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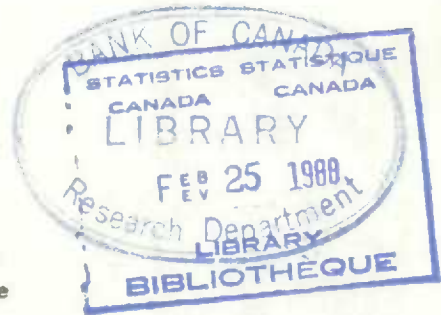
CANADA

MANUFACTURERS OF INDUSTRIAL CHEMICALS 1961

The list of firms normally included in this report has been omitted from this issue, along with certain tables. See introductory text for details.

ANNUAL CENSUS OF MANUFACTURES

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SYMBOLS

The interpretation of the symbols used in the tables throughout this publication is as follows:

- .. figures not available.
- ... figures not appropriate or not applicable.
- nil or zero.
- * revised figures.



EXPLANATORY NOTES

This report is one in a series of about 140 publications which present the results of the 1961 Census of Manufactures. Most reports in this series refer to specific industries, but there are summary reports for Canada and the provinces and for major industry groups. Implementation of the new definition of the establishment in the 1961 Census has resulted in certain changes and necessitated some adjustments to the statistics for previous years in order to maintain comparability of the data. (See following note on "Establishment".)

Industry statistics given in these reports refer to number of establishments, employees, salaries and wages, cost of materials, supplies, fuel and electricity, gross value of shipments, inventories and value added by manufacturing. Details of materials used and products shipped are also given. Descriptions of the principal industry statistics, with special reference to 1961, are as follows:

Period Covered

Firms are asked to submit figures for the calendar year, if at all possible, and most reports are on this basis. Financial year reports for periods differing from the calendar year are accepted in instances where the firms find it impossible to supply calendar year data from accounting records. However the data on employees, salaries and wages are requested on a calendar year basis in all cases.

Establishment

The reporting unit in the Census of Manufactures is the **establishment**. Beginning with the 1961 Census, the establishment is defined as follows:

The smallest unit which is a separate operating entity capable of reporting all the following:

- Materials and supplies used,
- Goods purchased for resale as such,
- Fuel and power consumed,
- Number of employees and their pay,
- Inventories,
- Shipments or sales.

The establishment is to be distinguished from smaller subdivisions or departments which do not have records which permit them to report all items required of an establishment. Prior to 1961, some establishments were required to submit two or more separate reports when they were engaged in operations which were classifiable to different industries. Beginning with 1961, separate reports for such operations will be required only in cases where accounting records can provide all the elements of principal statistics enumerated above. Special reporting arrangements were made with respondents when the acceptance of combined reports would have seriously affected the statistics for particular industries or areas. Where continuity of industry statistics was affected by this change in reporting procedures, adjustments to the data were made back to 1957 in order to maintain comparability of the series for recent years.

A manufacturing establishment is typically a factory, mill or plant principally engaged in manufacturing operations. Prior to 1961, the Census of Manufactures attempted to cover the manufacturing activities of all establishments, whether or not they were principally engaged in manufacturing operations. Beginning with the 1961 Census, establishments (accounting entities) which are not primarily engaged in manufacturing are no longer included as manufacturing establishments in the basic industry statistics. Again adjustments to the industry statistics were made to reflect the removal of such reporting units for the period 1957-1960. These reporting units are now listed as establishments in other Bureau industry surveys, such as Wholesale Trade, Construction, etc. In order, however, to maintain complete coverage of certain commodity items produced mainly in manufacturing establishments, many non-manufacturing establishments are now surveyed for commodity shipments only and the latter are included in those tables of industry reports showing shipments of certain commodities "from all industries".

Many firms have more than one manufacturing establishment. Such firms are requested to submit a separate Census of Manufactures report for each manufacturing establishment which can meet the reporting requirements described earlier.

Prior to 1961, the main emphasis in the Census of Manufactures was on manufacturing activity whereas, beginning with 1961, each establishment reports on the total operations carried out within its accounting boundaries (except income from investments such as rent, interest and dividends). However, data on different activities (manufacturing, selling, construction by own labour force etc.) are requested separately. The 1961 statistics in this report are confined to manufacturing activity in order to maintain comparability with previous years. In the 1962 reports it is planned to show both 1961 and 1962 data on the "total activity" basis in addition to the data on manufacturing operations.

Employees

Administrative and office employees include all executives and supervisory officials such as presidents, vice-presidents, secretaries, treasurers, etc., together with managers, professional and technical employees, superintendents and factory supervisors above the working foremen level, and clerical employees. Working owners and partners are also included in this category but will be shown separately in subsequent years.

Production and related workers include all other factory workmen whether paid on a monthly, weekly, hourly or piece-work basis. Working foremen doing work similar to that of the employees they supervise are included, as are maintenance, handling, warehousing and delivery staff. Employees on new construction work, in retail or wholesale operations, on outside piece work, etc, are not included.

Production workers are reported by months, an average for the year being obtained by summing the monthly figures and dividing by twelve. This procedure is followed even though the plant did not operate in all months. Figures on employment refer to the calendar year whether or not some establishments reported other data on a financial year basis.

Salaries and Wages

Salaries and wages refer to gross earnings of the employees described above, including salaries, wages, commissions, bonuses, the value of room and board where provided, deductions for income tax and social services such as sickness and unemployment insurance, pensions, etc., as well as any other allowances forming part of the employees' wages. Payments for overtime are included.

Salaries refer to amounts paid to administrative and office employees. Withdrawals by working owners or partners for normal living expenses for self and family are included with salaries, but will be shown separately in subsequent years. Wages refer to the amounts paid to production and related workers as defined above. Data on earnings refer to the calendar year whether or not some establishments reported other data on a financial year basis.

