

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS

CANBERRA.

OFFICIAL STATISTICS, COMMONWEALTH OF AUSTRALIA,

MANUFACTURING INDUSTRIES,

1939-40.

No. 3. CHEMICALS, DRUGS AND MEDICINES.

Prepared Under Instructions From

THE HONORABLE THE TREASURER

by

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Acting Commonwealth Statistician

21st May, 1941.

P R E F A C E.

1. Industries included in the Series: The list of industries included in this series is the same as in previous years. Summaries of the various industries will appear as the information becomes available and not necessarily in any given order. The following summaries have already been published: Numbers 1 and 2.
2. Classification of Factories: The classification of factories in Australia is based on the nature of the product. Where two or more distinct types of industrial activity are carried on in one establishment, factory proprietors are requested to furnish separate returns for each activity. In some instances, however, this is not practicable, and in such cases there is no alternative but to classify the factory according to its predominant activity. This difficulty is most acute in the Metal Trades industries (e.g. Engineering firms also producing Agricultural Implements, Stoves and Ovens, and/or Brass and Copper products), but it is also to be found in factories concerned with the treatment or manufacture of Skins, Leather, Clothing, Wood products and some other articles. In consequence, and to an extent which will vary with individual industries, the figures may include the subsidiary but extraneous activities of those establishments included in the industry, while they will exclude relevant activities which are subsidiary to the predominant activity of establishments classified to some other industry. This qualification is important in the case of Chemicals, Drugs and Medicines, the industry with which this summary is concerned.

Some of the items included in Table 4 are also the products of other Industries, namely, Chemical Fertilizer works and the Extraction and Refining of Metals and Alloys other than Iron and Steel. Of these Sulphuric Acid is the chief item.

3. Basis of the Statistics: The scope of the factory statistics is fully explained in Part I of the annual Production Bulletin.

Briefly, a "factory" is taken to be an industrial establishment in which four or more hands are employed or in which power other than hand is used.

All persons employed in the manufacturing activities of the factory are counted as factory employees. The figures relating to employment, therefore, exclude all those engaged in selling and distribution, such as salesmen, travellers, collectors, carters engaged solely on outward delivery, and retailing storemen. The figures do include, however, proprietors who work in their own factories and "out-workers".

The value of output is the wholesale selling value at the factory of goods made or processed during the year, including by-products. In addition, it includes the value of other work done, such as repair work, assembling and making up for customers.

The value of production is the value of output minus the cost of raw materials, containers, power, fuel, light, lubricants, water, tools replaced, and repairs to plant.

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Acting Commonwealth Statistician.

CHEMICALS, DRUGS AND MEDICINES.

The following table furnishes a summary of the principal statistics of the factories engaged in the manufacture of Chemicals, Drugs and Medicines in Australia for the period 1908 to 1938-39:-

1. CHEMICALS, DRUGS AND MEDICINES : AUSTRALIA, 1908 TO 1939-40.

Year	Number of Factories	Persons Employed (a)	Salaries and Wages Paid (b)	Power, Fuel and Light Used	Value of Other Materials Used	Value of Production	Value of Output
	No.	No.	£'000	£'000	£'000	£'000	£'000
1908	65	(c) 1,646	148	16	578	468	1,062
1913	79	(c) 1,589	149	17	440	453	910
1920-21	143	(c) 3,346	529	42	1,860	1,328	3,230
1928-29	163	(d) 3,561	699	86	1,971	2,163	4,220
1929-30	171	3,375	660	82	1,986	2,089	4,157
1930-31	172	3,164	592	71	1,964	1,892	3,927
1931-32	177	3,295	592	67	2,046	1,999	4,112
1932-33	182	3,524	613	77	2,121	2,083	4,281
1933-34	190	3,852	652	84	2,287	2,458	4,829
1934-35	203	4,251	713	91	2,441	2,639	5,161
1935-36	214	4,519	786	99	2,751	2,873	5,723
1936-37	225	4,928	849	107	2,949	3,307	6,363
1937-38	228	5,210	956	120	3,220	3,533	6,873
1938-39	238	5,346	1,012	121	3,404	3,827	7,352
1939-40	243	5,698	1,112	149	3,922	4,327	8,398

(a) Including Working Proprietors. (b) Exclusive of amounts drawn by Working Proprietors. (c) Average over period worked by factory. (d) For 1928-29 and succeeding years, the employment figures have been calculated on the basis of a whole year.

