UNITED STATES TARIFF COMMISSION

DYES AND OTHER SYNTHETIC ORGANIC CHEMICALS IN THE UNITED STATES

1937

REPORT No. 132

SECOND SERIES

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ACKNOWLEDGMENT

In the preparation of this report, the Commission had the services of P. K. Lawrence and Bertha M. Robertson, of the Chemical Division, and of others.

DYES AND OTHER SYNTHETIC ORGANIC CHEMICALS

INTRODUCTION

The data on the domestic production and sales of dyes and other synthetic organic chemicals for 1937 contained in this annual report were collected and compiled by the United States Tariff Commission. The Commission considers that the value of such information to governmental agencies and to the public warrants its collection and publication.

This report has been abridged in order to expedite publication and to effect economies in printing. Detailed tabulation of imports of dyes and other coal-tar products into the United States has been omitted to avoid duplication of the semiannual list of imports, published jointly by the Department of Commerce and the Tariff Commission. Statistics of imports and exports as published in Foreign Commerce and Navigation of the United States have also been omitted.

The grouping of coal-tar crudes, intermediates, dyes, and color lakes and toners follows that of the Tariff Act of 1930 and conforms in general, although not in every detail, to common practice. Azoic dyes, formerly listed under the heading "Unclassified dyes," and their components, formerly included under "Miscellaneous coal-tar products," have been combined under "Azoic dyes and their components" as a subgroup of "Unclassified dyes." The practice of grouping other synthetics, both coal-tar and non-coal-tar, by principal application, as was done in the 1936 report, is continued herein. This procedure applies to medicinals, flavors and perfume materials, resins, rubber chemicals, and miscellaneous products.

The statistics for 1937 were compiled from returns of 308 companies and are thought to form a complete record of the manufacture of such products in the United States. Data for separate items are given in as great detail as is possible without disclosing the operations of individual manufacturers. The policy of the Commission is to omit production and sales figures for a product or group of products unless at least three firms report a substantial output. If the total is not well distributed among three or more manufacturers, production or sales figures are not published. Every effort is made to avoid duplication of figures and it is believed that there is no duplication of production or sales statistics either for individual products or groups of products.

PART 1

SUMMARY OF UNITED STATES PRODUCTION AND SALES OF DYES AND OTHER SYNTHETIC ORGANIC CHEMICALS, 1937

COAL-TAR CRUDES

The output of coal tar in the United States in 1937, as reported to the Bureau of Mines, was 603,053,000 gallons as compared with 560,386,000 gallons in 1936. Sales totaled 386,648,000 gallons at an average of 4.8 cents per gallon. About 50 percent of the 1937 production was distilled for the recovery of the several constituents and in addition substantial quantities were topped to recover naphthalene and the tar acids. Some crude tar was burned as fuel at or near the point of production.

Table 1 compares the production and sales of coal tar, benzol, motor benzol, naphthalene, and creosote oil in 1937 with 1936 and with the average for 1925–30.

TABLE 1.—*Comparison of United States production of tar and production and sales of certain crudes, 1925–30, 1936, and 1937*

Product	1925–30 average	1936	1937	Percent increase 1937 over 1936
Tar produced—thousands of gallons	630,536	560,386	603,053	7.6
Benzol:				
Production—do	22,257	19,413	[1] 26,795	38.0
Sales—do	22,257	19,145	22,141	15.6
Sales value—thousands of dollars	4,651	2,676	2,928	9.4
Motor benzol:				
Production—thousands of gallons	96,879	85,673	95,527	11.5
Sales—do	96,879	84,762	93,767	10.6
Sales value—thousands of dollars	15,920	7,629	8,385	9.9
Naphthalene:				
Production—thousands of pounds	44,762	89,536	115,979	29.5
Sales—do	44,762	74,054	109,394	47.7
Sales value—thousands of dollars	581	1,466	2,535	72.9
Creosote oil:				
Production—thousands of gallons	95,443	101,758	107,294	5.4
Sales—do	95,443	93,216	107,485	15.3
Sales value—thousands of dollars	11,742	10,294	12,472	21.2

[1] Includes 5,135 thousand gallons reported to the U. S. Tariff Commission. This amount accounts for 26.4 percent of the increase.

COAL-TAR INTERMEDIATES

Peak production of intermediates, both in quantity and variety, was reported for 1937. The output totaled 575,893,000 pounds, or about 13 percent more than for 1936. Most of the intermediates

were produced in greater quantities although those used in synthetic resins show the largest gains. As compared with 1936, phenol production increased 35 percent, phthalic anhydride 45 percent, and outstanding increases are shown for the substituted phenols, meta-cresol, cresylic acid, chlorinated diphenyls, maleic anhydride, and the xylenols.

COAL-TAR DYES

Coal-tar dyes were produced in slightly greater quantity in 1937. Sales of classified dyes decreased about 1.5 percent in quantity and 2.2 percent in value, while the unclassified dyes show a 14 percent increase in sales quantity and an 11 percent increase in sales value over the preceding year.

The components for azoic dyes, formerly included in "Miscellaneous coal-tar products" are included in the azoic dyes under the heading "Unclassified dyes." This transfer accounts for a large part of the increase in 1937.

COLOR LAKES AND TONERS

The output of color lakes and toners in 1937 was 18,041,000 pounds or 17.5 percent more than in 1936. Sales totaled 15,263,000 pounds valued at $11,812,000, or 12 percent by quantity and 16 percent by value over the previous year. More detail as to types is shown in this report, and phosphomolybdic acid lakes and toners are shown separately for the first time.

MEDICINALS

This important group of synthetics continues to increase in quantity and variety. Production of medicinals of coal-tar origin in 1937 totaled 14,800,000 pounds and those of non-coal-tar origin 1,814,000 pounds. Sales of coal-tar medicinals were 11,989,000 pounds valued at $11,496,000 and those not of coal-tar origin amounted to 1,442,000 pounds valued at $2,408,000. Sales of aspirin increased 25 percent in quantity over the preceding year. Outstanding increases are noted for sulfanilamide and mandelic acid, both of which were minor items in 1936.

FLAVORS AND PERFUME MATERIALS

In 1937 the output of coal-tar flavors and perfume materials increased 25 percent and those not of coal-tar origin increased more than 50 percent over the preceding year. Sales of those of coal-tar origin totaled 3,907,000 pounds valued at $3,983,000, or 14 percent more by quantity and 24 percent more by value than in 1936. Sales of non-coal-tar flavors and perfume materials increased 35 percent by quantity and 19 percent by value over 1936.

RESINS

Increased production and sales of synthetic resins are again reported and several new types have appeared on the market. Resins from coal tar increased 21 percent in production to an all-time peak of 142,025,000 pounds (net resin), and those not derived from coal tar increased in output to 21,006,000 pounds or 35 percent over 1936.

The only group showing decreased activity in 1937 was the cast

phenolic resins, the output of which declined about 11 percent as compared with the preceding year.

CHEMICALS FOR RUBBER

These important synthetics, as a group, were produced in somewhat smaller quantities in 1937 than in 1936. Except for coal-tar antioxidants, the output of which increased about 5 percent over 1936, all groups report less activity during the past year.

MISCELLANEOUS CHEMICALS

Miscellaneous synthetic chemicals consist of products not properly classified under any of the foregoing groups. Like other groups, they are divided into those of (*a*) coal-tar origin, and (*b*) non-coal-tar origin. Those of coal-tar origin include individual products and groups of products, which if imported would be classified as intermediates under paragraph 27 of the Tariff Act of 1930, and others which would be classified as photographic chemicals, synthetic tanning materials, and others under paragraph 28. Those of non-coal-tar origin include many important but unrelated products widely used in industry and the arts.

SUMMARY OF PRODUCTION AND SALES OF COAL-TAR PRODUCTS

Table 2 summarizes the production and sales of coal-tar products in 1937, and table 3 compares the production and sales in 1937 with 1936 and with the average for 1925–30.

TABLE 2.—*Intermediates, dyes, and other coal-tar chemicals: Summary of United States production and sales, 1937*

	Number of manufacturers	Production	Sales		
			Quantity	Value	Unit value
		Pounds	*Pounds*		
Intermediates	55	575, 893, 133	242, 194, 435	$35, 638, 618	$0. 15
Finished products, total [1]	230	373, 063, 335	315, 742, 113	128, 735, 576	.41
Dyes:					
Classified		104, 499, 596	101, 585, 568	45, 452, 524	.45
Unclassified [2]		17, 744, 983	16, 460, 559	19, 160, 390	1. 16
Total	43	122, 244, 579	118, 046, 127	64, 612, 914	.55
Color lakes and toners	50	18, 040, 575	15, 262, 876	11, 812, 200	.77
Medicinals	47	14, 799, 821	11, 989, 359	11, 496, 045	.96
Flavors and perfume materials	28	4, 356, 293	3, 907, 217	3, 982, 507	1. 02
Resins [1]	71	142, 021, 541	109, 201, 349	20, 582, 156	.19
Rubber chemicals	10	29, 202, 343	20, 909, 372	8, 193, 890	.39
Miscellaneous chemicals [3]	43	42, 395, 183	36, 425, 813	8, 055, 864	.22

[1] Does not include resins from adipic acid, coumarone and indene, hydrocarbon, styrol, succinic acid, and sulfonamides.

[2] Includes azoic dyes (rapid fast and rapidogene dyes) and their components (fast color salts and naphthol AS derivatives).

[3] Includes benzoate of ammonia, benzoate of soda, benzoyl peroxide, biological stains and chemical indicators, poisonous and tear gases, synthetic insecticides, phthalates, photographic chemicals, synthetic tanning materials, textile assistants, and others. Does not include components for azoic dyes.

TABLE 3.—*Intermediates, dyes, and certain other classes* [1] *of coal-tar chemicals: Comparison of United States production and sales, 1925–30, 1936, and 1937*

	1925–30 average	1936	1937	Increase, 1937 over 1936
Intermediates:				*Percent*
Production, thousands of pounds	267,492	509,706	575,893	13.0
Sales, do	109,133	223,119	242,194	8.5
Sales value, thousands of dollars	22,408	31,806	35,639	12.1
Finished coal-tar products:				
Production, thousands of pounds	138,078	[2 3] 336,348	[2 4] 373,063	10.9
Sales, do	133,964	[2 3] 287,276	[2 4] 315,742	9.9
Sales value, thousands of dollars	65,027	[2 3] 120,765	[2 4] 128,736	6.6
Dyes:				
Production, thousands of pounds	94,003	[5] 119,523	[5 6] 122,245	(7)
Sales, do	92,207	[5] 117,573	[5 6] 118,046	(7)
Sales value, thousands of dollars	39,428	[5] 63,686	[5 6] 64,613	(7)
Medicinals:				
Production, thousands of pounds	4,508	12,034	14,800	23.0
Sales, do	4,106	10,079	11,989	19.0
Sales value, thousands of dollars	7,464	9,763	11,496	17.8
Flavors and perfume materials:				
Production, thousands of pounds	3,966	3,481	4,356	25.1
Sales, do	3,919	3,437	3,907	13.7
Sales value, thousands of dollars	2,901	3,220	3,983	23.7
Resins:				
Production, thousands of pounds	[8] 24,442	[3] 117,302	[4] 142,025	21.1
Sales, do	[8] 22,135	[3] 86,214	[4] 109,201	26.7
Sales value, thousands of dollars	[8] 7,756	[3] 17,056	[4] 20,582	20.7

[1] See text for changes in classifications made, from time to time, in the groups listed above.
[2] Includes color lakes and toners, rubber chemicals, and miscellaneous coal-tar chemicals not shown separately.
[3] Does not include resins from coumarone and indene, hydrocarbon, styrol, and sulfonamides.
[4] Does not include resins from adipic acid, coumarone and indene, hydrocarbon, styrol, succinic acid, and sulfonamides.
[5] Includes azoic dyes (rapid fast and rapidogene dyes) formerly included in the miscellaneous group.
[6] Includes components for azoic dyes, formerlyi ncluded in the miscellaneous group.
[7] Not on comparable basis.
[8] Average for 1927–30.

SUMMARY OF PRODUCTION AND SALES OF SYNTHETIC ORGANIC CHEMICALS NOT OF COAL-TAR ORIGIN

Table 4 summarizes the production and sales in 1937 of the several groups of synthetic organic chemicals not of coal-tar origin. Only a small part of the total output can be broken down into the several subgroups. Table 5 compares the output and sales of all non-coal-tar synthetics in 1937 with the preceding year and with the average for the period 1925–30.

TABLE 4.—*Synthetic organic chemicals of non-coal-tar origin: Summary of United States production and sales, 1937*

	Number of manufacturers	Production	Sales		
			Quantity	Value	Unit value
		Pounds	*Pounds*		
Medicinals	37	1,814,035	1,442,070	$2,408,371	$1.67
Flavors and perfume materials	27	1,802,767	1,560,469	1,024,435	.66
Resins	16	21,005,869	18,891,277	5,680,600	.30
Miscellaneous [1]	89	2,505,027,014	1,146,255,397	110,306,424	.10
Total		2,529,649,685	1,168,149,213	119,419,830	.10

[1] Includes non-coal-tar rubber chemicals and all other non-coal-tar synthetic organic chemicals.

TABLE 5.—*Synthetic organic chemicals of non-coal-tar origin: Comparison of United States production and sales, 1925–30, 1936, 1937*

	1925-30 average	1936	1937	Increase, 1937 over 1936
				Percent
Production.....thousands of pounds..	379, 972	2, 041, 455	2, 529, 650	23. 9
Sales.....thousands of pounds..	264, 006	1, 034, 921	1, 168, 149	12. 9
Sales value.....thousands of dollars..	44, 499	105, 832	119, 420	12. 8

Part II

PRODUCTION AND SALES OF SYNTHETIC ORGANIC CHEMICALS IN THE UNITED STATES, 1937

COAL-TAR CRUDES

Statistics of production of coal tar in 1937, collected and compiled by the Bureau of Mines, show an output of 603,053,000 gallons as compared with 560,386,000 gallons in 1936. Sales totaled 386,648,000 gallons or about 64 percent of the output. The unit sales price in 1937 was 4.8 cents per gallon as against 4.3 cents in 1936.

Tar distilled by purchasers thereof amounted to 335,434,000 gallons, or 4 percent more than in 1936.

The output of crude naphthalene was 115,979,000 pounds as compared with 89,536,000 pounds in 1936. Average sales price was 2.3 cents per pound in 1937 and 2 cents per pound in 1936. Continued increasing demand for tar acids, principally by makers of synthetic resins, resulted in sharp increases in the output of phenol, the cresols, and cresylic acid. An important development in raw materials for synthetic resins in 1937 was the first commercial production of paracresol.

Table 6 shows statistics of domestic production and sales in 1937 of coal tar, the quantities of the several kinds of tar distilled, the production and sales of light oil and derivatives thereof, and of the products of tar distillation and processing. These data were collected from producers of tar by the Bureau of Mines and from purchasers of tar by the Tariff Commission.

TABLE 6.—*Coal-tar crudes:* [1] *United States production and sales, 1937*

[The numbers in the second column refer to the numbered alphabetical list of manufacturers printed on p. 54. An X signifies that the manufacturer did not consent to the publication of his identification number with the designated product. Blanks in the third, fourth, and fifth columns indicate that the statistics of production or sales cannot be published without revealing information with regard to individual firms.]

Tar distilled by purchasers thereof: [2]	
Oil-gas tar, 13,033,678 gallons	$680,465
Water-gas tar, 17,441,254 gallons	822,434
Coal tar, 304,959,372 gallons	16,737,898
Total, 335,434,304 gallons	18,240,797

	Manufacturers' identification numbers (according to list on p. 54)	Production (quantity)	Sales		
			Quantity	Value	Unit value
Tar [3] gallons		603,053,288	386,648,478	$18,456,483	$0.048
Light oil derivatives:					
Crude light oil do	11, 58, 69, 106, 119, X	187,103,087	11,153,337	962,836	.086
Benzol (except motor benzol) do	22, 34, 64, 158, 178	26,795,497	[3] 22,140,936	[3] 2,928,471	.132
Motor benzol [3] do		95,526,695	93,767,208	8,384,863	.089
Toluol, crude and refined [3] do		20,896,724	20,173,723	5,350,087	.265
Solvent naphtha do	22, 34, 57, 64, 124, 158, 185, 186	7,077,114	6,343,220	1,295,500	.204
Xylol [3] do		4,562,344	4,245,316	1,176,723	.277
Other light oil products [4] do	22, 34, 64, 158, 178	12,842,115	11,806,798	1,871,115	.158
Naphthalene, crude and refined [5] pounds	22, 58, 119, 124, 178, 185, 186, 189	115,979,238	109,394,319	2,534,526	.023
Anthracene, crude (less than 30 percent) [2] do	185				
Cumene [2] gallons	22				
Cresylic acid (less than 75 percent) [2] do	22, 186				
High residue oils [2] do	124				
Pitch paint [2] do	185				
Pyridine [2] do	22, 185				
Creosote oil do	11, 22, 27, 57, 58, 69, 106, 110, 113, 119, 121, 127, 158, 185, 186, 189, X.	107,293,751	107,485,199	12,472,500	.116
Tars, crude and refined [2] do	22, 27, 57, 58, 106, 113, 119, 124, 158, 178, 185, 186, 189.	23,756,212	23,144,241	1,711,437	.074
Tars, road [2] do	11, 22, 69, 106, 113, 124, 178, 185, 186, 189, X.	155,088,720	155,745,590	12,907,947	.083
Other distillates [6] do	11, 22, 57, 69, 106, 119, 124, 172, 185, 186, 189, X, X.	34,550,805	8,313,627	1,406,736	.169
Pitch of tar tons	11, 22, 27, 57, 58, 69, 106, 113, 119, 124, 127, 185, 186, 189, X	893,715	315,443	4,382,466	13.89
Pitch of tar coke [2] do	11, 22, 69, 113, 124, 172, 185, 186.	181,495	91,983	1,131,812	12.30
Total				76,973,502	

[1] Data for coke ovens reported to Bureau of Mines, and for tar refineries and others to United States Tariff Commission, unless otherwise noted.
[2] Reported to United States Tariff Commission only.
[3] Reported to Bureau of Mines only.
[4] Includes motor benzol, toluol, xylol, and sales of benzol reported to United States Tariff Commission and other light oil products reported to Bureau of Mines.
[5] Includes crude and refined naphthalene reported to Bureau of Mines and crude naphthalene reported to United States Tariff Commission.
[6] Includes crude tar acids, reported to United States Tariff Commission, and Bureau of Mines, and phenol and sodium phenolate reported to Bureau of Mines.

COAL-TAR INTERMEDIATES

The peak production of 575,893,000 pounds of coal-tar intermediates represents an increase of 13 percent over 1936. Sales totaled 242,194,000 pounds valued at $35,639,000, or an average of 15 cents per pound. The difference between production and sales is due to large consumption by the maker in the manufacture of finished products. There were 55 makers of intermediates in 1937 as against 58 makers in 1936.

Outstanding gains in this group are shown by intermediates used in synthetic resins. Phenol output totaled 65,690,000 pounds, or 35 percent more than in 1936, and was a peak peace-time production. Production of phthalic anhydride increased 45 percent over the preceding year to 45,211,000 pounds. The cresols and maleic anhydride, shown separately for the first time, both record appreciable increases in output. Commercial production of several phenol derivatives was reported for the first time. Other raw materials for synthetic resins made in increased quantity include tertiary amyl phenol, tertiary butyl phenol, chloro-o-phenyl phenol, bis-phenol (p-p-dihydroxy diphenyl-dimethyl methane), and dichorophenol.

Production of technical benzoic acid increased about 30 percent, mixed cresols more than 30 percent, paradichlorobenzene 22 percent, and b-hydroxy naphthoic acid 21 percent. Other outstanding gains are noted for benzotrichloride, benzyl chloride, chloronapthalene, diphenyl and its derivatives, and the xylenols. Most of the intermediates for dyes were produced in slightly greater quantities than in 1936.

Table 7 shows production and sales of coal-tar intermediates in 1937.

TABLE 7.—*Coal-tar intermediates: United States production and sales, 1937*

[The numbers in the second column refer to the numbered alphabetical list of manufacturers printed on p. 54. An X signifies that the manufacturer did not consent to the publication of his identification number with the designated product. Blanks in the third, fourth, and fifth columns indicate that the statistics of production or sales cannot be published without revealing information with regard to individual firms. The figures thus concealed, however, are included in the total]

Name of intermediate	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
		Pounds	*Pounds*		
p-Acetaminobenzene sulfonamide	X				
p-Acetaminobenzene sulfonyl chloride	X				
Acetanilide, tech	45, 64, 86, 141	210, 848			
Acetoacetanilide	37, 219				
Acetoacet-o-chloroanilide	64, 219				
Acetoacetdichloroanilide	70				
Acetotoluide	34, 148				
Acetyldiaminoanthraquinone	7				
Acetyl-p-phenylenediamine (p-amino acetamilide).	5, 45, 64, 86, 148	239, 756			
Acetyl-p-phenylenediamine sulfonic acid	86				
Acetyl-p-toluidine	64, 168, X				
Acridine yellow	64, 148				
1-Amino-4-acetylamino-6 and 7-naphthylamine sulfonic acid (acetylamino Cleve's acid).	148				
a-Aminoanthraquinone and salt	64, 86, 148				
b-Aminoanthraquinone	64, 86, 148				
Aminoazobenzene and hydrochloride	7, 34, 64, 86, 148	173, 461			
Aminoazobenzene sulfonic acid	7, 34, 45, 64, 86, 148, 171.	122, 011			
Aminoazobenzene disulfonic acid	7, 148				
Aminoazotoluene	34, 45, 64, 86, 148, 171.	216, 391			
Aminoazotoluene mono sulfonate	64, 148				
Aminoazoxylene	86, 148				
Aminoazoxylene-toluidine	7, 34				
8-Amino-1:2-benzacridone	64				
o-Aminobenzoic acid (anthranilic acid)	62, 64, 86				
p-Aminobenzoic acid	64				
Amino-5-benzoylaminoanthraquinone	64				
2(4-Aminobenzoylamino) 5-aminotoluene	64				
m-Aminobenzoyl 1 acid	148				
m-Aminobenzoyl J acid	64, 171				
p-Aminobenzoyl J acid	64, 86, 148, 171	50, 593			
p-Aminobenzoyl-m-phenylenediamine	64				
m-Aminobenzoyl-p-tolylenediamine	64				

TABLE 7.—*Coal-tar intermediates: United States production and sales, 1937*—Con

Name of intermediate	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
		Pounds	*Pounds*		
1-Amino-2-bromo-4-p-toluidine anthraquinone.	64				
Aminobutyrylaminodiethyl hydroquinone	171				
1-Amino-6-chloroanthraquinone	64				
Amino-4-chlorophenol	148				
2-Amino-4-chlorotoluene	64, 148				
2-Amino-6-chlorotoluene	64, 148				
m-Aminocresol methyl ether	45				
1-Amino-2:4-dibromoanthraquinone	64, 148				
2-Amino-5-diethylaminotoluene hydrochloride.	70				
p-Aminodiethylaniline	70, 86				
p-Aminodiethyl benzaldehyde	64				
p-Aminodimethylaniline	70, 224				
p-Aminodiphenylamine	64				
Aminodiphenylamine sulfonic acid	45, 86, 148				
Aminodiphenyl ether	171				
p-Aminoethylbenzylaniline sulfonic acid	64				
1-Amino-2-methyl-4-p-toluidine anthraquinone.	64				
1:7-Aminonaphthol	64				
1-Amino-2-naphthol-4-sulfonic acid	45, 64, 86, 148	1, 367, 419			
1-Amino-8-naphthol-4-sulfonic acid	45, 64, 148	74, 161			
1-Amino-8-naphthol-2:4-disulfonic acid (Chicago acid).	45, 64, 148	181, 431			
1-Amino-8-naphthol-3:6-disulfonic acid (H acid).	64, 86, 145, 148	3, 382, 396			
2-Amino-5-naphthol-7-sulfonic acid (J acid)	5, 45, 64, 148	551, 956			
2-Amino-8-naphthol-6-sulfonic acid (gamma acid).	45, 64, 86, 148	1, 081, 751			
Amino-2-naphthol-6:8-disulfonic acid	86				
2-Amino-8-naphthol-3:6-disulfonic acid (2 R acid).	64, 148				
Amino-1-naphthylamine-6 and 7-sulfonic acid (amino Cleve's acid).	64				
o-Aminophenol	64, 70, 224, 232		19, 226	$21, 541	$1. 12
o-Aminophenol sulfonic acid	45, 148				
p-Aminophenol and hydrochloride	34, 45, 64, 70, 224, 232.	743, 321	461, 984	298, 096	. 65
p-Aminophenylammonium-hydroxide	X				
m-Aminophenylpyrazolone carboxylic acid	171				
p-Aminophenyl-p-tolylamine sulfonic acid	45				
Aminopyrazolone	171, X				
Aminosalicylic acid	7, 45, 148	20, 665			
Amyl naphthalenes	X				
Amyl phenol (p-tertiary)	X				
1-Anilido-2-carboxylic acid anthraquinone	64				
Aniline disulfonic acid	45, 64, 148	24, 892			
Aniline hydrocholride and sulfate	34, X				
Aniline methane sulfonic acid	86, 171				
Aniline oil	34, 62, 64, 141, 145, 148, X.	38, 850, 344	14, 720, 211	1, 667, 159	. 11
Aniline omega sulfonic acid	148, 171				
Anisic acid	X				
o-Anisidine	64, 145				
o-Anisidine omega sulfonic acid	86, 148, 171	13, 682			
p-Anisidine	64, 145, 148				
Anthracene, refined	185				
Anthranilic acid. (See o-Aminobenzoic acid.)					
Anthraquinone (100 percent)	34, 148				
Anthraquinone-a-sulfonic acid	86, 148				
Anthraquinone-1:5-disulfonic acid	64, 86				
Anthraquinone-1:8-disulfonic acid	86				
Anthraquinone-2:6-disulfonic acid	86, 148				
Anthraquinone-1:8-potassium disulfonate	64				
Anthraquinone-1-sodium sulfonate	64				
Anthraquinone-2-sodium sulfonate (silver salt).	7, 64, 148				
Anthraquinone-2:6-disulfonate	64				
Anthraquinone 2:7-disulfonate	148				
1:9-Anthrathiazol-2-carbonyl chloride	64				
Azobenzene	X				
Azoxyaniline	171				
Benzaldehyde, tech	101, X				
Benzaldehyde disulfonic acid	86				
Benzanthrone	7, 34, 64, 86, 148, 167.				

