

35 Dyestuffs and pigments

This Report on the Dyestuffs and Pigments Industry relates to establishments engaged wholly or mainly in manufacturing synthetic dyestuffs, including dyestuffs intermediates, vegetable dyes and tanning extracts, pigment dyestuffs and lakes and inorganic pigment colours. Confectioners' colours are excluded.

This industry corresponds to minimum list heading 277 in the Standard Industrial Classification (Revised 1968) which has been used for the first time as a basis of classification in the 1968 Census.

The industry corresponds to the Dyestuffs Industry (Part 25) and the Pigments sub-division of the General Chemicals Industry (Part 27) in the Reports on the last detailed Census of Production for 1963.

Throughout this Report the figures given for 1963 have been reclassified, as far as possible according to the Standard Industrial Classification (Revised 1968) so that data for 1963 and 1968 are on the same industrial basis. However the reclassification of small firms, which provided limited information only, has been arbitrary.

In interpreting the data in the tables it is essential to bear in mind the notes and definitions which appear on pages (i) to (iv).

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(c) Including services rendered to other organisations (amounts charged for hiring out plant, machinery or other goods, for providing transport, or for technical or other services rendered).

(d) Administrative, technical and clerical employees.

(e) Excluding expenditure for establishments not yet in production.

(f) Acquisitions less disposals.

TABLE 1 Industry summary, 1963 and 1968
United Kingdom (a) (b)

	Unit	All establishments		
		1963	1968	
Number of enterprises	No.	74	71	
Number of establishments	"	94	86	
Gross output	£'000	111,573	144,982	
Net output	"	51,457	70,830	
Net output per head	£	2,093	3,165	
Sales and work done	£'000	goods produced and work done (c)	102,858	130,864
		merchanted goods and canteen takings	7,699	10,657
Purchases	"	materials for use in production and packaging and fuel	51,907	63,911
		goods for merchandising and canteen purchases	6,031	8,997
Payments to other organisations	"	for work done on materials given out	94	90
		for transport by road	1,688	2,124
		by rail and other means excluding postal services			129
Stocks and work in progress	"			
Total stocks and work in progress	"	change during year	+ 619	+ 4,560
		at end of year	32,506	43,968
Goods on hand for sale	"	change during year	+ 915	+ 3,070
		at end of year	19,291	26,960
Work in progress	"	change during year	+ 101	+ 392
		at end of year	2,255	3,976
Materials, stores and fuel	"	change during year	- 396	+ 1,099
		at end of year	10,960	13,032
Number employed on average during the year	Th.	total, including working proprietors	24.6	22.4
		operatives	15.2	12.8
		other employees (d)	9.4	9.5
Wages and salaries	£'000	of operatives	12,343	14,570
		of other employees (d)	10,469	14,500
Capital expenditure (e)	"			
Total	"	8,069	14,473	
New building work	"	1,646	1,130	
Land and existing buildings (f)	"	- 114	332	
Plant and machinery (f)	"	6,475	12,869	
Vehicles (f)	"	61	142	

(a) For 1968, estimates for establishments not making satisfactory returns and for small establishments, from which only employment data were collected, accounted for 2 per cent. of the total figures in which they were incorporated: of this, unsatisfactory returns accounted for a negligible amount. A similar situation existed in 1963.

(b) The following information relates to small establishments (employing fewer than 25 persons) in this industry. It includes an estimate for small establishments not making satisfactory returns.

	1963	1968
Number of establishments	43	43
Average number employed:		
Working proprietors	51	35
Other persons employed	354	429

Footnotes continued on page 35/2.

