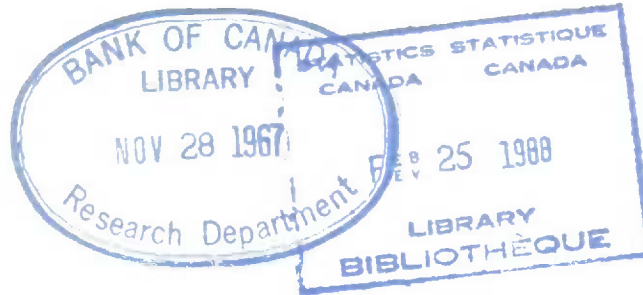


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MANUFACTURERS OF INDUSTRIAL CHEMICALS 1965

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PUBLICATIONS

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MANUFACTURERS OF INDUSTRIAL CHEMICALS

1965

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 industry; 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.

Separate figures for the production of chemicals in this industry are not published as many of the individual items are 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, chlorine and caustic soda are shown in Tables 8 to 22 inclusive.

Value of shipments and other revenue of this industry totalled \$793.0 million, an increase of \$83.0 million over 1964. This amount included shipments of industrial chemicals valued at \$587.0 million, shipments of other products (secondary products) valued at \$98.0 million, and other revenue of \$108.0 million.

This industry's shipments of industrial chemicals represented 83.8 per cent of its manufacturing revenue. Secondary products shipped in 1965 included anti-freeze, feed supplements, acrylic fibres, ethyl anti-knock compounds, fatty acids, plasticizers, vinyl chloride monomers, pest control products, etc.

The cost of materials and supplies, fuel and electricity etc. (inputs) used in the production of goods of own manufacture increased by \$38.9 million. Cost of inputs in 1965 represented 48.4 per cent of the value of shipments of own manufacture (outputs), compared to 47.5 per cent in 1964.

SYMBOLS

The following standard symbols are used in Dominion Bureau of Statistics publications:

- .. figures not available.
- ... figures not appropriate or not applicable.
- nil or zero.
- amount too small to be expressed.
- p preliminary figures.
- * revised figures.
- x confidential to meet secrecy requirements of the Statistics Act.

TABLE 1. Principal Statistics, 1961 - 65

Year and province	Estab-lish-ments	Manufacturing activity							Total activity				
		Production and related workers			Cost of fuel and elec-tricity	Cost of materials and supplies	Value of shipments of goods of own manu-facture	Value added	Working owners and partners		Employees		Value added
		Number	Man-hours paid	Wages					Number	With-drawals	Number	Salaries and wages	
No.		'000			\$'000			\$'000		\$'000			
1961													
Totals	125	10,791	23,485	55,798	42,001	181,624	478,690	260,137	x	x	16,748	91,686	270,688
1962													
Totals	126	10,595	23,069	57,382	42,756	190,967	517,199	280,908	x	x	16,508	94,384	293,173
1963													
Totals	129	11,402	24,885	62,731	46,115	221,067	553,762	290,194	--	--	17,587	102,935	308,831
1964													
Newfoundland	1	96	207	469	547	1,035	4,897	3,329	--	--	197	940	4,130
Prince Edward Island	--												
Nova Scotia	4												
New Brunswick	3												
Quebec	32	2,813	6,330	15,925	9,047	52,345	124,145	62,917	--	--	4,114	24,543	65,173
Ontario	57	6,763	14,611	39,271	32,419	150,962	376,543	194,673	--	--	10,830	67,170	205,720
Manitoba	4	44	87	179	61	697	2,098	1,340	--	--	105	468	1,938
Saskatchewan	4	47	116	277	116	1,402	1,853	1,023	--	--	80	472	1,756
Alberta	11	774	1,766	4,397	3,281	18,804	54,213	33,119	--	--	1,231	7,381	34,292
British Columbia	16	1,054	2,291	5,555	3,604	22,380	53,822	29,551	--	--	1,488	8,216	31,048
Yukon and Northwest Territories	--	--	--	--	--	--	--	--	--	--	--	--	--
Totals	132	11,591	25,408	66,074	49,075	247,626	617,570	325,953	--	--	18,045	109,190	344,057
1965													
Newfoundland	1	99	198	520	786	1,379	5,762	3,604	--	--	206	1,133	4,713
Prince Edward Island	--												
Nova Scotia	4												
New Brunswick	5												
Quebec	31	2,847	6,127	16,086	10,057	55,750	131,026	65,287	--	--	4,180	25,158	68,789
Ontario	58	6,925	15,090	41,859	35,466	173,049	423,849	217,139	--	--	11,106	71,733	230,341
Manitoba	3	35	76	161	66	718	1,962	1,175	--	--	113	546	1,575
Saskatchewan	4	80	170	428	308	4,123	4,665	974	--	--	128	733	1,559
Alberta	12	907	1,991	5,455	3,901	21,604	58,557	36,508	--	--	1,507	9,214	37,800
British Columbia	16	1,085	2,222	6,124	3,956	24,415	59,617	33,518	--	--	1,659	9,741	35,209
Yukon and Northwest Territories	--	--	--	--	--	--	--	--	--	--	--	--	--
Totals	134	11,978	25,873	70,634	54,539	281,040	685,437	358,205	--	--	18,899	118,259	379,986

TABLE 2. Principal Statistics classified by Size Group based on Value of Shipments of Goods of Own Manufacture, 1964 and 1965