TABLE 7.—*Coal-tar intermediates: United States production and sales, 1937*—Con.

Name of intermediate	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
		Pounds	*Pounds*		
Benzene sodium disulfonate	64				
Benzidine, base	45, 64, 148				
Benzidine hydrochloride and sulfate	5, 34, 64, 70, 86, 148	1, 539, 383			
Benzidine sulfonic acid	7, 45				
Benzidine disulfonic acid	45, 145, 171, X	6, 165			
Benzoic acid, tech	64, 101, 105, 145	125, 444	121, 394	$43, 607	$0.36
Benzotrichloride	101, 105, 145				
1-Benzoylamino-4-chloroanthraquinone	64, 86				
1-Benzoylamino-5-chloroanthraquinone	64				
5-Benzoylamino-1:1-dianthramide	64				
1-Benzoylamino-5-p-toluene sulfonic anthraquinone.	64				
Benzoyl benzoic acid	34, 64, 148				
Benzoyl chloride	105, X				
Benzoyl J acid	45				
Benzyl chloride	101, 105, X, X	1, 181, 079			
Benzyl disulfide	105				
Broenner's acid. (See 2-Naphthylamine-6-sulfonic acid.).					
Bromobenzanthrone	64				
Bromobenzene	62, 70				
p-Bromomethylaminoanthraquinone	86				
p-Bromophenol	X				
Butyl phenol (p-tertiary)	62				
Chicago acid. (See 1-Amino-8-naphthol-2:4-disulfonic acid.).					
o-Chloroacetoacetanilide	37				
Chloroacetoacetylnaphthylamide	171				
1-Chloro-5-aminoanthraquinone	64, 148				
1-Chloro-8-aminoanthraquinone	64				
o-Chloroaminobenzoic acid	X				
Chloroaminophenol sulfonic acid	45, 64, 86				
5-Chloro-2-aminotoluene hydrochloride	64				
m-Chloronailine	86, 145				
o-Chloroaniline	145, 224				
p-Chloroaniline	145, 224				
p-Chloroaniline sulfonic acid	86				
2-Chloroaniline-5-sulfonic acid	86				
Chloroanisidine	105, 171, 224				
Chloroanisidine methylene	171				
Chloroanthraquinone	34, 64, 86, 148	337, 650			
o-Chlorobenzaldehyde	86, 148				
Chlorobenzanthrone	7, 148				
Chlorobenzene (mono)	62, 64, 105, 145, 201				
o-Chlorobenzoic acid	148, X				
Chlorobenzoyl benzoic acid	34, 64, 86, 148	1, 115, 075			
1-Chloro-2-carboxy anthraquinone	64				
p-Chloro-m-cresol	22				
2-Chloro-1:4-dihydroxy anthraquinone (chloroquinizarin)	7, 148				
Chlorometanilic acid	64, 148				
Chloromethylanthraquinone	34, 64, 148	52, 862			
Chloronaphthalenes	105, X				
o-Chloro-p-nitroaniline	34, 62, 64	186, 691			
p-Chloronitroaniline	64, 224				
1-Chloro-5-nitroanthraquinone	64				
1-Chloro-8-nitroanthraquinone	64				
4-Chloro-2-nitrotoluene	64				
6-Chloro-2-nitrotoluene	64, 148				
o-Chlorophenol	145				
p-Chlorophenol	62, 145				
Chlorophenylhydrazine-p-sulfonic acid	86				
Chlorophenylmethylpyrazolone sulfonic acid	86				
2-Chloro-o-phenylphenol	62				
2-Chloro-6-phenylphenol and sodium salt	62				
4-Chloro-6-phenylphenol	62				
Chlorosulfophenylmethylpyrazolone	64				
Chloro symmetrical xylenol	22				
Chlorotoluene	64, 105, 148	304, 240			
o-Chloro-p-toluene sodium sulfonate	145				
Chloro-o-toluidine	64, 148				
4-Chloro-2-toluidine methylene	171				
Chlorotoluidine sulfonic acid	34, 45, 64, X	312, 205			
2-Chloro-4-toluidine-5-sulfonic acid	64				
Chlorotolylthioglycollic acid	64, 86, 148				
p-Chloro-p-xylidine	64				

TABLE 7.—*Coal-tar intermediates: United States production and sales, 1937*—Con

Name of intermediate	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit valu
		Pounds	*Pounds*		
p-Chloroxylylthioglycollic acid	64, 86				
Chromotropic acid. (See 1:8-Dihydroxy naphthalene-3:6-disulfonic acid.)					
Cleve's acid. (See 1-Naphthylamine-6 and 7-sulfonic acid.)					
Copper phthalocyanine urea salt	64				
Cresidine	64				
m-Cresol	22, X				
o-Cresol	22, 185, X				
p-Cresol	22, 209				
Cresol, meta-para	22, 185, X				
Cresol, meta, ortho, para	22, 34, 124, 185, X	13, 745, 271	13, 251, 345	$1, 071, 965	$0.08
o-Cresotinic acid	62, 148				
Cresylic acid (refined)	22, 124, 185, X				
Cumidine	23, 148, 207				
Cyanoacetylcoumarone	70				
Cyclohexylamine	145				
Dehydrothio-p-toluidine	64				
Dehydrothio-p-toluidine sulfonic acid	64, 148				
m-Diaminonanisole	221				
Diaminoanthraquinone	7, 64, 148				
Diaminoanthrarufin	64				
Diaminodibenzanthronyl	64				
Diaminodimethylacridine	171				
Diaminodimethylphenylacridine	171				
4:4-Diamino-2:2-dimethyldiphenylmethane	148				
Diaminodiphenylamine sulfonic acid	5, 45				
Diaminomethylphenylacridine	7, 171				
1:8-Diamino-4:5-dinitro anthraquinone	64				
Diaminophenetol	34				
Diaminostilbene disulfonic acid	64, 86, 148	180, 819			
1:5-Dianilidoanthraquinone-o-o-dicarboxylic acid (dicarboxylic-anthraquinone)	64				
Dianisidine	45, 64				
1:1-Dianthraquinone imine	64				
1:1-Dianthraquinone imine diamino	64				
1:1-Dianthraquinone imine-4:4-dibenzoyl diamino	64				
1:1-Dianthraquinone imine 4:5-dibenzoyl diamino	64				
1:1-Dianthraquinone imine dinitro	64				
1:1-Dianthraquinylamine	86				
1-Diazo-2-naphthol-4-sulfonic acid	45, 64, 148				
Diazosalicylic acid	64, 86, 148				
Dibenzacridone trianthrimid	64				
Dibenzanthrone	34, 64				
2:2-Dibenzanthronyl	64				
13:13-Dibenzanthronyl	64				
13:13-Dibenzanthronyl selenide	64				
Dibenzyl aniline	64				
Dibromoaminoanthraquinone	64				
p-Dibromobenzene	62				
Dibromopyranthrone	64				
Dicarboxybenzidine disulfonic acid	171				
Dichloroacetoacetanilide	37				
Dichloroaniline	45, 64, 105, 145, 148, 224.	231, 308	79, 387	31, 309	.39
Dichloroaniline nitrosamine	86				
Dichloroaniline sulfonic acid	64, 86, 148, 171	35, 776			
1:5-Dichloroanthraquinone	64, 86				
1:8-Dichloroanthraquinone	64				
2:6-Dichlorobenzal chloride	64				
o-Dichlorobenzene	62, 64, 105, 145	3, 209, 179	2, 881, 138	147, 429	.05
p-Dichlorobenzene	62, 64, 105, 145, 201	11, 705, 376	11, 118, 594	1, 095, 118	.10
Dichlorobenzidine	64				
Dichloro carboxyl pyrazolone	171				
1:8-Dichloro-4:5-dinitroanthraquinone	64				
Dichlorohydrazine	171				
Dichlorohydrazine sulfonic acid	171				
2:4-Dichlorophenol	145				
Dichloropyrazolone	171				
Dichlorosulfophenylpyrazolone	45				
Dichlorosulfophenylmethylpyrazolone	64				
Dicyclohexylamine	145				
Diethylaminobenzaldehyde	70, 86, 148				
Diethyl-m-aminophenol	64, X				
Diethylaniline	64, 148				
Diethylaniline-m-sulfonic acid	64, X				

TABLE 7.—*Coal-tar intermediates: United States production and sales, 1937*—Con.

Name of intermediate	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
		Pounds	*Pounds*		
1:4-Dihydroxy anthraquinone (quinizarin)	5, 7, 16, 64, 86, 148, 171, 234	205, 544			
1:5-Dihydroxy anthraquinone (anthrarufin)	64, 86, 148, 171, X	162, 127			
1:8-Dihydroxy anthraquinone (chrysazin)	64, 86				
p-p-Dihydroxydiphenyldimethylmethane (bis-phenol)	62				
5:5-Dihydroxy-7:7-disulfonic-2:2-dinaphthylamine (Rhoduline acid)	5, 64				
5:5-Dihydroxy-7:7-disulfonic-2:2-dinaphthylurea (J acid urea)	45, 64, 86, 148	207, 396			
1:5-Dihydroxynaphthalene	64, 86, 148				
1:8-Dihydroxynaphthalene-3:6-disulfonic acid (chromotropic acid)	45, 64, 148				
5:5-Dihydroxy-di-b-naphthylamine-7:7-disulfonic acid (I acid imide)	148				
2:5-Dimethoxy aniline	64				
Dimethylaniline	34, 64, 148	3, 510, 106			
Dimethyldianthraquinonyl	34, 64, 86, 148	55, 983			
Dinitroaniline	34, 64, 145, 148				
Dinitroanthraquinone	7				
4:8-Dinitroanthrarufin	64				
Dinitroanthrarufin disodium sulfonate	64				
Dinitrobenzene	34, 64, 148	1, 873, 430			
Dinitrobenzene sulfonic acid	45, 86				
Dinitrochlorobenzene	34, 64, 86, 145, 148	7, 009, 768			
Dinitrodibenzanthronyl	64				
4:8-Dinitro-1:5-dinitrophenyl ether anthraquinone	64				
Dinitrohydroxydiphenylamine	45, 86				
Dinitrophenol, tech	7, 64, 86, 148				
Dinitrostilbene disulfonic acid	64, 86, 148	344, 688			
Dinitrotoluene	64, 148				
Dioxamic acid	86				
1:5-Dioxamino-4:8-dinitroanthraquinone	64				
Dioxy dibenzanthrone	64				
Dioxy S acid	64				
Diphenoxy anthraquinone	7				
1:5-Diphenoxy anthraquinone	64				
Diphenyl	62, 145, 171				
Diphenyl derivatives:					
o-Amino	145				
p-Amino	145				
3-Bromo-4-hydroxy and sodium salt	62				
Polychloro	145				
Diphenylamine	64				
Diphenyl epsilon acid	64, 148, X	44, 590			
Dipyrazol dianthrone	64				
Distilbenediphenol	148				
1:5-Di-p-toluidine anthraquinone	64				
1:8-Di-p-toluidine anthraquinone	64				
1:4-Di-p-tolylaminoanthraquinone	64				
6-Ethoxy-3-hydroxy thionaphthalene	64				
Ethylaminobenzoate	X				
Ethyl-o-amino-p-cresol	64				
Ethylaniline (mono)	64, 148				
Ethylbenzene	62				
Ethylbenzene benzoate	X				
Ethylbenzylaniline	64, 148				
Ethylbenzylaniline sulfonic acid	45, 64, 86, 148	425, 979			
Ethylbenzyl-m-toluidine	64, 148				
Ethylbenzyl-m-toluidine sulfonic acid	64, 86, 148				
Ethyl salicyl carbonate	62, X				
Ethyl-m-toluidine	64, 148				
Ethyl-o-toluidine	64				
Ethyl-o-toluidine-p-sulfonic acid	64				
Ethylene glycol monophenyl ether	37				
Fast yellow L	5				
m-Fluor aniline	64				
Fluorescein	102, 152				
Furoylaminodimethoxy aniline	171				
Gamma acid. (See 2-Amino-8-naphthol-6-sulfonic acid.)					
H acid. (See 1-Amino-8-naphthol-3:6-disulfonic acid.)					
Hexachlorodiphenyl oxide	62				
2:1-2:1-Hydrazine dibromoanthraquinone	64				
a-Hydroxyanthraquinone	7, 64				

TABLE 7.—*Coal-tar intermediates: United States production and sales, 1937*—Con.

Name of intermediate	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
		Pounds	*Pounds*		
Hydroxy ethylethylaniline	64				
b-Hydroxy naphthoic acid	64, 86, 148	996,909	486,894	$482,352	$0.99
1-Hydroxy-4-nitroanthraquinone	64				
Indamine	5				
Indophenol (blue and green)	5, 64				
Isopropyl ester of p-toluidine sulfonic acid	64				
Iso resinduline	64				
Iso violanthrone	7, 64				
Laurent's acid. (See 1-Naphthylamine-5-sulfonic acid.)					
Lead trinitroresorcinate (lead styphnate)	X				
Leuco-1:4-dimethyldiaminoanthraquinone	64				
Leuco indophenol BCFN	64				
Leuco quinizarin	5, 7, 64, X				
Maleic acid and anhydride	8, 145, 148	2,114,176			
Malic acid	148				
Metanilic acid	5, 45, 64, 86, 148	523,561			
Methoxychlorobenzene diazoamino carboxy pyrrolidine.	171				
Methoxy omega sulfonic acid	64				
1-Methylamino-4-bromoanthraquinone	64				
4-Methyl-4-aminodiphenylamine-2-sulfonic acid.	86				
1-Methylamino-4-p-toluidine anthraquinone.	64				
Methylaminoanthraquinone	86				
b-Methylanthraquinone	34, 64				
2-Methyl quinoline (quinaldine)	148, X				
Methylene bismethyl	X				
Michler's hydrol. (See Tetramethyldiaminobenzhydrol.)					
Michler's ketone. (See Tetramethyldiaminobenzophenone.)					
Naphthalene, solidifying 79° C. or above (refined, flake)	22, 34, 57, 64, 185, 196, 205, 230, X.	52,194,379	29,656,585	1,893,257	.06
From domestic crude		24,999,732			
From imported crude		27,194,647			
Naphthalene sodium sulfonate	86				
Naphthalene-1:5-disodium sulfonate	148				
b-Naphthalene sulfonic acid	64, 86, 148				
1:5 Naphthalene disulfonic acid	45, 64, 86, 148	305,804			
2:7-Naphthalene disulfonic acid	64, 148, X				
Naphthalene-b-thioglycollic acid	64, 86				
Naphthalene-1:3:6-trisulfonic acid	86				
Naphthionic acid. (See 1-Naphthylamine-4-sulfonic acid.)					
a-Naphthol	45, 64, 86, 148	1,159,511	830,355	425,816	.51
a-Naphthol-3:6-disulfonic acid	45				
b-Naphthol, tech	34, 148, X				
1-Naphthol-4-sulfonic acid (Neville & Winther's acid).	5, 45, 64, 148	146,302			
1-Naphthol-5-sulfonic acid	45, 64, 86, 148	121,457			
1-Naphthol-8-chloro-3:6-disulfonic acid(chloro H acid).	148				
2-Naphthol sulfonic acid	64				
2-Naphthol-6-sulfonic acid (Schaeffer's acid)	5, 34, 45, 64, 148	175,749	24,374	10,617	.44
2-Naphthol-7-sulfonic acid	45, 64, X				
2-Naphthol-8-sulfonic acid	45				
2-Naphthol-3:6 disulfonic acid	45, 64, 86, 148, X	522,222	153,466	82,491	.54
2-Naphthol-6:8-disulfonic acid	45, 64, 86, 148	1,199,034			
Naphthsulton sulfonic acid 1:8:3	45				
Naphthsulton disulfonic acid 1:8:3:6	45				
b-Naphthoylacetonitrile	70				
a-Naphthylamine	64, 86, 148	3,281,458	387,678	127,228	.33
a-Naphthylamine disulfonic acid	64				
b-Naphthylamine	64, 148				
1-Naphthylamine-2-sulfonic acid (o-naphthionic acid).	64				
1-Naphthylamine-4-sulfonic acid (naphthionic acid).	45, 64, 148, X				
1-Naphthylamine-5-sulfonic acid (Laurent's acid).	5, 64, 148				
1-Naphthylamine-6-sulfonic acid	64, 148				
1-Naphthylamine-6 and 7-sulfonic acid (Cleve's acid).	5, 45, 64, 86				
1-Naphthylamine-7-sulfonic acid	45, 64, 148				
1-Naphthylamine-8-sulfonic acid	5, 64, 86, 148	246,053			
1-Naphthylamine-3,8-disulfonic acid	45, 64, 148	86,842			

TABLE 7.—*Coal-tar intermediates: United States production and sales, 1937*—Con.

Name of intermediate	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
		Pounds	*Pounds*		
1-Naphthylamine-4:8-disulfonic acid	45, 64, 148	409,235			
b-Naphthylamine-2:3:6-disulfonic acid	45				
1-Naphthylamine-3:6:8-trisulfonic acid	64, 86, 148	4,649,858			
2-Naphthylamine-1-sulfonic acid (Tobias acid).	5, 34, 45, 64, X	1,155,494	594,978	$365,211	$0.61
2-Naphthylamine-6-sulfonic acid (Broenner's acid).	64, 148				
2-Naphthylamine-3:6-disulfonic acid	148				
2-Naphthylamine-4:8-disulfonic acid	64, 86, 148	109,460			
2-Naphthylamine-5:7-disulfonic acid	45, 64, 148	993,920			
2-Naphthylamine-6:8-disulfonic acid	45, 64, 148	1,624,271			
2-Naphthylamine-2:3:6-trisulfonic acid	148				
1-Naphthylamino-2-carboxylic acid anthraquinone.	64				
p-Nitroacetanilide	5, 45, 86				
Nitroacetoacetylnaphthylamide	171				
3-Nitro-4-aminoanisole	148				
4-Nitro-2-aminoanisole	148				
5-Nitro-2-aminoanisole	64				
Nitroaminodiphenylamine-o-sulfonic acid	7				
p-Nitro-p-aminodiphenylamine-o-sulfonic acid.	5				
Nitroaminophenol	34, 45, 86, 148	106,583			
p-Nitro-o-aminophenol	64				
4-Nitro-4-amino-2-sulfodiphenylamine	148				
m-Nitroaniline	34, 45, 64, 224	185,780	113,462	73,037	.64
o-Nitroaniline	145				
p-Nitroaniline	7, 64, X				
p-Nitroaniline sulfonic acid	34, 64, 86, 148	77,329			
m-Nitro-p-anisidine	64				
3-Nitro-4-anisidine	86				
p-Nitro-o-anisidine	64, 86				
o-Nitroanisole	64, 145				
p-Nitroanisole	64, 148				
Nitrobenzene	34, 64, 145, 148, X	53,301,541	4,480,146	322,953	.07
Nitrobenzene sulfonic acid	45, 64, 86, 148, 171	171,441			
m-Nitrobenzoic acid	64				
p-Nitrobenzoic acid	64				
m-Nitrobenzoyl chloride	64, 105				
m-Nitrobenzoyl sulfonic acid	7				
p-Nitrobenzoyl chloride	64, 105				
p-Nitrobenzoyl J acid	64, 86				
Nitrobutyrylaminodiethyl hydroquinone	171				
Nitrocarboxyl pyrazolone	171				
m-Nitrochlorobenzene	64, 145				
o-Nitrochlorobenzene	64, 145				
o-Nitrochlorobenzene-p-sulfonic acid	148				
p-Nitrochlorobenzene	64, 145				
p-Nitrochlorobenzene-o-sulfonic acid	7, 45, 64, 86, 148	287,036			
2-Nitro-4-chlorotoluene	148				
Nitrocresol	64				
m-Nitrocresol	1				
m-Nitro-p-cresol	45				
Nitrocresol methyl ether	64				
8-Nitro-1-diazo-2-naphthol-4-sulfonic acid	86, 148				
Nitro-p-dichlorobenzene	45, 148, 224				
Nitrodiphenyl ether	171				
Nitrohydrazine	171				
Nitromethane base	171				
Nitronaphthalene	64, 86, 148	4,608,601			
2-Nitronaphthalene-4:8-disulfonic acid	45, 86, 148				
o-Nitrophenetol	64				
o-Nitrophenol	64, 224				
p-Nitrophenol	34, 64, 145, 224				
Nitrophenylenediamine	86				
Nitrophenylmethylpyrazolone	64, 70, 171	2,732			
Nitropyrazolone	171				
Nitrosalicylic acid	86				
Nitrosodiethylaniline	86				
Nitrosodimethylaniline	7, 148				
Nitrosoethylbenzylaniline	86				
Nitrosophenol	34, 45, 64, 70, 148	650,711			
Nitrotoluene	34, 64, 86, 148				
m-Nitrotoluene	64				
o-Nitrotoluene	64, 148				
o-Nitrotoluene sulfonic acid	7, 45				
p-Nitrotoluene	64, 148				

TABLE 7.—*Coal-tar intermediates: United States production and sales, 1937*—Con.