In the following table particulars of the industry are given for each State during the year 1939-40:-

2. CHEMICALS, DRUGS AND MEDICINES : STATES, 1939-40.

Particulars	New South Wales	Vic-toria	Queens-land	South Aus-tralia	Wes-tern Aus-tralia	Tas-mania	AUS-TRALIA
	No.	No.	No.	No.	No.	No.	No.
Number of Factories ..	138	105	12	13	11	4	243
Number Employed (a) -							
Males ..	1,697	973	113	310	158	24	3,275
Females ..	1,246	959	77	91	36	14	2,423
Total ..	2,943	1,932	190	401	194	38	5,698
Value of -							
Salaries and Wages Paid (b) ..	584,463	374,952	35,672	70,885	40,974	5,294	1,112,240
Fuel used ..	74,418	40,198	3,809	18,762	10,905	661	148,753
Materials etc. used ..	2,275,246	1,188,634	120,334	241,589	79,014	17,724	3,922,543
Production ..	2,694,770	1,243,337	102,104	146,387	125,477	14,657	4,326,732
Output ..	5,044,436	2,472,169	226,247	406,738	215,396	33,042	8,398,028
Land and Buildings ..	1,128,406	576,577	61,839	374,407	50,942	20,389	2,212,560
Plant and Machinery ..	632,352	363,624	35,075	690,778	154,126	12,576	1,888,531
H.P. of Engines Ordinarily in use ..	6,700	2,941	458	2,621	1,655	76	14,451

(a) Includes Working Proprietors. (b) Exclusive of amounts drawn by Working Proprietors.

Particulars of the average salary and wage paid to employees are shown in the following table together with the average values of output, production, etc. for each of the years indicated :-

3. AVERAGE SALARIES AND WAGES PAID, OUTPUT ETC. PER EMPLOYEE : AUSTRALIA, 1908 TO 1939-40.

Year	Salaries and Wages per Employee (a)	Value of Output per Person Engaged (b)	Value of Production per Person Engaged (b)	Ratio per cent. of Salaries and Wages to Value of Production
	£.	£.	£.	%
1908	91	645	284	31.61
1913	96	573	285	32.92
1920-21	161	265	397	39.81
1928-29	198	1,178	604	32.33
1929-30	200	1,232	619	31.61
1930-31	191	1,241	598	31.29
1931-32	184	1,246	607	29.59
1932-33	178	1,215	591	29.44
1933-34	173	1,254	638	26.51
1934-35	171	1,216	621	27.02
1935-36	174	1,239	622	27.36
1936-37	175	1,291	671	25.68
1937-38	187	1,319	678	27.05
1938-39	193	1,375	716	26.44
1939-40	199	1,474	759	25.71

(a) Excludes Working Proprietors and amounts drawn by them.

(b) Including Working Proprietors.

Particulars of the materials used and articles produced in the year 1939-40 are shown in the following table. The quantities and values shown here are those furnished by the establishments included in this Summary only. The figures do not include similar materials used or articles produced in establishments not classified with the group "Chemicals, Drugs and Medicines". Of these Sulphuric Acid is the chief item omitted.

4. MATERIALS USED AND ARTICLES PRODUCED : AUSTRALIA, 1939-40.

Particulars	Unit of Quantity	Quantity	Value £.
Materials Used			
Limestone ..	ton	10,522	7,537
Sea Salt ..	cwt.	295,649	17,383
Sulphuric Acid ..	ton	(a)	(a)
Sulphur ..	"	(a)	(a)
Alkali for Soda Crystals ..	cwt.	11,792	6,340
Essential Oils ..	lb.	312,906	54,392
Glycerine ..	"	(a)	(a)
Stearine ..	"	208,497	5,543
Wool Grease ..	"	34,020	860
Other Materials ..	-	-	(c)2,999,562
Total Value Materials Used:		Value only	(c)3,091,617
Articles Produced			
Acetylene Gas ..	cub.ft.	(a)	(c)
Oxygen ..	"	(a)	(a)
Cosmetic Creams ..	cwt.	9,225	250,074
Essences (Flavouring) ..	-	(b)	217,586
Pharmaceutical Products ..	-	(b)	3,443,847
Tooth Paste ..	-	(b)	238,184
Disinfectants including Phenyl ..	-	(b)	153,330
Insecticides ..	-	(b)	224,864
Poisons, Sprays and Weed Killers ..	-	(b)	139,254
Acids - Acetic ..	lb.	(a)	(a)
Hydrochloric - Consumed in own Works ..	"	(a)	(a)
For Sale or Stocks ..	"	(a)	(a)
Hydrogen Peroxide ..	gal.	(a)	(a)
Sodium Sulphate (Salt Cake and Glauber Salts) - Consumed in own Works ..	lb.	(a)	(b)
For Sale or Stocks ..	"	(a)	(a)
Sodium Carbonate (Soda Ash and Crystals) ..	cwt.	(a)	(a)
Other Articles ..	-	-	(c)3,730,889
Total Value of Output:		Value only	(c)8,398,028

(a) Information not available for publication.

