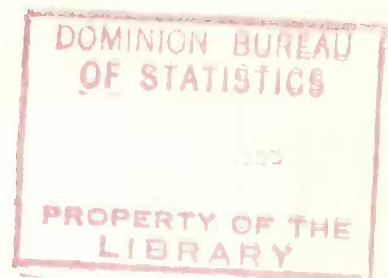


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CANADA



THE COMPRESSED GASES INDUSTRY

1953

Published by Authority of
The Right Honourable C. D. Howe, Minister of Trade and Commerce

DOMINION BUREAU OF STATISTICS
Industry and Merchandising Division
Metal and Chemical Products Section

5512-579
16-12-54

Price 25 cents

Vol. 2—Part XVI—N-1

NOTICE

The annual reports prepared by the Industry and Merchandising Division of the Bureau of Statistics are divided into 3 volumes, as follows: **Volume I** — The Primary Industries, including mining, forestry and fisheries; **Volume II** — Manufacturing; **Volume III** — Merchandising and Services. The volumes are made up of parts, and the parts in turn are subdivided according to the industries or provinces which they comprise.

Volume II consists of the following parts, the first two of which deal with manufacturing as a whole and the balance with the major manufacturing groups.

- I—General Review of the Manufacturing Industries, \$1.50
- II—The Manufacturing Industries of Canada, (7 sections, as follows:)
 - Section A. Summary for Canada, 25¢
 - Section B. Atlantic Provinces, 25¢
 - Section C. Quebec, 25¢
 - Section D. Ontario, 25¢
 - Section E. Prairie Provinces, 25¢
 - Section F. British Columbia, 25¢
 - Section G. The Manufacturing Industries of Canada, Regional Distribution, 75¢
- III—Foods and Beverages
- IV—Tobacco and Tobacco Products
- V—Rubber Products
- VI—Leather Products
- VII—Textiles
- VIII—Wood and Paper Products
- IX—Printing Trades
- X—Iron and Steel Products
- XI—Transportation Equipment
- XII—Non-ferrous Metal Products
- XIII—Electrical Apparatus and Supplies
- XIV—Non-metallic Mineral Products
- XV—Products of Petroleum and Coal
- XVI—Chemicals and Allied Products
- XVII—Miscellaneous Manufactures

The present report belongs in Part XVI, Chemicals and Allied Products. It is punched to permit of filing in a ring binder along with others of the group. The reports in this group are:

- A—General Review, 25¢
- B—The Acids, Alkalies and Salts Industry, 25¢
- C—The Fertilizers Industry, 25¢
- D—The Fertilizer Trade in Canada, 25¢
- E—The Medicinal and Pharmaceutical Preparations Industry, 25¢
- F—The Paints, Varnishes and Lacquers Industry, 25¢
- G—The Primary Plastics Industry, 25¢
- H—The Soaps, Washing Compounds and Cleaning Preparations Industry, 25¢
- I—The Toilet Preparations Industry, 25¢
- J—The Vegetable Oils Industry, 25¢
- K—The Inks Industry, 25¢
- L—The Adhesives Industry, 25¢
- M—The Polishes and Dressings Industry, 25¢
- N—The Compressed Gases Industry, 25¢
- O—The Coal Tar Distillation Industry, 25¢
- P—The Miscellaneous Chemical Products Industry, 25¢

THE COMPRESSED GASES INDUSTRY

1953

Manufacturing plants in Canada engaged chiefly in making industrial gases reported factory shipments in 1953 at \$15,712,330 compared with \$16,201,464 in 1952, a decline of 3.0 per cent.

There were 45 factories in operation in this industry during 1953, 14 being located in Ontario, 13 in Quebec, 5 in Alberta, 3 in British Columbia, 3 in Manitoba, 3 in Nova Scotia, 2 in Saskatchewan and 1 each in New Brunswick and Newfoundland. The number of employees in the industry in 1953 was 1,226, including 511 supervisory and office personnel and 715 production workers. Salaries for the year amounted to \$1,675,900 and wages totalled \$2,370,944.

The chief products were oxygen, acetylene and carbon dioxide, for sale mainly in cylinders or in some instances delivered by pipeline to adjacent consuming plants. The output of oxygen declined 0.9 per cent to 898 million cubic feet and acetylene increased 2.2 per cent to 155 million cubic feet. Carbon dioxide, aqua ammonia, anhydrous ammonia, nitrogen, hydrogen, nitrous oxide and argon were other products of this industry. The output figures for the latter items are not published separately since there were only one or two producers in each case.