Name of intermediate	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
		Pounds	*Pounds*		
p-Nitrotoluene-o-sulfonic acid	5, 45, 64, 86, 148	981,764			
Nitrotoluidine	1				
m-Nitro-p-toluidine	34, 45, 64, 168, X	801,152	731,971	$919,289	$1.26
p-Nitro-o-toluidine	64, 171				
Nitrotoluidine sulfone	171				
Nitroxylene	64, 148				
N. N. Dihydroxydiethyl-m-toluidine	64				
Oxalyl-p-nitroaniline	64, 86				
Oxalyl-m-phenylenediamine	64, 148				
Oxalyl-p-phenylenediamine	64, 86				
Oxydichlorobenzoyl benzoic acid	148				
Penta anthramide	64, 86				
Pentachlorobenzene	105				
Penta chlorophenol	62, 145				
o-Phenetidine	5, 64, 145				
p-Phenetidine	62, 64, 145				
Phenol	22, 34, 62, 124, 145, 185, X	65,689,782	57,175,514	6,152,843	.11
Phenyl-2-amino-5-naphthol-7-sulfonic acid (phenyl J acid)	45, 64, 148	71,122			
Phenyl-2-amino-8-naphthol-6-sulfonic acid (phenyl gamma acid)	5, 45, 64, 171	11,549			
Phenylammonium naphtholate	X				
Phenylethyl malonic ester	X				
Phenylethyl malonic diethyl ester	1				
m-Phenylenediamine	7, 34, 45, 64, 148, 179	782,065			
m-Phenylenediamine sulfonic acid	45, 64, 86, 148	105,693			
p-Phenylenediamine	34, 45				
p-Phenylenediamine sulfonic acid	45, 86				
Phenylene nerol acid	64				
Phenylglycine, sodium salt	62, 64, 148	7,257,445			
Phenylhydrazine and hydrochloride	62, 70, 171, 188				
Phenylhydrazine sulfonic acid	86, 171, 207	14,695			
Phenyl malonic diethyl ester	1				
Phenylmethylpyrazolone	34, 62, 64, 171, X	166,064			
1-Phenyl-3-methyl-5-pyrazolone (developer Z)	64, 171				
Phenyl-1-naphthylamine-8-sulfonic acid	5, 64, 86, 148	230,682			
o-Phenylphenol	62				
p-Phenylphenol	62				
Phloroglucinol. (See table 15.)					
Phthalamide	X				
Phthalates. (See table 15.)					
Phthalic acid and anhydride	8, 22, 64, 145, 148	45,210,784	17,565,905	2,492,473	.14
Phthalonitrile	64				
Phthalyl chloride	145				
a-Picolene	22				
Pieramic acid and salt	34, 64, 148				
Piperidine	64, 105, 145				
Primuline, base	61, 148				
Primuline sulfonic acid	86, 167				
Proline	171				
Propiophenone	168				
Pyrazol anthrone	64				
Pyrazolone	7				
Quinaldine. (See 2-Methyl quinoline.)					
Quinaldine yellow, base	148				
Quinoline	22				
Quinoline derivatives	X				
Red KB, base	86				
Resorcinol, tech	64, 168				
Rhoduline acid. (See 5:5-Dihydroxy-7:7-disulfonic-2:2-dinaphthylamine.)					
Rubber chemicals. (See table 14.)					
Salicylic acid, tech	62, 64				
Salicylic anilide	64				
Schaeffer's acid. (See 2-Naphthol-6-sulfonic acid.)					
Silver salt. (See Anthraquinone-2-sodium sulfonate.)					
Sodium chloro-o-phenylphenate	62				
Sodium naphthionate	64				
Sodium pentachlorophenate	62				
Sodium o-phenylphenate	62				
Sodium tetrachlorophenate	62				
Sodium trichlorophenate	62				
Sodium xylene sulfonate	145				

TABLE 7.—*Coal-tar intermediates: United States production and sales, 1937*—Con.

Name of intermediate	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
		Pounds	*Pounds*		
Succinic acid and anhydride	148, X				
Sulfanilic acid and salt	7, 34, 45, 64, 148, 224.	1,712,984			
o-Sulfobenzaldehyde	64, 86				
p-Sulfo-o-benzoyl benzoic acid (sulfo BB acid).	64				
1-Sulfo-5-nitroanthraquinone	64				
Sulfophenylmethylpyrazolone	45, 64, 171				
Sulfophenylmethylpyrizolone carboxylic acid.	171				
Tetraaminoditolylmethane	148, 171				
2:4:5:6-Tetrachlorophenol	62				
Tetrachlorophthalic anhydride	148				
Tetraethyldiaminobenzophenone (ethyl ketone).	64				
Tetramethyldiaminoacridine	171				
Tetramethyldiaminobenzhydrol (Michler's hydrol).	64, 86				
Tetramethyldiaminobenzophenone (Michler's ketone).	64, 86, 148				
Tetramethyldiaminodiphenylmethane	34, 64, 86, 148, 171, X.	691,900			
Tetramethyldiaminodiphenylmethane sulfonate.	148				
Thioaniline	5, 64, 148				
Thioaniline disulfonic acid	148				
Thiocarbanilide. (See table 14.)					
Tolazine, base	148				
Tolidine and salts	45, 64, 70, 148	301,657			
Tolidine disulfonic acid	7, 171, X				
o-Toluene sulfamide	145				
p-Toluene sulfamide	145				
p-Toluene sulfochloride	145				
p-Toluene sulfonic acid ethyl ester	224				
Toluidines (mixed)	34, 64				
Toluidine sulfochloride	171				
m-Toluidine	64, 148				
o-Toluidine	34, 64, 148				
o-Toluidine omega sulfonic acid	148				
o-Toluidine sulfonic acid	34, 64, 148				
p-Toluidine	64, 148				
p-Toluidine sulfonic acid	45, 64, 148				
p-Tolyl-o-benzoic acid	34, 64, 148	149,882			
m-Tolylenediamine	34, 45, 64, 148	1,142,040	360,597	$234,683	$0.65
m-Tolylenediamine sulfonic acid	64, 148				
p-Tolylenediamine sulfate	34				
p-Tolyl-b-naphthylamine	64				
Tolyl-1-napthylamine-8-sulfonic acid (tolyl peri acid).	5, 86, 148				
Tribromophenol	62				
Trichlorobenzene	62				
Tricresylphosphate	41, 145, 161				
Trinitrophenol	64, 148				
2:4:6-Trinitroresorcin (styphnic acid)	X				
1:2:4-Trioxyanthraquinone	86				
Triphenylphosphate	62, 145, X				
m-Xylene	64, X				
Xylenols	34, 185				
3:5-Xylenol	22				
Xylidine and salt	64, 148				
m-Xylidine	64, 148				
m-Xylidine acetate	148				
m-Xylidine sulfonic acid	7, 64, 148				
Xylidine, ortho and para	7, 34, 64, 148				
All other	1, 64, 171, X				
Total intermediates:					
For which individual statistics are shown.		352,141,921	155,215,204	17,958,474	.12
For which individual statistics cannot be shown.		223,751,212	86,979,231	17,680,144	.20
Grand total		575,893,133	242,194,435	35,638,618	.15

COAL-TAR DYES

PRODUCTION AND SALES BY TYPES

Coal-tar dye production in 1937 totaled 122,245,000 pounds, or 2.3 percent greater than in 1936. Sales increased less than 1 percent in quantity and slightly over 1 percent in value to 118,046,000 pounds, valued at $64,613,000. Sales of classified (Colour Index) dyes decreased 1.5 percent in quantity and 2.2 percent in value, while new and unclassified dyes show a 14 percent increase in quantity and 11 percent increase in value of sales. A large part of this increase is due to the inclusion of azoic dye components in this group for the first time. The unclassified dyes account for 14 percent of the sales quantity and 30 percent of the sales value of all dyes in 1937.

Production of synthetic indigo increased slightly to 18,417,000 pounds, while sales quantity declined slightly to 17,791,000 pounds, valued, at $2,965,000. Output of 13,615,000 pounds of sulfur black was 7 percent less than in 1936.

In 1937 production of food dyes increased to 425,000 pounds, as compared with 409,000 pounds in 1936. Average sales price dropped to $2.86 per pound from $3 per pound in 1936.

There were 43 makers of dyes in 1937 and 41 makers in 1936.

Table 8 shows production and sales of coal-tar dyes, by types, in 1937.

TABLE 8.—*Coal-tar dyes: United States production and sales, by types, 1937*

The numbers in the third column refer to the numbered alphabetical list of manufacturers printed on p. 54. An X signifies that the manufacturer did not consent to the publication of his identification number with the designated product. Blanks in the fourth, fifth, and sixth columns indicate that the statistics of production or sales cannot be published without revealing information with regard to individual firms. The figures thus concealed, however, are included in the total]

Colour Index No.	Name of dye	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
				Quantity	Value	Unit value
	CLASSIFIED DYES					
	NITROSO DYES		*Pounds*	*Pounds*		
2	Fast printing green	86				
5	Naphthol green	5, 34				
	NITRO DYES					
10	Naphthol yellow S	34, 45				
	AZO DYES					
	MONOAZO DYES					
16	Acid yellow G	7, 86				
17	Spirit yellow R	7, 34, 55, 80, 86, 148	54,960	55,854	$46,093	$0.83
19	Butter yellow	7, 34, 55, 80, 86, 148	28,678	30,096	19,642	.65
20	Chrysoidine Y	7, 34, 55, 86, 148	441,451			
21	Chrysoidine R	34, 86, 148	120,802			
23	Oil orange	55				
24	Sudan I	7, 34, 55, 64, 86, 148	312,224	298,116	145,401	.49
26	Croceine orange	7, 45, 148				
27	Orange G	34, 45, 64, 86, 148	190,364	184,035	87,136	.47
29	Chromotrope 2R	148				
30	Fast acid fuchsine B	7, 148				
31	Amido naphthol red G	5, 7, 34, 15, 64, 86, 148	476,775	438,227	144,246	.33
36	Chrome yellow 2G	7, 34, 45, 86	166,332	128,330	60,621	.47
40	Chrome yellow R	7, 34, 45, 86, 216	95,726	82,761	41,173	.50
52	Mordant yellow 4G	7, 45, 86				
53	Victoria violet	34, 45, 64, 86, 148	106,652	98,251	54,458	.55
54	Lanafuchsine	X				

TABLE 8.—*Coal-tar dyes: United States production and sales, by types, 1937*—Con.

Colour Index No.	Name of dye	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
				Quantity	Value	Unit value
	CLASSIFIED DYES—Contd.					
	AZO DYES—Continued					
	MONOAZO DYES—continued		*Pounds*	*Pounds*		
55	Azo coralline	86				
56	Chromotrope 6B	45, 148				
57	Amido naphthol red 6B	5, 7, 34, 45, 64, 86, 148.	326,827	283,682	$116,967	$0.41
69	Toluidine red RL	199				
73	Sudan II	7, 34, 55, 80, 86, 148	15,749	15,951	14,245	.89
79	Ponceau 2R	5, 7, 34, 45, 64, 86, 148.	322,629	345,525	137,369	.40
84	Double ponceau R	64, 86				
88	Bordeaux B	34, 45, 86, 148	125,531	126,654	55,080	.43
90	Chromotrope 10B	64				
98	Chrome brown R	45, 86				
99	Palatine chrome green G	86				
101	Chromate brown B	34, 179, X				
105	Acid chrome brown R	64				
110	Chrome flavine G	86				
114	Azo eosine G	64				
119	Eosamine G	64				
122	Chrome yellow 5G	45				
126	Direct pink E2GN	64				
128	Direct pink	148				
130	Direct pink EBN	64				
138	Metanil yellow	7, 45, 64, 86, 148	381,356	423,634	229,838	.54
142	Methyl orange	64				
145	Azo flavine 2R	86				
146	Azo yellow	7, 86, 148	85,949	76,833	45,347	.59
148	Resorcin yellow	5, 34, 86, 148	15,094	12,125	6,426	.53
151	Orange II	34, 45, 86, 102, 148	1,272,475	1,272,777	342,241	.27
156	Permanent orange R	X				
161	Orange R	34, 64, 148		259,031	72,869	.29
163	Lake red 4B	45, 64, 148				
165	Lake red C (strength 100%)	34, 64				
167	Acid chrome brown B	148				
168	Acid chrome garnet R	45, 86, 148		23,568	20,034	.85
169	Chrome violet R	45, 64, 148				
170	Chrome black PV	86, 148				
172	Acid alizarin black R	86				
175	Acid brown R	86				
176	Fast red A	34, 45, 64, 86, 148	106,669	102,756	50,256	.49
179	Azo rubine	7, 45, 64, 86, 148	132,703	141,748	73,553	.52
180	Fast red VR	34, 45, 86, 148	113,893	104,902	52,007	.50
183	Croceine scarlet 3BX	45				
184	Amaranth	7, 45, 148	44,756			
185	Cochineal red	34, 45, 86, 148	107,903	90,078	40,589	.45
189	Lake red R (strength 100%)	148, 199				
195	Mordant yellow	7, 45, 86, 148				
197	Chrome yellow RN	5, 7, 86, 148				
201	Chrome blue black B	45, 64, 86, 148				
202	Chrome blue black U	7, 45, 64, 86, 148	1,994,962	1,838,149	520,013	.28
203	Chrome black T	45, 86, 148				
204	Chrome black A	45, 86, 148, 179	243,808			
208	Fast acid blue R	5, 64, 86, 148	129,224	128,276	66,558	.52
209	Fast acid blue B	64, 86, 148				
214	Lake red D (strength 100%)	199				
216	Chrome red B	5, 45, 64, 86, 148, 234.	136,780	120,423	63,509	.53
219	Eriochrome flavine A	64, 86, X				
225	Direct pink R	64				
	DISAZO DYES					
234	Resorcin brown B	5, 7, 34, 45, 64, 86, 148, 233.	346,745	368,184	210,755	.57
235	Resorcin dark brown	5, 7, 34, 55, 86, 148	119,167	95,427	67,493	.71
238	Acid chrome brown G	64				
246	Acid black 10B	5, 7, 34, 45, 64, 86, 148, 233.	1,623,721	1,494,496	597,842	.40
247	Acid dark green A	45, 55, 64				
249	Cloth red R	45				
252	Brilliant croceine	34, 45, 64, 86 148	413,682	422,063	308,375	.73
256	Cloth red 3G	64				
258	Sudan IV	45, 55, 64, 8[illegible] 148				
262	Cloth red 2B	7, 45, 86, 1[illegible]8	53,377	51,176	29,562	.58

TABLE 8.—*Coal-tar dyes: United States production and sales, by types, 1937*—Con.

Colour Index No.	Name of dye	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
				Quantity	Value	Unit value
	CLASSIFIED DYES—Continued					
	AZO DYES—Continued					
	DISAZO DYES—continued		*Pounds*	*Pounds*		
267	Neutral gray G	64, X				
274	Milling orange G	5, 7, 34, 45, 86	20,564	26,341	$13,399	$0.51
275	Cloth scarlet G	7, 34, 45, 64, 233		5,538	5,575	1.01
278	Direct fast red 8BL	5, 7, 34, 64, 86, 148, 233, X.	175,237	170,526	331,274	1.94
280	Scarlet EC	7, 86, 148	38,270	20,382	18,864	.93
288	Fast cyanine G	5, 86, 148, X	39,613	32,810	23,069	.70
289	Fast cyanine 5R	5, 64, 86, 148, X	497,737	496,501	297,559	.60
290	Naphthalene acid black 4B	86				
294	Acid black B	148				
299	Chrome black F	45, 64, 86, 148				
302	Chrome blue green B	5, 64				
304	Fast acid black N2B	45, 64, 86				
306	Fast acid black F	86				
307	Fast cyanine black B	5, 64, 86, 148, X	211,375	240,153	151,002	.63
308	Naphthylamine black D	86				
316	Developed blue NA	7, 64, 86, 148				
317	Developed blue B	64, 86, 148				
319	Direct fast heliotrope 2B	64, 86				
324	Developed brilliant orange GR	64, 86, 171				
325	Diamine brilliant violet B	86				
326	Direct fast scarlet	45, 64, 86, 148, X	534,467	531,103	541,686	1.02
327	Direct fast scarlet 4BS	45, 86				
331	Bismarck brown	34, 64, 86, 148	98,752	94,264	35,321	.37
332	Bismarck brown 2R	34, 45, 64, 86, 148	878,796	836,343	307,862	.37
336	Acid chrome black F	7, 86				
343	Chrome fast yellow C	5				
346	Direct fast yellow 5GL	64, 86				
353	Direct fast pink 2BL	5, 64, 86, 148	23,530	19,581	33,567	1.71
364	Paper yellow	34, 64, 86, 148	208,369	196,691	147,510	.75
365	Chrysophenine G	64, 86, 148				
370	Congo red	5, 64, 148				
374	Direct orange TA	148				
375	Congo corinth G	5, 7, 34, 64, 86, 148, 233.	242,256	222,844	150,368	.67
376	Direct rubine	15, X				
382	Direct scarlet B	7, 34, 45, 86, 148, 233, X.	184,856	147,919	139,567	.94
385	Direct violet	45				
387	Direct violet B	45, 64, 148				
394	Direct violet N	34, 45, 64, 86, 148	94,425	87,564	75,587	.86
395	Developed black RO	7				
401	Developed black BHN	7, 34, 45, 64, 86, 148, 233.	2,563,481	2,329,965	762,645	.33
405	Direct cyanine R	148				
406	Direct blue 2B	5, 7, 34, 45, 55, 64, 86, 148, 233.	1,242,112	1,223,143	259,138	.21
409	Direct orange DB	64				
410	Chrysamine G	64, X				
411	Cresotine yellow G	45, 148, 233		26,023	11,655	.45
415	Direct orange R	45, 64, 86	64,966	76,411	31,154	.41
419	Direct fast red F	5, 7, 34, 45, 64, 86, 148, 233.	331,845	351,736	230,114	.65
420	Direct brown M	5, 7, 34, 45, 64, 86, 148, 233.	588,702	544,799	265,195	.49
423	Direct brown B	5, 34, 233		5,105	4,695	.92
430	Polar red G	45, 64, 86, 148, X, X.				
431	Acid chrome red	64				
436	Direct brilliant red 8B	45				
441	Chrome fast yellow RD	86				
443	Milling red 2G	5, 7, 34, 45, X				
446	Direct orange RT	7, 148				
448	Benzopurpurine 4B	45, 64, 148	743,368	656,104	323,493	.49
464	Direct blue R	64				
468	Direct mauve B	148				
471	Direct blue 3R	45, 148				
472	Direct blue BX	45, 64, 148	22,598	31,680	12,288	.39
477	Direct blue 3B	7, 45, 55, 64, 148	179,287	143,678	36,899	.26
478	Direct orange G	7, 45, 148				
487	Acid milling red B	7, 34, 86, 171, X	40,981	38,532	31,917	.83
495	Benzopurpurine 10B	45, 64, 148	34,003	29,673	25,333	.85
502	Direct azurine G	7, 45, 64, 86, 148, 233	90,619	117,699	72,247	.61

TABLE 8.—*Coal-tar dyes: United States production and sales, by types, 1937*—Con.

Colour Index No.	Name of dye	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
				Quantity	Value	Unit value
	CLASSIFIED DYES—Continued					
	AZO DYES—Continued					
	DISAZO DYES—continued		*Pounds*	*Pounds*		
508	Direct brilliant blue G	64				
512	Direct blue RW	7, 45, 64, 86, 148	169,337	170,986	$129,895	$0.76
515	Direct blue B	148				
518	Direct pure blue 6B	7, 45, 64, 86, 148	566,826	525,216	401,631	.76
	TRISAZO DYES					
520	Direct pure blue	5, 45, 64, 86, 148	87,643	91,757	46,160	.50
533	Direct fast blue FR	64				
534	Naphthogene blue 4R	86				
539	Direct fast black FF	45, 64, 86, 148				
544	Pluto black 5BS	86				
552	Diazo black RS	64, 148				
561	Direct brown BT	7, 64, 86, 118, 171, 233, X.	283,373	248,751	300,997	1.21
567	Direct fast blue R	45				
576	Direct fast blue B	45, 64, 148				
577	Direct brown T2G	34				
581	Direct black EW	7, 34, 45, 64, 86, 148, 233.	8,708,305	8,447,729	2,165,764	.26
582	Direct black RX	34, 45, 64, 86, 148, 233.	746,198	712,351	199,700	.28
583	Direct green ET	5, 7, 34, 45, 64, 86, 148, 233.	123,160	111,690	42,341	.38
589	Chloramine green B	34, 45, 64, 86, 148, 233.	119,132	88,270	30,805	.35
590	Direct steel blue G	64				
593	Direct green B	5, 7, 34, 45, 64, 86, 148, 179, 233.	762,754	724,351	238,404	.33
594	Direct green G	5, 34, 45, 64, 148, 233.	96,809	104,772	42,967	.41
595	Direct olive G	86				
596	Direct brown 3GO	5, 7, 34, 45, 64, 86, 148, 233.	1,111,578	1,045,395	322,979	.31
598	Congo brown G	7, 15, 64, 86, 148, X.	232,500	230,454	110,659	.48
601	Congo brown R	64				
606	Direct brown G	34, 86, 233		23,899	21,428	.90
	Total classified azo dyes		38,708,193	37,151,678	15,983,009	.43
	STILBENE DYES					
620	Direct yellow R	5, 45, 64, 86, 148	399,621	383,858	147,441	.38
621	Chloramine orange G	5, 34, 64, 86, 148	148,015	123,666	82,290	.67
622	Stilbene yellow	34, 64, 86	316,509	311,961	179,630	.58
628	Diphenyl catechine G	148				
	PYRAZOLONE DYES					
631	Direct chrysoine G	45				
636	Fast light yellow 2G	64, 86, 148, 171	64,552	64,096	64,799	1.01
639	Fast light yellow	34, 45, 64, 86, 148, 171, X.				
640	Tartrazine	7, 34, 86, 102, 148, 171.	613,048	648,505	435,840	.67
651	Pigment fast yellow G	86				
652	Chrome red B	7, 34, 45, 64, 86, 148, X.				
653	Pyrazol orange G	7, 148, 171	35,195			
654	Developed fast yellow 2G	64				
	KETONIMINE DYES					
655	Auramine	34, 64, 148, X	854,665	830,800	730,020	.88
	TRIPHENYLMETHANE AND DIPHENYLNAPHTHYLMETHANE DYES					
657	Malachite green	34, 66, 148	294,339	275,130	300,973	1.09
658	Rhodaline blue 6G	86, 148				
662	Brilliant green	34, 66				
663	Setocyanine	86				
666	Acid green B	34, 45, 64, 86, 148	94,348	91,228	78,828	.8

TABLE 8.—*Coal-tar dyes: United States production and sales, by types, 1937*—Con.

Colour Index No.	Name of dye	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
				Quantity	Value	Unit value
	CLASSIFIED DYES—Continued					
	TRIPHENYLMETHANE AND DIPHENYLNAPHTHYLMETHANE DYES—Contd.		*Pounds*	*Pounds*		
667	Fast acid green B	34, 86, 148				
670	Acid light green	64, 86				
671	Acid glaucine blue	64, 86, 148	418,151	438,179	$390,795	$0.89
676	Para fuchsine	34, 152, X	20,364	19,080	33,559	1.76
677	Magenta	34, 45, X				
680	Methyl violet and base	34, 64, 66, 86, 104, 148, X	902,370	909,543	583,596	.64
681	Crystal violet	64, 86, 148				
682	Ethyl violet	64, 86				
689	Spirit blue 2B	86				
691	Fast green bluish	7				
695	Acid violet 4BN	34				
696	Fast acid violet 10B	64, X				
698	Acid violet	45, 64, 86, 148, X	260,047	240,161	218,813	.91
699	Acid fast violet BG	148				
703	Alkali blue 6B	86				
705	Methyl blue	152				
706	Methyl cotton blue	152				
707	Soluble blue	34, 86, X	73,756	64,858	108,138	1.67
712	Patent blue	86, 148				
714	Patent blue A	86, 148				
720	Eriochrome azurol B	64, 86, 148, X	75,690	73,586	119,748	1.63
722	Eriochrome cyanine R	86, 148, X				
724	Aurine	64				
728	Victoria blue R	64, 86				
729	Victoria blue B	64, 86, 148				
735	Naphthalene green V	64, 148, X	89,517			
737	Wool green S	34, 64, 86	127,231	136,746	70,297	.51
	Total triphenylmethane and diphenylnaphthylmethane dyes		3,507,379	3,270,668	3,662,097	1.12
	XANTHENE DYES					
749	Rhodamine B	64				
749	Rhodamine B conc	64, X				
752	Rhodamine 6G conc	64, X				
758	Fast acid violet A2R	X				
766	Uranine	7, 34, 102, 152, 181	5,629	4,756	8,859	1.86
768	Eosine	7, 34, 102, 148, 152, 181	56,636	55,092	78,472	1.42
768	Tetrabromofluorescein (bromo acid)	7, 34, 102, 115, 152, 181	341,893	329,100	389,722	1.18
772	Erythrosine	152				
773	Erythrosine B	34				
774	Phloxine B	152				
777	Rose bengale	152				
779	Rose bengale B	34				
	ACRIDINE DYES					
788	Acridine orange A	86, 171				
793	Phosphine	34, 45, 64, 148, 171	119,738	127,533	99,632	.78
791	Phosphine 2G	171				
797	Euchrysine	86, 171				
	QUINOLINE DYES					
801	Quinoline yellow	64, 148, X	112,646	92,459	135,681	1.47
802	Quinoline yellow KT	148				
	THIAZOLE DYES					
812	Primuline	45, 64, 148, 167				
812	Direct pure yellow M	64				
814	Direct fast yellow	64, 86, 148, 167	365,660	337,165	296,722	.88
815	Thioflavine T	64				
816	Direct brilliant flavine S	167				

TABLE 8.—*Coal-tar dyes: United States production and sales, by types, 1937*—Con.