Size group	Estab-lish-ments	Manufacturing activity						Total activity						
		Production and related workers			Cost of fuel and elec-tricity	Cost of materials and supplies	Value of shipments of goods of own manufac-ture	Value added	Working owners and partners		Employees		Value added	
		Number	Man-hours paid	Wages					Number	With-drawals	Number	Salaries and wages		
No.		'000			\$'000			\$'000		\$'000				
1964														
Under \$10,000	-	-	-	-	-	-	-	-	-	-	-	-		
\$ 10,000 to \$ 24,999	-	-	-	-	-	-	-	-	-	-	-	-		
25,000 "	5	11	23	48	17	178	319	162	-	-	19	83	217	
50,000 "		12	71	138	270	78	852	1,646	896	-	-	187	797	3,373
100,000 "		28	212	461	1,017	242	3,569	9,297	5,509	-	-	373	1,934	8,728
200,000 "		18	272	578	1,272	462	4,434	12,919	8,218	-	-	565	2,737	10,755
500,000 "		38	1,519	3,325	7,981	6,049	37,804	86,733	44,349	-	-	2,510	13,530	48,445
1,000,000 "	31	9,506	20,885	55,486	42,227	200,790	506,656	266,818	-	-	13,947	87,059	270,399	
5,000,000 and over	...	...	...	...	...	...	...	...	-	-	444	3,049	2,140
Head offices, sales offices and auxiliary units	...	...	...	...	...	...	...	...	-	-	...	...	...
Totals	132	11,591	25,408	66,074	49,075	247,626	617,570	325,953	-	-	18,045	109,190	344,057	
1965														
Under \$10,000	-	-	-	-	-	-	-	-	-	-	-	-		
\$ 10,000 to \$ 24,999	-	-	-	-	-	-	-	-	-	-	-	-		
25,000 "	5	8	17	32	15	78	274	182	-	-	18	73	194	
50,000 "		13	55	116	287	66	798	1,901	1,060	-	-	167	912	3,240
100,000 "		21	170	367	881	216	3,216	6,671	3,127	-	-	345	1,823	5,936
200,000 "		21	265	551	1,348	554	5,099	15,260	9,609	-	-	624	3,228	13,285
500,000 "		44	1,682	3,714	9,579	8,018	48,188	111,985	58,015	-	-	2,631	15,704	64,047
1,000,000 "	30	9,798	21,110	58,507	45,671	223,661	549,346	286,212	-	-	14,563	92,783	291,226	
5,000,000 and over	...	...	...	...	...	...	...	...	-	-	551	3,737	2,057
Head offices, sales offices and auxiliary units	...	...	...	...	...	...	...	...	-	-	...	...	...
Totals	134	11,978	25,873	70,634	54,539	281,040	685,437	358,205	-	-	18,899	118,259	379,986	

TABLE 3. Principal Statistics classified by Size Group based on Manufacturing Value Added, 1964 and 1965

Size group	Estab-lish-ments	Manufacturing activity						Total activity						
		Production and related workers			Cost of fuel and elec-tricity	Cost of materials and supplies	Value of shipments of goods of own manufac-ture	Value added	Working owners and partners		Employees		Value added	
		Number	Man-hours paid	Wages					Number	With-drawals	Number	Salaries and wages		
No.		'000			\$'000			\$'000		\$'000				
1964														
Under \$10,000	-	-	-	-	-	-	-	-	-	-	-	-		
\$ 10,000 to \$ 24,999	3	13	24	52	15	192	253	53	-	-	58	209	726	
25,000 "	5	35	68	116	38	530	555	193	-	-	55	207	947	
50,000 "	13	62	129	256	59	1,577	2,624	958	-	-	119	532	1,946	
100,000 "	15	145	309	663	782	4,209	7,192	2,259	-	-	288	1,503	4,640	
200,000 "	29	362	809	1,749	514	9,721	19,934	10,219	-	-	702	3,570	12,920	
500,000 "	14	390	853	1,898	1,052	8,339	19,278	10,040	-	-	675	3,466	12,344	
1,000,000 "	34	2,406	5,211	13,335	10,976	54,576	139,269	74,731	-	-	3,616	20,723	77,936	
5,000,000 and over	19	8,178	18,006	48,004	35,639	168,482	428,465	227,500	-	-	12,088	75,930	230,458	
Head offices, sales offices and auxiliary units	...	...	...	...	...	...	...	...	-	-	444	3,049	2,140
Totals	132	11,591	25,408	66,074	49,075	247,626	617,570	325,953	-	-	18,045	109,190	344,057	
1965														
Under \$10,000	-	-	-	-	-	-	-	-	-	-	-	-		
\$ 10,000 to \$ 24,999	7	47	102	276	27	614	952	171	-	-	91	532	1,543	
25,000 "		13	60	124	277	67	1,109	2,090	919	-	-	163	845	2,961
50,000 "		16	179	389	877	366	5,690	8,319	2,149	-	-	276	1,386	2,714
100,000 "		25	283	612	1,384	613	11,284	19,813	8,596	-	-	622	3,250	11,950
200,000 "		17	386	855	2,082	848	9,936	23,170	12,065	-	-	680	3,993	13,924
500,000 "	37	2,395	5,205	14,104	13,878	59,214	155,742	83,981	-	-	3,630	22,194	89,926	
1,000,000 "	19	8,628	18,587	51,635	38,740	193,193	475,351	250,324	-	-	12,886	82,322	254,822	
5,000,000 and over	...	...	...	...	...	...	...	...	-	-	551	3,737	2,057
Head offices, sales offices and auxiliary units	...	...	...	...	...	...	...	...	-	-	...	...	...
Totals	134	11,978	25,873	70,634	54,539	281,040	685,437	358,205	-	-	18,899	118,259	379,986	

TABLE 4. Principal Statistics classified by Size Group based on Total Value Added, 1964 and 1965