TABLE 2 Analysis by size of establishment within the industry, 1968

(i) Output and employment

All establishments: United Kingdom

Number employed on average during the year by the establishment (a)	Estab-lish-ments	Enter-prises (b)	Total number employed on average during the year (a)	Gross output	Net output	Net output per head
	Number	Number	Number	£'000	£'000	£
1-5	13	13	47	..	..	..
6-10	6	6	53	..	..	..
11-24	20	18	338	..	..	..
25-49	8	8	309	1,869	648	2,096
50-99	10	9	693	6,092	1,973	2,847
100-199	9	7	1,360	8,271	3,582	2,634
200-299	4	4	884	7,280	2,609	2,951
300-749	3	3	1,308	10,578	5,168	3,951
750-999	3	3	2,711	17,409	8,383	3,092
1,000 and over	5	4	14,651	90,544	47,015	3,209
Unsatisfactory returns	5	4	26	..	..	..
Total	86	71	22,380	144,982(c)	70,830(c)	3,165(c)

(ii) Employees, wages and salaries

All establishments: United Kingdom

Number employed on average during the year by the establishment (a)	Employees		Wages and salaries		Wages and salaries per head	
	Oper-atives	Others (d)	Oper-atives	Others (d)	Oper-atives	Others (d)
	Number	Number	£'000	£'000	£	£
1-5	..	..	..	..	..	..
6-10	..	..	..	..	..	..
11-24	..	..	..	..	..	..
25-49	186	120	155	166	836	1,381
50-99	488	205	429	262	879	1,277
100-199	881	476	857	628	973	1,319
200-299	537	347	475	488	885	1,405
300-749	719	589	833	898	1,159	1,525
750-999	1,663	1,048	1,814	1,450	1,091	1,384
1,000 and over	8,106	6,544	9,726	10,335	1,200	1,579
Unsatisfactory returns	..	..	..	..	..	..
Total	12,830(c)	9,509(c)	14,570(c)	14,500(c)	1,136(c)	1,525(c)

(a) Including working proprietors.

(b) The sum of the figures for the size groups exceeds the total for the industry to the extent that enterprises made returns for establishments in more than one size group.

(c) Including estimates for establishments employing fewer than 25 persons and for establishments not making satisfactory returns.

(d) Administrative, technical and clerical employees.

TABLE 3 Percentage analysis of employees, by age and sex, 1969 (a)

All establishments: United Kingdom

Ages	Males	Females	All employees
	Per cent.	Per cent.	Per cent.
Under 18	1	1	2
18 and over	83	15	98
All ages	84	16	100

Source: Department of Employment

(a) The percentages relate to the numbers employed (excluding working proprietors) at June 1969, the earliest date for which the information is available on the basis of the Standard Industrial Classification, (Revised 1968).

Footnotes to Table 4.

- (a) Some establishments employing fewer than 25 persons were included in returns for larger establishments. These amounted to 2 establishments in 1968 and 3 in 1963.
- (b) The method of classifying returns to sub-divisions of the industry is explained in the notes; the characteristic products of each sub-division are identified in Table 5.
- (c) Including services rendered to other organisations (amounts charged for hiring out plant, machinery or other goods, for providing transport, or for technical or other services rendered).
- (d) Characteristic products relate only to sub-divisions of the industry.
- (e) For sub-divisions of the industry, this is the ratio of sales of characteristic products to total sales of goods produced and work done. For the industry as a whole, this is the ratio of total sales of principal products by the industry to total sales of goods produced and work done.
- (f) Administrative, technical and clerical employees.
- (g) Excluding expenditure for establishments not yet in production.
- (h) Acquisitions less disposals.

TABLE 4 Analysis of larger establishments, 1963 and 1968

Establishments employing 25 or more persons: Analysis of returns received, United Kingdom (a)

