Mass.
426	Squibb, E. R., & Sons.....	25 Columbia Heights, Brooklyn 2, N. Y.
427	Staley, A. E., Manufacturing Co.....	Decatur 50, Ill.
428	Standard Agricultural Chemicals, Inc.....	1301 Jefferson St., Hoboken, N. J.
429	Standard Brands, Inc.....	595 Madison Ave., New York 22, N. Y. (Peekskill, N. Y.).
430	Standard Chemical Products, Inc.....	1301 Jefferson St., Hoboken, N. J.
431	Standard Chlorine Chemical Co.....	115 Jacobus Ave., South Kearny, N. J.
432	Standard Naphthalene Products Corp.....	115 Jacobus Ave., South Kearny, N. J.
433	Standard Oil Co. of California.....	225 Bush St., San Francisco 20, Calif. (Richmond and El Segundo, Calif.).
434	Standard Oil Co. of Indiana.....	910 S. Michigan Ave., Chicago 80, Ill. (Wood River, Ill., and Whiting, Ind.).
435	Standard Oil Co. of New Jersey.....	26 Broadway, New York 4, N. Y. (Linden, N. J.).
436	Standard Oil Co. of New Jersey (Louisiana Div.).....	P. O. Box 551, Baton Rouge 1, La.
437	Standard Oil Co. of New Jersey (Stanco Distributors Inc.).....	216 W. 14th St., New York 11, N. Y.
438	Standard Oil Co. of New Jersey (Standard Alcohol Co.).....	26 Broadway, New York 4, N. Y.
439	Standard Ultramarine Co.....	5th Ave. and 24th St., Huntington 18, W. Va.
440	Standard Varnish Works.....	2600 Richmond Ter., Staten Island 3, N. Y.
441	Stange, Wm. J., Co.....	2536 W. Monroe St., Chicago 12, Ill.
442	Stanton Laboratories.....	Wyncote, Pa.

TABLE 22.—*Synthetic organic chemicals: Directory of manufacturers, 1944—*
Continued