(b) Not collected.

(c) Includes value of items marked (a).

The number of employees shown in Table 2 has been adjusted to represent the average employment over the whole year in those cases where short time was worked. In the following table the factories have been classified according to the average number employed during the actual period worked.

**5. FACTORIES CLASSIFIED ACCORDING TO HANDS EMPLOYED : AUSTRALIA
1908 TO 1939-39.**

Number of Persons Employed in each Factory	1908		1913		1920-21		1928-29		1938-39(a)	
	Number of Factories	Number Employed	Number of Factories	Number Employed	Number of Factories	Number Employed	Number of Factories	Number Employed	Number of Factories	Number Employed
Under 4 ..	1	3	8	20	13	29	19	37	43	93
4 ..	8	32	13	52	12	48	11	44	19	76
5 to 10 ..	20	145	23	163	54	390	57	407	65	450
11 to 20 ..	17	251	15	237	27	408	40	575	50	771
21 to 50 ..	10	279	14	457	20	643	17	572	35	1,138
51 to 100 ..	6	403	3	235	10	665	14	973	17	1,162
Over 100 ..	3	533	3	425	7	1,143	5	993	9	1,672
TOTAL:	65	1,646	79	1,589	143	3,346	163	3,601	238	5,362
Average Number Employed per Factory	25		20		23		22		23	

(a)-1939-40 not yet available.

Further details of employment in the industrial group "Chemicals, Drugs and Medicines" are furnished in the following three tables. In the first the employees have been classified according to the nature of their employment.

**6. PERSONS EMPLOYED CLASSIFIED ACCORDING TO THE GRADE OF OCCUPATION :
AUSTRALIA, 1908 TO 1939-40.**

Grade of Occupation	1908 (a)	1913 (a)	1920-21 (a)	1928-29 (b)	1939-40 (b)
	No.	No.	No.	No.	No.
Working Proprietors ..	37	41	60	57	98
Managers and Overseers ..	90	95	208	251	370
Clerical Staff ..	92	79	280	316	619
Engine Drivers and Firemen ..	59	46	76	70	83
Workers, Skilled and Unskilled	1,331	1,302	2,658	2,859	4,427
Other (Carters and Messengers)	37	26	64	28	101
TOTAL:	1,646	1,589	3,346	3,581	5,698

(a) Average over period of operation.

(b) Average over whole year.

The next table shows the actual number of persons employed (excluding Working Proprietors) on the pay-day nearest to the 15th of each month for the years 1938-39 and 1939-40.

**7. PERSONS EMPLOYED IN AUSTRALIA ON PAY-DAY NEAREST TO THE 15TH OF EACH MONTH
(WORKING PROPRIETORS EXCLUDED) : AUSTRALIA, 1938-39 AND 1939-40.**

Month	1938-39			1939-40		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
July ..	2,911	2,304	5,215	2,864	2,225	5,089
August ..	2,941	2,370	5,311	2,911	2,390	5,301
September ..	2,918	2,369	5,287	2,947	2,408	5,355
October ..	2,878	2,409	5,287	2,972	2,454	5,426
November ..	2,860	2,450	5,310	2,998	2,550	5,548
December ..	2,884	2,417	5,301	3,062	2,505	5,567
January ..	2,845	2,293	5,138	3,018	2,358	5,376
February ..	2,896	2,305	5,201	3,050	2,444	5,494
March ..	2,951	2,298	5,249	3,088	2,480	5,568
April ..	2,965	2,273	5,238	3,544	2,519	6,063
May ..	2,937	2,277	5,214	3,516	2,514	6,030
June ..	2,890	2,250	5,140	3,470	2,471	5,941
Average:	2,906	2,335	5,241	3,120	2,443	5,563

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The classification of employees according to age on or about the 15th June, 1940 is shown in the next table:-

8. PERSONS EMPLOYED CLASSIFIED ACCORDING TO AGE, JUNE, 1940.

Sex	Under 16 years	16 and under 21 years	Adults	Total
	No.	No.	No.	No.
Males	88	539	2,846	3,470
Per Cent. of Total	3%	15%	82%	100%
Females	205	1,106	1,160	2,471
Per Cent. of Total	8%	45%	47%	100%
Persons	293	1,645	4,006	5,941
Per Cent. of Total	5%	28%	67%	100%

Statistics of the power equipment of the factories included in this group are given in the next table. The details given include the rated horsepower of engines ordinarily in use together with those in reserve or idle for the years 1938-39 and 1939-40.