Size group	Estab- lish- ments	Manufacturing activity							Total activity					
		Production and related workers			Cost of fuel and elec- tricity	Cost of materials and supplies	Value of shipments of goods of own manu- facture	Value added	Working owners and partners		Employees		Value added	
		Number	Man- hours paid	Wages					Number	With- drawals	Number	Salaries and wages		
	No.		'000			'000			'000		'000			
1964														
Under \$10,000	—	—	—	—	—	—	—	—	—	—	—	—		
\$ 10,000 to \$ 24,999	}	3	6	12	25	14	145	189	67	—	—	13	53	89
25,000 " 49,999		9	39	85	168	29	1,248	1,852	572	—	—	63	301	645
50,000 " 99,999		12	113	241	497	116	3,309	5,104	1,712	—	—	147	681	1,842
100,000 " 199,999		30	314	693	1,500	519	9,003	17,035	8,127	—	—	535	2,820	10,345
200,000 " 499,999		22	447	961	2,046	1,335	8,892	21,207	11,260	—	—	930	4,550	16,496
500,000 " 999,999	37	2,494	5,410	13,833	11,423	56,546	143,719	76,215	—	—	3,825	21,806	82,042	
1,000,000 " 4,999,999	19	8,178	18,006	48,004	35,639	168,482	428,465	227,500	—	—	12,088	75,930	230,458	
5,000,000 and over .....	...	...	...	...	...	...	...	...	...	...	444	3,049	2,140
Head offices, sales offices and auxiliary units .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	132	11,591	25,408	66,074	49,075	247,626	617,570	325,953	—	—	18,045	109,190	344,057	
1965														
Under \$10,000	6	27	65	182	19	372	674	144	—	—	42	256	142	
\$ 10,000 to \$ 24,999	}	9	39	82	181	54	892	1,604	674	—	—	66	331	697
25,000 " 49,999		12	128	282	592	166	4,031	5,794	1,531	—	—	210	1,009	1,661
50,000 " 99,999		23	270	582	1,346	687	11,801	18,374	6,517	—	—	480	2,620	8,370
100,000 " 199,999		25	440	970	2,328	933	10,811	25,913	13,840	—	—	869	4,910	18,644
200,000 " 499,999		39	2,390	5,159	14,033	13,763	59,631	153,980	81,920	—	—	3,627	22,198	88,277
500,000 " 999,999	20	8,684	18,734	51,972	38,917	193,502	479,097	253,581	—	—	13,054	83,199	260,136	
1,000,000 " 4,999,999 .....	...	...	...	...	...	...	...	...	...	...	551	3,737	2,057
5,000,000 and over .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Head offices, sales offices and auxiliary units .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	134	11,978	25,873	70,634	54,539	281,040	685,437	358,205	—	—	18,899	118,259	379,986	

TABLE 5. Principal Statistics classified by Size Group based on Total Employed, 1964 and 1965

Size group	Estab- lish- ments	Manufacturing activity							Total activity				
		Production and related workers			Cost of fuel and elec- tricity	Cost of materials and supplies	Value of shipments of goods of own manu- facture	Value added	Working owners and partners		Employees		Value added
		Number	Man- hours paid	Wages					Number	With- drawals	Number	Salaries and wages	
	No.		'000			'000			'000		'000		
1964													
Under 5 employed	9	20	42	86	26	629	1,340	717	—	—	28	134	809
5 - 14 employed	26	141	308	679	616	3,299	9,580	5,717	—	—	229	1,151	6,648
15 - 49 "	41	650	1,437	3,291	2,816	20,556	44,521	23,048	—	—	1,108	5,924	29,049
50 - 99 "	25	1,045	2,271	5,762	6,235	31,965	80,384	42,947	—	—	1,697	9,731	46,151
100-199 "	12	1,216	2,782	7,446	8,696	30,684	83,255	44,212	—	—	1,692	10,564	45,942
200-499 "	11	2,070	4,442	10,662	5,721	42,440	112,598	65,681	—	—	3,175	17,397	67,964
500 employed and over	8	6,449	14,125	38,146	24,964	118,052	285,892	143,630	—	—	9,672	61,240	145,355
Head offices, sales offices and auxiliary units .....	...	...	...	...	...	...	...	...	...	...	444	3,049	2,140
Totals	132	11,591	25,408	66,074	49,075	247,626	617,570	325,953	—	—	18,045	109,190	344,057
1965													
Under 5 employed	8	13	29	56	20	780	1,378	575	—	—	23	111	589
5 - 14 employed	25	125	276	614	817	4,407	10,952	5,819	—	—	226	1,219	6,686
15 - 49 "	43	704	1,530	3,771	3,143	22,281	47,061	21,842	—	—	1,261	7,058	28,787
50 - 99 "	24	988	2,153	5,759	5,098	38,194	87,017	43,699	—	—	1,606	9,872	47,101
100-199 "	16	1,438	3,290	9,196	11,679	40,181	103,557	52,857	—	—	2,208	14,036	58,215
200-499 "	10	2,034	4,309	11,260	6,081	46,377	117,768	66,722	—	—	2,936	17,247	67,414
500 employed and over	8	6,776	14,285	39,978	27,702	128,819	317,704	166,691	—	—	10,088	64,979	169,137
Head offices, sales offices and auxiliary units .....	...	...	...	...	...	...	...	...	...	...	551	3,737	2,057
Totals	134	11,978	25,873	70,634	54,539	281,040	685,437	358,205	—	—	18,899	118,259	379,986

TABLE 6. Principal Statistics classified by Type of Organization, 1964 and 1965

Type of organization	Estab- lish- ments	Manufacturing activity						Total activity					
		Production and related workers			Cost of fuel and elec- tricity	Cost of materials and supplies	Value of shipments of goods of own manu- facture	Value added	Working owners and partners		Employees		Value added
		Number	Man- hours paid	Wages					Number	With- drawals	Number	Salaries and wages	
No.		'000			\$'000			\$'000		\$'000			
1964													
Individual ownerships	-	-	-	-	-	-	-	-	-	-	-	-	
Partnerships	-	-	-	-	-	-	-	-	-	-	-	-	
Incorporated companies	132	11,591	25,408	66,074	49,075	247,626	617,570	325,953	-	-	17,601	106,141	341,917
Co-operatives													
Head offices, sales offices and auxiliary units .....	...	...	...	...	...	...	...	...	...	...	444	3,049	2,140
Totals	132	11,591	25,408	66,074	49,075	247,626	617,570	325,953	-	-	18,045	109,190	344,057
1965													
Individual ownerships	-	-	-	-	-	-	-	-	-	-	-	-	-
Partnerships	-	-	-	-	-	-	-	-	-	-	-	-	-
Incorporated companies	134	11,978	25,873	70,634	54,539	281,040	685,437	358,205	-	-	18,348	114,522	377,929
Co-operatives													
Head offices, sales offices and auxiliary units .....	...	...	...	...	...	...	...	...	...	...	551	3,737	2,057
Totals	134	11,978	25,873	70,634	54,539	281,040	685,437	358,205	-	-	18,899	118,259	379,986