No mention is made in this report of liquid chlorine, liquid sulphur dioxide, synthetic ammonia, or of hydrogen and nitrogen for the manufacture of synthetic ammonia. These items were produced in works that also made other kinds of chemicals, and the statistics concerning the output of same have been included in the heavy chemical industry which is reviewed in a separate bulletin. A similar disposition has been accorded liquefied petroleum gases produced in the petroleum refining industry or as by-products in the recovery of absorption gasoline. Finally, reference should be made to firms which make hydrogen for use in the hydrogenation of fats. These firms which, in addition, produce some oxygen as a by-product, were reclassified from this group to the slaughtering and meat packing industry in 1952.

TABLE 1. Principal Statistics for the Compressed Gases Industry, 1949-1953

Year	Number of plants	Number of employees	Salaries and wages for year	Cost of fuel and electricity at works	Cost of materials at works	Gross selling value of products at works
			\$	\$	\$	\$
1949	48	1,223	3,230,904	431,855	1,979,160	12,091,176
1950	50	1,240	3,239,598	493,054	1,873,977	12,737,319
1951	51	1,247	3,681,376	582,097	2,408,694	15,378,363
1952	47	1,250	3,889,969	468,401	2,425,663	16,201,464 ¹
1953	45	1,226	4,046,844	490,633	2,240,446	15,712,330 ¹
Per cent change, 1953 from 1952	-	- 1.9	+ 4.0	+ 4.7	- 7.6	- 3.0

1. Factory shipments since 1952. The inventory value of finished products at plant at end of 1952 amounted to \$789,000 and at end of 1953 to \$58,000.

Note. Profits or losses cannot be calculated from above figures as data are not available for general expense items, such as interest, rent, depreciation, taxes, insurance, advertising, etc.

TABLE 2. Principal Statistics for the Compressed Gases Industry, by Provinces, 1952 and 1953

Province	Number of plants	Number of employees	Salaries and wages	Cost of fuel and electricity at works	Cost of materials at works	Value of factory shipments
			\$	\$	\$	\$
1952						
Newfoundland	1	99	303,474	61,173	156,898	1,322,300
Nova Scotia	3					
New Brunswick	1					
Quebec	13	281	888,077	100,134	575,419	4,215,989
Ontario	15	533	1,711,516	197,359	983,410	6,515,798
Manitoba	3	116	356,251	28,734	251,765	1,440,121
Saskatchewan	2					
Alberta	4	100	291,942	39,238	208,355	1,199,144
British Columbia	5	121	338,709	41,763	249,816	1,508,112
Canada	47	1,250	3,889,969	468,401	2,425,663	16,201,464
1953						
Newfoundland	1	101	320,864	53,184	148,939	1,349,200
Nova Scotia	3					
New Brunswick	1					
Quebec	13	279	934,557	124,545	581,634	4,339,645
Ontario	14	521	1,754,575	209,882	830,620	5,740,786
Manitoba	3	122	363,841	28,971	241,850	1,554,716
Saskatchewan	2					
Alberta	5	104	342,486	39,472	230,298	1,243,977
British Columbia	3	99	330,521	34,579	207,105	1,484,006
Canada	45	1,226	4,046,844	490,633	2,240,446	15,712,330

TABLE 3. Products of the Compressed Gases Industry, 1952 and 1953

Product	1952		1953	
	Quantity	Value of factory shipments	Quantity	Value of factory shipments
	cu. ft.	\$	cu. ft.	\$
Acetylene ¹	152,024,204	4,957,888	155,392,530	5,180,019
Oxygen ¹	906,123,080	8,015,555	897,743,238	7,418,809
Other products ²	—	3,228,021	—	3,113,502
Canada	—	16,201,464	—	15,712,330

1. In cylinders or delivered by pipe line.

2. Includes nitrous oxide, carbon dioxide, nitrogen, argon, hydrogen, and ammonia made from gas liquor.

TABLE 4. Materials Used in the Compressed Gases Industry, 1952 and 1953

Material	Unit of measure	1952		1953	
		Quantity	Cost at works	Quantity	Cost at works
			\$		\$
Acetone	pound	485,242	77,862	528,016	73,368
Calcium carbide	ton	12,492	1,380,483	12,658	1,381,898
Oil (for making carbon dioxide and hydrogen)	Imp. gal.	1,422,893	139,208	1,423,047	128,217
Potassium hydroxide	lb.	192,340	15,334	188,086	15,526
Sodium hydroxide	"	313,285	15,936	337,100	16,889
Other materials ¹	—	—	796,840	—	624,548
Total	—	—	2,425,663	—	2,240,446
Cylinders purchased during the year	number	27,078	629,932	24,332	685,231