Colour Index No.	Name of dye	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
				Quantity	Value	Unit value
	CLASSIFIED DYES—Continued					
	AZINE DYES					
			Pounds	*Pounds*		
833	Wool fast blue GL	86, 148, X	111,822	79,434	$117,400	$1.48
841	Safranine	34, 64, 148	281,891			
853	Acid cyanine BF	64				
860	Induline (spirit-soluble)	34, 86, 148	68,969	76,728	35,210	.46
861	Induline (water-soluble)	34, 86, 148				
864	Nigrosine (spirit-soluble)	24, 86, 148	1,353,733	1,265,679	350,940	.28
865	Nigrosine (water-soluble)	34, 86, 148	1,302,479	1,335,135	478,851	.36
	ANILINE BLACK AND ALLIED DYES					
871	Diphenyl black base	86				
873	New fast gray	34, 64, 171		5,957	7,389	.24
875	Fur black	34, 86				
	OXAZINE DYES					
878	Delphine blue B	148				
883	Gallocyanine	34, 234				
909	Cotton blue	7, 34, 148				
913	Nile blue BX	86				
	Total oxazine dyes		103,810	109,899	148,219	1.35
	THIAZINE DYES					
922	Methylene blue	34, 64, 66, 86, 148				
924	Methylene green B	34				
927	New methylene blue	34				
931	Brilliant chrome blue	86				
	SULFIDE DYES					
969	Carbazole vat blue R	64, 86	(1)	(1)		
971	Carbazole vat blue G	64, 86	(1)	(1)		
	Sulfur black	20, 34, 64, 86, 148, 202.	13,614,708	14,304,516	2,317,965	.16
	Sulfur blue	5, 20, 34, 45, 64, 86, 109, 148.	2,473,340	2,120,099	877,853	.41
	Sulfur brown	20, 34, 45, 56, 64, 86, 109, 148, 202.	2,536,841	2,352,613	654,337	.28
	Sulfur green	5, 34, 64, 86, 109, 148	250,138	232,320	160,831	.69
	Sulfur maroon	5, 34, 64, 86, 148	926,442	780,271	376,729	.48
	Sulfur olive	20, 34, 56, 64, 86, 148, 202.	147,299	129,821	37,444	.29
	Sulfur orange	45, 64, 86, 148	49,330	51,653	18,282	.35
	Sulfur tan	5, 20, 34, 45, 56, 64, 86, 109.	269,224	237,035	69,327	.29
	Sulfur yellow	5, 20, 34, 45, 56, 64, 86, 109, 148, 202.	261,220	246,904	96,390	.39
	Total sulfide dyes		20,528,542	20,455,232	4,609,158	.23
	ANTHRAQUINONE DYES					
1027	Alizarin	34, 148				
1034	Alizarin red S	7, 34, 148	49,503	46,846	76,940	1.64
1035	Alizarin brown	148, 234				
1039	Alizarin GI	64				
1040	Alizarin SX	148				
1043	Pseudopurpurine	86				
1053	Acid alizarin blue SE	64, 86, X		30,613	61,264	2.00
1054	Acid alizarin blue B	64, 86, 148, 234, X	429,614	465,289	772,071	1.66
1060	Anthracene blue SWGG	16, X				
1062	Anthracene blue WR	86, X				
1063	Anthracene blue WRS	16				
1073	Alizarin irisol R	7, 16, 64	3,876	7,035	19,860	2.82
1075	Alizarin astrol B	64, 86				
1076	Cyananthrol R	64				
1078	Alizarin cyanine green E	5, 7, 16, 64, 86, 148, 234, X.	115,268	111,227	222,652	2.00
1080	Acid anthraquinine violet B	16, 64				
1085	Anthraquinone blue black B	7, 16, 64, 86, 148, 234, X.	156,917	165,863	249,795	1.51

[1] Totals not included under sulfide dyes. In the dyes classified by method of application these 2 dyes are included in the vat dyes.

TABLE 8.—*Coal-tar dyes: United States production and sales, by types, 1937*—Con.

Colour Index No.	Name of dye	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
				Quantity	Value	Unit value
	CLASSIFIED DYES—Continued					
	ANTHRAQUINONE DYES—Continued		*Pounds*	*Pounds*		
1088	Acid anthraquinone blue B	61, 86, 148	44,814	40,912	$130,947	$3.20
1091	Acid alizarin rubine	64, 86				
	Total anthraquinone dyes		1,270,982	1,385,654	1,988,878	1.44
	ANTHRAQUINONE VAT DYES (SINGLE STRENGTH)					
1095	Anthraquinone vat yellow GC (12½%)	34, 64, 86, 167	798,028	793,224	883,806	1.11
1096	Anthraquinone vat golden orange G (12½%)	34, 64, 86, 148	199,751	167,067	225,089	1.35
1097	Anthraquinone vat golden orange R (12½%)	34, 64, 148				
1098	Anthraquinone vat scarlet GS (16⅔%)	86, 148				
1099	Anthraquinone vat dark blue BO (25%)	34, 64, 86, 148, 167	174,231	165,504	191,989	1.16
1101	Anthraquinone vat jade green (6%)	64				
1102	Anthraquinone vat green B and black B (12½%)	34, 64, 86, 148, 167				
1103	Anthraquinone vat violet R (25%)	86				
1104	Anthraquinone vat violet RR (12½%)	7, 64, 86, 148	218,401			
1105	Anthraquinone vat violet B (25%)	86				
1106	Anthraquinone vat blue RS (10%)	64, 86				
1109	Anthraquinone vat blue 3G (10%)	64				
1113	Anthraquinone vat blue GCD (8⅓%)	7, 64, 86, 148	818,911	769,267	445,446	.58
1114	Anthraquinone vat blue BOS (20%)	7, 64, 86, 148		802,884	860,773	1.07
1118	Anthraquinone vat yellow G (12½%)	64, 86, 148				
1120	Anthraquinone vat brown B (22%)	64				
1128	Anthraquinone vat pink R (12½%)	86				
1132	Anthraquinone vat yellow R (12½%)	64				
1133	Anthraquinone vat red FF, extra (12½%)	64				
1134	Anthraquinone vat brilliant violet 2B (12½%)	64				
1135	Anthraquinone vat brilliant violet R (12½%)	64				
1150	Anthraquinone vat olive R (12½%)	64, 86, 148				
1151	Anthraquinone vat brown R (12½%)	64, 86, 148				
1152	Anthraquinone vat brown G (12½%)	64, 148				
1161	Anthraquinone vat red violet RRN (12½%)	64, 86				
1162	Anthraquinone vat red BN, extra (12½%)	64, 148				
1163	Anthraquinone vat violet BN (25%)	64				
1169	Anthraquinone vat orange R (12½%)	64				
1170	Anthraquinone vat yellow R (12½%)	64				
1173	Anthraquinone vat blue green B (12½%)	148				
	INDIGOID AND THIOINDIGOID DYES					
1177	Indigo, synthetic (20%)	62, 64, 148	18,416,903	17,790,949	2,965,248	.17
1178	Indigo white (20%)	148				
1180	Indigo extract	64, 148				
1183	Tribromindigo RB (20%)	62, 148				
1184	Bromindigo blue 2BD (16%)	62, 86, 148				
1189	Brilliant indigo 4G (20%)	64				
1210	Vat red B (12½%)	86				
1212	Vat red 3B (20%)	62, 64, 86, 148	76,366	82,772	114,584	1.38
1217	Vat orange R (10%)	34, 61, 86, 148, X	605,131	553,075	641,851	1.16
1222	Vat violet B (10%)	62				
1228	Vat fast scarlet G (20%)	62				
1229	Vat red R (10%)	62				
	FOOD DYES					
22	Yellow AB	67, 148				
61	Yellow OB	67, 148				
80	Ponceau 3R	23, 148, 207				
150	Orange I	23, 123, 148, 207, 227	90,265	86,684	191,517	2.21
184	Amaranth	23, 123, 148, 207, 227	114,720	108,230	262,785	2.43
640	Tartrazine	23, 123, 148, 207	102,409	97,066	241,105	2.48
666	Guinea green B	23, 148, 227				
670	Light green SF (yellowish)	23, 148, 227				
773	Erythrosine	23, 123, 148, 207	6,878	7,182	100,117	13.94
1180	Indigo disulfonic acid	23, 123, 207				
	Brilliant blue FCF	23, 148, 227				

TABLE 8.—*Coal-tar dyes: United States production and sales, by types, 1937*—Con.

Colour Index No.	Name of dye	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
				Quantity	Value	Unit value
	CLASSIFIED DYES—Continued					
	FOOD DYES—Continued		*Pounds*	*Pounds*		
------	Fast green FCF	227				
------	Ponceau SX	118, 227				
------	Sunset yellow FCF	123, 148, 207, 227	37,368	34,942	$82,167	$2.35
	Total food dyes		425,272	405,104	1,160,244	2.86
	Total classified dyes		104,499,596	101,585,568	45,452,524	.45
	UNCLASSIFIED DYES					
	Acetate silk dyes, total		2,191,881	2,099,587	2,314,350	1.10
	Amacel blue GG, GR	7				
	Black (B, BDN, J, JN, W, III, IV, IV dbl.).	5, 7, 34, 64, 80, 233	372,211	441,645	292,651	.66
	Blue (BB, B conc., G, 3G, R, 5RB conc. III, IV, XIII, XIII dbl.).	7, 64, 86, X				
	Bordeaux	5				
	Brilliant blue (B, FFG, 2G)	5, 64, 173				
	Brilliant orange	173				
	Brilliant red	64, 173				
	Brilliant yellow (W)	5, 173				
	Brown (BR, Y)	64				
	Cellitazole (AZ, BNS, BZ, NAZ, NBZ, NS, NZD, NSJ, STN).	86				
	Developed black (AD, AS, BAM, GA, GD, GN, SJ).	5, 34, 64, X, X	273,571	282,939	214,468	.76
	Developed navy blue (RD)	5, 64				
	Developed red 3B	X				
	Developed sapphire blue G	X				
	Direct blue S	5				
	Direct orange R	X				
	Direct red YC	34				
	Fast black (B, BTN)	86				
	Fast blue (AF, B, FFR, 2RA)	86, X				
	Fast blue green B	86				
	Fast brown (3R, 5R)	86				
	Fast light yellow	64				
	Fast navy blue (B, BR)	86				
	Fast orange 2R supra	5				
	Fast pink B	86				
	Fast red 2G	86				
	Fast red violet RN	86				
	Fast rubine B	86				
	Fast violet (B, 6B, 6BA)	86, X				
	Fast yellow (G, GL, GR, RR)	64, 86				
	Golden orange (I, III)	7				
	Golden yellow (F, FSI, VIII, VIII conc., IX, XI, XII, XIII).	5, 7				
	Green BS	64				
	Green blue II	7				
	Heliotrope I	7				
	Light orange FSI	7				
	Navy blue (B, BN conc., BP conc., BX, CBR conc., R).	7, 34, 64				
	Orange (GF conc., GFN, GR, JER, RR, 3RC, I, II, III, 4, extra).	5, 7, 34, 64, 86, 233, X.	112,367	94,349	74,827	.79
	Pink II	7				
	Pure blue (BR, BR conc.)	64				
	Pure yellow (I, II)	7				
	Purple	64				
	Red (BR, BY, 3B, 2BC, DM, FSI, R, RP, Y, YR, I, III, V, VI–X, VII, VIII).	5, 7, 34, 64, 80, 86				
	Red violet R	64				
	Rubine (B, IX)	7, 64				
	Sapphire blue 2G	34				
	Scarlet (B, BN, BR, III, III conc.)	5, 7, 34, 64, 80, 86	21,484			
	Sky blue (B, G, GA)	5, 64, X				
	Violet (CB, RR, II)	7, 64				
	Violet blue FSI	7				
	Yellow (C, G, GC, GG, GX, 5G)	5, 7, 34, 64, 80, 86	40,912	43,832	61,157	1.40

TABLE 8.—*Coal-tar dyes: United States production and sales, by types, 1937*—Con.

Colour Index No.	Name of dye	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
				Quantity	Value	Unit value
	UNCLASSIFIED DYES—Con.		*Pounds*	*Pounds*		
	Acid alizarin green B	234				
	Acid anthracene brown PG	86				
	Acid anthracene yellow GR extra	X				
	Acid anthraquinone blue (BGA, 3G, SBS, SWB, WSA).	64				
	Acid black (AR, BR supra, 8B, 8BN, GRF, GRF conc., 3G, J, NBJ, RB, TL, 640, 773).	5, 7, 34, 55, 64, 86, 148.	77,828			
	Acid blue (D, 2G)	171, X				
	Acid Bordeaux R	X				
	Acid brilliant blue (3B, RR)	7, 64				
	Acid brilliant green 10G	64				
	Acid brilliant red (BBA, 5B, G, 4BL)	7, 64, 148, X				
	Acid brown (FN, MF, N, R)	34, 171				
	Acid ceresine	34				
	Acid chromal brown AEB	45				
	Acid chrome blue (RR, 2RA)	45, 86				
	Acid fast black (BBN, WAN)	64, 86				
	Acid fast blue (B, G, IB, NB)	64, 148				
	Acid fast brown CGS	64				
	Acid fast orange LW	7				
	Acid fast red BL	34, 64				
	Acid fast yellow (JY, RS)	7, 34				
	Acid flavine, conc	179				
	Acid garnet GR	179				
	Acid green, (S)	171, 179				
	Acid light red 4BL	64				
	Acid light rubine BL	86				
	Acid milling brown R supra	7				
	Acid milling orange 4R	34				
	Acid milling red R	45				
	Acid milling yellow (G, 2GX, R)	34, 45, 171				
	Acid naphthol blue black	45				
	Acid navy blue (conc., B, B conc., M, M4B).	7, 34, 45, 64, 233	15,467	14,607	$8,586	$0.59
	Acid neutral yellow GNS	7				
	Acid olive G	34				
	Acid orange (GS, R, 2R, 4R, YF)	34, 171, X				
	Acid red, (B, 3B, OA)	45, 171				
	Acid sapphire G	X				
	Acid scarlet (G conc., Y)	171				
	Acid spirit black	34				
	Acid spirit yellow 2R	34				
	Acid violet (B, BS, RL, 2R, 2RX)	34, 45, 171, 179				
	Acid wool blue BL	64				
	Acid yellow (conc., 2G, 5G, R)	34, 45, 171				
	Alizarin blue GS	148				
	Alizarin direct blue (AR, A2G)	86				
	Alizarin fast blue RB	148				
	Alizarin supra blue (A, C)	86				
	Alizarin L	7				
	Alkali fast green 10G	86				
	Anthracene blue SWN	148				
	Anthracene chromate brown EBS conc.	X				
	Anthracene chrome brown RL	234				
	Anthracene indigo blue N	86				
	Anthraquinone vat black (J, R)	34, 148				
	Anthraquinone vat blue (CLX, RCX)	64				
	Anthraquinone vat blue green (FFB, Y).	64, 86				
	Anthraquinone vat brilliant green BN	86				
	Anthraquinone vat brilliant orange (GR, RK).	86				
	Anthraquinone vat brilliant scarlet BGN.	86				
	Anthraquinone vat brilliant yellow 4G	64				
	Anthraquinone vat brown (BR, G, RR, VR).	64, 86				
	Anthraquinone vat dark brown (R, RG, RT).	64, 86				
	Anthraquinone vat deep black BD	86				
	Anthraquinone vat direct black 3G	64				
	Anthraquinone vat flavine GC	148				
	Anthraquinone vat golden orange 3G	86				
	Anthraquinone vat golden yellow (GK, GOW).	86				
	Anthraquinone vat green IBW	86				
	Anthraquinone vat khaki (GG)	64, 86, 148				

TABLE 8.—*Coal-tar dyes: United States production and sales, by types, 1937*—Con.

Colour Index No.	Name of dye	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
				Quantity	Value	Unit value
	UNCLASSIFIED DYES—Con.		*Pounds*	*Pounds*		
	Anthraquinone vat navy blue (BN, G, 3G)	7, 34, 64, 86	190,806	167,326	$164,255	$0.98
	Anthraquinone vat olive G	64				
	Anthraquinone vat olive green B	86				
	Anthraquinone vat pink B	64				
	Anthraquinone vat printing black (B suprafix, TL)	86				
	Anthraquinone vat printing green BG suprafix	86				
	Anthraquinone vat red G2B	64				
	Anthraquinone vat scarlet (3B, GGN)	86				
	Anthraquinone vat violet FFBN	86				
	Anthraquinone vat yellow 8G	64				
	Artificial silk black (G, R, RR)	45, 86				
	Azo Bordeaux (BL, 2BL)	171				
	Azo eosine 2B	64				
	Azo fast blue 2R	148				
	Azo fast orange G	86				
	Azo fast violet	148				
	Azo fast yellow GR	86				
	Azo oil black	148				
	Azo orange (GN, GXA)	171				
	Azo red (7BL, F)	5, 171				
	Azo scarlet G conc	171				
	Azoic dyes and their components, total		2,699,643	2,391,318	4,168,537	1.74
	Dyes:					
	Rapid fast:					
	Orange	34				
	Orange RH	64, 86				
	Red GZH	86				
	Red RH	64, 86				
	Scarlet	34				
	Scarlet ILH	64, 86				
	Rapidogene:					
	Black DM	64				
	Black MG	86				
	Black brown IT	86				
	Blue	171				
	Blue BN, D, N	86				
	Blue GN, GNN, R	64, 86				
	Bordeaux	171				
	Bordeaux RN	86				
	Brown	171				
	Brown GN, IB, IPT	86				
	Dark brown AR	64				
	G, double	86				
	Golden yellow R	86				
	Orange	171				
	Orange G	64, 86				
	Orange R	86				
	Red	171				
	Red GH, GS	86				
	Red G, M2B, R	64				
	Scarlet	171				
	Scarlet R	64, 86				
	Scarlet RS	86				
	Yellow	171				
	Yellow G	64				
	Yellow G, GG, GS, GGN	86				
	Components:					
	Fast color salts:					
	Black salt B	86, 148				
	Blue salt B, BB	86				
	Blue salt BN	86, 148				
	Bordeaux salt GP	86, 148				
	Orange salt GC	86, 148				
	Red salt AL, B	86, 148				
	Red salt G, 3G, TR	148				
	Red salt GL, 3GL	86				
	Scarlet salt GG	86, 148				
	Scarlet salt R	7, 86, 148				
	Variamine blue salt BD	86				
	Naphthols:					
	Naphthol AS	7, 34, 86, 148				
	Naphthol AS, BO	7, 86, 148				
	Naphthol AS, BR	7, 86				
	Naphthol AS, BS	7, 64, 86, 148				
	Naphthol AS, D	7, 86, 148, 171				

TABLE 8.—*Coal-tar dyes: United States production and sales, by types, 1937*—Con.

Colour index No.	Name of dye	Manufacturers' identification numbers according to list on p. 54)	Production	Sales		
				Quantity	Value	Unit value
	UNCLASSIFIED DYES—Contd.					
	Azoic dyes and their components—Con.					
	Components—Continued.					
	Naphthols—Continued.		*Pounds*	*Pounds*		
	Naphthol AS, OL	86, 171				
	Naphthol AS, OP	171				
	Naphthol AS, PH	86				
	Naphthol AS, RL	7, 86				
	Naphthol AS, SW	7, 86, 148				
	Brilliant benzo violet B	64				
	Brilliant milling blue B	64, 86				
	Brilliant milling green B conc	64				
	Brilliant milling yellow 5G	7				
	Brilliant wool blue (FFR, FRS special, G extra, N).	86, 148				
	Chromate blue black B	45				
	Chromate brilliant brown RL	X				
	Chromate brown, (EB, EBR)	5, 34, 64, 234		90, 209	$68, 118	$0.76
	Chromate red 2G	234				
	Chrome black (3G, NSE, P2B, PV, SW).	64, 148, X	14, 803	9, 371	5, 800	.62
	Chrome blue (ATX, ECR)	64				
	Chrome brilliant orange 2R	7				
	Chrome brown (B, BC, BS, 3B, EB, EBL, G, O, PG, RH, RH conc.).	5, 7, 34, 45, 64, 86, 148.				
	Chrome fast garnet R	45				
	Chrome garnet R	X				
	Chrome gray DG	148				
	Chrome green (B, CB, G)	45, 148				
	Chrome orange 3R	148				
	Chrome yellow (DS, 2G, 3G, 5G, SW)	5, 34, 45, 64, 148	76, 880	72, 296	30, 631	.42
	Ciba black	62				
	Cloth red 2R	148				
	Cotton black 3G	34				
	Croceine scarlet FP cone	148				
	Developed black (G, OB, OT, ZV conc.).	7, 45, 64, 86, 148	283, 419	253, 455	158, 951	.63
	Developed blue (B, BR, BR conc., 6G, 5GL).	45, 64, 148, X				
	Developed Bordeaux (2BL, 7B, 7B conc., RB).	7, 64, 86, 148	93, 817			
	Developed brilliant green 3G	86				
	Developed brilliant orange (G, GG)	86				
	Developed brilliant scarlet (2BL, 2BL extra, 5BL, RO).	64, 86, X				
	Developed brown (6G, NR, R, 3RB)	64, 86				
	Developed dark brown B	X				
	Developed fast blue (B, 2RW)	45				
	Developed fast Bordeaux 2BL	86				
	Developed fast brown RK	64				
	Developed fast red 7BL	64, X				
	Developed fast rubine B	X				
	Developed fast violet (BL, 2RL)	64, X				
	Developed fast yellow 2G	86, 148				
	Developed green (BL, 2GL, GW)	64				
	Developed indigo blue (BRR, 4GL)	64, 86				
	Developed orange (GR, R, RR, RFW, WD).	64, 148				
	Developed red (BFW, 7BL)	64, 148				
	Developed rubine B	86				
	Developed scarlet (A, FW, GFW, R)	64, 148				
	Developed sky blue (B, 3GL)	86				
	Developed violet (BRD, RR)	7, 64				
	Diamond green SS	86				
	Diazaphen red	34				
	Diazaphen yellow	34				
	Direct black (G, 3G, 3GR, NCW; CSW).	5, 45, 86, 148, X		172, 201	87, 127	.51
	Direct blue (B, FF, G, NR)	5, 64, 148	109, 116	93, 620	83, 120	.89
	Direct blue green CW	148				
	Direct Bordeaux (B, 6B)	7, 86, 148	111, 273	108, 382	80, 876	.75
	Direct brilliant blue BFL	148				
	Direct brilliant cerise	5				
	Direct brilliant red (12B, 12B conc.)	5, 148				
	Direct brilliant violet (4B, R)	7				
	Direct brown (CSW, CWR, FW, GB, G2R, G3R, K, R, RY, S).	5, 45, 55, 148, 233, X.	136, 983	131, 775	77, 160	.59
	Direct catechine (FF, GS, G conc., 3G)	7, 64, 148	280, 978			
	Direct chrome black blue B	X				
	Direct chrome blue black B	86, 148				

TABLE 8.—*Coal-tar dyes: United States production and sales, by types, 1937*—Con.