TABLE 7. Calculation of Output, Input and Value Added, 1964 and 1965

	Manufacturing activity		Non-manufacturing activities		Total activity	
	1964	1965	1964	1965	1964	1965
\$'000						
Output						
1. Shipments and other revenue	617,570	685,437	92,500	107,583	710,070	793,020
Inventories—Goods of own manufacture:						
Add closing—Goods in process	8,633	8,284	...	...	8,633	8,284
Finished goods	49,360	58,013	...	...	49,360	58,013
Deduct opening—Goods in process	8,827	8,664	...	...	8,827	8,664
Finished goods	44,082	49,286	...	...	44,082	49,286
2. Net inventory change	5,084	8,347	...	...	5,084	8,347
3. Gross output (1 + 2)	622,654	693,784	92,500	107,583	715,154	801,367
Input						
4. Purchases of goods not of own manufacture .....	...	...	69,076	80,761	69,076	80,761
Inventories—Goods not of own manufacture:						
Add opening .....	...	...	7,533	7,524	7,533	7,524
Deduct closing .....	...	...	7,444	8,384	7,444	8,384
5. Cost of goods sold (not of own manufacture) .....	...	...	69,165	79,901	69,165	79,901
6. Materials, supplies, etc.	247,626	281,040	5,232	5,902	252,858	286,942
7. Fuel and electricity	49,075	54,539	...	...	49,075	54,539
8. Gross input (5 + 6 + 7)	296,701	335,579	74,397	85,803	371,098	421,382
Value added (3 - 8)	325,953	358,205	18,104	21,780	344,057	379,986

TABLE 8. Employment and Payroll, 1964 and 1965

Year and province	Employees										Salaries and wages				
	Production and related workers				Administrative and office		Sales and distribution		Total		Production and related workers		Administrative and office	Sales and distribution	Total
	Manufacturing		Other		Male	Female	Male	Female	Male	Female	Manufacturing	Other			
	Male	Female	Male	Female											
	number										\$'000				
1964															
Newfoundland															
Prince Edward Island															
Nova Scotia	96	-	1	-	62	16	22	-	181	16	469	4	356	110	940
New Brunswick															
Quebec	2,800	13	3	-	925	217	132	24	3,860	254	15,925	14	7,467	1,137	24,543
Ontario	6,731	32	191	-	2,480	674	592	130	9,994	836	39,271	1,155	22,323	4,421	67,170
Manitoba	44	-	4	-	29	13	15	-	92	13	179	24	190	75	468
Saskatchewan	47	-	-	-	18	4	10	1	75	5	277	-	123	72	472
Alberta	767	7	5	-	339	73	37	3	1,148	83	4,397	26	2,750	208	7,381
British Columbia	1,051	3	-	-	357	43	33	1	1,441	47	5,555	-	2,447	213	8,216
Yukon and Northwest Territories	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	11,536	55	204	-	4,210	1,040	841	159	16,791	1,254	66,074	1,224	35,655	6,237	109,190
1965															
Newfoundland															
Prince Edward Island															
Nova Scotia	99	-	2	-	60	16	29	-	190	16	520	18	440	155	1,133
New Brunswick															
Quebec	2,842	5	9	-	929	203	161	31	3,941	239	16,086	57	7,680	1,334	25,158
Ontario	6,896	29	176	-	2,630	706	549	120	10,251	855	41,859	1,118	24,319	4,437	71,733
Manitoba	35	-	8	-	26	17	27	-	96	17	161	27	211	147	546
Saskatchewan	80	-	-	-	30	7	9	2	119	9	428	-	239	66	733
Alberta	894	13	9	-	456	93	39	3	1,398	109	5,455	58	3,471	230	9,214
British Columbia	1,082	3	33	-	371	53	111	6	1,597	62	6,124	123	2,856	640	9,741
Yukon and Northwest Territories	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	11,928	50	237	-	4,502	1,095	925	162	17,592	1,307	70,634	1,400	39,216	7,009	118,259

TABLE 9. Production and Related Workers, - Manufacturing Activity, 1964 and 1965

Month	1964		1965	
	Male	Female	Male	Female
	number			
Establishments reporting monthly detail (large establishments only):				
January	11,160	53	11,441	48
February	11,216	53	11,521	46
March	11,293	54	11,582	45
April	11,343	50	11,663	50
May	11,535	52	11,970	48
June	11,734	52	12,091	47
July	11,751	58	11,983	48
August	11,860	54	12,137	46
September	11,658	51	12,010	48
October	11,588	55	12,089	49
November	11,605	52	12,086	48
December	11,483	53	12,085	49
Averages	11,536	55	11,928	50
Establishments reporting annual averages (small establishments only)	-	-	-	-
Average for all establishments	11,536	55	11,928	50

