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CANADA

# THE COMPRESSED GASES INDUSTRY 1955



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## 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—Textile Mills
- VIII—Knitting Mills
- IX—Clothing
  - X—Wood and Paper Products
- XI—Printing Trades
- XII—Iron and Steel Products
- XIII—Transportation Equipment
- XIV—Non-ferrous Metal Products
- XV—Electrical Apparatus and Supplies
- XVI—Non-metallic Mineral Products
- XVII—Products of Petroleum and Coal
- XVIII—Chemicals and Allied Products
- XIX—Miscellaneous Manufactures

The present report belongs in Part XVIII, 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 Cressings 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 1955

Manufacturing plants in Canada, engaged chiefly in making industrial gases, reported factory shipments in 1955 at \$16,501,924 compared with \$15,873,288 in 1954, an increase of 3.9 per cent.

There were 52 factories in operation in this industry during 1955, 15 being located in Ontario, 14 in Quebec, 6 in Alberta, 7 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 1955 was 1,387, including 688 supervisory and office personnel and 699 production workers. Salaries for the year amounted to \$2,130,862 and wages totalled \$2,628,897.

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 increased 7.9 per cent to 1000 million cubic feet and acetylene increased 6 per cent to 159 million cubic feet. Carbon dioxide, nitrogen, 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.

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Note: Figures for value added by manufacture, shown in Table 1, prior to 1952 were obtained by subtracting the cost of materials used, including fuel and electricity, from the value of production. In 1952, the gross value of production was replaced by value of factory shipments, f.o.b. plant. As no information on inventory change is available for 1952 and 1953, value added figures for these years were obtained by subtracting from the value of shipments the cost of materials, fuel and electricity. Since 1954, information on the value of year-end inventory holdings at plant and plant warehouses has been collected as part of the annual Census of Industry and information thus made available was taken into account in calculating the value added figures for 1954 and 1955.



TABLE 1. Principal Statistics of the Compressed Gases Industry, by Significant Years, 1929-1955

Year	Establishments	Employees	Earnings	Cost of fuel and electricity at plant	Cost at plant of materials used	Value added by manufacture <sup>1</sup>	Gross selling value of products <sup>1</sup>
	No.	No.	\$	\$	\$	\$	\$
1929 .....	28	542	770,424	155,685	785,377	3,026,354	3,967,416
1933 .....	31	428	613,278	117,382	371,204	2,001,629	2,490,215
1937 .....	27	606	919,773	140,221	527,410	3,261,611	3,929,242
1939 .....	31	672	1,037,718	156,372	501,108	3,352,349	4,009,829
1943 .....	38	1,080	1,848,753	344,136	1,380,575	7,487,515	9,212,226
1946 .....	42	1,064	1,961,493	314,524	1,258,423	6,735,081	8,308,028
1949 .....	48	1,223	3,230,904	431,855	1,979,160	9,680,161	12,091,176
1951 .....	51	1,247	3,681,376	582,097	2,408,694	12,387,572	15,378,363
1952 .....	47	1,250	3,889,969	468,401	2,425,663	13,307,400	16,201,464
1954 .....	46	1,305	4,355,140	513,145	2,622,602	12,746,776	15,873,288
<b>1954</b>							
Newfoundland .....	1	105	337,823	52,413	215,193	1,024,034	1,291,879
Nova Scotia .....	3						
New Brunswick .....	1						
Quebec .....	13	290	966,356	136,542	689,811	3,822,363	4,646,953
Ontario .....	14	573	1,959,616	214,990	961,386	4,670,814	5,841,623
Manitoba .....	3	125	392,788	29,946	260,711	1,092,818	1,380,909
Saskatchewan .....	2						
Alberta .....	6	113	368,186	39,868	264,902	970,925	1,274,075
British Columbia .....	3	99	330,371	39,386	230,599	1,165,822	1,437,849
<b>Canada .....</b>	<b>46</b>	<b>1,305</b>	<b>4,355,140</b>	<b>513,145</b>	<b>2,622,602</b>	<b>12,746,776</b>	<b>15,873,288</b>
<b>1955</b>							
Newfoundland .....	1	102	328,594	64,265	255,704	1,030,836	1,350,822
Nova Scotia .....	3						
New Brunswick .....	1						
Quebec .....	14	297	1,011,959	159,977	752,326	4,228,293	5,139,831
Ontario .....	15	621	2,210,908	234,129	1,030,366	4,480,173	5,732,185
Manitoba .....	3	138	421,336	29,641	279,092	1,065,142	1,375,055
Saskatchewan .....	2						
Alberta .....	6	110	381,000	50,057	286,593	1,020,832	1,356,472
British Columbia .....	7	119	405,962	52,881	338,837	1,160,689	1,547,559
<b>Canada .....</b>	<b>52</b>	<b>1,387</b>	<b>4,759,759</b>	<b>591,850</b>	<b>2,942,918</b>	<b>12,985,965</b>	<b>16,501,924</b>