	Unit	Sub-divisions of the industry (b)				Total	
		Dyestuffs		Pigments		1963	1968
		01	02	1963	1968		
Number of enterprises	No.	15	15	19	17	34	32
Number of establishments	"	27	20	27	25	54	45
Gross output	£'000	72,944	95,044	36,919	47,262	109,862	142,307
Net output	"	34,259	47,156	16,409	22,367	50,668	69,523
Net output per head	£	2,034	2,985	2,227	3,625	2,093	3,165
Sales and work done	£'000	65,122	83,437	36,159	45,013	101,281	128,449
Sales of characteristic products	"	6,871	8,903	710	1,557	7,581	10,460
Index of specialisation (e)	Per cent.	39,853	49,646	30,875	42,700	(d)	(d)
Purchases	£'000	61	60	85	95	75	77
Payments to other organisations	"	32,453	39,726	18,659	23,006	51,112	62,732
Stocks and work in progress	"	5,167	7,387	771	1,444	5,938	8,831
Goods on hand for sale	"	80	80	13	9	92	89
Work in progress	"	917	1,317	746	767	1,663	2,085
Materials, stores and fuel	"	72	72	55	55	126	126
Number employed on average during the year	No.	+ 898	+ 2,370	+ 3	+ 643	+ 901	+ 3,013
Wages and salaries	£'000	16,109	21,446	2,886	5,016	18,995	26,462
Capital expenditure (g)	"	+ 53	+ 335	+ 46	+ 50	+ 99	+ 385
New building work	"	1,352	2,442	869	1,461	2,221	3,902
Land and existing buildings	"	- 68	+ 693	- 322	+ 386	- 390	+ 1,079
Plant and machinery	"	5,004	5,833	5,788	6,959	10,792	12,792
Vehicles	"	16,843	15,796	7,367	6,171	24,210	21,967
Disposals	"	10,057	8,794	4,906	3,819	14,963	12,613
Acquisitions	"	6,781	6,998	2,458	2,350	9,239	9,348
Disposals	"	8,187	10,024	3,996	4,300	12,183	14,324
Acquisitions	"	7,664	10,837	2,667	3,418	10,331	14,254
Disposals	"	814	1,140	814	1,126	814	1,136
Acquisitions	"	1,130	1,549	1,085	1,454	1,118	1,525
Disposals	"	1,060	721	561	388	1,621	1,109
Acquisitions	"	4(h)	109(h)	116(h)	216(h)	11	340
Disposals	"	3,869	7,815	2,565	4,940	6,435	12,756
Acquisitions	"	25	29	34	95	59	124
Disposals	"	79	182	35	57	115	239
Acquisitions	"	44	86	11	13	55	99
Disposals	"						

For notes to this table - see page 35/5.

TABLE 5 Sales of principal products of the industry by larger establishments, including sales by establishments classified to other industries, 1963 and 1968

Establishments employing 25 or more persons: Analysis of returns received, United Kingdom

Industry sub-division (a)		1963		1968		Enterprises	Entries
		Quantity	Value	Quantity	Value		
		Th.cwt.	£'000	Th.cwt.	£'000		
01	Synthetic organic dyestuffs intermediates (including aniline and aniline oil)	749	8,218	947	8,613	13	16
01	Finished synthetic organic dyestuffs and preparations for dyeing; fluorescent brightening agents (b)						
	Acid (c)	142	5,757	159	7,464	9	11
	Azoic (c)	24.9	975	11.0	516	*	*
	Basic (c)	60.6	2,280	52.3	2,310	7	8
	Direct (c)	139	3,242	155	4,223	6	7
	Disperse (d)	42.2	3,397	50.5	6,136	5	6
	Mordant (e) (f)	95.8	2,094	62.1	1,481	7	9
	Reactive dyes and fluorescent brightening agents (g) (h)	62.4	4,392	143	9,921	6	7
	Solvent (c)	..	9,249	49.6	1,657	5	7
	Other (i)			..	7,264	8	11
	Total finished synthetic organic dyestuffs and preparations for dyeing; fluorescent brightening agents		31,386		40,970	..	..
01	Blends of purchased dyestuffs and household dyes	..	1,197	17.5	1,492	8	9
01	Vegetable tanning and dyeing extracts	230	536	188	600	*	*
02	Pigments (whether used for colouring or not)	Th.tons		Th.tons			
	Earth colours, processed or powdered (including ochres and natural iron oxide, but excluding blacks)	23.7	848	20.4	936	8	8
	Inorganic pigment colours, pure or reduced, dry and in pulp form						
	Chromium pigments (including mixed pigments, eg lead greens and zinc greens)	10.2	2,163	10.0	2,694	6	8
	Iron blues	..	3,563	0.1	17	*	*
	Other (except lead oxides) (i)			..	3,709	5	7
	Iron oxides, synthetic	10.9	774	14.2	1,004	7	7
	Lithopone, dry	23.8	1,294	-	-	-	-
	Synthetic organic pigments, pure or reduced	Th.cwt.		Th.cwt.			
	Pigment dyestuffs (including toners)	114	6,710	200	12,939	12	14
	Lakes	Th.tons		Th.tons			
	Lakes	1.3	555	..	372	5	6
	Unclassified	..	228	-	-	-	-

Continued on next page.