TABLE 10. Inventories, 1965

Province	Manufacturing				Non-manufacturing	Total inventories
	Materials, supplies, etc.	Goods in process	Finished goods of own manufacture	Total	Products or materials purchased for resale	
book value \$'000						
Opening:						
Newfoundland						
Prince Edward Island						
Nova Scotia	224	8	45	277	303	580
New Brunswick						
Quebec	9,221	1,607	8,331	19,159	1,496	20,655
Ontario	22,569	6,511	23,810	52,890	4,328	57,218
Manitoba	72	2	23	96	142	238
Saskatchewan	245	56	643	944	319	1,263
Alberta	3,021	265	4,561	7,847	385	8,233
British Columbia	6,350	216	11,873	18,438	550	18,988
Yukon and Northwest Territories	-	-	-	-	-	-
Totals	41,701	8,664	49,286	99,652	7,524	107,175
Closing:						
Newfoundland						
Prince Edward Island						
Nova Scotia	281	20	39	340	410	750
New Brunswick						
Quebec	9,507	775	9,232	19,514	1,624	21,138
Ontario	24,251	6,403	25,722	56,376	4,507	60,884
Manitoba	59	2	20	81	216	297
Saskatchewan	402	49	1,391	1,841	269	2,111
Alberta	4,837	938	7,345	13,120	412	13,532
British Columbia	8,099	99	14,262	22,460	945	23,405
Yukon and Northwest Territories	-	-	-	-	-	-
Totals	47,436	8,284	58,013	113,733	8,384	122,117

TABLE 11. Purchased Fuel and Electricity Used, 1964 and 1965

Description	1964		1965	
	Quantity	Cost	Quantity	Cost
		\$'000		\$'000
1. Large establishments reporting commodity detail:				
Bituminous coal:				
(a) From Canadian mines	ton	25,860	3,400	53
(b) Imported	"	1,065,735	1,176,882	10,044
Sub-bituminous coal (from Alberta mines only)	"	-	-	-
Anthracite coal	"	79	40	1
Lignite coal	"	-	-	-
Coke	"	3,949	9,841	153
Gasoline (including gasoline used in cars and trucks)	imp. gal.	1,109,758	1,227,200	434
Fuel oil including kerosene or coal oil	"	36,254,430	48,987,977	3,870
Wood	cord	23	3	--
Gas:				
(a) Liquefied petroleum gases	Imp. gal.	1,860,709	793,464	296
(b) Other manufactured gas	M cu. ft.	12,548,629	12,735,496	3,847
(c) Natural gas	"	21,781,057	22,580,937	5,964
Other fuel .....		...	...	108
Electricity purchased	kwh.	5,563,200,817	5,030,109,401	27,051
Steam purchased .....		...	...	2,720
2. Small establishments not reporting commodity detail:				
Estimate for fuel and electricity		-	-	-
3. All establishments:				
Total fuel and electricity used		49,075	...	54,539

TABLE 12. Materials and Supplies - Manufacturing Activity, 1964 and 1965

Description	1964		1965		
	Quantity	Cost	Quantity	Cost	
		\$'000		\$'000	
1. Materials used:					
Acetone	lb.	2,016,351	174	1,903,864	164
Acid - Acetic, 99% ¹	"	1,969,873	164	2,281,671	190
Fatty - Oleic	"	1,107,385	210	1,845,856	391
Stearic	"	1,201,145	161	1,338,864	185
Other fatty acids	"	11,084,319	1,209	10,404,094	1,318
Formic, 85%	"	344,879	47	448,541	60
Hydrochloric (muriatic), 100%	"	11,065,333	409	11,111,610	414
Hydrofluoric	"	6,089,004	1,130	7,301,788	1,372
Nitric, 100%	"	42,328,238	667	59,899,862	1,060
Phosphoric	"	72,032,506	5,084	105,832,420	8,036
Sulphuric - New acid (as 100%)	ton	92,739	1,906	142,528	2,552
Spent acid (as 100%)	"	-	-	44	2
Alcohol - Butyl (including isobutyl and normal)	lb.	6,537,289	903	3,930,540	525
Isopropyl	"	2,050,418	129	2,688,596	206
Methyl	Imp. gal.	2,476,533	654	2,549,319	709
Aluminum chloride	lb.	3,052,521	428	3,849,018	481
Aluminum sulphate (alum)	"	1,264,321	31	1,769,999	53
Ammonia, anhydrous	ton	114,320	6,053	110,546	5,341
Barium carbonate	lb.	1,423,534	70	1,530,500	88
Barium chloride	"	711,867	48	731,674	50
Benzol	"	190,743,274	6,293	199,403,046	6,782
Betanaphthol	"	395,482	93	292,516	69
Calcium carbonate (whiting and chalk)	"	532,280	11	458,583	16
Carbon, activated	"	563,390	193	334,134	96
Carbon bisulphide (disulphide)	"	2,595,640	133	2,636,915	138
Carbon tetrachloride	"	22,983,720	1,604	23,526,010	1,640
Chlorine	ton	38,253	2,620	35,703	2,447
Coal, (except for fuel) - Anthracite	"	61,160	1,022	109,375	1,941
Bituminous	"	58,902	859	41,408	624
Cobalt acetate	lb.	39,262	30	43,134	33
Coke, (except for fuel) other	ton	172,631	3,041	137,930	2,572
Cresol (including cresylic acid, all forms)	lb.	161,859	27	184,781	34
Diatomaceous earth	ton	12,837	759	12,296	753
Electrodes (purchased)	"	..	982	..	1,278
Ethanolamine - Mono	lb.	1,104,534	293	1,077,220	304
Di	"	116,631	38	344,782	91
Tri	"	301,758	90	177,518	55
Fluorspar	ton	11,246	538	12,827	643
Formaldehyde, 100% solids basis	lb.	1,999,851	209	2,119,008	216
Glycerine (includes mainly crude grade)	"	1,969,916	365	2,527,478	478
Glycols - Ethylene	"	270,416	40	856,347	149
Other grades	"	1,109,846	182	978,167	158
Graphite	"	1,544,005	604	838,881	386
Iron and steel scrap (borings, etc.)	ton	6,056	195	6,048	234
Lead	lb.	27,440,931	3,498	29,390,075	4,456
Lead sulphate	"	13,550	3	1,800	--
Limestone	ton	582,735	1,314	621,643	1,398
Lime - Hydrated	"	3,898	80	5,382	118
Quick	"	30,088	430	25,303	359
Litharge	lb.	2,527,245	435	2,701,012	510
Mercury	"	96,166	294	158,612	622
Muriate of potash (potassium chloride)	ton	8,445	374	8,830	386
Natural gas (as a material in manufacturing; not for fuel)	M cu. ft.	14,716,741	5,339	16,796,193	6,091
Oils - Caster	lb.	2,120,087	325	2,276,310	307
Cocanut	"	3,102,320	477	3,362,587	624
Linseed	Imp. gal.	27,714	38	58,411	77
Tall	lb.	591,041	109	1,195,589	139
Other oils	"	3,329,899	400	3,388,711	364
Phenol	"	8,639,226	1,012	8,090,617	926
Petrochemical feed stocks - L.P.G.'s (Butane, propane, other)	"	..	5,604	..	6,653
Other	"	..	33,533	..	40,728
Phosphate rock	ton	908,695	13,604	1,127,758	14,963
Potassium bichromate	lb.	283,620	55	241,600	47
Potassium hydroxide (as 100% KOH)	"	4,775,571	272	5,473,766	302
Phthalic anhydride	"	6,578,659	795	7,846,275	915
Quartz and quartzite	ton	70,685	242	67,724	243
Silica sand	"	29,787	272	33,518	298
Sodium chloride, dry (common salt)	"	498,340	4,722	562,737	5,275
Sodium chloride, brine (salt content)	"	73,913	213	26,559	221
Sodium bichromate	lb.	1,952,618	432	3,054,903	702
Sodium hydroxide (caustic soda as 100% Na OH)	ton	53,132	2,817	33,597	2,082
Sodium nitrate	lb.	893,657	50	827,281	47
Sodium prussiate	"	430,654	67	422,189	66
Sodium silicate (water glass) (including metasilicate)	"	2,136,209	55	2,921,601	78
Sulphur (brimstone)	ton	243,696	5,460	269,060	6,373
Tallow	lb.	20,673,917	1,496	20,893,569	1,688
Titanium dioxide	"	81,810	22	77,601	22
Toluene (toluol)	"	44,520,647	1,177	46,310,087	1,259
Urea	"	17,909,071	512	18,550,606	503
Xylene (xylo)	"	322,989	16	351,862	16
Zinc chloride	"	637,083	59	450,977	36
Zinc oxide	"	379,612	59	597,425	98
Steel sheets for making containers	ton	3,063	536	3,812	654
All other materials and components used ²	..	..	78,623	..	90,849
2. Containers and other packaging materials and supplies used					
	..	..	11,952	..	11,550
3. Operating, maintenance and repair supplies used (excluding fuel)					
	..	..	28,047	..	31,757
4. Amount paid out to others for work done on materials owned by establishments					
	..	..	3,111	..	2,901
Totals	..	..	247,626	..	281,040