1. Includes ammonia liquor, ammonium nitrate, unpurified brewery gas, lime, soda ash, condensing water, etc.

TABLE 5. Production¹ of Acetylene and Oxygen, 1944-1953

Year	Acetylene		Oxygen ²	
	Quantity	Selling value at works	Quantity	Selling value at works
	cu. ft.	\$	cu. ft.	\$
1944	101,981,116	2,377,919	614,110,740	4,568,371
1945	95,889,965	2,273,945	565,601,348	4,297,791
1946	100,276,367	2,403,386	476,822,719	3,973,866
1947	111,370,838	2,748,114	577,806,032	4,603,919
1948	123,185,685	3,301,822	565,869,719	5,297,530
1949	120,831,500	3,420,827	657,134,873	5,567,476
1950	124,375,068	3,586,705	690,362,200	5,400,670
1951	136,043,698	4,207,520	794,054,423	6,893,420
1952	152,024,204	4,957,888	934,783,851	8,078,431
1953	155,392,530	5,180,019	901,943,238	7,431,405

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

2. Includes production reported by firms classified to the slaughtering and meat packing industry in 1952.

TABLE 6. Available Data on the Consumption of Carbon Dioxide, 1949-1953

Year	In the manufacture of carbonated beverages (soft drinks) ¹				In the manufacture of malt liquors	
	In cylinders		Solid		Quantity	Cost at works
	Quantity	Cost at works	Quantity	Cost at works		
	pounds	\$	pounds	\$	pounds	\$
1949	10,889,711	900,488	1,239,520	82,149	1,707,076	132,155
1950	10,873,710	891,352	985,046	63,497	1,624,000	129,191
1951	9,953,957	855,135	810,428	55,635	1,343,697	117,408
1952	11,212,871	983,966	943,419	64,275	1,061,637	113,174
1953	11,843,001	1,052,125	895,359	63,362	1,018,795	103,714

1. Includes amounts used by firms classified to the Breweries Industry which made soft drinks as a minor product.

TABLE 7. Production and Imports of Liquefied Petroleum Gases, 1949-1953

Year	Production	Imports
	(pounds)	
1949	48,000,000	142,506,000
1950	63,000,000	155,476,000
1951	112,000,000	188,849,000
1952	184,000,000	191,701,000
1953	263,835,000	263,071,000

TABLE 8. Production, Imports and Exports of Chlorine, 1949-1953

Year	Production	Imports	Exports
	(tons)		
1949	96,000	10,400	1
1950	131,000	5,500	1
1951	155,000	12,900	1
1952	169,000	15,800	14,200
1953	169,000	20,400	17,900

1. Not available separately before 1952.

TABLE 9. Employees and Their Earnings in the Compressed Gases Industry, 1952 and 1953

Province	Number of employees					Earnings		
	Supervisory and office		Production workers		Total	Supervisory and office	Production workers	Total
	Male	Female	Male	Female				
1952						\$	\$	\$
Quebec	66	41	173	1	281	293,473	594,604	888,077
Ontario	141	116	275	1	533	830,756	880,760	1,711,516
Alberta	28	18	54	—	100	132,316	159,626	291,942
British Columbia	41	16	64	—	121	131,034	207,675	338,709
Other provinces	61	34	120	—	215	292,226	367,499	659,725
Canada	337	225	686	2	1,250	1,679,805	2,210,164	3,889,969
1953								
Quebec	49	39	190	1	279	283,233	651,324	934,557
Ontario	134	115	272	—	521	849,912	904,663	1,754,575
Alberta	28	18	58	—	104	145,910	196,576	342,486
British Columbia	21	16	62	—	99	112,665	217,856	330,521
Other provinces	57	34	132	—	223	284,180	400,525	684,705
Canada	289	222	714	1	1,226	1,675,900	2,370,944	4,046,844

TABLE 10. Capital and Repair Expenditures in the Compressed Gases Industry, 1949-1953