Cost of Fuel and Electricity

Figures for fuel refer to amounts actually used (including fuel used in cars and trucks), not to purchases unless the quantities are the same. Values refer to the laid-down cost at the establishment including freight, duty, etc.

Materials and Supplies Used

Figures represent quantities and laid-down cost values, at the establishment, of materials, supplies and components actually used during the year whether purchased from others or received as transfers from other plants of the reporting company. Amounts paid to other manufacturers for work done on materials owned by the reporting company are included. Returnable containers or any other items charged to capital account are not included. Fuels are not included. Goods bought from others or received as transfers from other plants or reporting companies for resale without further processing are not included. Maintenance and repair supplies not chargeable to capital account are included.

Factory Shipments

Factory shipments generally refer to shipments of goods made from own materials either in the reporting establishments or by other manufacturers on the basis of a charge to the reporting establishment for work done. All products and by-products shipped from the establishment are included whether for domestic use, export, or for government departments. Transfer shipments to sales outlets, distributing warehouses or to other manufacturing units of the reporting firm which are treated as separate establishments are included. Goods bought or received as transfers and resold without further processing are not included. Values are requested

on f.o.b. establishment basis, and do not include sales tax or excise duties. Values of containers not returnable are included. Amounts received in payment for work done on materials owned by others are included.

In a few industries such as shipbuilding, air craft, etc., where work on principal products extend over a relatively long period, the value of production is recorded rather than the value of shipments. For those industries production is computed from the value of deliveries of complete units during the year plus the value of work done during the year on unfinished units less the value of work done in previous years on finished units delivered in the year under review.

Inventories

Values represent the book value of manufacturing inventory. Figures consist of inventory at the plant and at warehouses or selling outlets which are treated as extensions of the plants for the purpose of reporting shipments.

Value added by Manufacturing

Value added is compiled by deducting the cost of materials, fuel and electricity consumed from the value of production (value of shipments adjusted for changes in the value of inventories of finished goods and goods in process). Value added is sometimes referred to as net production.¹

Standard Industrial Classification

The revised Standard Industrial Classification which was introduced with the 1960 Census of Manufactures provides for a breakdown of the universe into 140 industries arranged in 20 major groups compared with 135 industries in 17 major groups in the old classification which was used in the compilations for the years 1949 to 1959 inclusive. Full details are contained in the Standard Industrial Classification Manual, Catalogue No. 12-501, which is available from either the Queen's Printer or the Dominion Bureau of Statistics. Reporting establishments are classified or allotted to specific industries on the basis of the value of principal products made or shipped.

Establishments engaged solely in repair work are not included in manufacturing industries (except in the case of furniture, shipbuilding, boat building, aircraft and railroad rolling stock industries) but establishments principally engaged in assembling parts into complete units are included.

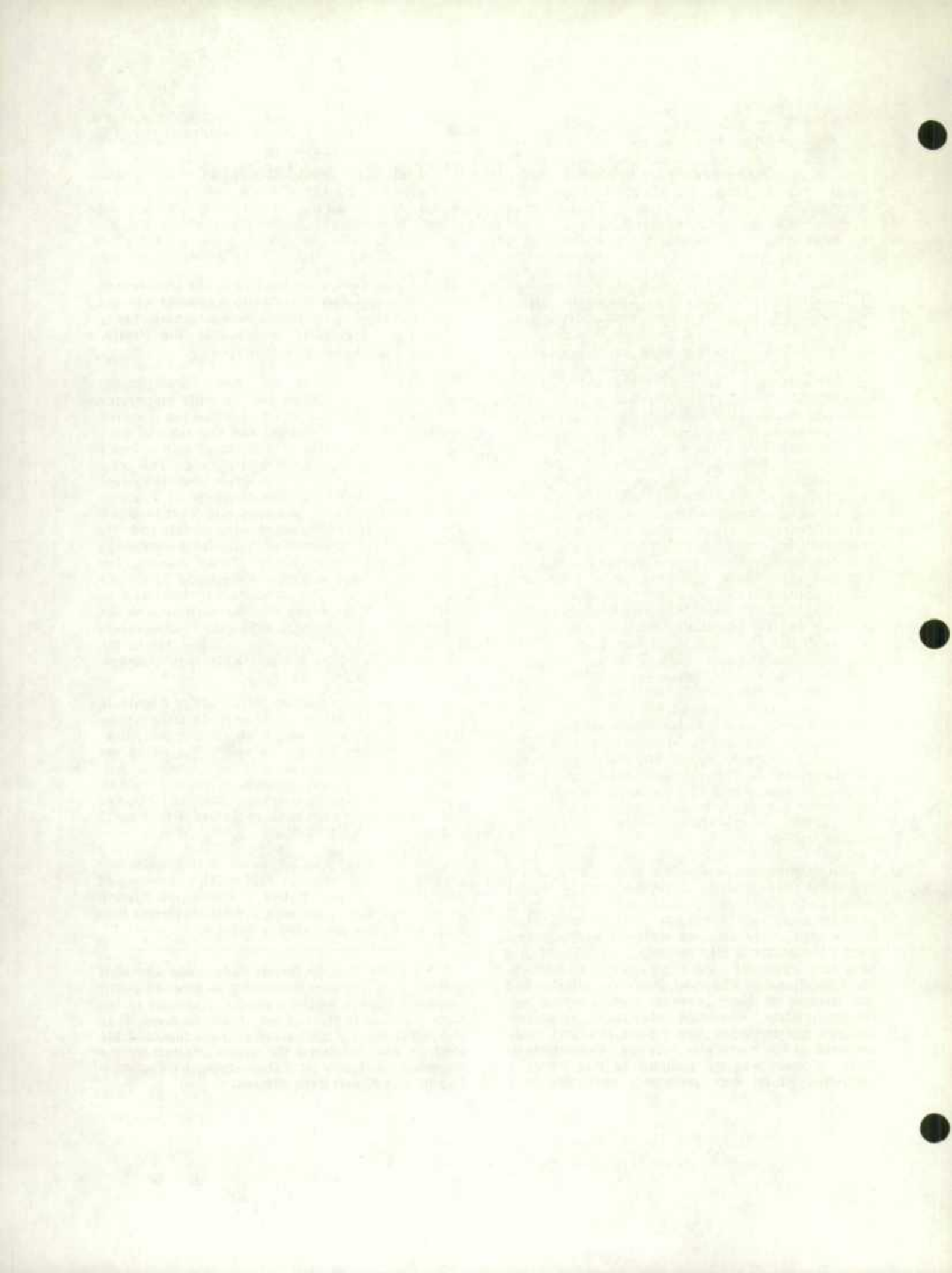
¹ To arrive at the National Accounts concept of "gross domestic product at factor cost", it would be necessary to subtract also the cost of advertising, insurance and other business costs which are not collected in the annual Census of Manufactures. Value added figures for the primary industries, manufacturing and construction are published in D.B.S. publication 61-202, Survey of Production.