Colour index No.	Name of dye	Manufacturers' identification numbers according to list on p. 54)	Production	Sales		
				Quantity	Value	Unit value
	UNCLASSIFIED DYES—Contd.		*Pounds*	*Pounds*		
	Direct copper blue (RR, RRX)	64, 86				
	Direct dark blue SR	X				
	Direct fast black, (B, FOR, FTC, G, L, L conc., PG extra, VE).	7, 45, 64, 86, 148, 233, X.	569,752	559,063	$371,860	$0.67
	Direct fast blue (FF, 2GL, 4GL, 8GL, LBR, LG, R, RL, 8RL).	45, 64, 86, 148	346,864	321,321	368,219	1.15
	Direct fast brown (BRL, 4GL, LBR, LG, L3R, R, 4R, 2RL, 4RL, 3YL).	64, 86, 148, X	147,143	117,958	180,734	1.53
	Direct fast gray (BL, GL, 2GL, R)	64, 86, 148				
	Direct fast light blue FF	45				
	Direct fast olive brown RL	7				
	Direct fast orange (EG, ER, E3G, G, 2G conc., 2GL, 4G conc., L3R, L5G, L7G, R, RF, 2R, 6R, 7R, S).	34, 45, 64, 86, 109, 148, X.	292,480	243,401	278,629	1.14
	Direct fast red (5BL, 8BLN, 8BLSW)	45, 148, X				
	Direct fast rubine B conc	148				
	Direct fast violet (BB, F)	5, 86				
	Direct fast yellow (GA extra, 4GL, 5GL, LR, L5G, RL).	5, 45, 64, 86, 148	167,048	155,576	246,813	1.59
	Direct garnet R	45				
	Direct gray (BBC, BL, G, Z)	55, 148, X				
	Direct green (54FS, 5G, 2Y)	5, 64				
	Direct green black	45				
	Direct light yellow RL	45				
	Direct navy blue (BF, BW, 4B, DB, R, RY).	5, 34, 64, 148, 233, X.	111,133			
	Direct orange (B, GL, D2R)	86, 148, X				
	Direct red (B, 3B, G)	5, 45				
	Direct red violet RY	34				
	Direct rhodoline red B	64				
	Direct sapphire B	X				
	Direct silk blue NR	86				
	Direct speck dye red SW	148				
	Direct violet (2B, 2R)	5, 148				
	Direct violet black	45				
	Discharge brown RB	64				
	Fast acid black BR	86				
	Fast acid blue (R, WF)	86, 148				
	Fast acid Bordeaux B	86				
	Fast acid brown RG	148				
	Fast acid light red B	45				
	Fast acid red (3B, GG)	86				
	Fast acid violet (ERR extra, VR)	64, 171				
	Fast acid yellow R	86				
	Fast black V	64				
	Fast crimson R	148				
	Fast light red (B, 4B)	86				
	Fast silk yellow G	5				
	Fast wool red (BL, GL)	148				
	Fast wool violet B	148				
	Fast wool yellow GS	148				
	Fluorescent green #5	64				
	Fluorescent red #3	64				
	Fluorol 5G	86				
	Formal fast black G	45				
	Formanol black RW	X				
	Gas yellow	34				
	Hansa yellow (G)	64, 86				
	Helio red RMT	86				
	Heliogen blue B	86				
	Hydroform navy blue	167				
	Hydroform yellow 3G	167				
	Indamine navy blue 2B	5				
	Indigo vat brown (G)	34, 148, X	175,301	173,955	179,250	1.03
	Indigo vat pink (FB, FF)	34, 64, 148, X	466,502	410,848	498,132	1.21
	Indigo vat scarlet 2GN	148				
	Indocyanine B	86				
	Indophenol blue	181				
	Jet black APX	64				
	Lake blue (G, 6G)	64				
	Lake fast blue BL conc	64				
	Lake fast orange (G, R)	64				
	Lake fast yellow 10G	64				
	Lake red 2B	64				
	Lake scarlet 2YL	64				
	Leather brown RR	64				
	Metalized azo gray G	34				
	Milling fast garnet R	X				

TABLE 8.—*Coal-tar dyes: United States production and sales, by types, 1937*—Con.

Colour Index No.	Name of dye	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
				Quantity	Value	Unit value
	UNCLASSIFIED DYES—Contd.		*Pounds*	*Pounds*		
	Milling fast yellow 5GL	X				
	Milling navy blue 4B	148				
	Milling orange R	64, 148				
	Milling red (B conc., R)	148				
	Milling yellow (GN, 3G, 2GCW, O conc., XN).	64, 148, 171				
	Monastrol fast blue BS	64				
	Mordant green SN	5				
	Mordant yellow OD	86				
	Naphthylamine black V	64				
	Neutral brown (RD, 2RS)	5, 61, 148				
	Neutral red G	5				
	Nigrosine base (B, N, R, 2R)	148				
	Oil black	181				
	Oil blue (116R)	181, 234				
	Oil bronze	64				
	Oil brown (D, M, Y, #79, #102)	80, 148				
	Oil fast black	148				
	Oil fast blue B	148				
	Oil fast orange A conc	148				
	Oil fast red (M, Y)	148				
	Oil fast yellow (EG, 3G)	64, 148				
	Oil green	234				
	Oil orange (O, 2R, #30, #67)	34, 55, 80, 148, 231	55,805	47,725	$42,496	$0.89
	Oil pink B	148				
	Oil red (EG, EGN, G, I 1471, N 1700, O, OB, RO, #322).	7, 34, 55, 80, 148, 231.	77,842	90,067	82,449	.92
	Oil violet	234				
	Oil yellow (N, PHW)	34, 64				
	Orange Y	55				
	Paper red AP	86				
	Patent blue B conc	148				
	Pigment rubine (G, 3G)	86				
	Quinoline yellow KT	X				
	Rayon dyes:					
	Black B	64				
	Black GDW	80				
	Blue BB	80				
	Bordeaux B, 3B	64				
	Brown G, M	64				
	Brown RB	80				
	Navy blue N	64				
	Violet 3B	64				
	Resin brilliant red R	148				
	Resin brilliant scarlet 6G	148				
	Resin brown Z	148				
	Resorcin brown (R, YX)	45, 55				
	Rosanthrene (A, R)	64				
	Rosanthrene orange	64				
	Rubber colors	64				
	Safranine SB	148				
	Silk black (4BF, G)	45				
	Silk blue 10G	64				
	Silk brown (B, G, R)	45, X				
	Silk fast blue 3G	64				
	Silk red (2B, 4B, 10B)	45, X				
	Stilbene brown 3GLX	34				
	Stilbene orange EG	34				
	Sudan corinth B	86				
	Sudan orange (IT, RT)	86				
	Sudan red 4B	86				
	Sulfon orange G	86				
	Sulfon yellow R	86				
	Supranol brown 5R	86				
	Supranol red PB	86				
	Vat blue BR	62				
	Wool blue (CG, CGG)	148				
	Wool navy blue B	148				
	Zambesi black (B, D, G, PC, V)	45, 86, 148				
	All other	64, X, X				
	Total unclassified dyes		17,744,983	16,460,559	19,160,390	1.16
	Total dyes:					
	Those for which individual statistics are shown.		88,810,983	85,531,022	34,661,513	.41
	Those for which individual statistics cannot be shown.		33,433,596	32,515,105	29,951,401	.92
	Grand total		122,244,579	118,046,127	64,612,914	.55

PRODUCTION AND SALES OF DYES BY CLASSES OF APPLICATION

Table 9 compares the production and sales of dyes by classes of application, in 1937 and 1936, with the average for the period 1925–30.

TABLE 9.—*Comparison of United States production and sales of dyes, by classes of application, 1925–30, 1936, and 1937*

Class of application	Production					
	Quantity			Percent of total		
	1925–30 average	1936	1937	1925–30 average	1936	1937
	Pounds	*Pounds*	*Pounds*			
Acetate silk	[1]	2,389,885	2,191,881		2.00	1.79
Acid	11,813,941	15,974,423	15,343,304	12.57	13.38	12.55
Azoic	[2]	[2]	[3] 2,699,643			2.21
Basic	4,833,382	5,727,303	5,775,239	5.14	4.79	4.73
Direct	17,983,751	[4] 29,907,629	30,595,183	19.13	25.02	25.03
Lake and spirit-soluble	1,947,124	2,722,807	3,157,406	2.07	2.28	2.58
Mordant and chrome	3,611,608	6,639,112	6,192,888	3.84	5.55	5.07
Sulfur	20,004,635	20,717,289	20,528,542	21.28	17.33	16.79
Vat, total	33,221,072	34,449,513	34,501,413			
(*a*) Indigo	27,128,311	18,039,419	18,416,903	28.86	15.09	15.06
(*b*) Other	6,092,761	16,410,094	16,084,510	6.48	13.73	13.16
Unclassified	587,657	995,185	1,259,080	.63	.83	1.03
Total	94,003,170	119,523,146	122,244,579	100.00	100.00	100.00

	Sales					
	Quantity			Percent of total		
	Pounds	*Pounds*	*Pounds*			
Acetate silk	[1]	1,943,406	2,099,587		1.65	1.78
Acid	11,699,667	15,528,825	14,911,413	12.69	13.21	12.63
Azoic	[2]	[2]	[3] 2,391,318			2.03
Basic	4,709,926	5,465,227	5,432,966	5.11	4.65	4.60
Direct	17,580,927	[4] 29,495,273	29,152,360	19.07	25.09	24.69
Lake and spirit-soluble	1,896,821	2,624,777	2,949,908	2.06	2.23	2.50
Mordant and chrome	3,558,732	6,234,937	6,008,996	3.86	5.31	5.09
Sulfur	19,810,565	20,812,369	20,455,232	21.48	17.70	17.33
Vat, total	32,429,018	34,557,262	33,406,528			
(*a*) Indigo	27,111,575	17,848,853	17,790,949	29.40	15.18	15.07
(*b*) Other	5,317,443	16,708,409	15,615,579	5.77	14.21	13.23
Unclassified	521,625	910,747	1,236,819	.56	.77	1.05
Total	92,207,281	117,572,823	118,046,127	100.00	100.00	100.00

	Sales					
	Value			Percent of total		
Acetate silk	[1]	$2,473,296	$2,314,350		3.88	3.58
Acid	$8,651,526	11,933,721	11,461,325	21.94	18.74	17.74
Azoic	[2]	[2]	[3] 4,168,537			6.45
Basic	3,977,258	4,905,755	5,059,983	10.09	7.70	7.83
Direct	9,076,783	[4] 17,497,791	15,138,355	23.02	27.48	23.43
Lake and spirit-soluble	1,681,736	1,714,916	1,853,690	4.27	2.69	2.87
Mordant and chrome	2,212,390	3,116,262	2,880,527	5.61	4.89	4.46
Sulfur	3,928,982	4,635,256	4,609,158	9.96	7.28	7.13
Vat, total	9,114,973	16,611,526	16,075,211			
(*a*) Indigo	3,741,314	2,889,105	2,965,248	9.49	4.54	4.59
(*b*) Other	5,373,659	13,722,421	13,109,963	13.63	21.55	20.29
Unclassified	784,604	797,034	1,051,778	1.99	1.25	1.63
Total	39,428,252	63,685,557	64,612,914	100.00	100.00	100.00

[1] Not shown separately during 1925–30.
[2] Not shown separately prior to 1937.
[3] Includes azoic dyes (rapid fast and rapidogene dyes) and their components (fast color salts and naphthol AS derivatives).
[4] Includes rapid fast dyes and rapidogene dyes.

COLOR LAKES AND TONERS

The 50 domestic makers of color lakes and toners report an output of 18,041,000 pounds, with sales of 15,263,000 pounds, valued at $11,812,000, or an average of 77 cents per pound. This activity is an increase of 17.5 percent in production, 12 percent in sales quantity, and 16 percent in sales value over the preceding year.

Toners or full strength colors are the most important class of this group, followed by lakes and extended colors, and by reduced toners.

Table 10 shows production and sales of color lakes and toners in 1937.

TABLE 10.—*Color lakes and toners: United States production and sales, 1937*

[The numbers in the second column refer to the numbered alphabetical list of manufacturers printed on p. 51. An X signifies that the manufacturer did not consent to the publication of his identification number with the designated product. Blanks in the third, fourth, and fifth columns indicate that the statistics of production or sales cannot be published without revealing information with regard to individual firms. The figures thus concealed are, however, included in the total]

Name of product	Manufacturers' identification numbers (according to list on p. 51)	Production	Sales		
			Quantity	Value	Unit value
LAKES AND EXTENDED COLORS					
		Pounds	*Pounds*		
Alizarin	12, 64, 97, 123, 126, 138, 142, 157, 176, 199, 217, 218, 234, X, X, X, X, X, X, X, X.	144,602	125,976	$154,900	$1.23
Azo Bordeaux	2, 12, 29, 64, 104, 126, 138, 142, 176, 218, X, X, X.	367,615	327,443	89,912	.27
Black	44, 73, 97, 123, 138, 217, 218, 234, X	78,573	66,357	34,790	.52
Blue	12, 29, 44, 64, 73, 97, 104, 119, 123, 138, 157, 208, 217, 218, 231, X, X, X, X, X, X, X.	295,723	160,994	86,870	.54
Brown	138, 217, 218, 231, 234, X	41,030	(1)	(1)	------
Eosine and phloxine	29, 36, 44, 64, 73, 77, 97, 115, 123, 126, 138, 199, 208, 217, 218, X, X, X, X, X.	140,040	129,922	110,112	.85
Fast light yellow	12, 77, 104, 123, 138, 208, 218, X, X, X, X.	162,606	53,309	39,660	.74
Green	12, 29, 44, 64, 73, 77, 97, 104, 123, 126, 138, 157, 208, 217, 218, X, X, X, X, X, X, X, X, X, X, X, X.	333,246	221,440	112,253	.51
Helio fast rubine	12, 29, 64, 104, 123, 138, 208, X, X, X, X, X, X.	48,657	26,586	44,412	1.67
Lithol rubine and maroon	12, 29, 36, 44, 64, 73, 77, 97, 104, 119, 123, 126, 142, 157, 197, 199, 208, 217, 218, 231, X, X, X, X, X, X, X.	911,003	911,361	238,910	.26
Methyl violet	12, 29, 44, 64, 66, 77, 97, 104, 123, 126, 138, 199, 208, 218, 234, X, X, X, X, X.	155,498	148,271	77,359	.52
Naphthol yellow	12, 73, 77, 123, 218, 234, X, X, X	30,783	30,805	21,708	.70
Orange	29, 36, 44, 64, 77, 97, 104, 115, 123, 138, 217, 218, 231, X, X, X, X, X, X, X.	221,157	135,409	38,147	.28
Peacock blue	12, 29, 36, 44, 64, 73, 77, 102, 104, 123, 126, 138, 199, 208, 217, 218, 234, X, X, X, X, X, X, X.	1,562,411	1,214,120	675,796	.56
Persian orange	12, 36, 64, 73, 77, 102, 123, 126, 138, 199, 208, 218, X, X, X, X, X, X, X, X, X.	500,594	335,487	134,856	.40
Phosphomolybdic acid lakes, total.		86,159	63,422	51,227	.81
Blue	12, 36, 77, 104, 208, X, X				
Brown	X				
Green	12, 77, 157, X				
Purple	12, 36, X				
Red	12, 157, X				

[1] Included in all other.

TABLE 10.—*Color lakes and toners: United States production and sales, 1937*—Con.

Name of product	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
LAKES AND EXTENDED COLORS—continued					
Phosphotungstic acid lakes:		*Pounds*	*Pounds*		
Blue	29, 34, 44, 64, 77, 97, 104, 119, 123, 126, 138, 199, 208, 218, 234, X, X, X, X, X, X.	493,314	484,207	$389,036	$0.80
Green	29, 34, 44, 64, 77, 97, 104, 123, 126, 138, 218, 234, X, X, X, X, X, X, X.	208,538	200,933	124,847	.62
Purple	29, 44, 126, 199, 218, 234, X, X, X	28,082	30,231	31,565	1.04
Red	44, 64, 73, 77, 97, 104, 126, 138, 199, 218, 234, X, X, X, X, X, X, X.	147,257	125,822	65,649	.52
All other	73, 97, 138, 217, X, X	5,824	1,473	2,264	1.54
Pigment scarlet	12, 29, 64, 77, 102, 104, 123, 126, 138, 176, 199, 217, 218, 234, X, X, X, X, X, X.	449,521	206,607	140,081	.68
Quinoline yellow	12, 123, 199, 208, X, X, X	22,845	24,659	18,260	.74
Red	29, 64, 73, 77, 97, 104, 119, 138, 199, 208, 217, 218, 231, X, X, X, X, X, X, X, X, X.	330,261	301,276	134,625	.45
Scarlet 2R	2, 12, 29, 36, 44, 64, 97, 119, 123, 126, 176, 199, 217, 218, 231, X, X, X, X.	783,305	697,768	202,249	.29
Tartrazine	12, 36, 77, 102, 104, 123, 138, 199, 208, 218, X, X, X, X, X.	239,212	218,110	125,085	.57
Violet	12, 64, 77, 97, 104, 138, 217, 231, X, X	31,698	24,424	12,572	.51
Yellow	12, 64, 104, 115, 138, 218, X, X, X, X, X.	216,182	116,093	37,552	.32
All other	36, 119, 138, 217, 218, 231, 234, X, X, X.	104,252	57,620	20,945	.36
Total lakes and extended colors.		8,139,988	6,440,125	3,215,642	.50
TONERS OR FULL STRENGTH COLORS					
Alkali blue	34, 208, X, X	645,207	629,045	682,035	1.08
Eosine and phloxine	12, 73, 77, 97, 102, 123, 126, 199, 208, 218, 234, X.	405,948	217,648	338,945	1.56
Hansa yellow	12, 36, 102, 104, 115, 123, 199, 234, X, X, X, X, X.	235,579	183,928	244,855	1.33
Lake Red C and D	12, 34, 36, 64, 73, 77, 102, 104, 115, 123, 126, 138, 199, 208, 218, 234, X, X, X, X, X.	546,862	485,329	444,823	.92
Lithol	12, 36, 64, 73, 77, 102, 104, 115, 119, 123, 126, 199, 217, 218, 231, 234, X, X, X.	2,561,744	2,426,522	1,614,989	.67
Lithol rubine	12, 64, 73, 77, 102, 119, 123, 126, 199, X, X, X, X.	105,265	90,922	104,335	1.15
Maroon	12, 64, 73, 77, 102, 119, 123, 126, 176, 217, 231, 234, X, X, X, X, X.	356,213	351,318	799,081	2.27
Methyl violet	12, 29, 34, 73, 77, 97, 104, 115, 126, 208, 217, 218, 234, X, X, X, X.	200,620	171,420	228,048	1.33
Orange	12, 77, 102, 104, 119, 126, 199, 217, 218, X, X.	47,288	43,562	39,746	.91
Para red	2, 12, 29, 36, 64, 73, 102, 119, 123, 126, 176, 199, 217, 218, 231, X, X, X, X, X, X, X, X, X.	1,271,309	1,136,743	852,432	.75
Permanent orange	34, 102, 234, X	106,143	105,776	87,046	.82
Phosphomolybdic acid toners, total.		84,728	64,753	190,193	2.94
Blue	12, 36, 64, 73, 77, 102, 104, 123, X, X.				
Green	12, 36, 104, 123, 157, X				
Purple	36, 64, 123, X, X				
Red	12, 36, 157, X				
Violet	X				
Phosphotungstic acid toners:					
Blue	29, 64, 73, 77, 102, 104, 123, 126, 138, 199, 217, 218, 234, X, X, X, X, X, X.	140,426	125,852	432,721	3.44
Green	29, 44, 64, 77, 102, 104, 115, 123, 126, 138, 176, 199, 208, 217, 218, 234, X, X, X, X, X, X, X.	118,772	107,647	292,551	2.72

TABLE 10.—*Color lakes and toners: United States production and sales, 1937*—Con.

Name of product	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
TONERS OR FULL STRENGTH COLORS—continued					
Phosphotungstic acid toners—Continued.		*Pounds*	*Pounds*		
Purple	29, 64, 77, 102, 104, 126, 138, 176, 199, 208, 217, 218, X, X, X, X, X.	84,352	79,050	$137,016	$1.73
Red	29, 44, 64, 73, 77, 104, 126, 138, 199, 218, X, X, X.	97,325	94,401	120,177	1.27
Red	29, 34, 64, 102, 104, 208, 231, 234, X, X, X, X.	282,280	275,826	282,769	1.03
Toluidine red	2, 12, 36, 64, 73, 102, 104, 119, 123, 126, 176, 199, 217, 218, 231, X, X, X, X, X, X, X, X, X, X.	940,047	807,034	1,081,923	1.34
All other	12, 64, 73, 102, 104, 119, X, X	120,680	119,340	177,432	1.49
Total toners or full strength colors.		8,350,788	7,516,116	8,151,117	1.08
REDUCED TONERS					
Lake red C and D	12, 36, 64, 73, 97, 104, 123, 126, 138, 199, 208, 218, 234, X, X, X.	101,898	93,721	54,660	.58
Lithol	12, 29, 64, 73, 77, 97, 104, 123, 126, 138, 199, 208, 217, 218, 231, 234, X, X, X, X, X, X.	401,249	393,735	150,437	.38
Para red	2, 12, 29, 36, 64, 73, 97, 104, 123, 126, 176, 217, 218, 231, X, X, X, X, X, X, X.	630,909	525,149	89,507	.17
Toluidine red	2, 12, 29, 36, 64, 73, 97, 104, 119, 123, 126, 176, 208, 217, 218, 231, X, X, X, X, X, X, X, X, X, X.	267,258	222,263	77,485	.35
All other	2, 12, 64, 97, 138, 218, X, X, X	148,485	71,767	73,352	1.02
Total reduced toners		1,549,799	1,306,635	445,441	.34
Total color lakes and toners.		18,040,575	15,262,876	11,812,200	.77

MEDICINALS

Synthetic medicinals were produced in increased quantity in 1937. The 47 makers of coal-tar medicinals produced 14,800,000 pounds, with sales of 11,989,000 pounds, valued at $11,496,000. Aspirin sales increased 25 percent to a peak of 5,144,000 pounds. Sulfanilamide, a minor item in 1936, showed sales of 267,000 pounds, valued at $1,322,000 in 1937, the average value being $4.95 per pound. Mandelic acid and salts increased more than 200 percent in output. Among the outstanding changes were sharp decreases in the prices of the arsphenamines and the several medicinal dyes.

Production of non-coal-tar synthetic medicinals, by 37 makers, totaled 1,814,000 pounds, with sales of 1,442,000 pounds, valued at $2,408,000, or an average of $1.67 per pound. Amino acetic acid, a relatively new product in this group, increased more than 100 percent in production, 90 percent in sales quantity, and 100 percent in sales value over 1936. Average sales price was $1.86 per pound, as compared with $4.89 per pound in 1933. Further decline in the production and sales of certain barbituric acid derivatives is noted.

Table 11 shows production and sales of synthetic medicinals in 1937.

TABLE 11.—*Synthetic medicinals: United States production and sales, 1937*

[The numbers in the second column refer to the numbered alphabetical list of manufacturers printed on p. 54. An X signifies that the manufacturer did not consent to the publication of his identification number with the designated product. Blanks in the third, fourth, and fifth columns indicate that the statistics of production or sales cannot be published without revealing information in regard to individual firms. The figures thus concealed, however, are included in the total]

Name of medicinal	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
(A) COAL-TAR					
		Pounds	*Pounds*		
Acetanilide	47, 62, 141, 145	986,429	950,827	$189,739	$0.20
Acetphenetidin	62, 145, X				
Acetylamino-hydroxy-phenyl-arsonic acid	1, X				
Acetyl-p-aminophenyl salicylate (Salophen)	X				
Acetyl phenylhydrazine	188				
Acetyl salicylic acid (Aspirin)	62, 145, X, X, X, X.	4,997,453	5,143,672	2,624,133	.51
p-Aminobenzosulfonamide (Sulfanilamide)	1, 34, 64, 84, 143, 145, 153, X, X, X.	355,369	267,104	1,322,412	4.95
p-Aminobenzoyl di-n-butylamino propanol (Butyn base)	1				
p-Aminobenzoyl di-n-butylamino propanol sulfate (Butyn sulfate)	1				
p-Aminobenzoyldiethylaminoethanol (Procaine)	1, 84, 160, 164, 209, X, X.	13,456	13,154	381,390	28.99
p-Aminobenzoyldimethylaminomethyl butanol hydrochloride (Tutocain)	X				
m-Amino-p-hydroxyphenylarsine oxide hydrochloride (Mapharsen)	X				
Ammonium mandelate	X				
Amyl-m-cresol	X				
Antipyrine	62				
Arsanilic acid	1, X				
Arsphenamine	1, 60, 136, 143, X, X	237	266	36,423	136.93
Barbituric acid derivatives:					
Cyclohexenylmethylmethyl barbituric acid and salt	X				
Phenobarbital	1, 84, 136, 143, 209, X, X.	94,195	92,171	419,390	4.55
Phenobartital sodium	1, 84, 136, 143, 209, X.	9,301	10,527	40,958	3.89
Phenylethylmethyl barbituric acid	X				
1-p-Tolyl-5:5-ethyl-n-butyl barbituric acid	X				
Benzaldehyde	101, 209, 221, X	73,086	65,744	54,144	.82
Benzoamine benzoate	192				
Benzoic acid	64, 145, 209				
Benzoyl-tetramethyldiamino-ethyl-isopropanol hydrochloride	X				
Benzylmethyl ketone	X				
Benzyl phthalimide	X				
Benzyl succinate and sodium salt	192				
Bismethyl benzylidine	X				
Bismuth betanaphthol	153, X				
Bismuth tribromophenol	X				
m-Bromoaceto phenyl benzoate (Neoxyn)	62				
n-Butyl-p-aminobenzoate (Butesin)	1				
p-Butylaminobenzoyl dimethylamino ethanol	X				
Caffeine sodium benzoate	136, 143, 153, 192	1,805	1,269	3,640	2.87
Caffeine sodium salicylate	153				
Calcium cresol sulfonate	X				
Calcium iodoxybenzoate	X				
m-Cresyl acetate (Cresatin)	193				
o-Cresylazo-2:4-diaminobenzene hydrochloride	191				
m-Cresyl valerate	X				
Dibenzyl ketone	X				
Di-n-butyl-p-aminobenzoate trinitrophenol (Butesin picrate)	1				
n-Diethylaminoisopentyl-8-amino-6-methoxy quinoline	X				
3:4-Dihydroxy phenyl ethylmethylamine (Epinine)	X				
3:4-Dimethoxy benzaldehyde	X				
3:4-Dimethoxy cinnamic acid	X				
3:4-Dimethoxy phenylethylamide	X				
3:4-Dimethoxy phenylethylmethylamide	X				
3:4-Dimethoxy phenylpropionamide	X				

TABLE 11.—*Synthetic medicinals: United States production and sales, 1937*—Con.