TABLE 5 (continued)

Industry sub-division (a)	1963		1968			
	Quantity	Value	Quantity	Value	Enterprises	Entries
	Th.tons	£'000	Th.tons	£'000	Number	Number
02 Pigments (whether used for colouring or not) (continued)						
Titanium dioxide	125	20,378	148	25,937	*	*
White lead, dry and ground (including ground in oils in terms of dry content)	7.5	726	..	781	*	*
Zinc oxide	40.2	2,821	33.0	3,266	6	8
Total pigments		40,060		51,752	..	..
Other products	..	1,240	..	101	*	*
Waste products	..	151	..	384	12	15
Work done		30		55	6	7
Total		82,818		104,071	..	..
Sales in other industries (see Table 6)		6,357		5,387	..	..
Principal products of this industry sold by establishments in the industry		76,461		98,684	32	38(j)

(a) The number given is that of the sub-division of which the item is a characteristic product. The sales shown are total sales by larger establishments, not merely sales by establishments classified to the sub-division.

(b) For 1963 fluorescent brightening agents were not specifically included.

(c) In terms of domestic standard powder strength.

(d) In terms of 100 per cent. pure dye content.

(e) In terms of domestic standard powder strength, except for alizarine red which is in terms of 100 per cent. pure dye content.

(f) For 1963 described as chrome and mordant (including alizarine).

(g) In terms of standard weight.

(h) For 1963 described as reactive dyes and optical bleaches (optical whitening agents).

(i) For 1963 includes unclassified.

(j) This figure represents the total number of returns made for larger establishments in this industry which is less than the total number of establishments shown in Table 4 on account of combined returns covering more than one establishment.

TABLE 6 Sales of principal products of the industry by larger establishments classified to other industries, 1963 and 1968

Establishments employing 25 or more persons:
Analysis of returns received, United Kingdom

	1963		1968			Principal industries in which produced (a)
	Quantity	Value	Quantity	Value	Entries	
	Th.cwt.	£'000	Th.cwt.	£'000	Number	
Synthetic organic dyestuffs intermediates (including aniline and aniline oil)	69.7	1,189	35.1	517	5	28,29,40
Finished synthetic organic dyestuffs and preparations for dyeing; fluorescent brightening agents, household dyes, and vegetable tanning and dyeing extracts	..	581	..	1,751	7	28,29,40
Pigments (whether used for colouring or not)						
Inorganic pigment colours pure or reduced, dry and in pulp form	..	2,479	1.8	848	*	27,29
Synthetic organic pigments pure or reduced and other pigments	..	2,107	..	2,270	13	27,29,34,48
Total		6,357		5,387	..	

(a) The references given are to the list of industries at the front of this report.

TABLE 7 Sales of other than principal products by larger establishments in the industry, 1963 and 1968

Establishments employing 25 or more persons:
Analysis of returns received, United Kingdom

	1963	1968
	Value	Value
	£'000	£'000
Inorganic chemicals	2,509	2,027
Mixtures of inorganic and organic chemicals	8,397	10,809
Miscellaneous chemical products	1,729	895
Other goods	11,591	15,466
Services rendered to other organisations (a)	595	568
Total value of goods sold without having been subjected to any manufacturing process (merchanted or factored)	7,188	10,070
Canteen takings	393	390
Total	32,402	40,225

(a) Amounts charged for hiring out plant, machinery or other goods, for providing transport, or for technical or other services rendered to other organisations.

TABLE 8 Production of certain principal products of the industry by larger establishments, 1963 and 1968

This table is not applicable to this industry.

TABLE 9 Purchases by larger establishments of selected principal products of the industry, 1968

This table is not applicable to this industry.