1. See footnote to text.

TABLE 2. Inventories<sup>1</sup>, 1955

	Raw materials and supplies	Goods in process	Finished goods of own manufacture	Total
	\$	\$	\$	\$
Opening:				
Newfoundland, Nova Scotia and New Brunswick .....	54,485	—	6,716	61,201
Quebec .....	76,783	—	25,375	102,158
Ontario .....	176,945	811	37,395	215,151
Manitoba and Saskatchewan .....	52,280	—	11,180	63,460
Alberta .....	66,952	—	13,269	80,221
British Columbia .....	70,473	—	6,569	77,042
<b>Canada .....</b>	<b>497,918</b>	<b>811</b>	<b>100,504</b>	<b>599,233</b>
Closing:				
Newfoundland, Nova Scotia and New Brunswick .....	50,712	—	6,699	57,411
Quebec .....	127,901	22,660	26,140	176,701
Ontario .....	185,127	19,168	49,878	254,173
Manitoba and Saskatchewan .....	52,927	2,912	10,000	65,839
Alberta .....	48,723	1,019	15,179	64,921
British Columbia .....	94,854	2,766	11,417	109,037
<b>Canada .....</b>	<b>560,244</b>	<b>48,525</b>	<b>119,313</b>	<b>728,082</b>

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

Note: Beginning with 1954, information on the value of year-end inventory holdings at plant and plant warehouses is being collected as part of the annual Census of Industry. These data were formerly collected by a separate survey. The summarized results for the Compressed Gases Industry for the year under review are shown in the above table.

TABLE 3. Products of the Compressed Gases Industry, 1954 and 1955

Product	1954		1955	
	Quantity	Value of factory shipments	Quantity	Value of factory shipments
	cu. ft.	\$	cu. ft.	\$
Acetylene <sup>1</sup> .....	150,026,906	5,060,711	159,005,717	5,372,647
Oxygen <sup>1</sup> .....	927,713,308	7,165,890	1,000,297,075	7,410,259
Other products <sup>2</sup> .....	—	3,646,687	—	3,719,018
<b>Canada</b> .....	<b>—</b>	<b>15,873,288</b>	<b>—</b>	<b>16,501,924</b>

1. In cylinders or delivered by pipeline.

2. Includes nitrous oxide, carbon dioxide, nitrogen, etc.

TABLE 4. Materials Used in the Compressed Gases Industry, 1954 and 1955

Material	Unit of measure	1954		1955	
		Quantity	Cost at works	Quantity	Cost at works
			\$		\$
Acetone .....	lb.	489,749	65,029	529,260	63,068
Calcium carbide .....	ton	12,443	1,278,410	13,417	1,361,770
Oil (for making carbon dioxide and hydrogen) .....	Imp. gal.	1,446,916	133,468	1,701,252	151,746
Potassium hydroxide .....	lb.	68,915	7,848	73,888	9,768
Sodium hydroxide .....	"	468,022	27,681	471,937	23,836
Other materials <sup>1</sup> .....	—	—	1,110,166	—	1,332,730
<b>Total</b> .....	<b>—</b>	<b>—</b>	<b>2,622,602</b>	<b>—</b>	<b>2,942,918</b>
Cylinders purchased during the year .....	number	11,913	527,020	24,303	763,763