Name of medicinal	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
(A) COAL-TAR—continued		*Pounds*	*Pounds*		
3:4-Dimethoxy phenylpropionic acid	X				
4-Dimethylamino antipyrine (Aminopyrine).	148, X				
Dinitrophenol	64				
Dioxy anthranol (Anthralin)	1				
Diphenylmethyl pyrozolonyl	X				
Disodiumhydroxymercurisalicyloxy acetate (Mercurosol).	X				
Dyes, medicinal, total		40,104	38,089	$759,299	$19.93
Acriviolet	148				
Brilliant green	148				
3:6-Diamino acridine sulfate (Proflavine).	148				
3:6-Diamino-10-methyl acridine chloride (Acriflavine).	1, 148				
Dibromohydroxymercurifluorescein sodium salt (Mercurochrome).	107				
Gentian violet	148				
Hexalet	X				
Methylene blue	34, 148				
Methyl violet	148				
Phenolsulfonphthalein	107, X				
Scarlet red	148				
Stovarsol and salts	X				
Sulfosalicylic acid	70, X				
Tryparsamide	X				
Ethocaine borate (Borocaine)	193, X				
Ethyl-p-amino benzoate (Benzocaine) (Anesthesine).	1, 84, 143, 160, 192, 209, X, X, X.	15,149	12,444	44,054	3.54
Ethylenediamine mandelate	174				
Gamma - diethylaminopropylcinnamate hydrochloride (Apothesine).	X				
Guaiacol (liquid)	101, 145				
Hexylresorcinol	193				
8-Hydroxyquinoline (Oxyquinoline, base)	X, X				
8-Hydroxyquinoline-5-sulfonic acid	X				
o-Iodobenzoic acid	70, X				
o-Iodosobenzoic acid	X				
Iodoxyquinoline sulfonic acid (Yatren acid).	X, X				
Laevo-methylaminoethanol catechol (Epinephrine).	X				
Lithium benzoate	X				
Lithium salicylate	X				
Magnesium salicylate	62, 101, 136		5,487	5,482	1.00
Mandelic acid and salts	1, 84, 136, 143, 153	148,408	121,932	242,210	1.99
Menthyl salicylate	X				
2-Methoxy-6-chloro-9-diethylaminopentylamino-acridine.	X				
Methyl-m-amino-p-hydroxy benzoate (Orthoform).	X				
Methylene-citrylsalicylic acid (Novaspirin).	X				
Methylene disalicylic acid derivative (Formidine).	X				
p-Methylphenyl cinchoninic ethyl ester (Neocinchophen).	1, 34, X				
Mono n-amylaminoethyl p-aminobenzoate (Amylcaine).	160				
Monoisobutyl aminoethyl p-aminobenzoate (Monocaine).	160				
Neoarsphenamine	1, 60, 136, 143, X, X.	8,797	8,238	1,083,991	131.58
Neo-silver arsphenamine	1				
Neo-synephrin hydrochloride	X				
Oxyquinoline benzoate	X, X				
Oxyquinoline citrate	X, X				
Oxyquinoline sulfate	X, X				
Oxyquinoline tannate	X				
Phenobarbital (see Barbituric acid derivatives).					
Phenolphthalein	145, X, X	460,400			
Phenolsulfonates (calcium, sodium, zinc, etc.).	136, X				
Phenylazo-diamino pyridine hydrochloride (Pyridium).	182				

TABLE 11.—*Synthetic medicinals: United States production and sales, 1937*—Con.

Name of medicinal	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
(A) COAL-TAR—continued		*Pounds*	*Pounds*		
Phenylethylmethyl urea sodium	X				
Phenyl isocyanate	70				
5-Phenylisopropyl amine and sulfate	X				
Phenyl mercuric acetate	71, 96				
Phenyl mercuric benzoate	96				
Phenyl mercuric chloride	96				
Phenyl mercuric hydroxide	71, 96				
Phenyl mercuric nitrate	71, 96				
Phenylmethylisopropyl antipyrine (Isopropyl antipyrine).	103				
Phenyl-propanolamine hydrochloride (Propadrin hydrochloride).	193				
2-Phenylquinoline-4-carboxylic acid and salts (Cinchophen) (Phenylcinchoninic acid).	34, X				
Potassium oxyquinoline sulfate	X				
Propyl p-aminobenzoate	X				
Pyramidon and trichloroethyl alcohol urethane compounds.	X				
Resorcinol	64, 168				
Resorcinol monoacetate	70, 143, 192				
Salicylic acid	62, 101, 145, X	4,402,889	2,283,420	$610,549	$0.27
Salol	62				
Silver arsphenamine	1, X				
Sodium o-iodohippurate	136				
Sodium methylene sulfonamino-hydroxyphenyl arsonate.	1				
Sodium salicylate	62, 101, 145				
Sodium p-toluene sulfochloramide (Chloramine T).	145				
Strontium salicylate	62, 101, 136				
Succinic peroxide	X				
Sulfanilamide. (See p-Aminobenzosulfonamide.)					
Sulfoarsphenamine	1, 60, 136, 143, X, X	325	291	49,323	169.49
Tetrabromo-o-cresol	191				
Tetraiodophenolphthalein sodium salt (Iodeikon) (Antinosin).	70, 136, 143, 148, X, X	5,997	4,940	73,018	14.78
Theobromine and sodium salicylate	136, 143, 153				
Theophylline calcium salicylate	X				
Theophylline sodium salicylate	X				
Thymol p-aminobenzoate	160				
p-Toluene sulfodichloramide (Dichloramine T).	145				
Zinc sulfanilate	X				
All other medicinals of coal-tar origin	1, X				
Total coal-tar medicinals:					
Those for which individual statistics are shown.		11,573,296	8,981,486	7,180,856	.80
Those for which individual statistics cannot be shown.		3,226,525	3,007,873	4,315,189	1.43
Grand total		14,799,821	11,989,359	11,496,045	.96
(B) NON-COAL-TAR					
Acetannin (Tannigen) (Tannyl acetate)	X				
Adenine sulfate	70				
Aminoacetic acid (Glycocol) (Glycine)	6, 62, 64, 169, 209, X	116,344	105,405	195,879	1.86
Amyl nitrite (Isoamyl nitrite)	70, 136, X				
Ascorbic acid	X, X				
Barbituric acid derivatives, total		119,837	67,844	419,457	6.18
Allyl isopropyl acetyl carbamide	103				
Allylisopropylbarbituric acid and salts	103				
Butyl ethyl barbituric acid and salts	1				
Calcium isopropyl ethyl barbituric acid and salts.	X				
Cyclohexenyl ethyl barbituric acid and salts.	X				
Diallylbarbituric acid and salts	X				
Dibromobarbituric acid and salts (Dibromin).	X				
Diethylbarbituric acid and salts (Barbital).	1, 84, 103, X				
Diethyl ester of monoethyl-ethyl malonic acid.	X				

TABLE 11.—*Synthetic medicinals: United States production and sales, 1937*—Con.

Name of medicinal	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
(B) NON-COAL-TAR—continued		*Pounds*	*Pounds*		
Hexylethyl barbiturate sodium (Ortal sodium).	X				
Isoamyl ethyl barbituric acid and salts	129				
Isopropyl ethyl malonic ester	X				
Monoethyl-ethyl malonic acid	1				
Propyl-methyl-carbinyl-allyl-barbiturate sodium.	129				
Bromocamphor	62, 136				
Bromodiethylacetyl carbamide	13, X				
Calcium gluconate	X				
Calcium iodobehenate	X				
Calcium lactate. (See table 15.)					
Calcium levulinate	X				
Camphor (synthetic). (See table 15.)					
Chaulmoogric ester	X				
Chloral hydrate	145, X				
Chlorobutanol	143, X, X, X				
Chloroform. (See table 15.)					
Chlorothymol	X				
2,5-Diaminotoluene sulfate	70				
Diethylbromoacetyl bromide (Bromo acid).	X				
Ether, absolute. (See table 15.)					
Ethyl chloride. (See table 15.)					
Ethyl ether. (See table 15.)					
Ethyl glycine hydrochloride	X				
Ethyl glycollic acid ester of menthol	X				
Ethyl iodide	70, 71, 136, 143				
Ethyl malonate (Malonic ester)	1				
Ethyl nitrite	81, 136, 143	24,629	16,776	$10,537	$0.63
Ethylenediamine di hydrochloride	174				
Ethylenediamine di iodide	174				
Ethylenediamine di nitrate	174				
Gallic acid	70, 136				
Glycerophosphoric acid and salts	101, 145				
Hexamethylenetetramine	64, 101				
Hexamethylenetetramineanhydromethylene citrate.	X				
Hexamethylenetetramine tetra iodide	174				
Iodoform	136, 143, 153	12,537			
Iodomethane sulfate sodium	X				
Lactic acid. (See table 15.)					
Lithium lactate	111				
Menthol (synthetic)	139, 209, X				
Menthol ester of valeric acid (Validol)	160				
Methyl iodide	70, 71, 136, 143	515	459	2,319	5.05
Methylene citric acid and salts	X				
Methylene iodide	70, 143, X				
Sodium bismuth-thioglycollate (Thiobismol).	X				
Sodium formaldehyde sulfoxylate	X				
Sulfonethylmethane	136				
Sulfonmethane	136				
Terpin hydrate	64, 99, 143	75,475			
Theobromine sodium acetate	153				
Theophylline and derivatives:					
Base	84, 136, X, X				
Ethylenediamine (Aminophylline)	10, 63, 84, 135, X, X, X, X, X.	8,810			
Sodium acetate	136, X				
Thymol	X				
Thymol iodide	136, 143, 153	7,507	6,000	18,603	3.10
Tribromoacetyl aldehyde (Bromal)	X				
Tribromomethane (Bromoform)	62, X				
Trichloroacetic acid	62				
Tribromotertiarybutyl alcohol (Brometone).	X				
Trichlorotertiarybutyl alcohol (Chloretone).	X				
Other medicinals	1				
Total non-coal-tar medicinals:					
Those for which individual statistics are shown.		245,817	128,640	227,338	1.77
Those for which individual statistics cannot be shown.		1,568,218	1,313,430	2,181,033	1.66
Grand total		1,814,035	1,442,070	2,408,371	1.67

FLAVORS AND PERFUME MATERIALS

These important synthetics were produced in increased quantity and variety in 1937. Production of those of coal-tar origin amounted to 4,356,000 pounds, or 25 percent more than in 1936. The 28 makers report sales of 3,907,000 pounds, valued at $3,983,000, or 14 percent more by quantity and 24 percent more by value than in the preceding year. Among the outstanding features of this group in the past year are a 36 percent increase in sales of coumarin, and a 26 percent increase in sales quantity and 33 percent in sales value of vanillin. It should be noted that vanillin from whatever source is included under coal-tar flavors.

Synthetic flavors and perfume materials not of coal-tar origin were produced by 27 makers in 1937, and the output totaled 1,803,000 pounds, or 51 percent increase over 1936. Sales were 1,560,000 pounds, valued at $1,024,000, or 35 percent more by quantity and 19 percent more by value than in the preceding year. Unusual increases are noted for geraniol, methyl ionone, and terpineol. Sales of geraniol increased 60 percent by quantity and 37 percent by value, while sales of methyl ionone increased 63 percent and of terpineol more than 50 percent in both quantity and value.

Table 12 shows production and sales of synthetic flavors and perfume materials in 1937.

TABLE 12.—*Synthetic flavors and perfume materials: United States production and sales, 1937*

[The numbers in the second column refer to the numbered alphabetical list of manufacturers printed on p. 54. An X signifies that the manufacturer did not consent to the publication of his identification number with the designated product. Blanks in the third, fourth, and fifth columns indicate that the statistics of production or sales cannot be published without revealing information in regard to individual firms. The figures thus concealed, however, are included in the total]

Name of flavor or perfume material	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
(A) COAL-TAR		*Pounds*	*Pounds*		
Acetophenone	78, 83, X, X, X, X	16,585			
Amino-carvacrol	209				
Amyl benzoate	78				
Amyl cinnamic aldehyde	75, 78, 139, 221, X, X, X, X.	50,187	48,198	$86,985	$1.80
Amyl salicylate	62, 78, 198, X, X, X, X	50,285	49,955	24,224	.48
Benzal chloride	105				
Benzal glycerin	X				
Benzophenone	64, 78, 83, X				
Benzoyl isoeugenol	75				
Benzyl acetate	78, 139, 198, 209, X				
Benzyl alcohol	78, 105, 139, 198, 209, X				
Benzyl benzoate	78, 139, 198, 209, X, X	33,672	32,126	26,127	.81
Benzyl butyrate	75, 78, X, X	236	178	269	1.51
Benzyl cinnamate	78, X				
Benzyl formate	78, 221				
Benzyl isobutyrate	75				
Benzyl isoeugenol	75, 78				
Benzylphenyl acetate	75				
Benzyl propionate	75, 78, 139, 221, X, X	1,429	1,247	2,089	1.68
Benzyl salicylate	78, 83, 139, 221, X	7,157	7,214	11,149	1.55
Benzyl valerate	75, 78				
Benzylidine acetone	221				
Bromstyrol	X				
Butylphenyl acetate	75				
Carvacrol	209				
Carvacryl acetate	209				
Carvo-menthol	209				
Carvo-menthone	209				
Cinnamic acid	83, 209, X				
Cinnamic alcohol	78, 83, 141				
Cinnamic aldehyde	78, 139, 209, X, X, X, X	27,477	17,185	16,282	.95

TABLE 12.—*Synthetic flavors and perfume materials: United States production and sales, 1937*—Continued

Name of flavor or perfume material	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
(A) COAL-TAR—continued		*Pounds*	*Pounds*		
Cinnamyl acetate	75, 78				
Cinnamyl isobutyrate	75				
Cinnamyl valerianate	75, 78				
Coumarin	62, 64, 78, 141, 145	216,767	186,325	$488,939	$2.62
p-Cresyl acetate	78, 221				
p-Cresylmethyl ether	139				
p-Cresylphenyl acetate	75, 78				
Diethyl succinate	X				
Dimethyl acetal of phenylacetaldehyde	83, X				
Dimethyl anthranilate	75, 78				
Dimethylbenzyl carbinol	78, 221				
Dimethyl hydroquinone	64, 78, X				
Diphenylmethane	X				
Diphenyl oxide	62, 78, X				
Ethyl anthranilate	75, 78, X				
Ethyl benzoate	78, 159, 221, X, X, X	1,797	1,653	1,620	.98
Ethyl cinnamate	78, 221				
Ethylmethylphenyl glycidate	75, X				
Ethylphenyl acetate	X				
Ethyl salicylate	62, 78, X	599	432	423	.98
Ethyl vanillin	141, 145, X				
Guaiacol acetate	75				
p-Hydroxy benzoic acid esters (Aseptoform).	X				
Isoamylphenyl acetate	75				
Isobutyl anthranilate	78				
Isobutyl indol	78				
Isobutylphenyl acetate	78, X				
Isobutyl salicylate	75, 78				
Linalyl anthranilate	78				
Menthyl benzoate	209				
Methyl acetophenone	78, 83, X, X, X	4,280	2,864	3,374	1.18
Methyl anthranilate	62,139				
Methyl benzoate	78, 101, 105, 159, 221				
Methyl cinnamate	209, 221, X				
Methyl p-cresol	75, 78				
Methylnaphthyl ketone	78, 83, X				
Methylphenyl acetate	83, 221, X, X, X, X	1,183	1,056	1,475	1.40
Methylphenyl carbinol	83				
Methylphenyl carbinyl acetate	83				
Methyl salicylate	62, 78, 101, 145, X, X	1,677,329	1,538,599	497,504	.32
Musk ambrette	64, 139, X, X				
Musk ketone	64, 139, X, X		8,131	29,843	3.67
Musk xylol	64, 139, X, X	56,741	55,945	60,765	1.09
b-Naphthyl anthranilate	75				
b-Naphthyl ethyl ether (Nerolin)	83, X				
b-Naphthyl methyl ether (Yara yara)	83, X				
Phenylacet acetal	75				
Phenylacetic acid	83, 221, X, X, X				
Phenylacetic aldehyde	78				
Phenylacetic ester	X				
Phenylacetic ketone	78				
Phenylethyl acetate	1, 78, 221, X				
Phenylethyl alcohol	62, 78, 221, 224, X, X	107,320	137,091	251,973	1.84
Phenylethyl butyrate	78				
Phenylethyl formate	X				
Phenylethylphenyl acetate	78, 221				
Phenylethyl salicylate	64, 221				
Phenylethyl valerianate	75, X				
Propyl cinnamate	75				
Saccharin	145				
Salicyl aldehyde	62, 64				
Tolyl acetate	X				
Tolyl aldehyde	X				
Trichloromethylphenylcarbinol acetate (Rosetone).	X				
Vanillidine	X				
Vanillin	141, 145, 190, X, X	368,330	370,930	1,213,052	3.27
Total coal-tar flavors and perfume materials:					
Those for which individual statistics are shown.		2,621,371	2,459,129	2,716,093	1.10
Those for which individual statistics cannot be shown.		1,734,919	1,448,088	1,266,414	.87
Grand total		4,356,293	3,907,217	3,982,507	1.02

TABLE 12.—*Synthetic flavors and perfume materials: United States production and sales, 1937*—Continued

Name of flavor or perfume material	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
(B) NON-COAL-TAR					
Acetate:		*Pounds*	*Pounds*		
C 10	75				
C 12	75				
Aldehyde: C 7 (Heptyl)	75, X				
Allyl caproate	75, 78, X				
Allyl propionate	75				
Amyl butyrate	33, 75, X				
Amyl caproate	X				
Amyl formate	75, X				
Anethol	99, 151				
Anisic aldehyde (Aubepine)	78, X, X				
Anisyl formate	75				
n-Butyl butyrate	78, 159				
Capryl butyric acid	78				
Capryl butyric ether	78				
Citral	33, 64, 75, 78, 131, 139, 209, 221, X, X, X, X, X.	36,472	33,232	$51,852	$1.56
Citronellal	75, 221, X, X, X				
Citronellol	64, 78, 83, 139, 209, 221, X, X.	15,319	11,083	16,354	1.48
Citronellyl acetate	75, 78, X	38	22	62	2.82
Diethylacetal (Acetal)	X				
Dihydrovanillone	78				
Dihydroxy citronellic ketone	78				
Dimethyl octanol	209, X				
Dipropyl ketone	X				
Ethyl butyrate	33, 75, 81, 159, X, X	38,611	36,483	23,846	.65
Ethyl caproate	159, X				
Ethyl isovalerate	81, 159, X				
Ethyl laurate	75				
Ethyl oenanthate	75, 78, 159, X, X, X	4,773	4,526	3,416	.75
Ethyl oxyhydrate	75, 78, 131, 221	15,779	13,652	9,494	.70
Ethyl pelargonate	33, 221				
Ethyl sebacate	75				
Ethyl n-valerate	78, X				
Formate: C 12	75				
Geraniol	64, 75, 78, 83, 139, 209, 214, 221, X, X, X, X, X, X.	368,866	328,125	212,578	.65
Geranyl acetate	64, 75, 78, 83, 139, 209, X, X.	14,921	11,093	11,956	1.08
Geranyl butyrate	75, 78				
Geranyl formate	75, 78, X				
Heliotropin	X, X, X	41,884			
Hydroxy citronellal	64, X				
Hydroxy citronellal dimethyl acetal	X				
Hydroxy dimethylacetal	75				
Ionone	64, 139, 141, 209, 221, 224, X, X.	52,393	48,605	89,392	1.84
Isoamyl butyrate	78, 81, 159, X				
Isoamyl formate	78, 159, X	552	310	282	.91
Isoamyl isovalerate	75, 159, X, X	1,284	881	1,496	1.70
Isoamyl propionate	X, X, X				
Iso borneol	64				
Isobornyl acetate	64				
Isobutyl acetate	75, 159				
Isobutyl butyrate	78				
Isoeugenol	75, X, X, X, X, X	10,095	9,449	24,231	2.56
Isopulegol	83, 209				
Linalyl acetate	75, 78, 221, X, X, X	5,873	3,679	8,010	2.18
Linalyl formate	78				
Menthone	209				
Menthyl acetate	209				
Methyl eugenol	75				
Methylhexyl ketone	209				
Methyl ionone	64, 139, 141, 209, 221, 224, X.	32,902	26,780	68,018	2.54
Methyl isoeugenol	75				
Octyl alcohol (sec) (Capryl alcohol)	209, X				
Octyl butyrate	75				
Peppermint oil (synthetic)	209				
Rhodinol	64, 75, 78, 131, 214, 221 X, X, X, X, X	6,642	4,743	64,980	13.70

TABLE 12.—*Synthetic flavors and perfume materials: United States production and sales, 1937*—Continued

Name of flavor or perfume material	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
(B) NON-COAL-TAR—continued					
		Pounds	*Pounds*		
Rhodinol formate	75, X				
Rhodinyl acetate	75, X				
Santalyl acetate	75				
Terpineol	64, 99, X, X	781,152	733,070	$147,798	$0.20
Terpinolene	64				
Terpinyl acetate	64, 75, X, X				
Undecalactone	75, X				
Vertiverol acetate	75, X, X, X				
Total non-coal-tar flavors and perfume materials:					
Those for which individual statistics are shown.		1,427,575	1,265,733	733,765	.58
Those for which individual statistics cannot be shown.		375,192	294,736	290,670	.99
Grand total		1,802,767	1,560,469	1,024,435	.66

RESINS

Activity in the production of synthetic resins continues to increase with a record output exceeding 160 million pounds in 1937, or 23 percent more than in 1936. Production of resins from coal tar exceeded 141 million pounds, of which tar acid resins were the most important, followed by the alkyd resins. Tar acid resin production increased 15 percent to 80,771,000 pounds, while alkyd resin increased 30 percent to 61,254,000 pounds. Cast phenolic resins show decreased production and sales compared with the preceding year.

Resins not of coal-tar origin increased 35 percent in output to 21,006,000 pounds, with sales of 18,891,000 pounds valued at $5,681,000, or 28 percent in quantity and 58 percent in value as compared with 1936.

Table 13 shows production and sales of synthetic resins in 1937.

TABLE 13.—*Synthetic resins: United States production and sales, 1937*

[The numbers in the second column refer to the numbered alphabetical list of manufacturers printed on page 54. An X signifies that the manufacturer did not consent to the publication of his identification number with the designated product. Blanks in the third, fourth, and fifth columns indicate that the statistics of production or sales cannot be published without revealing information in regard to individual firms. The figures thus concealed, however, are included in the total]

Name of resin	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
(A) COAL-TAR					
		Pounds	*Pounds*		
Adipic acid	88	(1)	(1)		
Alkyd:					
Maleic anhydride	8, 35, 38, 89, 99, 117, 128, 184, X, X, X, X.	2,803,987	2,154,988	$418,183	$0.19
Phthalic anhydride	8, 19, 24, 31, 38, 64, 88, 117, 134, 176, 184, 220, X, X, X, X, X, X, X, X, X, X, X, X, X, X, X, X, X, X, X, X, X, X.	58,450,032	32,583,307	6,445,511	.20
Succinic acid	X	(1)	(1)		

[1] Not included in total.

TABLE 13.—*Synthetic resins: United States production and sales, 1937*—Contd.

Name of resin	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
(A) COAL-TAR—continued					
		Pounds	*Pounds*		
Coumarone and indene	22, 150, X	(1)	(1)		
Hydrocarbon	64	(1)	(1)		
Styrol	62, X	(1)	(1)		
Sulfonamides	145	(1)	(1)		
Tar acids:					
Cresol or cresylic acid	65, 88, 184, 213, X, X, X, X, X, X, X.	10,701,463	8,466,610	$976,549	$0.12
Phenol:					
Cast	40, 64, 76, 114, 122, 137, X	5,459,654	5,335,746	2,180,620	.41
Other	8, 24, 35, 49, 53, 65, 79, 88, 128, 184, 185, X, X, X, X, X, X, X, X, X, X, X, X, X, X.	47,898,203	45,750,777	6,812,799	.15
Phenols and cresols	88, 100, 134, 187, X, X, X, X, X, X.	14,086,283	13,277,663	3,464,791	.26
Xylenols	88, X, X, X	651,979	654,318	122,137	.19
Xylenols and cresols	18, 88, X, X	1,972,940	977,940	161,566	.17
Total coal-tar resins		142,024,541	109,201,349	20,582,156	.19
(B) NON-COAL-TAR					
Abalyn-hydrogen-nitrogen	99				
Abietic acid	99, X				
Acrylic acid esters	64, X, X				
Ketone	X				
Petroleum	X				
Terpenes	99				
Urea	8, 64, 184, X, X, X, X, X, X				
Urea and thiourea	X				
Vinyl acetate and chloride	37, 64, 76, 91				
Wood rosin-methyl alcohol	99				
Total non-coal-tar resins		21,005,869	18,891,277	5,680,600	.30

RUBBER CHEMICALS

Synthetic rubber chemicals were produced in somewhat smaller quantities in 1937. The 10 makers report production of 29,202,000 pounds of coal-tar rubber chemicals, of which 15,166,000 pounds were accelerators and 14,036,000 pounds antioxidants.