Number	Name of company	Office address (location of plant given in parentheses if not in same city as office)
443	Stauffer Chemical Co., Inc.	420 Lexington Ave., New York 17, N. Y. (Chauncey, N. Y.; Monongahela and Chester, Pa.; Roanoke, Va.; and Perry, Ohio).
444	Stearns, Frederick, & Co.	6533 E. Jefferson Ave., Detroit 31, Mich.
445	Stresen-Reuter, F. A., Inc.	2113 Medill Ave., Chicago 47, Ill. (Bensenville, Ill.).
446	Sun Chemical & Color Co.	309 Sussex St., Harrison, N. J.
447	Sun Oil Co.	1608 Walnut St., Philadelphia 3, Pa. (Marcus Hook, Pa.).
448	Sylvania Industrial Corp.	Fredericksburg, Va.
449	Synthetical Laboratories	5558 Ardmore Ave., Chicago 30, Ill.
450	Synthetic Chemicals, Inc.	335 McLean Blvd., Paterson 4, N. J.
451	Synthetic Products Co.	1798 London Rd., Cleveland 12, Ohio.
452	Tar Distilling Co.	500 5th Ave., New York 18, N. Y.
453	Taunton Gas Light Co.	41 Taunton Green, Taunton, Mass.
454	Taylor Chemical Corp.	600 N. Broad St., Phillipsburg, N. J. (Penn Yan, N. Y.).
455	Taylor Fibre Co.	Norristown, Pa. (Betzwood, Pa.).
456	Tennessee Eastman Corp.	Kingsport, Tenn.
457	Tennessee Products Corp.	404 American National Bank Bldg., Nashville 3, Tenn. (Chattanooga 10, Tenn.).
458	Texas Co.	Box 2332, Houston 1, Tex.
459	Trojan Powder Co.	17 N. 7th St., Allentown, Pa. (Seiple, Pa.).
460	Trubek Laboratories	State Highway #17, East Rutherford, N. J.
461	Tubize Rayon Corp.	2 Park Ave., New York 16, N. Y. (Rome, Ga.).
462	Ugite Sales Corp.	1401 Arch St., Philadelphia 5, Pa. (Chester, Pa.).
463	Uhlich, Paul, & Co., Inc.	90 West St., New York 6, N. Y. (Brooklyn 15, N. Y.).
464	Ultra Chemical Works	2 Wood St., Paterson 4, N. J.
465	Union Bay State Co.	50 Harvard St., Cambridge 42, Mass.
466	Union Oil Co. of California	617 W. 7th St., Los Angeles 14, Calif.
467	U. S. Industrial Chemicals, Inc.	60 E. 42d St., New York 17, N. Y. (New Orleans, La.).
468	U. S. Oil Co.	P. O. Box 1345, Providence, R. I.
469	Utah Copper Co.	Kearns Bldg., Salt Lake City 12, Utah (Garfield, Utah).
470	Valentine & Co., Inc.	11 E. 36th St., New York 16, N. Y. (Brooklyn, N. Y.).
471	Valley Chemical Co., Inc.	80 Wheeler Point Rd., Newark 5, N. J.
472	Van Ameringen-Haebler, Inc.	315 4th Ave., New York 10, N. Y. (Elizabeth 2, N. J.).
473	Van Camp Laboratories	Terminal Island, Calif.
474	Van Dyk & Co., Inc.	57 Wilkinson Ave., Jersey City 5, N. J. (Belleville 9, N. J.).
475	Van Schaack Chemical Works, Inc.	3430 Henderson St., Chicago 18, Ill.
476	Niagara Chemical Co.	P. O. Box 433, Niagara Falls, N. Y.
477	Velsicol Corp.	120 E. Pearson St., Chicago 11, Ill. (Marshall, Ill.).
478	Verley Chemical Co., Inc.	Main and William Sts., Belleville 9, N. J.
479	Verona Chemical Co.	26 Verona Ave., Newark 4, N. J.
480	Victor Chemical Works	141 W. Jackson Blvd., Chicago 4, Ill.
481	Virginia Electric & Power Co.	Norfolk, Va.
482	Virginia Smelting Co.	Jefferson St. and 3d Ave., West Norfolk, Va.
483	Vitamins, Inc.	809 W. 58th St., Chicago 21, Ill.
484	Wallace & Tiernan Products, Inc.	Belleville 9, N. J.
485	Warner-Jenkinson Mfg. Co.	2526 Baldwin St., St. Louis 6, Mo.
486	Warwick Chemical Co.	100 Pulaski St., West Warwick, R. I.
487	Watertown Mfg. Co.	127 Echo Lake Rd., Watertown, Conn.
488	Werner Drug & Chemical Co.	914 Race St., Cincinnati 2, Ohio.
489	Western Condensing Co.	935 E. John St., Appleton, Wis. (Adell, Wis.).
490	Western Dry Color Co.	600 W. 52d St., Chicago 9, Ill.
491	Western United Gas & Electric Co.	50 Fox St., Aurora, Ill. (Lockport and DuQuoin, Ill.).
492	Westinghouse Electric & Manufacturing Co.	306 4th Ave., Pittsburgh 30, Pa. (Trafford, Pa.).
493	Westvaco Chlorine Products Corp.	405 Lexington Ave., New York 17, N. Y. (South Charleston, W. Va., and Newark, Calif.).
494	Westville Laboratories	Stepney, Conn. (Derby, Conn.).
495	Westwell Chemical Co.	P. O. Box 191, Whittier, Calif.
496	Wetherill, George D., Varnish Co., Inc.	Haddon Ave. and White House Pike, Camden, N. J.
497	White & Hodges	2 Wellington Ave., Everett 49, Mass.
498	Wilhelm, A., Co.	3d and Bern Sts., Reading, Pa.
499	Wilmut & Cassidy, Inc.	292 Freeman St., Brooklyn 22, N. Y.
500	Wilson Laboratories	4221 S. Western Ave., Chicago 9, Ill.
501	Winthrop Chemical Co., Inc.	170 Varick St., New York 13, N. Y. (Rensselaer, N. Y.).
502	Wisconsin Fuel & Light Co.	106 N. 8th St., Manitowoc, Wis.
503	Wisconsin-Michigan Power Co.	137 W. Mill St., Appleton, Wis.
504	Wisconsin Power & Light Co.	122 W. Washington St., Madison 1, Wis.
505	Wisconsin Public Service Corp.	1029 N. Marshall St., Milwaukee, Wis.
506	Witco Chemical Co.	295 Madison Ave., New York 17, N. Y.
507	Witte, John H., & Sons	Burlington, Iowa.
508	Woburn Chemical Corp.	1200 Harrison Ave., Harrison, N. J. (Kearny, N. J.).
509	Wolf-Alport Chemical Corp.	1127 Irving Ave., Brooklyn 27, N. Y.
510	Worcester Gas Light Co.	240 Main St., Worcester 8, Mass. (Framingham, Mass.).
511	Wyandotte Chemicals Corp.	1609 Biddle Ave., Wyandotte, Mich.
512	Young Aniline Works, Inc.	2731 Boston St., Baltimore 24, Md.
513	Zinsser & Co., Inc.	Hastings on Hudson, N. Y.