Short Forms

Since 1949, in order to ease the reporting burden for smaller firms, a one-page short form has been used asking only for certain principal items of shipments. For purposes of publication, missing data were estimated on the basis of appropriate ratios. For the 1959 and 1960 censuses the general limit for short forms was raised from \$50,000 to \$100,000 value of shipments and a new intermediate form was used. This form is a shortened version of the long form in that some of the general questions were pared down and the detailed lists of materials and products were limited to the more important items. The general limits for firms in this category were set at between \$100,000-\$500,000 value of shipments, but in the case of both the short and inter-

mediate forms there are lower cut-offs for a number of industries in which the smaller firms account for a larger share of total shipments.

In the 1961 Census, in addition to the question on shipments of goods of own manufacture, questions on employment and payroll and on total revenue were added on all short forms. The other elements of principal statistics, viz. value of materials, fuel and electricity, and inventories, are generally estimated by using ratios based on the change in the value of shipments from year to year. This is to permit the complete compilation of basic industry statistics by industry and by geographic location. The proportion of the estimated data is generally less than 5 per cent of the total in each category of principal statistics.



MANUFACTURERS OF INDUSTRIAL CHEMICALS

1961

Data presented in this report under the heading of Manufacturers of Industrial Chemicals reflect implementation of the revised Standard Industrial Classification (S.I.C.) and the New Establishment Concept which are being used by the Dominion Bureau of Statistics in its compilation of 1961 industry statistics—see items "Standard Industrial Classification" and "Establishment" in the Explanatory Notes section of this report. For statistical purposes the industry titled Manufacturers of Industrial Chemicals in the revised Standard Industrial Classification covers the operations of establishments primarily engaged in manufacturing basic industrial inorganic chemicals such as acids, alkalis, salts, compressed gases and other inorganic compounds or in manufacturing industrial organic chemicals by chemical processes. This industry includes establishments primarily engaged in manufacturing dry colours, pigments, white lead, lead oxides, iron oxides and titanium oxide and in manufacturing dyes. Included also are establishments primarily engaged in manufacturing synthetic rubber and those primarily engaged in manufacturing compressed organic gases. Establishments primarily engaged in manufacturing coke are classified in the Iron and Steel Mills Industry or in the Other Petroleum and Coal Products Industries; petroleum refineries are classified in the Petroleum Refineries Industry; establishments primarily engaged in manufacturing plastics materials are classified in the Manufacturers of Plastics and Synthetic Resins Industry; establishments primarily engaged in manufacturing superphosphates and mixed fertilizers are classified in the Manufacturers of Mixed Fertilizers Industry.

In many instances, adoption of the new Standard Industrial Classification in 1960 effected a radical shifting of manufacturing establishments as between industry groupings. Significant elements in the shift in the case of the industry reviewed in this report were the transfer to this industry of establishments producing synthetic rubber previously included in the Miscellaneous Chemical Products Industry and the transfer of establishments manufacturing ammonium nitrate, ammonium phosphate, ammonium sulphate and ammonium nitrate phosphate previously included in the Fertilizers Industry. Another significant element was the grouping in this report of statistics which were previously published in a

separate report under the heading of The Compressed Gases Industry. Another and minor element was the transfer of some of the establishments manufacturing dry colours previously included in the Paints, Varnishes and Lacquers Industry.

Implementation of the New Establishment Concept in 1961 affected the reporting procedures of a number of firms. The major changes occurred in the provinces of Quebec and Ontario and were the result of transfers in and out of this industry because of combinations in reporting. The principal industries involved in these transfers were Smelting and Refining, Manufacturers of Plastics and Synthetic Resins and Synthetic Textile Mills. The overall effect of these changes on this industry is reflected in the series of statistics presented in Table 1A and Table 1B. The former presents the statistics for this industry on the basis of the old Standard Industrial Classification in use prior to 1960 while the latter presents the statistics on the basis of the new Standard Industrial Classification and incorporating as well the changes due to the implementation of the New Establishment Concept.

Separate figures for the production of chemicals in this industry are not published as many of the individual items were made by only one or two firms. However, figures for the several items which are available for publication such as ammonium sulphate, pigments and colours, synthetic rubber, acetylene and oxygen, sulphuric acid, and chlorine and caustic soda are shown in Tables 4 to 7 and 9 to 13.