Statistics of production and sales of non-coal-tar rubber chemicals are not publishable since the figures would reveal the activity of individual firms.

Table 14 shows production and sales of synthetic rubber chemicals in 1937.

TABLE 14.—*Synthetic rubber chemicals: United States production and sales, 1937*

[The numbers in the second column refer to the numbered alphabetical list of manufacturers printed on p. 54. An X signifies that the manufacturer did not consent to the publication of his identification number with the designated product. Blanks in the third, fourth, and fifth columns indicate that the statistics of production or sales cannot be published without revealing information in regard to individual firms. The figures thus concealed, however, are included in the total]

Name of chemical	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
(A) COAL-TAR		*Pounds*	*Pounds*		
Accelerators, total		15,166,301	10,782,910	$4,503,236	$0.42
Aldehyde-amines:					
Acetaldehyde aniline	64, 145, X				
Butyraldehyde aniline	64,91,145, X				
Crotilidine aniline	X				
Ethyl b-propylacryl aniline	X				
Heptaldehyde aniline	X				
Methylene aniline (anhydroformaldehyde aniline).	64,145				
Other:					
Aminobenzothiazole	91				
Benzothiazole thiobenzoate	145				
Benzothiazyl disulfide	X				
Benzothiazyl-ethyl-thio carbonate	X				
Carbon disulfide on methylene dipiperidine	145				
p-p'Diaminodiphenylmethane	X				
Dibenzothiazyl-dimethylthiol-urea	145				
Dibenzothiazyl-dimethylthiol-urea, diphenylguanidine phthalate and anhydroformaldehyde aniline.	145				
Dibenzylamine	X				
Dimethylethylenediphenyldithiocarbamate lead salt.	X				
Dinitrophenylbenzothiazyl sulfide plus diphenylguanidine acetate.	145, X				
Dinitrophenyldimethyldithiocarbamate	X				
Dinitrophenyl ester of mercaptobenzothiazole	145				
Diphenylcarbamyldimethyldithiocarbamate	X				
Diphenylguanidine	8, 62, 64, 145	1,862,029	1,267,226	416,205	.33
Diphenylguanidine acetate	145				
Diphenylguanidine phthalate	145				
Diphenylguanidine and dinitrophenyl ester of mercaptobenzothiazole.	145				
Diphenylguanidine phthalate, diphenylguanidine and dinitrophenyl ester of mercaptobenzothiazole.	145				
Di-o-tolylguanidine	64, X				
Di-o-tolylthiourea	64				
Hexamethylenetetramine ester of mercaptobenzothiazole.	145				
Mercaptobenzothiazole	145, X, X				
Mercaptobenzothiazole on benzyl chloride addition of hexamethylenetetramine.	64				
Mercaptobenzothiazole methylene aniline	X				
Mercaptobenzothiazole methylene-o-toluidine.	X				
Mercaptobenzothiazole potassium salt	64				
Mercaptobenzothiazole sodium salt	145				
Mercaptobenzothiazole zinc salt	64, 145, X				
Methylene dianilide	64				
Methylene dipiperidine	115				
Methylene mercaptobenzothiazole	X				
Methylene p-toluidine (anhydroformaldehyde p-toluidine).	64				
Piperidine penta methylene dithiocarbamate and potassium salt.	64				
Thiocarbanilide	64, 145, 148	371,256	207,565	47,820	.23
Triphenylguanidine	64, 148				
Other accelerators	X				
Antioxidants, total		14,036,042	10,126,462	3,690,654	.36
Acetaldehyde aniline	X				
p-Aminodiphenyl acetone compound	145				
Aniline-acetone	145				
Aniline-acetone, acid derivatives	145				
Aniline-b-naphthol	64				
Antox	64				

TABLE 14.—*Synthetic rubber chemicals: United States production and sales, 1937*—Continued

Name of chemical	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
(A) COAL-TAR—continued					
Antioxidants—Con.		*Pounds*	*Pounds*		
Crotonylidine-a-naphthylamine	91				
2:4-Diaminodiphenylamine	145				
b-Di-p-hydroxy phenylpropane	X				
Dimethoxy diphenylamine	64				
Diphenylamine acetone	X				
Diphenylamine acetone formaldehyde	X				
Diphenyl ethylenediamine	X				
s-Di (b-naphthol) p-phenylenediamine	91				
Diphenyl-p-phenylenediamine	64, 91, X	688,065			
Diphenyl-p-phenylenediamine and p-amino-diphenyl acetone compound	145				
Diphenyl-p-phenylenediamine and aniline acetone, acid derivatives	145				
Ditolylamines	91				
Di-o-tolylethylenediamine	X				
Di-o-tolylguanidine salt of dicatechol borate	64				
p-Hydroxy diphenylamine	64				
Hydroxyphenyl morpholine	64				
Isopropoxy diphenylamine	91				
p-Methyl-p-(p-tolylsulfonylamino) diphenylamine	X				
Mono benzyl ether of hydroquinone	91				
Phenol-cyclohexanone compound	X				
Phenyl-a-naphthylamine	64, 148				
Phenyl-b-naphthylamine	64, 86, 91				
Phenyl-b-napthylnitrosamine	X				
Polyethylene polyamine plus b-naphthol	X				
Thiophenyl-b-naphthylamine	X				
2:2:4-Trimethyldihydroquinoline and polymers	91				
Other coal-tar rubber chemicals	X				
Total coal-tar rubber chemicals		29,202,343	20,909,372	$8,193,890	$0.39
(B) NON-COAL-TAR					
Accelerators:					
Aldehyde ammonia	64, 145				
Dimethylaminodimethyldithiocarbamic acid, zinc salt	X				
Dipenta methylene thiouramterra sulfide	64				
Dithiocarbamates:					
Lead dimethyl	232				
Zinc dibutyl	X				
Zinc diethyl	232, X				
Zinc dimethyl	X, X				
p-Nitrosodimethylamine	64				
Tetramethylthiouram sulfide and disulfide	64, X, X, X	400,299	326,071	742,115	2.28
Triethyltrimethylenetriamine	X				
Xanthates:					
Di-n-butylxantho disulfide	X				
Dixanthogen	93				
Potassium amyl	93, 145				
Potassium butyl	8, 93, 145				
Potassium ethyl	93, 145				
Potassium isopropyl	93, X				
Potassium pentasol	93				
Sodium butyl	X				
Sodium ethyl	93, 145				
Zinc butyl	X, X				
Zinc isopropyl	X				
Others	144				
Other accelerators	X, X				
Other rubber chemicals	X				
Total non-coal-tar rubber chemicals[1]					

[1] Not publishable. Included in "Miscellaneous" synthetic chemicals of non-coal-tar origin.

MISCELLANEOUS CHEMICALS

Miscellaneous coal-tar chemicals were produced by 43 makers, and those not of coal-tar origin by 89 makers, in 1937. Table 15 shows production and sales.

Coal-tar products included herein are unrelated commodities and minor products not properly classified under any of the other groups. Statistics of production and sales for these miscellaneous groups are not comparable with those for earlier years because of the inclusion of products heretofore classified elsewhere or the transfer of subgroups to other classifications. Diazo salts and naphthol AS derivatives formerly classified here are combined with the azoic dyes under unclassified dyes in this report.

Many increases in quantity occurred in the products of the group not of coal-tar origin. The record output of 2,505,027,000 pounds was 24 percent more than in 1936. Sales totaled 1,146,255,000 pounds valued at $110,306,000. Production of acetic anhydride increased 30 percent and the increase in output of synthetic acetic acid was even greater. Acetone increased 31 percent, the butyl alcohols 65 percent, and carbon tetrachloride 23 percent in 1937 over 1936. Ethyl acetate production declined about 5 percent and isopropyl alcohol about 6 percent.

TABLE 15.—*Miscellaneous synthetic chemicals: United States production and sales, 1937*

[The numbers in the second column refer to the numbered alphabetical list of manufacturers printed on p. 54. An X signifies that the manufacturer did not consent to the publication of his identification number with the designated product. Blanks in the third, fourth, and fifth columns indicate that the statistics of production or sales cannot be published without revealing information in regard to individual firms. The figures thus concealed are, however, included in the total]

Name of chemical	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
(A) COAL-TAR [1]		*Pounds*	*Pounds*		
Amino diethyl hydroquinone	X				
Benzoate of ammonia	105, 145				
Benzoate of soda	64, 105, 145, X				
Benzoyl peroxide	X				
Benzylated phenol (Santophens)	145				
Biological stains and chemical indicators	125, 148, 211, X				
Butyl catechol	X				
Cresophan	X				
Cyclanol	64				
Cyclohexane	64				
Cyclohexanone	64				
Decahydronaphthalene (Decalin)	64				
Diamyl hydroquinone	70, 145				
a-a-Dipyridyl	71				
Ethylene glycol monophenyl ether	37				
Gases (poisonous, tear, etc.):					
Chloroacetophenone	74				
Chloropicrin	74, X				
Diphenylamine chlorarsine	74, 168				
Hexalin (Cyclohexanol)	64, 105				
Insecticides (synthetic): Aliphatic thiocyanates	X				
Methyl cyclohexanone	64				
Methyl hexalin (Methyl cyclohexanol)	64, 105				
Naphthanil red for printing	64				
Naphthanil scarlet for printing	64				
o-Phenyl mercaptobenzothiazole	X				
Phloroglucinol	71				

[1] Fast color salts and naphthol AS derivatives are included in unclassified dyes under azoic dyes and their components.

TABLE 15.—*Miscellaneous synthetic chemicals: United States production and sales, 1937*—Continued

Name of chemical	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
(A) COAL-TAR—continued					
		Pounds	*Pounds*		
Photographic chemicals, total		1,762,201	1,443,755	$1,516,327	$1.05
p-Aminophenol sulfate	71				
Catechol (Pyrocatechin)	145, 168				
Diaminophenol hydrochloride (Amidol)	224				
Hydroquinol	54, 70, 224, 234, X	1,220 253	1,133,139	816,337	.72
p-Hydroxy phenylglycine	70, 71, X, X				
Methyl p-aminophenol sulfate (Metol) (Rhodol)	64, 70, 224, X, X	205,987			
Tertiarybutyl pyrogallol (Rubinol)	X				
Phthalates, total		15,082,440	13,282,818	2,496,314	.19
Diamyl	120, 219, X				
Dibutoxy ethyl	161				
Dibutyl	8, 54, 64, 120, 145, 219, X.	6,963,625	5,760,967	986,295	.17
Dicyclohexyl	64				
Diethoxy ethyl	161				
Diethyl	145, 219, X, X	1,288,491	1,106,939	193,426	.17
Dimethoxy ethyl	64, 161				
Dimethyl	8, 54, 145, 219, X, X				
Dimethyl cyclohexyl	64				
Diphenyl	145				
Potassium butyl	64				
Sodium butyl	64				
Sodium ethyl butyl	64				
Other	64				
Phthalyl glycollate plasticizer	145				
Printsol colors:					
Blue B	148				
Bordeaux R	148				
Orange G	148				
Red G	148				
Scarlet B	148				
Quinhydrone	70, X				
Quinone	70				
Research chemicals	6, 70, 169, X				
Sodium dicresyldithiophosphate	X				
Tanning materials (synthetic)	8, 22, 45, 86, 145, 148, 154, X, X.				
Tetrahydronaphthalene (Tetralin)	64				
Textile chemicals, total	7, 8, 64, 86, 145, 148, X, X.	3,080,251	2,952,293	779,674	.26
Other products	64, 70, 145				
Total miscellaneous coal-tar chemicals:					
Those for which individual statistics are shown.		12,758,607	10,953,338	2,775,732	.25
Those for which individual statistics cannot be shown.		29,636,576	25,472,475	5,280,132	.21
Grand total		42,395,183	36,425,813	8,055,864	.22
(B) NON-COAL-TAR					
Acetaldehyde	37, 154, X				
Acetaldol	154				
Acetamide	62, 105				
Acetic acid (100 percent)	37, 54, 154, 219, X	125,509,931			
Acetic anhydride (from all sources (100 percent)	37, 62, 70, X, X	177,488,353			
Acetin (mono, di, tri)	86, 102, X	144,152	130,080	40,378	.31
Acetone	37, 54, 180, 196, 219, X.	124,012,187	68,772,268	3,586,971	.05
Acetonitrile	70, X				
Acetyl chloride	87, X				
Allyl bromide	70, 71				
Allyl chloride	70, 71				
Allyl isothiocyanate (synthetic mustard oil)	X				
Aluminum formate	154, 225				

TABLE 15.—*Miscellaneous synthetic chemicals: United States production and sales 1937*—Continued

Name of chemical	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
(B) NON-COAL-TAR—continued		*Pounds*	*Pounds*		
Amines:					
Amyl (mono, di, tri)	X				
Butyl:					
Di	X				
Tri	64, X				
Ethyl:					
Mono	28				
Di	232				
Methyl:					
Mono	6, 54, 64				
Di	54, 64				
Tri	64				
Ammonium oxalate	87				
Ammonium stearate	X				
Amyl acetate, total			11,796,710	$1,236,678	$0.10
Normal (90 percent)	54, 64, 180, 194, 219				
Secondary (90 percent)	X				
Iso (90 percent)	81, 120, 159, 219, X, X.				
Amyl alcohol, total		14,205,997			
Normal (100 percent)	64, 194, 219				
Secondary (100 percent)	X				
Iso (100 percent)	81, 120, X, X				
Amyl chloride	X				
Amyl ether	X				
Amyl mercaptan	X				
Amyl propionate	81				
Butyl acetate, total		76,352,160	62,167,685	5,382,888	.09
Normal (90 percent)	37, 54, 64, 84, 145, 180, 219.				
Secondary (90 percent)	X				
Iso (90 percent)	64, X				
Butylacetyl ricinoleate	54				
Butyl alcohol, total		124,464,656	40,806,856	3,322,689	.08
Normal (100 percent)	37, 54, 159, 180, 219				
Secondary (100 percent)	196, X				
Tertiary (100 percent)	64, 196				
Butyl aldehyde	37, 54				
n-Butyl bromide	70, 188				
Butyl chloride	64, 105				
Butyl lactate	54				
n-Butyl methacrylate	64				
Butyl oleate	54				
Butyl propionate (100 percent)	81, 219				
Butyl stearate	54, 120				
n-Butyric acid	37, 70, 159				
Butyric anhydride	37				
Butyryl chloride	105				
Caffeine (from Theobromine)	141, 145				
Calcium lactate	9, 195				
Calcium malonate	X				
Calcium propionate	64				
Camphor (synthetic)	64, 151				
n-Caproic acid	136, 159				
Carbon tetrachloride	62,93,156,212,229, X	81,112,215	74,417,244	3,016,448	.04
Carbonyl chotoride (Phosgene)	155				
Chlorinated solvents	25				
Chloroacetic acid (mono and di)	62				
Chloroacetone	70				
Chloroacetyl chloride	62				
Chloroform (tech. and U S P)	30, 62, 64, 93	2,657,167	1,948,656	335,437	.17
Chloromethoxy bis diazoethylenediamino diacetic acid.	171				
Citric acid, refined (fermentation)	47, 143, X				
Copper lactate	195				
Crotonaldehyde	37, 154				
Crotonic acid	154				
Diacetone alcohol	37, 54, 145, 196	3,063,136			
Diacetyl	37, 70				
Diaminodiacetic acid	171				
Diaminoisopropanol	62				
n-Dibutylamine diaminoisopropanol	64				
Dibutyl ether (n-Butyl ether)	54				
Dibutyl oxalate	219				
Dibutyl sebacate	6, 161, 209				

TABLE 15.—*Miscellaneous synthetic chemicals: United States production and sales 1937*—Continued

Name of chemical	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
(B) NON-COAL-TAR—continued		*Pounds*	*Pounds*		
Dibutyl tartrate	54, 64, 120	22,058			
Dicapryl alcohol	209				
Dicapryl sebacate	209				
Dichlorodifluoromethane	121				
Dichloroethyl ether	37				
Dichloroethylene	64				
Dichloroisopropyl ether	37				
Dichloromonofluoromethane	121				
Dichlorotetrafluoroethane	121				
Dicyandiamid	X				
Diethanolamine	37				
Diethyl acetic acid	37, X				
Diethyl carbonate	219				
Diethyl oxalate	X				
Diethyl sulfate	37				
Diethylaminoethanol	37, 70				
Diethylene glycol	37				
Diethylene glycol diethyl ether	37				
Diethylene glycol dipropionate	161				
Diethylene glycol monobutyl ether	37				
Diethylene glycol monobutyl ether acetate.	37				
Diethylene glycol monoethyl ether	37				
Diethylene glycol monoethyl ether acetate.	37				
Diethylene glycol monomethyl ether	37				
Diethylene oxide (Dioxan)	37				
Diethylenetriamine	28				
Diglycol laurate	X				
Diglycol oleate	X				
Diisobutylene	X				
Diisobutyl ketone	37				
Dimethyl ether	64				
Dimethylglyoxime	6, 70, 169, 188				
Dimethyl sulfate	64				
Epichlorohydrin	64				
Erucic acid	X				
Ethyl acetate (85 percent)	37, 54, 64, 79, 81, 145, 180, 219.	69,637,571	44,339,330	$2,910,222	$0.07
Ethyl acetoacetate	37, 219				
Ethyl alcohol (synthetic)	37				
Ethyl bromide	1, 62				
Ethyl bromo acetate	62				
Ethyl butyl acetate	37				
Ethyl butyl alcohol	37				
Ethyl butyraldehyde	37				
Ethyl chloride (tech. and USP)	62, 64, 81, 85, X				
Ethyl chlorocarbonate	219				
Ethyl ether (tech., USP and absolute.)	37, 64, 136, 143, X				
Ethyl formate	54, 78, 81, 136, 159, 219, X, X.				
a-Ethyl hexanal	37				
a-Ethyl hexanol	37				
Ethyl hexoic acid	37				
a-Ethylhexyl acetate	37				
Ethyl lactate	X				
Ethyl mercaptan	136				
Ethyl monochloro acetate	62, 75				
Ethyl oxalate	81, 219				
Ethyl propionate	75, 81, 219, X, X				
Ethyl silicate	37				
Ethylene chlorohydrin	37				
Ethylenediamine (medicinal and tech.)	28, 37				
Ethylenediaminodiacetic acid	171				
Ethylene dibromide	62, 72, 229				
Ethylene dichloride	37, 62				
Ethylene glycol	37, 62				
Ethylene glycol diacetate	37				
Ethylene glycol diethyl ether	37				
Ethylene glycol monobutyl ether	37				
Ethylene glycol monobutyl ether stearate (Butoxy ethyl stearate).	161				
Ethylene glycol monoethyl ether	37				
Ethylene glycol monoethyl ether acetate.	37, 81				

TABLE 15.—*Miscellaneous synthetic chemicals: United States production and sales, 1937*—Continued

Name of chemical	Manufacturers' identification numbers (according to list on p. 54)	Production	Sales		
			Quantity	Value	Unit value
(B) NON-COAL-TAR—continued		*Pounds*	*Pounds*		
Ethylene glycol monomethyl ether	37				
Ethylene glycol monomethyl ether acetate.	37				
Ethylene glycol monomethyl ether oleate (Methoxy ethyl oleate).	161				
Ethylene oxide	37				
Ethylidin diacetate	X				
Fatty acids (synthetic)	112				
Fatty alcohols (containing more than 8 carbon atoms).	64				
Fenchone	151				
Formaldehyde (40 percent)	46, 64, 101				
Formamide	64				
Formic acid (90 percent)	64, 225				
Furfural	183				
Furfural derivatives:					
Furfuryl alcohol	183, X				
Furoic acid	183				
Hydrofuramide	183				
Tetrahydrofurfuryl alcohol	183, X				
Gallic acid, tech	70, 136, 234	263, 756			
Glyceryl monomyristate	51				
Glyceryl monostearate	51, X				
Glyceryl oleate	X				
Glyceryl tripropionate	70				
Glycol bori-borate	X				
Glycol stearate	51, X				
Heptadecanol	37				
Heptane	37				
Heptoic acid	75				
Hexachloroethane	62, 93				
Hexaldehyde	37				
Hexamethylenetetramine, tech	64, 101, X				
Hexyl acetate (sec.)	X				
Hexyl alcohol (n and sec)	37, 64, X				
Higher acetates (above hexyl)	X				
Higher alcohols (containing more than 5 carbon atoms.	64, X				
Hydroxylamine hydrochloride	188, X				
Hydroxylamine sulfate	188				
Insecticides	X				
Isobutyl propionate	64				
Isobutyr aldehyde	64				
Isobutyric acid	64				
Isopropyl acetate	37, 219, X				
Isopropyl alcohol (Isopropanol)	37, 196, 219, X	131, 462, 298			
Isopropyl chloride	105				
Isopropyl ether	37, 196, X	3, 978, 267			
Ketones, mixed	64				
Lactic acid:					
Edible (100 percent)	9, 14, 48, 64, 195	927, 329	883, 961	$195, 855	$0.22
Medicinal (100 percent)	14, 64				
Technical (100 percent)	9, 14, 48, 64, 195				
Levulinic acid	X				
Malonic acid	X				
Mannitol	19				
Mesityl oxide	37, 54				
Methacrylic acid	64				
Methanol (synthetic)	37, 46, 54, 64		125, 313, 631	4, 827, 626	.04
Methyl acetate	154				
Methyl acetoacetate	37				
Methyl bromide	62, 93				
Methyl chloride (Chloromethane) (100 percent).	64, 175, 226, X	3, 404, 079	3, 374, 955	1, 074, 665	.32
Methyl dichlorostearate	X				
Methyl formate	54, 64, X				
Methyl isobutyl carbinol	37				
Methyl isobutyl carbinol acetate	37				
Methyl isobutyl ketone	37				
Methyl lactate	54				
Methyl methacrylate	64				
Methyl propyl ketone	196, X				
Methyl stearate	105				
Methyl succinate	X				
Methylamyl ketone	37				
1-Methylbutyl bromide	1				
Methylbutyl ketone	X				

TABLE 15.—*Miscellaneous synthetic chemicals: United States production and sales 1937*—Continued

Name of chemical	Manufacturers' identification numbers (according to list on p.54)	Production	Sales		
			Quantity	Value	Unit value
(B) NON-COAL-TAR—continued		*Pounds*	*Pounds*		
Methylene chloride (Dichloromethane)	25, 62, 64, 93				
Methylethyl ketone	37, 196, X				
Monoethanolamine	37				
Morpholine	37				
Oxalic acid	87, 163, 225, X	10,247,541	9,605,180	$1,030,137	$0.11
Paracetaldehyde	154				
Paraformaldehyde	64, 101				
Pelargonic acid	75				
Pelviren acid	X				
Pentachloroethane	64				
Pentaerythritol	154				
Perchloroethylene	64				
Phorone	37				
Polyethyleneamines	37				
Polyglycerol	145				
Polyglycerol-abietic acid compound	145				
Propionic acid	64, 70				
Propionic anhydride	37, 70				
Propionyl chloride	105				
n-Propyl acetate	X				
n-Propyl alcohol (Propanol)	64				
Propylene chlorohydrin	37				
Propylene diamine	28				
Propylene dichloride	37, 62				
Propylene glycol	37, 64				
Propylene oxide	37				
Pyrogallic acid (Pyrogallol)	70, 136, 234	115,027	99,812	118,614	1.19
Research chemicals	70, 154, X				
Rubber, synthetic	64, X				
Sebacic acid	209, X				
Sodium formate	64, 136, 225, X				
Sodium lactate	195				
Sodium oxal acetate	219				
Sodium oxalate	87, 136, 225				
Sorbitol	19				
Sucrose octa acetate	154				
Sulfated fatty alcohols, acids, etc. (Gardinols, Igepons, Intramines).	37, 64, 86, X, X, X				
Sulfoacetic acid	X				
Sulfonated thiocarbanilide acetaldehyde ammonia compound.	145				
Tetrabromoethane (Acetylene tetrabromide).	62				
Tetrachloroethane (Acetylene tetrachloride).	64, 229				
Tetrachloroethylene	62				
Tetradecanol	37				
Tetraethyl lead	64				
Tetraethylene glycol dimethy ether	37				
Tributyl citrate	54				
Tributyl phosphate	54				
Tributyl phosphite	64				
Trichloroethane	62				
Trichloroethylene	64, 229				
Trichloromonofluoromethane	121				
Triethanolamine	37				
Triethyl citrate	X				
Triethyl phosphate	54, 145				
Triethylene glycol	37				
Triethylene glycol dihexoate	37				
Triethylenetetramine	28				
Triisobutylene	196, X				
Trimethylene bromide	62				
Urea (solid)	64				
Urea in urea-ammonia solution	64				
Vanillin. (See table 12.)					
Vinyl acetate	X				
Vinyl chloride	37				
Waxes (synthetic)	64, X				
Xanthates. (See table 14.)					
Other products	64, 211, X, X				
Total miscellaneous non-coal-tar chemicals:					
Those for which individual statistics are shown.		952,067,910	443,656,368	27,108,608	.06
Those for which individual statistics cannot be shown.		1,552,959,104	702,599,029	83,197,816	.12
Grand total [1]		2,505,027,014	1,146,255,397	110,306,424	.10

[1] Includes non-coal-tar rubber chemicals.