TABLE 22.—*Synthetic organic chemicals: Directory of manufacturers, 1944—*
Continued

Number	Name of company	Office address (location of plant given in parentheses if not in same city as office)
	<i>United States Government plants operated by Rubber Reserve Company</i>	
514	Copolymer Corp.	P. O. Box 1029, Baton Rouge 2, La.
515	Dow Chemical Co., Styrene Div.	P. O. Box 500, Gardena, Calif. (Freeport and Velasco, Tex.).
516	DuPont de Nemours, E. L., & Co., Inc.	P. O. Box 1378, Louisville 1, Ky.
517	Firestone Tire & Rubber Co.	1200 Firestone Parkway, Akron 17, Ohio (Port Neches, Tex.).
518	General Tire & Rubber Co.	Baytown, Tex.
519	Goodrich, B. F., Co.	324 Rose Bldg., Cleveland 15, Ohio (Louisville, Ky.; Borger and Port Neches, Tex.).
520	Goodyear Synthetic Rubber Co.	1144 Market St., Akron 16, Ohio (Houston, Tex., and Torrance, Calif.);
521	Humble Oil & Refining Co.	P. O. Box 1321, Baytown, Tex.
522	Koppers Co., Inc.	P. O. Box 92, Monaca, Pa. (Kobuta, Pa.).
523	National Synthetic Rubber Corp.	P. O. Box 2068, Louisville 1, Ky.
524	Polymer Corporation, Ltd.	Sarnia, Ontario, Canada.
525	Shell Chem. Div. of Shell Union Oil Corp.	P. O. Box 211, Torrance, Calif.
526	Sinclair Rubber, Inc.	P. O. Box 2584, Houston 1, Tex.
527	Southern California Gas Co.	P. O. Box 3249 Terminal Annex, Los Angeles 54, Calif.
528	Standard Oil Co. of California.	225 Bush St., San Francisco 20, Calif. (El Segundo, Calif.).
529	Sun Oil Co.	Woodville & Bay Terminal Railroad, Toledo 1, Ohio.
530	Taylor Refining Co.	Taylor, Tex. (Corpus Christi, Tex.).
531	United States Rubber Co.	1230 6th Ave., New York 20, N. Y. (Naugatuck, Conn.; Institute, W. Va.; and Torrance, Calif.).

APPENDIX

A. IMPORTS OF COAL-TAR INTERMEDIATES AND FINISHED PRODUCTS

Statistics on United States imports of coal-tar products entered in 1944 under paragraphs 27 and 28 of the Tariff Act of 1930 were obtained by analyzing invoices covering imports through all customs districts. These imports, summarized in table 23, are given in detail in a separate report.¹

TABLE 23.—*Coal-tar intermediates and finished coal-tar products: United States imports for consumption, classified by uses, 1942-44*