TABLE 10 Purchases by larger establishments in the industry, 1963 and 1968

Establishments employing 25 or more persons: Analysis of returns received, United Kingdom

	1963		1968	
	Quantity	Cost	Quantity	Cost
Materials for use in production		£'000		£'000
Vegetable materials for manufacture of tanning and dyeing extracts	..	238	..	400
Animal and vegetable oils and fats (a)	..	278	..	320
Titanium ores			..	3,365
Natural iron oxides and earth colours			..	509
Other natural minerals		(b)	..	5,969
Oil refinery products other than fuel and lubricants (white spirit, solvents, etc)			..	115
General chemicals (c)				
Inorganic (including inorganic gases)				
Sulphuric acid	..	693	..	726
Other inorganic acids	..	774	..	756
Sodium hydroxide (caustic soda)	..	1,043	..	1,137
Ammonia, synthetic and by-product (d)	..	359	..	480
Barium compounds			..	85
Cadmium compounds			..	925
Chromium compounds			..	750
Aluminium compounds	..	8,652	..	679
Sodium carbonate and bicarbonate			..	403
Zinc compounds			..	399
Other inorganic substances			..	5,558
Organic (including dyestuffs intermediates and organic gases)				
Phthalic anhydride	..	670	..	486
Other organic acids, acid anhydrides and acid chlorides (e)	..	825	..	1,488
Alcohols, mono-, di-, tri- and polyhydric, except glycerol (f)	..	617	..	1,154
Cyclic hydrocarbons (other than for use as fuels)				
Benzene (g)	..	255	..	951
Toluene			..	786
Xylenes	..	879	..	36
Napthalene (crystallisation point 77.5°C and over) (h)	..	340	..	462
Aldehydes			..	245
Halogenated derivatives of hydrocarbons			..	818
Sulphonated, sulphated, nitrated and nitrosated derivatives of hydrocarbons			..	393
Heterocyclic compounds (eg pyridine, carbazole)	..	11,224	..	500
Amines, their salts and their halogenated, sulphonated, nitrated and nitrosated derivatives			..	3,813
Phenol, other phenols, their salts and their halogenated, sulphated, nitrated and nitrosated derivatives			..	1,198
Other organic chemicals			..	6,219

Continued on next page.

TABLE 10 (continued)

	1963		1968	
	Quantity	Cost	Quantity	Cost
Materials for use in production (continued)		£'000		£'000
General chemicals (continued)				
Other chemicals (eg mixtures of inorganic and organic chemicals)				
Surface active materials (other than washing or scouring preparations) including wetting and emulsifying agents, sulphonated or sulphated oils, alcohols and hydrocarbons (i)	..	311	..	152
Bleaching materials, including bleaching powder, hydrosulphites, hydrochlorites, peroxides (excluding hydrogen peroxide), peroxy salts and compounded bleaching agents	..	302	..	221
Other			..	473
Dyestuffs (for blending or other further processing)	..	2,386	..	2,264
Pigments for blending or other further processing (except for natural iron oxides and earth colours)	..	(b)	..	1,040
Paint and varnish (including lacquers and stains)	..	(b)	Th.gal. 36	54
Lubricating oils and greases	Th.gal. 154 Th.cwt. 0.8	34 4	159 0.7	37 5
Replacement parts for firms' own machinery, plant and vehicles, and accessories and consumable tools bought as replacement				
Tyres and other spare parts for firms' own road goods vehicles	..	2,046	..	30
Other			..	2,422
All other materials for use in production	..	11,479	..	4,926
Packaging materials	Thousands		Thousands	
Metal barrels, kegs and drums	1,285	1,317	1,613	2,073
Containers wholly or mainly of wood (including plywood boxes and drums), baskets and wickerwork crates	..	135	..	117
Plastic moulded and fabricated containers (including closures and inserts) with a capacity exceeding 1 gallon	..	1,228	..	109
All other packaging materials			..	1,592
Fuel and electricity (j)	Th.tons		Th.tons	
Coal	477	2,269	382	2,003
Coke (including screenings) and manufactured fuel	32.8	193	31.9	137
Derv fuel and motor spirit for use in road vehicles	..	58	..	97
Other liquid fuels (including creosote/pitch mixtures, etc and liquefied petroleum gases)	Th.gal. 23,015	1,041	Th.gal. 36,179	1,663
Gas	Th.therms 1,866	126	Th.therms 1,577	119
Electricity	Th.kWh 267,959	1,339	Th.kWh 369,911	2,054