9. POWER EMPLOYED TO DRIVE MACHINERY : AUSTRALIA.

Class of Engine	Rated H.P. of Engines			
	Ordinarily in Use		In Reserve or Idle	
	1938-39	1939-40	1938-39	1939-40
Steam - Reciprocating	1,943	2,247	404	311
Turbine	38	1,675	-	1,675
Internal Combustion -				
Gas	90	90	-	-
Petrol or Other Light Oils	12	19	-	-
Heavy Oils	3	-	-	-
Water				
Total Prime Movers	2,086	4,031	404	1,986
Motors driven by electricity -				
Purchased	9,929	10,420	1,656	1,409
Own Generation	324	2,519	124	1,852
Total Electricity:	10,253	12,939	1,780	3,261
TOTAL POWER USED (a):	12,015	14,451	2,184	5,247

(a) without duplication.

Details of the quantities and values of the various items of power, fuel and light used are shown in the following table :-

10. POWER, FUEL, LIGHT, ETC. USED : AUSTRALIA, 1939-40.

Particulars	Unit of Quantity	Quantity	Value £.
Coal - Black	ton	24,788	32,686
Brown	"	219	375
Coke	"	6,055	8,711
Wood	"	36,025	6,051
Fuel Oil	gallon	918,729	15,666
Electricity	(a)	-	56,690
Gas	(a)	-	4,147
Other (Charcoal etc.)	(a)	-	4,056
Water used	(a)	-	16,753
Lubricating Oil	(a)	-	3,618
TOTAL:		Value only	148,753

(a) Value only available.

Particulars of the book values of premises and plant used for factory purposes as at the 30th June for each of the five years ended 1940 are shown in the next table. In addition, details of the values of additions and replacements made and depreciation allowed during the year 1939-40 are also shown. It should be noted that the amounts expended in Additions and Replacements refer to expenditure incurred by existing factories and do not include the costs of erecting and equipping new factories.

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latter items, however, are included with the book values shown at 30th June. The amounts shown for Depreciation are those returned by factories. Changes in the number of factories operating and other factors affect comparison from year to year.

11. VALUE OF LAND AND BUILDINGS, PLANT AND MACHINERY : AUSTRALIA, 1939-40.

Particulars	Land and Buildings	Plant and Machinery
	£.	£.
Additions and Replacements made during year (a)	75,587	210,535
Depreciation allowed during year (a)	32,876	152,549
Book Value (a) as at 30th June -		
1940 ..	2,212,560	1,888,531
1939 ..	1,817,727	1,253,967
1938 ..	1,677,485	1,119,992
1937 ..	1,635,188	1,080,969
1936 ..	1,556,254	986,700

(a) See Note above.

The next two tables furnish particulars of the values of imports and exports of a number of items included in the group "Chemicals, Drugs and medicines".

12. VALUE OF IMPORTS OF CHEMICALS, DRUGS AND MEDICINES : AUSTRALIA.

Item	1913	1920-21	1928-29	1938-39	1939-40
	£A.	£A.	£A.	£A.	£A.
Acids ..	93,248	394,048	170,096	134,059	159,202
Drugs and Medicinal Preparations ..	335,880	762,281	543,978	721,481	815,438
Sodium Salts ..	116,558	639,082	435,479	713,366	(d)
Cream of Tartar ..	163,079	415,526	147,588	21,640	31,354
Argol ..	(a)	(a)	(a)	253,705	184,181
Cyanides of Potassium and Sodium ..	(b)185,858	83,916	44,194	307,295	(d)
Dyes ..	34,287	500,464	148,315	456,397	601,572
Perfumery and Toilet Preparations	136,540	349,298	459,517	251,720	285,363
Essential Oils (Non-Spirituous) ..	67,373	148,492	139,432	151,888	180,499
All Other Chemicals and Drugs (c)	604,544	901,640	1,222,439	1,787,017	3,387,429
TOTAL:	1,757,367	4,194,747	3,311,038	4,803,568	5,645,038

(a) Not stated separately.

(b) Including Bromide Salts.

(c) Exclusive of

Fertilizers and Sulphur.

(d) Not available for publication.

Included with

All Other Chemicals and Drugs.