The total value of shipments of chemicals from all industries in 1961 was \$534.6 millions compared with \$515.3 millions in 1960. A special compilation which gives a good summary of total shipments from all industries is presented in Table 8.

As a result of increased work loads and staff shortages, it has been necessary to suspend publication of certain tables normally contained in the reports issued in the Census of Manufactures. It is planned to resume publication of these tables in the 1962 reports. In general the tables affected are the following: Directory of Firms—Imports—Exports—Capital and Repair Expenditures.

**TABLE 1. Principal Statistics: Manufacturers of Industrial Chemicals,
by Provinces, 1957-61**

(Basis: Revised Standard Industrial Classification and New Establishment Concept)

Year and province	Estab- lish- ments	Em- ployees	Salaries and wages	Cost of fuel and electricity at plant	Cost at plant of materials used	Value added by manufacture ¹	Selling value of factory shipments
	number				dollars		
1957							
Newfoundland	1	122	451,525	70,187	393,756	—	1,937,272
Nova Scotia	4						
New Brunswick	1						
Quebec	36	5,024	23,195,115	8,036,492	40,588,607	—	91,070,714
Ontario	45	9,363	44,245,919	21,063,734	94,270,273	—	216,337,415
Manitoba	3	86	301,390	21,836	214,856	—	1,408,058
Saskatchewan	3	70	252,749	23,390	976,521	—	1,600,529
Alberta	11	1,167	5,128,883	2,041,601	8,100,572	—	21,599,940
British Columbia	12	1,336	5,950,771	1,218,457	12,599,477	—	31,584,656
Northwest Territories	1						
Canada	117	17,168	79,526,352	32,475,697	157,144,062	—	365,538,584
1958							
Newfoundland	1	114	392,301	67,823	255,791	1,260,899	1,585,394
Nova Scotia	3						
New Brunswick	1						
Quebec	37	4,831	23,495,694	8,417,710	43,660,363	52,399,505	104,178,506
Ontario	49	9,472	47,359,223	25,269,452	105,195,001	114,755,205	242,528,797
Manitoba	3	66	275,020	20,492	214,814	1,194,775	1,437,757
Saskatchewan	3	61	257,737	23,572	1,244,675	618,850	1,906,701
Alberta	11	1,062	5,231,324	2,183,779	8,058,187	16,736,471	26,180,655
British Columbia	12	1,415	6,706,244	1,835,616	14,609,284	20,487,063	35,835,567
Northwest Territories	1						
Canada	121	17,021	83,717,543	37,818,444	173,238,115	207,452,768	413,653,377
1959							
Newfoundland	1	114	450,384	65,630	380,772	1,565,836	2,074,328
Nova Scotia	4						
New Brunswick	1						
Quebec	34	5,073	25,391,218	9,319,073	53,502,541	53,963,995	116,414,717
Ontario	49	8,904	46,787,847	26,659,365	106,292,923	119,325,343	252,205,834
Manitoba	3	74	307,503	23,577	287,137	1,293,751	1,596,051
Saskatchewan	3	50	244,272	24,410	1,131,867	732,226	1,887,901
Alberta	11	1,094	5,180,945	2,204,083	8,028,120	19,096,585	31,819,830
British Columbia	12	1,405	6,718,933	2,036,235	13,787,767	22,548,343	38,787,407
Northwest Territories	1						
Canada	119	16,714	85,081,102	40,332,373	183,411,127	218,526,079	444,786,068
1960							
Newfoundland	1	110	426,405	87,165	304,009	1,738,605	2,117,484
Nova Scotia	3						
New Brunswick	1						
Quebec	32	4,564	23,411,904	8,994,718	39,156,146	46,947,593	94,035,488
Ontario	50	9,471	51,232,960	29,764,959	111,518,170	142,293,209	278,357,015
Manitoba	3	77	306,271	22,219	271,060	1,329,598	1,621,602
Saskatchewan	4	58	297,607	33,689	1,054,022	721,811	1,812,404
Alberta	11	1,148	5,782,103	2,504,209	10,174,565	21,013,336	33,094,890
British Columbia	14	1,420	6,936,717	2,283,282	17,429,648	23,381,195	39,781,458
Northwest Territories	1						
Canada	120	16,848	88,393,967	43,690,241	179,907,620	237,425,347	450,820,341
1961							
Newfoundland	1	102	392,238	97,273	336,080	1,643,953	2,078,293
Nova Scotia	4						
New Brunswick	2						
Quebec	33	4,184	23,409,593	8,882,955	37,307,207	51,475,260	97,747,890
Ontario	53	9,193	51,879,076	27,835,262	114,873,080	155,922,921	297,174,596
Manitoba	4	76	313,078	40,072	438,550	1,199,171	1,666,128
Saskatchewan	3	42	172,995	25,975	174,405	820,163	1,017,097
Alberta	12	1,149	6,043,593	2,707,732	11,693,467	21,166,292	35,051,649
British Columbia	16	1,445	7,153,747	2,434,100	17,209,312	25,394,478	41,867,578
Canada	128	16,191	89,364,320	42,023,369	182,032,101	257,622,238	476,603,231

¹ Because of lack of inventory data "Value added" is not available for 1957.