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

TABLE 5. Production<sup>1</sup> of Acetylene and Oxygen, 1946-1955

Year	Acetylene		Oxygen <sup>2</sup>	
	Quantity	Selling value at works	Quantity	Selling value at works
	cu. ft.	\$	cu. ft.	\$
1946 .....	100,276,367	2,403,386	476,822,719	3,973,866
1947 .....	111,370,838	2,748,114	577,805,032	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
1954 .....	150,026,906	5,060,711	939,153,386	7,183,927
1955 .....	159,005,717	5,372,647	1,017,208,577	7,434,989

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<sup>2</sup> of Carbon Dioxide, 1930-1954

Year	In the manufacture of carbonated beverages (soft drinks) <sup>1</sup>				In the manufacture of malt liquors	
	In cylinders		Solid		Quantity	Cost at works
	Quantity	Cost at works	Quantity	Cost at works		
	pounds	\$	pounds	\$	pounds	\$
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	53,362	1,018,795	103,714
1954 .....	13,404,742	1,003,780	1,862,033	144,327	742,529	88,254

1. Includes amounts used by firms classified to the Breweries Industry which made soft drinks as a minor product.  
 2. 1955 figures not available.

TABLE 7. Principal Statistics of the Compressed Gases Industry in Canada, Grouped According to Size of Establishment, 1954 and 1955

Establishments reporting value of factory shipments	Establishments	Employees	Earnings	Cost at plant of materials used	Selling value of factory shipments
	No.	No.	\$	\$	\$
1954					
Under \$10,000 .....	3	16	51,519	47,105	115,190
\$25,000 to \$49,999 .....	3	17	59,787	77,403	235,279
\$100,000 to \$199,999 .....	14	167	587,895	363,204	2,279,276
\$200,000 to \$499,999 .....	16	484	1,596,140	826,649	5,176,009
\$500,000 to \$999,999 .....	8	621	2,059,799	1,308,241	8,067,534
\$1,000,000 to \$4,999,999 .....	2				
<b>Total .....</b>	<b>46</b>	<b>1,305</b>	<b>4,355,140</b>	<b>2,622,602</b>	<b>15,873,288</b>
1955					
\$25,000 to \$49,999 .....	4	23	81,078	57,994	173,586
\$50,000 to \$99,999 .....	5	29	104,347	85,415	379,006
\$100,000 to \$199,999 .....	13	129	515,302	408,063	2,006,140
\$200,000 to \$499,999 .....	20	586	1,950,443	1,024,635	6,298,943
\$500,000 to \$999,999 .....	10	620	2,108,589	1,366,811	7,644,249
\$1,000,000 to \$4,999,999 .....					
<b>Total .....</b>	<b>52</b>	<b>1,387</b>	<b>4,759,759</b>	<b>2,942,918</b>	<b>16,501,924</b>

TABLE 8. Employees and Their Earnings in the Compressed Gases Industry, 1954 and 1955

Province	Number of employees					Earnings		
	Supervisory and office		Production workers		Total	Supervisory and office	Production workers	Total
	Male	Female	Male	Female				
1954						\$	\$	\$
Quebec.....	54	40	195	1	290	298,868	667,488	966,356
Ontario.....	156	130	287	—	573	981,223	978,393	1,959,616
Alberta.....	37	16	60	—	113	163,459	204,727	368,186
British Columbia .....	25	15	59	—	99	120,526	209,745	330,371
Other provinces .....	69	36	125	—	230	334,867	395,744	730,611
Canada.....	341	237	726	1	1,305	1,899,043	2,456,097	4,355,140