¹ No detailed information on materials used was collected from small establishments, the estimated costs for which are included here. In 1965 these estimated costs were \$110,330.

TABLE 13. Factory Shipments of Chemicals, 1964 and 1965

Description	Value	
	1964	1965
	\$'000	
Acids, including acetic, muriatic, nitric, sulphuric, phosphoric, stearic, etc.	40,112	51,118
Calcium compounds, including carbide, chloride, phosphide, cyanamide, cyanide acid phosphate, grey acetate, arsenate, chloride of lime, etc.	19,831	23,238
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)	59,932	67,726
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)	209,588	244,144
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.	102,722	112,207
Fertilizer chemicals, including ammonium sulphate, ammonium nitrate (fertilizer grade), ammonium phosphate and superphosphate	90,348	104,793
Synthetic resins, including casein type, vinyls, polystyrene, phenol-formaldehyde, urea-formaldehyde, alkyds, sodium carboxymethylcellulose, etc.	142,851	143,327
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.	109,343	126,805
Totals	774,727	873,358

TABLE 14. Production,¹ Imports, Exports and Apparent Consumption of Sulphuric Acid, 1925 - 65

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
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
1962	1,696,000	7,162	34,960	1,668,202
1963	1,790,000	5,634	37,316	1,758,318
1964	1,941,000	4,209	67,409	1,877,800
1965	2,165,000	3,075	57,113	2,110,962

¹ From all industries.

² No allowance made for changes in inventories.

TABLE 15. Production,¹ Imports and Exports of Chlorine and Caustic Soda, 1961-65

Year	Chlorine	Caustic soda ² (100% Na OH)
	tons	
(a) Production:		
1961	354,000	415,000
1962	371,000	432,000
1963	423,000	485,000
1964	469,000	539,000
1965	569,000	643,000
(b) Imports:		
1961	29,686	37,107
1962	32,478	53,062
1963	34,552	77,593
1964	42,848	55,222
1965	37,833	94,088
(c) Exports:		
1961	19,965	..
1962	24,900	..
1963	27,000	..
1964	18,320	..
1965	39,124	..

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 15 have been converted to 100% Na OH to agree with the basis used in production and exports.

TABLE 16. Available Data on the Consumption of Sulphuric Acid, by Industries, 1964 and 1965

Industry	1964	1965
	short tons of 100% acid	
Iron and steel mills.....	67,896	60,966
Other iron and steel.....	14,784	14,493
Electrical products.....	5,352	7,737
Vegetable oil mills.....	79	216
Sugar refineries.....	271	273
Leather tanneries.....	2,550	2,506
Pulp and paper mills.....	53,985	59,346
Uranium ore processing.....	143,162	70,795
Manufacturers of mixed fertilizers ¹	362,883	404,095
Manufacturers of plastics and synthetic resins.....	24,491	24,304
Manufacturers of soap and cleaning compounds.....	17,315	17,767
Other chemical industries.....	12,104	14,980
Manufacturers of industrial chemicals ² (includes bauxite concentration).....	1,004,555	1,041,401
Petroleum refining industry.....	14,612	18,359
Mining ³	47,549	47,549
Miscellaneous ⁴	85,275	91,367
Total accounted for.....	1,856,920	1,876,210

¹ Includes used for production of superphosphates.