TABLE 2. Inventories:¹ Manufacturers of Industrial Chemicals, 1961

	Raw materials and supplies	Goods in process	Finished goods of own manufacture	Total
	dollars			
Opening:				
Newfoundland, Nova Scotia and New Brunswick	89,576	—	23,330	112,906
Quebec	7,287,113	1,267,649	6,778,904	15,333,666
Ontario	17,587,870	6,665,639	18,750,380	43,003,889
Manitoba	43,001	—	15,048	58,049
Saskatchewan	21,938	—	12,947	34,885
Alberta	2,314,467	502,510	3,410,355	6,227,332
British Columbia	4,722,560	10,592	8,019,113	12,752,265
Canada	32,066,525	8,446,390	37,010,077	77,522,992
Closing:				
Newfoundland, Nova Scotia and New Brunswick	83,997	—	22,343	106,340
Quebec	6,756,634	1,368,658	6,595,427	14,720,719
Ontario	19,823,699	7,216,666	19,656,020	46,696,385
Manitoba	49,168	2,680	24,033	75,881
Saskatchewan	28,370	—	16,393	44,763
Alberta	2,296,956	263,234	4,165,473	6,725,663
British Columbia	5,202,502	5,013	11,195,004	16,402,519
Canada	34,241,326	8,856,251	41,674,693	84,772,270

¹ (a) Book value of all manufacturing inventories owned and held at plant and plant warehouses.

(b) The opening inventory for 1961 differs from the closing inventory for 1960 because of the receipt of revised data, the inclusion of new establishments, the removal of figures for establishments which did not operate during 1961, changes in classification and the implementation of the New Establishment Concept.

TABLE 3. Materials Used: Manufacturers of Industrial Chemicals, 1961

Material	Quantity	Cost at plant
		\$
Acetone	lb. 2,164,559	214,530
Acid— Acetic, 99½%	“ 859,660	99,668
Fatty—Oleic	“ 681,865	110,285
Stearic	“ 43,641	7,231
Other fatty acids	“ 7,051,775	580,889
Formic, 85%	“ 287,290	38,927
Hydrochloric (muriatic), 100%	“ 7,200,609	370,262
Hydrofluoric	“ 3,444,575	678,636
Nitric, 100%	“ 5,671,157	238,519
Phosphoric	“ 1,807,125	159,995
Sulphuric— New acid (as 100%)	ton 24,048	702,788
Spent acid (as 100%)	“ 2,804	24,427
Alcohol— Butyl (including isobutyl and normal)	lb. 1,904,287	269,578
Ethyl	Imp. gal. 1,845	1,613
Isopropyl	lb. 1,667,132	116,339
Methyl	Imp. gal. 2,809,211	808,231
Aluminum chloride	lb. 3,151,403	457,352
Aluminum sulphate (alum)	“ 1,055,943	30,740
Ammonia (liquor)	lb. NH ₃ 1,173,965	89,639
Ammonia, anhydrous	ton 103,968	5,979,542
Ammonium nitrate	“ 2,897	205,043
Barium carbonate	lb. 1,232,012	64,810
Barium chloride	“ 720,299	47,982
Benzol	“ 155,242,173	7,064,857
Betanaphthol	“ 208,842	55,665
Borax	“ 36,338	2,913
Calcium carbonate (whiting and chalk)	“ 846,166	13,368
Calcium chloride	“ 923,156	24,481
Carbon, activated	“ 418,415	123,960
Carbon bisulphide (disulphide)	“ 1,928,701	97,013

TABLE 3. Materials Used: Manufacturers of Industrial Chemicals, 1961 - Concluded

Material	Quantity	Cost at plant
		\$
Carbon tetrachloride	lb. 13,037,970	1,056,100
Chlorine	ton 11,185	809,200
Coal, (except for fuel) - Anthracite	" 53,039	764,339
Bituminous	" 76,531	1,104,312
Cobalt acetate	lb. 6,450	5,952
Cobalt sulphate	" 6,156	2,941
Coke, (except for fuel) - Petroleum	ton 841	21,729
Other	" 140,934	2,474,065
Copper sulphate	lb. 9,675	1,117
Cresol (including cresylic acid, all forms)	" 250,489	89,652
Diatomaceous earth	ton 11,575	664,021
Electrodes (purchased)	" ..	649,033
Ethanolamine - Mono	lb. 781,114	219,558
Di	" 186,930	55,209
Tri	" 17,313	5,191
Ferrous sulphate (copperas)	" 771,482	20,412
Fluorspar	ton 6,150	281,858
Formaldehyde, 100% solids basis	lb. 701,746	77,868
Glycerine (includes mainly crude grade)	" 1,139,940	160,713
Glycols - Ethylene	" 108,613	14,582
Diethylene	" 1,019,961	172,303
Triethylene	" 7,499	3,773
Propylene	" 470,710	69,172
Other grades	" 420,976	76,477
Graphite	" 657,355	233,032
Grease	" 4,432,678	279,744
Iron and steel scrap (borings, etc.)	ton 4,838	157,141
Lead, pig	lb. 28,518,792	2,385,306
Lead sulphate	" 4,250	652
Limestone	ton 575,334	1,559,543
Lime - Hydrated	" 9,057	75,360
Quick	" 23,074	449,735
Litharge	lb. 2,119,447	280,482
Mercury	" 96,539	231,445
Muriate of potash (potassium chloride)	ton 6,788	314,211
Natural gas (as a material in manufacturing; not for fuel)	M cu.ft. 9,028,011	2,669,898
Oils - Castor	lb. 2,875,664	440,697
Cocanut	" 1,722,822	205,795
Linseed	Imp. gal. 7,038	11,880
Tall	lb. 466,083	38,163
Other oils	" 3,305,700	211,352
Phenol	" 2,521,496	427,931
Petrochemical feed stocks - L.P.G's (Butane, propane, other)	" ..	5,509,990
Other	" ..	25,377,104
Phosphate rock	ton 747,920	10,201,436
Potassium bichromate	lb. 67,135	13,823
Potassium hydroxide (as 100% KOH)	" 2,355,286	146,328
Phthalic anhydride	" 5,629,163	1,075,721
Quartz and quartzite	ton 60,750	225,150
Silica sand	" 24,108	221,362
Sodium acetate	lb. 90,344	15,457
Sodium chloride, dry (common salt)	ton 317,135	2,931,184
Sodium chloride, brine (salt content)	" 62,354	159,902
Sodium bichromate	lb. 2,968,800	395,294
Sodium hydrosulphide	" 100,695	13,945
Sodium hydroxide (caustic soda) as 100% Na OH)	ton 30,792	2,082,355
Sodium nitrate	lb. 400,525	20,780
Sodium prussiate	" 450,388	64,628
Sodium silicate (water glass) (including metasilicate)	" 541,118	32,305
Sodium sulphide	" 531,037	25,758
Sulphur (brimstone)	ton 175,537	4,280,719
Tallow	lb. 8,960,491	466,831
Titanium dioxide	" 46,457	11,990
Toluene (toluol)	" 7,013,366	225,187
Tricresyl phosphate	" 101,586	31,978
Urea	" 12,004,640	482,539
Xylene (xylol)	" 176,347	7,858
Zinc chloride	" 334,235	22,604
Zinc oxide	" 342,375	49,614
Steel sheets for making containers	ton 1,836	324,815
All other materials	" ..	80,127,351
Containers and packing materials	" ..	10,036,866
Total	182,032,101