Year	Capital expenditures		Sub-total	Repair and maintenance expenditures		Sub-total	Total capital and repair expenditures
	Construction	Machinery and equipment		Construction	Machinery and equipment		
	\$'000						
1949	100	823	923	133	493	626	1,549
1950	362	1,415	1,777	112	543	655	2,432
1951	560	1,244	1,804	129	638	767	2,571
1952	215	1,655	1,870	192	736	928	2,798
1953 ¹	186	2,672	2,858	146	847	993	3,851

1. Preliminary.

TABLE 11. Fuel and Electricity Used¹ in the Compressed Gases Industry, 1948 and 1953

Kind	Unit of measure	1948		1953	
		Quantity	Cost at works	Quantity	Cost at works
			\$		\$
Bituminous coal—Canadian.....	ton	905	10,729	68	1,103
Imported.....	ton	4,147	39,763	—	—
Anthracite coal.....	ton	694	8,318	1,161	16,006
Gasoline.....	Imp. gal.	4,171	1,659	28,081	10,310
Fuel oil.....	Imp. gal.	121,439	14,719	281,301	35,094
Gas—Manufactured.....	M cu. ft.	4,404	3,523	2,524	2,910
Natural.....	M cu. ft.	5,666	2,146	6,093	3,283
Other fuel.....	—	—	4,156	—	14,666
Electricity purchased.....	k.w.h.	47,283,982	319,442	50,643,319	407,261
Total	—	—	404,455	—	490,633

1. Details shown in Tables 11 and 12 are collected only every five years; accordingly, data for intervening years are not available.

TABLE 12. Power Equipment¹, 1948 and 1953

	Ordinarily in use		In reserve or idle	
	Number of units	Total rated horse power	Number of units	Total rated horse power
1948				
Steam engines.....	2	30	—	—
Gasoline, gas and oil engines, other than Diesel engines.....	—	—	1	23
Hydraulic turbines or water-wheels.....	1	150	—	—
Electric motors run by purchased power.....	506	10,216	24	408
Total	509	10,396	25	431
Boilers for power purposes only.....	6	1,672	1	250
Motor-generator sets.....	13	1,729 k.v.a.	—	—
1953				
Steam engines.....	6	2,280	—	—
Electric motors run by purchased power.....	627	14,173	6	119
Total	633	16,453	6	119
Boilers for power purposes only.....	—	—	—	—
Motor-generator sets.....	8	38 k.v.a.	—	—

1. See footnote to Table 11.



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List of Firms in the Compressed Gases Industry, 1953

Name of firm	Location of plant
Liquid Carbonic Canadian Corporation Limited, H.O. 2120 Cabot St., Montreal, Que.	Dartmouth, N.S.; Montreal, Que.; Quebec, Que.; Toronto, Ont.; Winnipeg, Man.; Edmonton, Alta.; Vancouver, B.C.
L'Air Liquide Society & Canadian Liquid Air Co. Limited, H.O. 1111 Beaver Hall Hill, Montreal, Que.	St. John's, Nfld.; Halifax, N.S.; Sidney, N.S.; Moncton, N.B.; Montreal, Que.; St. Joseph de Sorel, Que.; Quebec, Que.; Toronto, Ont.; London, Ont.; Hamilton, Ont.; Port Arthur, Ont.; Winnipeg, Man.; Regina, Sask.; Calgary, Alta.; Edmonton, Alta.; Vancouver, B.C.
Dominion Oxygen Company, Limited, H.O. Canada Life Building, 340 University Ave., Toronto, Ont.	Arvida, Que.; Quebec, Que.; Montreal, Que. (2); Shawinigan Falls, Que.; Sault Ste. Marie, Ont.; Toronto, Ont.; Welland, Ont.; Merriton, Ont.; St. Boniface, Man.; Saskatoon, Sask.; Vancouver, B.C.
Imperial Oxygen Limited, H.O. 8400 Decarie Blvd., Montreal, Que.	Montreal, Que. (2); Toronto, Ont.; Windsor, Ont..
Ohio Chemical Canada Limited, 2535 St. James St. W., Montreal, Que.	Montreal, Que.; Toronto, Ont.
Alberta Oxygen & Acetylene Co. Ltd., 142nd Street at 108th Avenue, Edmonton, Alta.	Edmonton, Alta.
British Oxygen Canada Ltd.	Horner Ave., Etobicoke, Ont.
Independent Oxygen Ltd.	Lethbridge, Alta.
Peoples' Gas Supply Co., Ltd.	2-10 Mill St., Ottawa, Ont.