APPENDIX

Directory of manufacturers of dyes and other synthetic organic chemicals, 1937

No.	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	Alston Lucas Paint Co	1029 North Throop St., Chicago, Ill.
3	Althouse Chemical Co	540 Pear St., Reading, Pa.
4	Aluminum Industries, Inc	2438 Beekman St., Cincinnati, Ohio.
5	Amalgamated Dyestuff & Chemical Works, Inc.	75 Hudson St., New York, N. Y. (Newark, N. J.).
6	Ameeco Chemicals, Inc	75 Rockwood St., Rochester, N. Y.
7	American Aniline Products, Inc	50 Union Square, New York, N. Y. (Lock Haven, Pa.).
8	American Cyanamid Co	30 Rockefeller Plaza, New York, N. Y. (Bound Brook and Warners, N. J., Bridgeville, Pa.).
9	American Maize-Products Co	100 East 42d St., New York, N. Y. (Roby, Ind.).
10	American Pharmaceutical Co., Inc	525 West 43d St., New York, N. Y.
11	American Tar & Chemical Co	5910 Fremont St., Duluth, Minn.
12	Ansbacher-Siegle Corporation	92 Chestnut Ave., Rosebank, Staten Island, N. Y.
13	Ansul Chemical Co	Box 231, Marinette, Wis.
14	Apex Chemical Co., Inc	225 West 34th St., New York, N. Y. (Elizabethport, N. J.).
15	Arco Co	7301 Bessemer Ave., Cleveland, Ohio.
16	Arnold, Hoffman & Co., Inc	55 Canal St., Providence, R. I. (Dighton, Mass.).
17	Aromatic Products, Inc	Springdale, Conn.
18	Artifex Products Co	Delaware Ave., and Elm St., Camden, N. J.
19	Atlas Powder Co	Wilmington, Del. (Atlas Point, Del., Stamford, Conn.).
20	Augusta Chemical Co	Box 660, Augusta, Ga.
21	Bakelite Corporation	247 Park Ave., New York, N. Y. (Bloomfield and Bound Brook, N. J.).
22	Barrett Co	40 Rector St., New York, N. Y. (Plants throughout the United States).
23	Bates Chemical Co	Scottdale Rd., Lansdowne, Pa.
24	Beck, Koller & Co., Inc	661 Woodward Heights Blvd., Detroit, Mich. (Ferndale, Mich.).
25	Belle Alkali Co	Belle, W. Va.
26	Benzol Products Co	237 South St., Newark, N. J. (Piscataway, N. J.).
27	Berkheimer, J. E., Manufacturing Co	Kenton Station, Portland, Oreg.
28	Bersworth, F. C., Laboratories	609 Waverly St., Framingham, Mass.
29	Brooklyn Color Works, Inc	129-43 Cherry St., Brooklyn, N. Y.
30	Brown Co	404 Commercial St., Portland, Me. (Berlin, N. H.).
31	Brown, Andrew, Co	5431 South Riverside Drive, Los Angeles, Calif.
32	Burroughs Wellcome & Co., Inc	9 East 41st St., New York, N. Y. (Tuckahoe, N. Y.).
33	Bush, W. J., & Co., Inc	11 East 38th St., New York, N. Y. (Linden, N. J.).
34	Calco Chemical Co., Inc	Bound Brook, N. J.
35	California Flaxseed Products Co	3135 East 26th St., Los Angeles, Calif.
36	California Ink Co., Inc	545 Sansome St., San Francisco, Calif. (Berkeley, Calif.).
37	Carbide & Carbon Chemicals Corporation.	30 East 42d St., New York, N. Y. (South Charleston, W. Va., Niagara Falls, N. Y. (Whiting, Ind.).
38	Carbogen Chemical Co	South Ave., Garwood, N. J.
39	Carus Chemical Co	1377 8th St., La Salle, Ill.
40	Catalin Corporation of America	Fords, N. J.
41	Celluloid Corporation	290 Ferry St., Newark, N. J.
42	Chemical Manufacturing Co., Inc	Ashland, Mass.
43	Chemical Specialties, Inc	16 East 8th St., Holland, Mich.
44	Childs Pulp Colors, Inc	43 Summit St., Brooklyn, N. Y.
45	Cincinnati Chemical Works, Inc	P. O. Box 20, Evanston Station, Cincinnati, Ohio (Norwood and St. Bernard, Ohio).
46	Cities Service Oil Co	Bartlesville, Okla. (Tallant, Okla.).
47	Citro Chemical Co	Maywood, N. J.
48	Clinton Co	Clinton, Iowa.
49	Colasta Co., Inc	Mechanic St., Hoosic Falls, N. Y.
50	Coleman & Bell Co	Main and Waverly Aves., Norwood, Ohio.
51	Colloid Chemical Laboratories	21 West St., New York, N. Y.
52	Collway Colors, Inc	15 Market St., Paterson, N. J.
53	Colt's Patent Fire Arms Manufacturing Co.	17 Van Dyke Ave., Hartford, Conn.
54	Commercial Solvents Corporation	230 Park Ave., New York, N. Y. (Terre Haute, Ind., Peoria, Ill., Agnew, Calif.).
55	Commonwealth Color & Chemical Co	Nevins, Butler, and Baltic Sts., Brooklyn, N. Y.
56	Cooks Falls Dye Works, Inc	Cooks Falls, N. Y.
57	Coopers Creek Chemical Co	River Rd., West Conshohocken, Pa.
58	Crown Tar Works (division of Public Service Co. of Colorado).	900 15th St., Denver, Colo.
59	Devoe & Raynolds Co., Inc	1 West 47th St., New York, N. Y. (Louisville, Ky.).
60	Diamond Co., Inc	72 Kingsley St., Buffalo, N. Y.
61	Dodge & Olcott Co	180 Varick St., New York, N. Y. (Bayonne, N. J.).
62	Dow Chemical Co	Midland, Mich.
63	Dubin, H. E., Laboratories, Inc	250 East 43d St., New York, N. Y.
64	du Pont de Nemours, E. I. & Co	Wilmington, Del. (Carneys Point, New Brunswick, Perth Amboy, Arlington, and Newark, N. J., Carrollville, Wis., Belle, W. Va., Niagara Falls, N. Y., El Monte, Calif.).

Directory of manufacturers of dyes and other synthetic organic chemicals, 1937—Continued

No.	Name of company	Office address (location of plant given in parentheses if not in same city as office)
65	Durite Plastics, Inc	5000 Summerdale Ave., Philadelphia, Pa.
66	Dye Specialties Corporation	3 Bennett St., Jersey City, N. J.
67	Dyestuffs & Chemicals, Inc	11th and Monroe Sts., St. Louis, Mo.
68	Eakins, J. S., & W. R., Inc	55 Berry St., Brooklyn, N. Y.
69	Easteru Tar Products Corporation	Lexington Bldg., Baltimore, Md. (Baltimore, Md., Norfolk, Va.).
70	Eastman Kodak Co	343 State St., Rochester, N. Y. (Rochester, N. Y., Kingsport, Tenn.).
71	Edwal Laboratories, Inc	732 Federal St., Chicago, Ill.
72	Ethyl-Dow Chemical Co	Wilmington, N. C.
73	Federal Color Laboratories, Inc	4633 Forest Ave., Norwood, Ohio.
74	Federal Laboratories, Inc	185 41st St., Pittsburgh, Pa. (Tunnelton, Pa.).
75	Felton Chemical Co., Inc	599 Johnson Ave., Brooklyn, N. Y.
76	Fiberloid Corporation	Worcester St., Indian Orchard, Mass.
77	Fine Colors Co	21-29 McBride Ave., Paterson, N. J.
78	Florasynth Laboratories, Inc	1513-33 Olmstead Ave., New York, N. Y.
79	Ford Motor Co	3674 Schaefer Rd., Dearborn, Mich.
80	Foster-Heaton Co	833-39 Magnolia Ave., Elizabeth, N. J.
81	Franco-American Chemical Works	342 Madison Ave., New York, N. Y. (Carlstadt, N. J.).
82	Fries Bros	92 Reade St., New York, N. Y. (Bloomfield, N. J.).
83	Fries, George G., & Co., Inc	68 Beekman St., New York, N. Y. (Long Island City, N. Y.).
84	Gane's Chemical Works, Inc	43 West 16th St., New York, N. Y. (Carlstadt, N. J.).
85	Gebauer Chemical Co	826 Hanna Bldg., Cleveland, Ohio.
86	General Aniline Works, Inc	435 Hudson St., New York, N. Y. (Rensselaer N. Y., Grasselli, N. J.).
87	General Chemical Co	40 Rector St., New York, N. Y. (Buffalo, N. Y.).
88	General Electric Co	1 River Rd., Schenectady, N. Y. (Schenectady, N. Y., Pittsfield, Mass.).
89	General Paint Corporation	3000 Sand Springs Rd., Tulsa, Okla.
90	General Plastics, Inc	Walck Rd., North Tonawanda, N. Y.
91	Goodrich, B. F., Co	500 South Main St., Akron, Ohio.
92	Goodyear Tire & Rubber Co	1144 East Market St., Akron, Ohio.
93	Great Western Electro-Chemical Co	9 Main St., San Francisco, Calif. (Pittsburg, Calif.).
94	Guyan Color & Chemical Works	P. O. Box 1088, Huntington, W. Va.
95	Halowax Corporation	247 Park Ave., New York, N. Y. (Wyandotte, Mich.).
96	Hamilton Laboratories, Inc	Hamilton, Ohio.
97	Hampden Color & Chemical Co	161 Armory St., Springfield, Mass.
98	Harmon Color Works, Inc	P. O. Box 1158, Paterson, N. J. (Haledon, N. J.).
99	Hercules Powder Co	Delaware Trust Bldg., Wilmington, Del.
100	Heresite & Chemical Co	822 South 14th St., Manitowoc, Wis.
101	Heyden Chemical Corporation	50 Union Square, New York, N. Y. (Garfield and Perth Amboy, N. J.).
102	Hilton-Davis Chemical Co	Langdon Farm Rd., Cincinnati, Ohio.
103	Hoffmann-LaRoche, Inc	Nutley, N. J.
104	Holland Aniline Dye Co	Holland, Mich.
105	Hooker Electrochemical Co	60 East 42d St., New York, N. Y. (Niagara Falls, N. Y.).
106	Huggins, James, & Son	239 Medford St., Malden, Mass.
107	Hynson, Westcott & Dunning, Inc	1030 North Charles St., Baltimore, Md.
108	Imperial Paper & Color Corporation (Pigment Color Division).	Glens Falls, N. Y. (Queensbury, N. Y.).
109	Industrial Dyestuff Co	Massasoit Ave., East Providence, R. I.
110	Inland Tar Co	38 South Dearborn St., Chicago, Ill. (Indiana Harbor, Ind.).
111	Jamieson, C. E., & Co	1962-80 Trombly Ave., Detroit, Mich.
112	Jasco, Inc	c/o Standard Oil Co., of La., Baton Rouge, La.
113	Jennison-Wright Co	2463 Broadway, Toledo, Ohio.
114	Joanite Corporation	1002 44th Drive, Long Island City, N. Y.
115	Johnson, Charles Eneu, & Co	10th St. at Lombard St., Philadelphia, Pa.
116	Joliet Wall Paper Mills	Logan Ave., Joliet, Ill.
117	Jones-Dabney Co	1481 South 11th St., Louisville, Ky.
118	Kay-Fries Chemicals, Inc	180 Madison Ave., New York, N. Y. (West Haverstraw, N. Y.).
119	Kentucky Color & Chemical Co	34th St. South of Bank St., Louisville, Ky.
120	Kessler Chemical Corporation	Delaware Ave. and Mifflin St., Philadelphia, Pa.
121	Kinetic Chemicals, Inc	duPont Bldg., Wilmington, Del. (Carney's Point, N. J.).
122	Knoedler, A., Co	717 North Prince St., Lancaster, Pa.
123	Kohnstamm, H. & Co., Inc	87 Park Place, New York, N. Y. (Brooklyn, N. Y.).
124	Koppers Co. (Tar & Chemical Division)	Koppers Bldg., Pittsburgh, Pa. (Plants throughout the United States).
125	LaMotte Chemical Products Co	McCormick Bldg., Baltimore, Md.
126	Lavanburg, Fred L., Co., Inc	105 Bedford Ave., Brooklyn, N. Y.
127	Lehigh Briquetting Co	Universal Bldg., Fargo, N. D. (Dickinson, N. D.).
128	Lewis, John D., Inc	68 Traverse St., Providence, R. I. (Mansfield, Mass.).
129	Lilly, Eli, & Co	Indianapolis, Ind.
130	Lucidol Corporation	293 Larkin St., Buffalo, N. Y.
131	Lueders, George, & Co	427 Washington St., New York, N. Y. (Brooklyn, N. Y.).
132	Macher, William, & Son	1533 West Clearfield St., Philadelphia, Pa.
133	Magruder Color Co., Inc	2385 Richmond Terrace, Staten Island, N. Y.
134	Makalot Corporation	262 Washington St., Boston, Mass. (Waltham, Mass.).
135	Mallard, A. E	3021 Wabash Ave., Detroit, Mich.
136	Mallinckrodt Chemical Works	3600 North 2d St., St. Louis, Mo.

Directory of manufacturers of dyes and other synthetic organic chemicals, 1937—Continued

No.	Name of company	Office address (location of plant given in parentheses if not in same city as office)
137	Marblette Corporation	37-21 30th St., Long Island City, N. Y.
138	Marx, Max, Color & Chemical Co	192-4 Coit St., Irvington, N. J.
139	Maschmeijer, A., Jr., Inc	43 West 16th St., New York, N. Y. (Newark, N. J.).
140	May, Otto B., Inc	198-214 Niagara St., Newark, N. J.
141	Maywood Chemical Works	100 West Hunter Ave., Maywood, N. J.
142	Mepham, Geo. S., Corporation	2001 Lynch Ave., East St. Louis, Ill.
143	Merck & Co., Inc	Rahway, N. J. (Rahway, N. J., Philadelphia, Pa.).
144	Mineree Corporation	120 Broadway, New York, N. Y. (Baltimore, Md.).
145	Monsanto Chemical Co	1700 South 2d St., St. Louis, Mo. (St. Louis, Mo., Monsanto, Ill., Everett, Mass., Anniston, Ala., Nitro, W. Va.).
146	Moser, Chas., Co	215-27 East 9th St., Cincinnati, Ohio.
147	Mutual Chemical Co. of America	270 Madison Ave., New York, N. Y. (Jersey City, N. J.).
148	National Aniline & Chemical Co., Inc	40 Rector St., New York, N. Y. (Buffalo, N. Y.).
149	Naugatuck Chemical (division of United States Rubber Products, Inc.).	1790 Broadway, New York. (Naugatuck, Conn.).
150	Neville Co	Neville Island, Pittsburgh, Pa.
151	Newport Industries, Inc	P. O. Box 1612, Pensacola, Fla.
152	New York Color & Chemical Co., Inc. (division of American Dyewood Co.).	100 East 42d St., New York, N. Y. (Belleville, N. J.).
153	New York Quinine & Chemical Works, Inc.	99-117 North 11th St., Brooklyn, N. Y.
154	Niacet Chemicals Corporation	4700 Pine Ave , Niagara Falls, N. Y.
155	Niagara Chlorine Products Corporation	Mill St., Lockport, N. Y.
156	Niagara Smelting Corporation	420 Lexington Ave., New York, N. Y. (Niagara Falls, N. Y.).
157	Niagara Wall Paper Co	Walnut Ave. and 2d St., Niagara Falls, N. Y.
158	Nord & Schulich, Inc	Foot of Blanchard St., Newark, N. J.
159	Northwestern Chemical Co	1263 North 70th St., Wauwatosa, Wis.
160	Novocol Chemical Manufacturing Co., Inc.	2923 Atlantic Ave., Brooklyn, N. Y.
161	Ohio-Apex, Inc	Nitro, W. Va.
162	Ohio Chemicals, Inc	475 Dorchester Rd., Akron, Ohio.
163	Oldbury Electro Chemical Co	P. O. Box 346, Niagara Falls, N. Y.
164	Organic Chemicals, Inc	211 East 19th St., New York, N. Y.
165	Patent Chemicals, Inc	57 Wilkinson Ave., Jersey City, N. J.
166	Peaslee-Gaulbert Paint & Varnish Co	15th and Lytle Sts., Louisville, Ky.
167	Peerless Color Co	521-35 North Ave., Plainfield, N. J.
168	Pennsylvania Coal Products Co	Petrolia, Pa.
169	Pfanstiehl Chemical Co	104 Lakeview Ave., Waukegan, Ill.
170	Pfizer, Chas. Co	81 Maiden Lane, New York, N. Y. (Brooklyn, N. Y.).
171	Pharma Chemical Corporation	949 Broadway, New York, N. Y. (Bayonne, N. J.).
172	Philadelphia Gas Works Co	1800 North 9th St., Philadelphia, Pa.
173	Phoenix Color & Chemical Co	24 Van Houten St., Paterson, N. J.
174	Pitman-Moore Co., Inc	1220 Madison Ave., Indianapolis, Ind.
175	Pittsberg Chemical Co	703 Market St., San Francisco, Calif. (Los Angeles, Calif.)
176	Pittsburgh Plate Glass Co	235 East Pittsburgh Ave., Milwaukee, Wis.
177	Plaskon Co., Inc	2112 Sylvan Ave., Toledo, Ohio.
178	Portland Gas & Coke Co	Public Service Bldg., Portland, Oreg.
179	Poughkeepsie Dyestuff Corporation	77 North Water St., Poughkeepsie, N. Y.
180	Publicker, Inc	260 South Broad St., Philadelphia, Pa.
181	Pylam Products Co., Inc	799 Greenwich St., New York, N. Y. (Norwalk, Conn.).
182	Pyridium Corporation	21 Grey Oaks Ave., Nepera Park, N. Y.
183	Quaker Oats Co	141 West Jackson Blvd., Chicago, Ill. (Cedar Rapids, Iowa).
184	Rauh, Robert, Inc	480 Frelinghuysen Ave., Newark, N. J.
185	Reilly Tar & Chemical Corporation	1615 Merchants Bank Bldg., Indianapolis, Ind. (plants throughout the United States).
186	Republic Creosoting Co	1615 Merchants Bank Bldg., Indianapolis, Ind. (plants throughout the United States).
187	Resinox Corporation	230 Park Ave., New York, N. Y. (Edgewater, N. J.).
188	Rogers, Allen E., Laboratories, Inc	72 Grand Ave., Brooklyn, N. Y.
189	Ruberoid Co	500 Fifth Ave., New York, N. Y. (Erie, Pa., Joliet, Ill.).
190	Salvo Chemical Corporation	Rothschild, Wis.
191	Schering & Glatz, Inc	113 West 18th St., New York, N. Y.
192	Seydel Chemical Co	86 Forrest St., Jersey City, N. J.
193	Sharp & Dohme, Inc	640 North Broad St., Philadelphia, Pa.
194	Sharples Solvents Corporation	23d and Westmoreland Sts., Philadelphia, Pa. (Wyandotte, Mich.).
195	Sheffield By-Products Co	524 West 57th St., New York, N. Y. (Hobart, N. Y.).
196	Shell Chemical Co	100 Bush St., San Francisco, Calif. (Martinez and Dominguez, Calif.).
197	Sherwin-Williams Co	101 Prospect Ave., N. W., Cleveland, Ohio (Chicago, Ill.).
198	Simons, Harold L., Inc	11-25 44th Rd., Long Island City, N. Y.
199	Sinclair & Valentine Co	611 West 129 th St., New York, N. Y.
200	Smith, Kline & French Laboratories	105 North 5th St., Philadelphia, Pa.
201	Solvay Process Co	Syracuse, N. Y. (Geddes, N. Y.).
202	Southern Dyestuff Corporation	P. O. Box 1045, Charlotte, N. C.
203	Squibb, E. R., & Sons	745 Fifth Ave., New York, N. Y. (Brooklyn, N. Y., New Brunswick, N. J.).
204	Standard Alcohol Co	26 Broadway, New York, N. Y. (Linden, N. J.).

Directory of manufacturers of dyes and other synthetic organic chemicals, 1937—Continued

No.	Name of company	Office address (location of plant given in parentheses if not in same city as office)
205	Standard Naphthalene Products Corporation.	Jacobus Ave., South Kearny, N. J.
206	Standard Ultramarine Co	Huntington, W. Va.
207	Stange, William J., Co	2536 West Monroe St., Chicago, Ill.
208	Sun Chemical & Color Co. (division of General Printing Ink Corp.)	309–21 Sussex St., Harrison, N. J. (East Rutherford and Harrison, N. J.)
209	Swann & Co	3205 Avenue B, Birmingham, Ala.
210	Synthetic Chemicals, Inc	57 Wilkinson Ave., Jersey City, N. J.
211	Synthetical Laboratories	5558 Ardmore Ave., Chicago, Ill.
212	Taylor Chemical Corporation	Phillipsburg, N. J. (Wyandotte, Mich., Penn Yan, N. Y.)
213	Taylor Fibre Co	P. O. Box 470, Norristown, Pa. (Betzwood, Pa.).
214	Todd, A. M., Co	1717 Douglas Ave., Kalamazoo, Mich.
215	Trubek Laboratories, Inc	State Highway No. 2, East Rutherford, N. J.
216	Turner & Heller Co	36 Barry St., Hyde Park, Mass.
217	Uhlich, Paul, & Co., Inc	157 Chambers St., New York, N. Y. (Brooklyn, N. Y.)
218	United Color & Pigment Co., Inc	McClellan St., Newark, N. J.
219	U. S. Industrial Chemical Co	60 East 42d St., New York, N. Y. (Baltimore, Md.).
220	Valentine & Co., Inc	11 East 36th St., New York, N. Y. (Brooklyn, N. Y.).
221	van Ameringen-Haebler, Inc	315 Fourth Ave., New York, N. Y. (Elizabeth, N. J.).
222	Van Dyk & Co., Inc	57 Wilkinson Ave., Jersey City, N. J.
223	Varcum Chemical Corporation	P. O. Box 433, Niagara Falls, N. Y.
224	Verona Chemical Co	26 Verona Ave., Newark, N. J.
225	Victor Chemical Works	141 West Jackson Blvd., Chicago, Ill. (Chicago Heights, Ill.).
226	Virginia Smelting Co	West Norfolk, Va.
227	Warner-Jenkinson Manufacturing Co	2526 Baldwin St., St. Louis, Mo.
228	Watertown Manufacturing Co	127 Echo Lake Rd., Watertown, Conn.
229	Westvaco Chlorine Products Corporation	405 Lexington Ave., New York, N. Y. (South Charleston, W. Va.).
230	White Tar Co., of N. J., Inc	1201 Koppers Bldg., Pittsburgh, Pa. (Kearny, N. J.).
231	Wilhelm, A., Co. (division of Glidden Co.)	Third and Bern Sts., Reading, Pa.
232	Wolff Alport Chemical Corporation	1127 Irving Ave., Brooklyn, N. Y.
233	Young Aniline Works, Inc	2701 Boston St., Baltimore, Md.
234	Zinsser & Co., Inc	Hastings-on-Hudson, N. Y.