Note: Figures shown in above table are not comparable with previous years because of the change in the industry concept brought about by the implementation of the new Standard Industrial Classification (S.I.C.) in 1960 and the New Establishment Concept in 1961.

TABLE 4. Factory Shipments¹ and Imports: Ammonium Sulphate, 1957 - 61

Year	Shipments	Imports
	tons	
1957	318,634	3,288
1958	300,049	5,892
1959	307,121	5,941
1960	349,677	8,686
1961	278,527	9,940

¹ From all industries.

TABLE 5. Factory Shipments¹ and Imports: Pigments and Dry Colours, 1957 - 61

Year	Shipments ²	Imports
	dollars	
1957	20,014,000	18,218,000
1958	26,506,000	15,420,000
1959	27,369,000	17,241,000
1960	25,980,000	15,005,000
1961	28,477,000	16,840,000

¹ From all industries.

² Includes white lead, red lead and litharge; colours, dry and in oils; acetylene black, satin white, zinc oxide, cobalt oxide, cobalt sulphate, carbon black, copper oxide, aluminum paste, synthetic iron oxide and titanium oxide.

TABLE 6. Factory Shipments of Synthetic Rubber, 1957 - 61

Year	Quantity	Selling value at plant
	pounds	\$
1957	290,351,000	65,988,000
1958	299,185,000	67,351,000
1959 ¹	230,018,000	51,437,000
1960	335,872,000	76,039,000
1961	372,254,000	83,427,000

¹ The totals for 1959 reflect the effects of a strike in this industry from March 18, 1959 to June 23, 1959.

TABLE 7. Factory Shipments¹ of Acetylene and Oxygen, 1957 - 61

Year	Acetylene		Oxygen ²	
	Quantity	Selling value at plant	Quantity	Selling value at plant
	cu. ft.	\$	cu. ft.	\$
1957	195,838,372	7,303,939	1,323,847,599	10,924,006
1958	180,973,230	6,772,394	1,203,933,175	10,604,155
1959	184,915,535	7,199,610	1,390,233,113	11,424,807
1960	209,480,259	7,849,234	1,836,199,766	12,331,906
1961	178,777,276	6,967,856	1,888,655,030	12,317,380

¹ Includes only the shipments, chiefly in cylinders, or delivered by pipeline to adjacent consuming plants. Does not include amounts made for own use by some chemical companies.

² Excludes tonnage oxygen.

TOTAL PRODUCTION OF CHEMICALS

It is very difficult to get, from official reports, the statistics covering the total production in Canada of heavy and fine chemicals. There are two reasons for this, the first being that data for many of the individual items cannot be shown because they were made by only one or two concerns, and the second being that chemicals are made in a number of different industries. Ethyl alcohol, for example, is a product of the distilled liquors industry; some fine chemicals are made in the phar-

maceutical industry; ammonium sulphate is produced in coke plants; cobalt and nickel salts are made in the non-ferrous metal refineries, and so on. The Bureau has made, therefore, a special compilation shown in Table 8 which gives a good summary of the total shipments as gathered up from all industries. The values cover only the products shipped as there is no adequate record of the intermediates made for the further use of the producers.

TABLE 8. Factory Shipments of Chemicals, 1960 and 1961

	Selling value at plant	
	1960	1961
	dollars	
<i>Acids, including acetic, muriatic, nitric, sulphuric, phosphoric, stearic, etc.</i>	36,041,000	30,950,000
<i>Calcium compounds, including carbide, chloride, phosphide, cyanamide, cyanide acid phosphate, grey acetate, arsenate, chloride of lime, etc.</i>	15,954,000	15,210,000
<i>Sodium compounds, including hydroxide, phosphate, cyanide, silicate, hypochlorite, bisulphite, saltcake, Glauber's salt, chlorate, acid pyrophosphate, soda ash, sal soda, bisulphate, etc., (pharmaceutical salts included elsewhere)</i>	45,969,000	46,568,000
<i>Organic chemicals, including acetic anhydride, butyl acetate, ethyl acetate paraldehyde, glycols, pentasol acetate, vinyl acetate, ethyl alcohol, methyl hydrate, glycerine, phenol, cresol, benzol, etc., (acetic acid and acetylene included elsewhere)</i>	138,383,000 ^f	147,110,000
<i>Compressed and liquefied gases, etc., including acetylene, carbon dioxide, oxygen, nitrous oxide, liquid sulphur dioxide, liquid chlorine, anhydrous and aqua ammonia, liquefied petroleum gases, etc.</i>	72,583,000	74,030,000
<i>Fertilizer chemicals, including ammonium sulphate, ammonium nitrate (fertilizer grade), ammonium phosphate, and superphosphate</i>	59,583,000	64,524,000
<i>Synthetic resins, including casein type, vinyls, polystyrene, phenol-formaldehyde, urea-formaldehyde, alkyds, sodium carboxymethylcellulose, etc.</i>	88,178,000	91,975,000
<i>Other chemicals, including white lead, zinc oxide, red lead, litharge, cobalt salts, nickel salts, ferric chloride, lead arsenate, phosphorus, white arsenic, ammonium nitrate, fine chemicals, precious metal salts, etc.</i>	58,631,000	64,183,000
Totals	515,322,000	534,550,000