Product	1942		1943		1944	
	Quantity	Foreign invoice value	Quantity	Foreign invoice value	Quantity	Foreign invoice value
	1,000 pounds	1,000 dollars	1,000 pounds	1,000 dollars	1,000 pounds	1,000 dollars
Intermediates, total.....	3,243	564	4,424	651	9,034	1,395
Finished coal-tar products, total.....	6,109	3,051	1,283	2,334	5,455	2,593
Dyes, total.....	1,127	1,905	607	1,318	651	1,514
Acid.....	219	447	169	449	247	662
Vat.....	297	413	36	115	36	132
Mordant and chrome.....	147	260	100	210	59	130
Direct ¹	291	473	170	318	196	410
Acetate rayon.....	78	120	96	156	70	112
Basic.....	48	76	22	40	27	(?)
Sulfur.....	3	5				
Color-lake and spirit-soluble.....	27	108	9	28	9	28
All other.....	17	3	5	2	7	(?)
Aromatic chemicals.....	3	21	3	18	5	31
Medicinals and pharmaceuticals.....	1	33	206	862	21	69
All other.....	4,978	1,092	467	136	4,778	979

¹ Includes rapid fast dyes.

² Publication would reveal operations of individual importers.

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

Dyes continued in 1944 to be the most important group, in terms of value, among imports of dutiable coal-tar chemicals. In that year imports of dyes amounted to 1.5 million dollars, or 58 percent of the total value of all imported finished coal-tar products, which was 2.6 million dollars. Switzerland supplied 89 percent of the total quantity of dyes imported for consumption in 1944. These imports, however, were chiefly withdrawals from warehouse of goods which had been shipped to this country in earlier years. Imports of other finished coal-tar products consisted chiefly of medicinals, almost entirely sulfapyridine and salts, and perfume and flavor materials, largely musk ambrette.

Imports of coal-tar intermediates in 1944 totaled 9 million pounds, valued at 1.4 million dollars. They consisted chiefly of ethylbenzene (from which styrene is made) and styrene, both of which were im-

¹ See U. S. Tariff Commission, *Imports of Coal Tar Products, 1944, 1945* [processed].

ported from Canada for the account of the Rubber Reserve Company. Dibutyl phthalate, also from Canada, was another large import item grouped among the intermediates.

Among the chemicals listed as "All other," the most important were the military explosives, trinitrotoluene and tetryl, both of which came chiefly from Canada. Another major item in this group was phenylaminomethyl-2-benzothiazyl sulfide, an accelerator for rubber vulcanization; 107,000 pounds of this chemical was imported, all from Canada.

The ratio of the value (foreign invoice value) of imports to the value of the domestic output of all coal-tar products was less than 1 percent in 1944.

B. RESEARCH WORKERS AND EXPENDITURES

From time to time the Commission has collected some general information on research expenditures of the synthetic organic chemical industry. The data are approximate because some of the reporting companies which produce chemicals other than synthetic organic chemicals find it difficult to determine how much of the total cost of research should be allocated to synthetic organic chemicals. Furthermore, since some companies do not report all the data requested, it has been necessary to estimate part of the data. Notwithstanding these limitations, the following statistics, which are not available elsewhere, are of value in indicating trends:

Year	Companies reporting	Technically trained research workers ¹	Salaries paid	Cost of research		Extra-plant research
				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>
1941.....	153	2,957	8,966	18,425	17,137	(3)
1942.....	183	3,839	11,541	23,440	20,768	(3)
1943.....	236	5,086	20,816	28,723	28,470	(3)
1944.....	272	5,118	22,428	43,820	40,946	2,546

¹ For the years 1941-43, a technically trained research worker was defined as a person with technical training engaged in research work and earning not less than \$2,000 per year; in 1944 the minimum amount of earnings was fixed at \$2,500.

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

³ Data for extra-plant research were not collected before 1944.

The apparent increase in the number of companies reporting research work in 1944 reflects the greater effort of the Commission to enlist the cooperation of all companies having research organizations.

In 1944, information was reported for the first time on the amount expended by companies on extra-plant research, that is, for consultants, research projects in universities, and privately endowed laboratories. The reported amount (which is probably incomplete) was about 2.5 million dollars.

The average salary of technically trained research workers was \$4,400 in 1944 compared with \$4,100 in 1943 and \$3,000 in 1942 and 1941. The gross cost of research increased from 28.7 million to 43.8 million dollars, or roughly 50 percent, from 1943 to 1944, while salaries paid increased only from 20.8 million to 22.4 million dollars, or roughly 8 percent.