13. VALUE OF EXPORTS OF CHEMICALS, DRUGS AND MEDICINES : AUSTRALIA.

Item	1913	1920-21	1928-29	1938-39	1939-40
	£A.	£A.	£A.	£A.	£A.
Acids ..	4,584	18,259	8,708	27,632	29,620
Medicines ..	48,392	118,943	110,578	190,885	211,158
Sodium Salts ..	1,639	5,787	1,100	8,102	(b)
Cream of Tartar ..	1,548	11,631	43,021	31,146	32,840
Dyes ..	2,078	26,529	11,389	3,936	4,989
Perfumery and Toilet Preparations	7,213	26,209	27,696	43,014	42,385
Essential Oils (Non-Spirituous) ..	41,344	14,707	66,916	22,004	40,161
All Other Chemicals and Drugs (a)	45,123	413,695	336,083	401,905	644,888
TOTAL:	151,921	635,760	605,491	728,624	1,006,041

(a) Exclusive of Fertilizers and Sulphur. - (b) not available for publication. Included with All Other Chemicals and Drugs.

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The following table shows, for certain industries, the weekly minimum rates of wage and hours of labour in operation at the 30th June, 1940 as prescribed by State Industrial Tribunals in New South Wales, Victoria and Western Australia. Where no rate is shown it indicates that the particular occupation is not specifically provided for. Awards in respect of these industries do not appear to have been prescribed in the other States.

14. CHEMICALS, DRUGS AND MEDICINES

Minimum Weekly Rate of Wage and Hours of Labour as at 30th June, 1940.

Particulars	New South Wales		Victoria		Western Australia	
	Hrs.	Weekly Wage	Hrs.	Weekly Wage	Hrs.	Weekly Wage
Chemists - Manufacturing						
Warehouse employees.						
Departmental Managers ..	44	106/- & 109/-	44	109/- & 118/-	..	..
Travellers ..	44	101/- & 104/-	..	..	..	..
Salesmen ..	44	101/- & 104/-	44	91/6	..	..
Drug counter hands ..	44	96/- & 99/-	44	91/6	..	..
Drug checkers ..	44	96/- & 99/-	44	91/6	..	..
Foreman ..	..	..	44	109/- & 118/-	..	..
Assistant ..	..	..	44	91/6 & 101/-	..	..
Others ..	..	..	44	87/-	..	..
Juniors - Male ..	44	18/3 to 81/3	44	19/6 to 66/6	..	..
Juniors - Female ..	44	16/6 to 59/3	44	16/6 to 36/6	..	..
Factory employees ..						
Calculating and compounding	44	146/- & 149/-	..	..	..	..
Analytical ..	44	98/6 & 101/6	..	..	..	..
Manufacturing pills, hydro-	44	96/- & 99/-	44	91/6	..	..
gen peroxide etc. ..	44	99/- & 105/6	..	..	..	..
Shiftmen in ether room ..	44	85/6 & 88/6	..	..	..	..
Manufacturing raw material	44	..	..	..	..	..
Sheep Dip or Coal Tar -						
Foreman ..	..	..	44	96/-	..	..
Assistant ..	..	..	44	92/-	..	..
Other Departments -						
Foreman ..	..	..	44	107/- & 116/-	..	..
Assistant ..	..	..	44	91/6 & 102/-	..	..
Juniors - Male ..	44	17/6 to 68/3	44	19/6 to 66/6	..	..
Juniors - Female ..	44	16/3 to 49/6	44	16/6 to 36/6	..	..
Forewoman ..	..	..	44	63/3 & 65/3	..	..
Other Females ..	..	..	44	49/6	..	..
Cream of Tartar -						
Miller ..	44	101/6 & 104/6	..	..	..	..
Charge hand ..	44	101/6 & 104/6	..	..	..	..
Filter operators ..	44	91/6 & 94/6	..	..	..	..
Press operators ..	44	91/6 & 94/6	..	..	..	..
Cooking pan operators ..	44	91/6 & 94/6	..	..	..	..
Vacuum pan operators ..	44	91/6 & 94/6	..	..	..	..
Centrifugal Machine ..	44	91/6 & 94/6	..	..	..	..
Rollster operators ..	44	91/6 & 94/6	..	..	..	..
Argolmen engaged charging						
rollster ..	44	89/- & 92/-	..	..	..	..
All other adults ..	44	87/6 & 90/6	..	..	..	..
Juniors ..	44	42/1 to 68/4	..	..	..	..
Acids -						
Acetic Acid ..	44	93/-	..	..	44	95/8
Nitric Acid ..	44	99/6	..	..	44	95/8
Sulphuric Acid ..	44	99/6	..	..	44	89/8 to 95/8
Hydrochloric Acid ..	44	93/-	..	..	44	95/8
Muriatic Acid ..	44	99/6	..	..	44	95/8
Concentrating Acid ..	44	99/6	..	..	44	95/8
Battery Acid ..	44	93/-	..	..	44	95/8
Juniors ..	..	..	..	..	44	28/9 to 69/10

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