TABLE 9. Production:¹ Imports, Exports and Apparent Consumption of Sulphuric Acid, 1925-61

Year	Production	Imports	Exports	Apparent consumption ²
	short tons of 100% acid			
1925	77,700	52	19,179	58,573
1930	100,020	150	571	99,599
1935	209,083	83	1,027	208,139
1940	301,444	142	2,244	299,342
1945	664,302	149	11,203	653,248
1950	756,110	332	44,417	712,025
1955	950,277	151	29,578	920,850
1957	1,290,000	1,000	29,500	1,261,500
1958	1,586,000	39,345	23,252	1,602,093
1959	1,739,000	18,489	27,863	1,729,626
1960	1,673,000	9,526	43,430	1,639,096
1961	1,614,000	7,275	38,914	1,582,361

¹ From all industries.² No allowance made for changes in inventories.

TABLE 10. Production:¹ Imports and Exports of Chlorine and Caustic Soda, 1957-61

Year	Chlorine	Caustic soda ² (100% Na OH)
	tons	
(a) Production:		
1957	226,000	264,000
1958	268,000	313,000
1959	282,000	341,000
1960	322,000	373,000
1961	354,000	415,000
(b) Imports:		
1957	33,828	53,200
1958	23,102	30,737
1959	26,584	35,972
1960	27,820	41,361
1961	29,686	37,107
(c) Exports:		
1957	10,500	285
1958	14,491	1,710
1959	16,844	2,799
1960	24,483	3,135
1961	19,965	..

¹ From all industries.

² Imports of caustic soda solution are generally reported in terms of gross weight of approximately 50% Na OH. Figures in Table 10 have been converted to 100% Na OH to agree with the basis used in production and exports.

TABLE 11. Available Data on the Consumption of Sulphuric Acid, by Industries, 1960 and 1961

Industry	1960	1961
	short tons of 100% acid	
Iron and steel mills	48,149	55,100
Other iron and steel	12,440	12,600
Electrical products	4,945	4,900
Vegetable oil mills	96	100
Sugar refineries	332	200
Leather tanneries	2,083	2,200
Textile dyeing and finishing plants	54	—
Pulp and paper mills	25,925	36,100
Uranium ore processing	373,337	283,300
Manufacturers of mixed fertilizers	101,821	114,600
Manufacturers of plastics and synthetic resins	20,257	20,900
Manufacturers of soaps and cleaning compounds	15,000	15,700
Other chemical industries	9,529	11,500
Manufacturers of industrial chemicals ¹ (Includes bauxite concentration)	833,890	833,400
Petroleum refining industry	16,931	13,800
Mining ₂	49,670	52,000 ³
Miscellaneous ⁴	60,026	96,300
Total accounted for	1,574,485	1,552,700

¹ Includes consumption of "own make" or "captive" acid by firms classified to these industries.

² Includes metal mines, non-metal mines, mineral fuels and structural materials.

³ Estimated.

⁴ Includes synthetic textiles, explosives and ammunition, and other petroleum and coal.

Note: Figures shown by industry for 1960 and 1961 are not necessarily comparable with previous years because of the change in the industry concept brought about by the implementation of the new Standard Industrial Classification (S.I.C.) in 1960 and the New Establishment Concept in 1961.

A further result of the new S.I.C. concept is that some industries have disappeared completely.

TABLE 12. Available Data on the Consumption of Chlorine, by Industries, 1960 and 1961

Industry	1960	1961
	net tons	
Iron and steel mills	235	104
Municipal waterworks (1959 latest available)	2,721	2,721
Miscellaneous food industries	4	—
Fish products industry	65	—
Mining ¹ (1960 data latest available)	5,113	5,113 ²
Pulp and paper mills ³	174,636	192,828
Textile dyeing and finishing plants	4	6
Manufacturers of plastics and synthetic resins	291	280
Manufacturers of soaps and cleaning compounds	4,107	4,238
Other chemical industries	76	1,472
Manufacturers of industrial chemicals ³	129,004	146,522
Distilleries	110	—
Total accounted for	316,366	353,284

¹ Includes non-metal mines, metal mines, mineral fuels and structural materials.

² Estimated.

³ Includes consumption of "own make" or "captive" chlorine by firms classified to these industries.

Note: Figures shown by industry for 1960 and 1961 are not necessarily comparable with previous years because of the change in the industry concept brought about by the implementation of the new Standard Industrial Classification (S.I.C.) in 1960 and the New Establishment Concept in 1961. A further result of the new S.I.C. concept is that some industries have disappeared completely.