**TABLE 8. Employees and Their Earnings in the Compressed Gases Industry, 1954 and 1955**  
— Concluded

Province	Number of employees					Earnings		
	Supervisory and office		Production workers		Total	Supervisory and office	Production workers	Total
	Male	Female	Male	Female				
<b>1955</b>						\$	\$	\$
Quebec .....	60	41	196	—	297	318,218	693,741	1,011,959
Ontario .....	195	152	274	—	621	1,136,676	1,074,232	2,210,908
Alberta .....	37	17	56	—	110	150,625	230,375	381,000
British Columbia .....	44	15	60	—	119	170,946	235,016	405,962
Other provinces .....	93	34	113	—	240	354,397	395,533	749,930
<b>Canada .....</b>	<b>429</b>	<b>259</b>	<b>699</b>	<b>—</b>	<b>1,387</b>	<b>2,130,862</b>	<b>2,628,897</b>	<b>4,759,759</b>

**TABLE 9. Production Workers, by Months, 1954 and 1955**

Month	1954			1955		
	Male	Female	Total	Male	Female	Total
	Number					
January .....	708	1	709	677	—	677
February .....	711	1	712	678	—	678
March .....	722	1	723	679	—	679
April .....	717	1	718	685	—	685
May .....	744	1	745	699	—	699
June .....	748	1	749	714	—	714
July .....	757	1	758	751	—	751
August .....	752	1	753	747	—	747
September .....	733	1	734	707	—	707
October .....	715	1	716	693	—	693
November .....	708	1	709	692	—	692
December .....	710	1	711	689	—	689
<b>Average .....</b>	<b>726</b>	<b>1</b>	<b>727</b>	<b>699</b>	<b>—</b>	<b>699</b>

**TABLE 10. Capital and Repair Expenditures in the Compressed Gases Industry, 1951-1955**

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						
1951 .....	560	1,244	1,804	129	638	767	2,571
1952 .....	215	1,655	1,870	192	736	928	2,798
1953 .....	315	2,452	2,767	166	885	1,051	3,818
1954 .....	1,118	1,731	2,849	158	837	995	3,844
1955 <sup>t</sup> .....	405	2,515	2,920	138	804	942	3,862

1. Preliminary.



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TABLE 11. Production and Imports of Liquefied Petroleum Gases, 1951-1955

Year	Production	Imports
	(lb.)	
1951.....	112,000,000	188,849,000
1952.....	184,000,000	191,701,000
1953.....	263,835,000	263,071,000
1954.....	371,160,000	265,319,000
1955.....	523,709,000	222,223,000

TABLE 12 Production, Imports and Exports of Chlorine, 1951-1955

Year	Production	Imports	Exports
	(tons)		
1951.....	155,000	12,900	1
1952.....	169,000	15,800	14,200
1953.....	169,000	20,400	17,900
1954.....	167,000	32,100	2,900
1955.....	192,000	38,000	10,400

1. Not available separately before 1952.

List of Firms in the Compressed Gases Industry, 1955

Name of firm	Location of plant
Liquid Carbonic Canadian Corporation Limited, H.O. 2120 Cabot St., Montreal, Quebec	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, Quebec	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.; Victoria, B.C.; Kitimat, B.C.; North Vancouver, B.C.; Cranbrook, B.C.
Linde Air Products Div. of Union Carbide, Canada Ltd., H.O. Canada Life Building, 340 University Ave., Toronto, Ontario	Noranda, Que.; Arvida, Que.; Quebec, Que.; Montreal, Que. (2); Shawinigan Falls, Que.; Sault Ste. Marie, Ont.; Fort William, Ont.; Toronto, Ont.; Welland, Ont.; Merriton, Ont.; St. Boniface, Man.; Saskatoon, Sask.; Edmonton, Alta.; Vancouver, B.C.
Imperial Oxygen Limited, H.O. 8400 Decarie Blvd., Montreal, Quebec	Montreal, Que. (2); Toronto, Ont.; Windsor, Ont.
Ohio Chemical Canada Limited, 2535 St. James St. W., Montreal, Quebec	Montreal, Que.; Toronto, Ont.
Alberta Oxygen & Acetylene Co. Ltd., 142nd Street at 108th Avenue, Edmonton, Alberta	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.