² Includes consumption of "own make" or "captive" acid by firms classified to these industries.

³ Includes metal mines, non-metal mines, mineral fuels and structural materials.

⁴ Includes synthetic textiles, explosives and ammunition, other petroleum and coal, mineral wool, miscellaneous food industries and textile dyeing and finishing industries.

TABLE 17. Available Data on the Consumption of Chlorine, by Industries, 1964 and 1965

Industry	1964	1965
	net tons	
Municipal waterworks (1959 latest available).....	2,721	2,721
Mining ¹	5,113 ²	5,113
Pulp and paper mills ³	278,035	259,094
Textile dyeing and finishing plants.....	9	47
Manufacturers of plastics and synthetic resins.....	247	249
Manufacturers of soap and cleaning compounds.....	6,835	7,907
Manufacturers of industrial chemicals ³	192,822	313,628
Miscellaneous food industries.....	439	903
Total accounted for.....	486,221	589,662

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.

TABLE 18. Available Data on the Consumption of Caustic Soda, by Industries, 1964 and 1965

Industry	1964	1965
	net tons of 100% Na OH	
Pulp and paper mills ¹	290,545	299,336
Manufacturers of soap and cleaning compounds.....	27,982	29,492
Manufacturers of industrial chemicals ¹ (includes bauxite concentration).....	218,615	155,031
Petroleum refining.....	10,280	12,127
Manufacturers of plastics and synthetic resins.....	16,840	17,481
Other chemical industries.....	7,497	7,839
Miscellaneous food industries (includes starch and glucose).....	2,652	2,844
Mining ²	10,356	10,356
Iron and steel mills.....	1,211	1,098
Textile dyeing and finishing.....	118	203
Sugar refineries.....	104	129
Vegetable oil mills.....	224	334
Miscellaneous ³	26,238	27,376
Total accounted for.....	612,662	555,807

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 Includes synthetic textile mills and plastic fabricators.

TABLE 19. Factory Shipments¹ of Ammonium Sulphate, 1961 - 65

Year	Shipments
	tons
1961	278,527
1962	291,683
1963	257,581 [†]
1964	286,439
1965	307,646

¹ From all industries.

TABLE 20. Factory Shipments¹ of Pigments and Dry Colours, 1961 - 65

Year	Shipments ¹
	\$'000
1961	28,477
1962	33,306
1963	42,416
1964	51,189
1965	56,165

¹ From all industries.

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

TABLE 21. Factory Shipments of Synthetic Rubber, 1961 - 65

Year	Quantity	Selling value at plant
	M pounds	\$'000
1961	372,254	83,427
1962	372,394	80,200
1963	409,390	79,076
1964	452,026	82,659
1965	454,819	82,456

TABLE 22. Factory Shipments¹ of Acetylene and Oxygen, 1961 - 65

Year	Acetylene		Oxygen ²	
	Quantity	Selling value at plant	Quantity	Selling value at plant
	cu. ft.	\$'000	cu. ft.	\$'000
1961	178,777,276	6,967	1,888,655,030	12,317
1962	192,492,117	7,236	1,552,477,747	12,775
1963	197,462,539	7,690	1,704,636,705	12,244
1964	213,956,910	8,109	1,677,809,347	13,062
1965	214,717,178	8,186	1,708,540,072	13,790

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.

List of Establishments classified to this Industry, 1965

(Does not include establishments classified to other industries, which as a secondary activity, manufacture products typical of this industry)