TABLE 13. Available Data on the Consumption of Caustic Soda, by Industries, 1960 and 1961

Industry	1960	1961
	net tons of 100% Na OH	
Pulp and paper mills ¹	161,498	178,022
Manufacturers of soap and washing compounds	21,010	22,597
Manufacturers of industrial chemicals ¹ (includes bauxite concentration)	141,934	162,817
Petroleum refining	10,155	10,927
Manufacturers of plastics and synthetic resins	14,602	12,740
Other chemical industries	5,187	5,025
Miscellaneous food industries (includes starch and glucose)	1,250	1,450
Mining ² (1960 data latest available)	10,356	10,356 ³
Manufacturers of pharmaceuticals and medicines	271	346
Iron and steel mills	1,315	1,274
Textile dyeing and finishing	111	145
Manufacturers of toilet preparations	136	116
Other petroleum and coal products industries	92	17
Sugar refineries	69	87
Vegetable oil mills	139	131
Miscellaneous ⁴	27,579	18,200
Total accounted for	395,704	424,250

¹ Includes consumption of "own make" or "captive" caustic by firms classified to these industries.

² Includes metal mines, non-metal mines, mineral fuels and structural materials.

³ Estimated.

⁴ Includes synthetic textile mills, explosives, plastic fabricators, sausage and sausage casings.

Note: Figures shown by industry for 1960 and 1961 are not necessarily comparable with previous years because of the change in the industry concept brought about by the implementation of the new Standard Industrial Classification (S.I.C.) in 1960 and the New Establishment Concept in 1961. A further result of the new S.I.C. concept is that some industries have disappeared completely.

**TABLE 14. Principal Statistics classified according to Type of Ownership:
Manufacturers of Industrial Chemicals, 1961**

Type of ownership	Estab-lish-ments	Em-employees	Salaries and wages	Cost at plant of materials used	Selling value of factory shipments
	number		dollars		
Individual ownership	1	} 16, 191	89, 364, 320	182, 032, 101	476, 603, 231
Incorporated companies.....	127				
Totals	128	16, 191	89, 364, 320	182, 032, 101	476, 603, 231

**TABLE 15. Principal Statistics grouped according to Selling Value of Factory Shipments:
Manufacturers of Industrial Chemicals, 1961**

Establishments reporting factory shipments valued at	Estab-lish-ments	Employees	Salaries and wages	Cost at plant of materials used	Selling value of factory shipments
	number		dollars		
Under \$10,000	1	} 10	33, 799	48, 731	102, 616
\$ 10,000 to \$ 49,999	3				
50,000 " 99,999	3	9	40, 780	79, 358	238, 233
100,000 " 199,999	14	81	345, 325	851, 233	2, 222, 732
200,000 " 499,999	34	449	1, 965, 650	4, 230, 473	11, 106, 286
500,000 " 999,999	21	814	3, 694, 874	6, 670, 411	15, 518, 205
1,000,000 " 4,999,999	31	2, 424	12, 820, 161	26, 662, 544	74, 951, 649
5,000,000 and over	21	11, 734	65, 810, 812	143, 489, 351	372, 463, 510
Head offices	—	670	4, 652, 919	—	—
Totals	128	16, 191	89, 364, 320	182, 032, 101	476, 603, 231

TABLE 16. Employees and their Earnings: Manufacturers of Industrial Chemicals, 1961

Province	Employees					Earnings		Total earnings
	Administrative		Workmen		Total	Admin-istrative	Workmen	
	Male	Female	Male	Female				
	number					dollars		
Newfoundland, Nova Scotia and New Brunswick	32	15	55	—	102	181, 449	210, 789	392, 238
Quebec	1, 101	356	2, 724	3	4, 184	9, 549, 307	13, 860, 286	23, 409, 593
Ontario	2, 376	639	6, 141	37	9, 193	18, 950, 208	32, 928, 868	51, 879, 076
Manitoba	20	14	41	1	76	148, 268	164, 810	313, 078
Saskatchewan.....	15	8	19	—	42	94, 007	78, 988	172, 995
Alberta	334	77	730	8	1, 149	2, 337, 365	3, 706, 228	6, 043, 593
British Columbia	333	40	1, 060	12	1, 445	2, 094, 168	5, 059, 579	7, 153, 747
Canada	4, 211	1, 149	10, 770	61	16, 191	33, 354, 772	56, 009, 548	89, 364, 320



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CHEMICAL AND CHEMICAL PRODUCTS INDUSTRIES

TABLE 17. Production Workers, by Month: Manufacturers of Industrial Chemicals, 1961

Month	number	
	Male	Female
January	10,422	60
February	10,368	61
March	10,454	60
April	10,603	63
May	10,806	60
June	11,014	62
July	11,136	64
August	11,117	60
September	10,919	65
October	10,814	60
November	10,795	60
December	10,732	66
Averages	10,770	61

TABLE 18. Fuel and Electricity Used: Manufacturers of Industrial Chemicals, 1961

Kind	Quantity	Cost at plant
		\$
Bituminous coal:		
(a) From Canadian mines	ton 34,676	335,662
(b) Imported	" 887,323	7,456,592
Anthracite coal	" 1,570	17,862
Coke	" 10,694	72,521
Gasoline (including gasoline used in cars and trucks).....	Imp. gal. 932,329	295,143
Fuel oil including kerosene or coal oil.....	" 17,992,311	1,592,023
Wood (cords of 128 cubic feet of piled wood).....	cord 21	393
Gas:		
(a) Liquefied petroleum gases	Imp. gal. 61,305	9,042
(b) Other manufactured gas	M cu. ft. 6,889,725	3,570,543
(c) Natural gas	" 19,348,974	4,628,260
Other fuel.....	..	333,608
Electricity purchased	kwh. 5,183,984,649	21,064,879
Steam purchased	2,646,841
Total cost of fuel and electricity	42,023,369