TABLE 10 (continued)

	1963		1968	
	Quantity	Cost	Quantity	Cost
Fuel and electricity (j) (continued)		£'000		£'000
All other fuels	..	(k)	..	20
Total cost of materials and fuel		51,112		62,732
Goods purchased for merchanting		5,602		8,451
Canteen purchases		337		380
Total cost of purchases		57,051		71,563

- (a) For 1963 described as 'Vegetable and seed oils'.
 (b) Included with 'All other materials for use in production' for 1963.
 (c) For 1963 described as 'Heavy chemicals (acids, alkalis, alcohols, other inorganic and organic chemicals, compressed gases, etc)'.
 (d) For 1963 described as 'Ammonia (liquor and anhydrous)'.
 (e) For 1963 described as 'Organic acids' only.
 (f) For 1963 described as 'Alcohols (including methylated spirits but excluding sulphonated or sulphated alcohols)'.
 (g) For 1963 described as 'Benzole refined (all grades)'.
 (h) For 1963 described as 'Naphthalene' only.
 (i) For 1963 described as 'Surface-active material (including sulphonated or sulphated alcohols and oils, quaternary ammonium compounds, etc)'.
 (j) The total quantity of electricity generated in establishments employing 25 or more persons in this industry was 192,549 Th.kWh in 1963 and 190,016 Th.kWh in 1968.
 (k) Not recorded separately for 1963.

TABLE 11 Transport costs and employment of larger establishments, 1963 and 1968

Establishments employing 25 or more persons:
 Analysis of returns received, United Kingdom

	Unit	1963	1968
Average number mainly employed on transport	No.	101	127
Transport costs			
Wages and salaries	£'000	81	150
Derv fuel and motor spirit	"	58	97
Tyres and other spare parts for road goods vehicles	"	..	30
Payments to other organisations for transport	"	1,663	2,085
by road			
by rail and other means excluding postal services			126
Costs of operating road goods vehicles			
Insurance	"	7	6
Vehicle licences	"	6	11
Depreciation	"	51	37
Payments to other organisations for repairs and maintenance	"	26	23
Total	"	1,892(a)	2,565

(a) Excluding tyres and other spare parts for road goods vehicles, not collected separately for 1963.

TABLE 12 Payments for certain services, etc by larger establishments, 1963 and 1968 (a)

Establishments employing 25 or more persons:
Analysis of returns received, United Kingdom

	Amounts payable	
	1963	1968
Repairs and maintenance to	£'000	£'000
Buildings	308	297
Road goods vehicles	26	23
Plant, machinery and other capital equipment	1,130	1,882
Insurance, licensing and depreciation of road goods vehicles (b)	64	54
Rates, excluding water rates	726	1,171
Hire of plant and machinery	96	313
Postage, telephone, telegrams, cables and telex (c)	235	399
Total	2,586	4,139

(a) No deduction is made for these payments to arrive at the figures of net output given in this report.

(b) For details see Table 11.

(c) Excluding telex for 1963.

TABLE 13 Percentage analysis of twelve-month periods covered by returns from larger establishments, 1968

Establishments employing 25 or more persons:
Analysis of returns received, United Kingdom

Year ended	Percentage of total returns received	Percentage of total number employed
1968	Per cent.	Per cent.
April (a)	0.0	0.0
May	0.0	0.0
June	2.6	0.2
July	0.0	0.0
August	0.0	0.0
September	0.0	0.0
October	5.3	5.6
November	5.3	0.9
December	57.9	80.8
1969		
January	0.0	0.0
February	0.0	0.0
March	28.9	12.5
April (b)	0.0	0.0
	100	100

(a) From 6 April.

(b) To 5 April.