Name and location	Name and location
Newfoundland:	Ontario - Concluded:
L'Air Liquide and Canadian Liquid Air Co. Ltd., St. John's	Ethyl Corporation of Canada Ltd., Corunna Harchem Limited, 715 Kipling Ave. S., Toronto Holland Suco Colour of Canada Ltd., 120 St. Helen's Ave., Toronto Howards and Sons (Canada) Ltd., Cornwall Huron Chemicals, Marathon Imperial Oil Enterprises Ltd., Sarnia Independent Oxygen and Acetylene Co. Ltd., Cornwall L'Air Liquide and Canadian Liquid Air Co. Ltd., Hamilton L'Air Liquide and Canadian Liquid Air Co. Ltd., London L'Air Liquide and Canadian Liquid Air Co. Ltd., Port Arthur L'Air Liquide and Canadian Liquid Air Co. Ltd., Sudbury L'Air Liquide and Canadian Liquid Air Co. Ltd., Toronto Liquid Carbonic Canadian Corp. Ltd., Maitland Liquid Carbonic Canadian Corp. Ltd., 41 Mill St., Toronto Liquid Carbonic Canadian Corp. Ltd., 565 Tretheway Dr., Toronto National Oxygen Ltd., Div. of Anthe Imperial Co. Ltd., Oakville National Silicates Ltd., Toronto Naugatuck Chemicals, Div. of Dominion Rubber Co. Ltd., Elmira Northern Pigment Co. Ltd., Towns Rd., Etobicoke Nuodex Products of Canada Ltd., Toronto Pfizer Company Limited, Cornwall Pigment and Chemical Co. Ltd., Milton Polymer Corporation Limited, Sarnia Resco Chemicals and Colours Ltd., Toronto Sherbrooke Metallurgical Co. Ltd., Dunnville St. Clair Chemical Ltd., Sarnia Union Carbide Canada Ltd., Linde Gases Div., Oakville Union Carbide Canada Ltd., Linde Gases Div., Sault Ste. Marie Union Carbide Canada Ltd., Linde Gases Div., Welland Vir Chem. of Canada Ltd., Cornwall Welland Chemicals of Canada Ltd., Port Colborne Witco Chemical Co. (Canada) Ltd., Oakville
Nova Scotia:	Manitoba:
L'Air Liquide and Canadian Liquid Air Co. Ltd., Halifax L'Air Liquide and Canadian Liquid Air Co. Ltd., Sydney Liquid Carbonic Canadian Corp. Ltd., Dartmouth Union Carbide Canada Ltd., Linde Gases Div., Halifax	Border Chemical Co. Ltd., Gunn Rd. and Day St., Transcona L'Air Liquide and Canadian Liquid Air Co. Ltd., Winnipeg Liquid Carbonic Canadian Corp. Ltd., Winnipeg
New Brunswick:	Saskatchewan:
Allied Chemical (Maritimes) Ltd., Dalhousie Canadian Industries Limited, Dalhousie L'Air Liquide and Canadian Liquid Air Co. Ltd., Moncton Painspearl Canada Ltd., St. Stephen Union Carbide Canada Ltd., Linde Gases Div., Saint John	Armour Industrial Chemicals Ltd., Saskatoon Cominco Ltd., Regina Interprovincial Co-operative Ltd., Saskatoon L'Air Liquide and Canadian Liquid Air Co. Ltd., Regina
Quebec:	Alberta:
Abbey Chemical Co., St-Antoine-des-Laurentides A.C.C. (Chrome Chemicals) Ltd., Ville d'Anjou Allied Chemical Canada Ltd., Nichols Chemical Div., Valleyfield Canadian Alcolac Ltd., Valleyfield Canadian Industries Limited, Shawinigan Falls Canadian Oxygen Ltd., Sherbrooke Canadian Titanium Pigments Ltd., Varennes Carter White Lead Co. of Canada Ltd., The, Montreal Chemicals Refineries Corp., Napierville Durham Industries (Canada) Limited, Montreal Electric Reduction Co. of Canada Ltd., Buckingham Electric Reduction Co. of Canada Ltd., Varennes Fawcort Chemical Ltd., Boucherville Hercules Powder Co. (Canada) Ltd., St. Johns L'Air Liquide and Canadian Liquid Air Co. Ltd., Baie Comeau L'Air Liquide and Canadian Liquid Air Co. Ltd., Montreal L'Air Liquide and Canadian Liquid Air Co. Ltd., Quebec L'Air Liquide and Canadian Liquid Air Co. Ltd., Tracey Laurentide Chemicals and Sulphur Ltd., Montreal East McArthur Irwin Ltd., 7 Bates Rd., Outremont National Silicates Ltd., Valleyfield Ogilvie Flour Mills Co. Ltd., The, Montreal Shawinigan Chemicals Ltd., Montreal East Shawinigan Chemicals Ltd., Shawinigan Falls Shawinigan Chemicals Ltd., Varennes Shawinigan Chemicals Ltd., (Petrochemical Plant), Varennes Shell Canada Ltd., Montreal East Standard Chemical Limited, Beauharnois Tioxide of Canada Ltd., Tracy Union Carbide Canada Ltd., Linde Gases Div., Montreal Union Carbide Canada Ltd., Linde Gases Div., Sept-Isles	Canadian Chemical Co. Ltd., Edmonton Cominco Ltd., Calgary Dow Chemical of Canada Ltd., Fort Saskatchewan Inland Chemicals Ltd., Fort Saskatchewan L'Air Liquide and Canadian Liquid Air Co. Ltd., Calgary L'Air Liquide and Canadian Liquid Air Co. Ltd., Edmonton Naugatuck Chemicals, Div. of Dominion Rubber Co. Ltd., Clover Bar Northwest Nitro Chemicals Ltd., Medicine Hat Thio-Pet Chemicals Ltd., Calgary Union Carbide Canada Ltd., Linde Gases Div., Edmonton Western Chemicals Limited, Duvernay Western Co-operative Fertilizers Ltd., Calgary
Ontario:	British Columbia:
Allied Chemical Canada Ltd., Amherstburg Allied Chemical Canada Ltd., Corunna Allied Chemical Canada Ltd., Nichols Chemical Div., Port Arthur Allied Chemical Canada Ltd., Nichols Chemical Div., Sulphide Allied Chemical Canada Ltd., Nichols Chemical Div., Thorold Brockville Chemicals Div., Sogemines Ltd., Maitland Cabot Carbon of Canada Limited, Sarnia Canada Packers Limited, Toronto Canadian Industries Limited, Copper Cliff Canadian Industries Limited, Cornwall Canadian Industries Limited, Hamilton Canadian Industries Limited, Millhaven Canadian Oxygen Limited, Toronto Columbian Carbon (Canada) Ltd., Hamilton Cornwall Chemicals Limited, Cornwall Cyanamid of Canada Ltd., Niagara Falls Cyanamid of Canada Ltd., (Welland Works), Niagara Falls Cyanamid of Canada Ltd., Hamilton Dominion Colour Corporation Ltd., New Toronto Dow Chemical of Canada Ltd., Sarnia Dryden Chemicals Ltd., Dryden Du Pont of Canada Ltd., Maitland Dussek Bros. Canada Ltd., Belleville Elmira Acid and Chemical Ltd., Elmira Emery Industries (Canada) Ltd., London EpoxyLite of Canada Ltd., Fort Erie	Allied Chemicals Canada Ltd. Nichols Chemical Div., Barnet Consolidated Mining and Smelting Co. of Canada Ltd., Kimberley Consolidated Mining and Smelting Co. of Canada Ltd., Tadanac Dow Chemical of Canada Ltd., Ladner Electric Reduction Co. of Canada Ltd., North Vancouver F.M.C. Chemical Ltd., Squamish Hooker Chemicals Ltd., Nanaimo Hooker Chemicals Ltd., North Vancouver L'Air Liquide and Canadian Liquid Air Co. Ltd., Cranbrook L'Air Liquide and Canadian Liquid Air Co. Ltd., Dawson Creek L'Air Liquide and Canadian Liquid Air Co. Ltd., Kitimat L'Air Liquide and Canadian Liquid Air Co. Ltd., Nanaimo L'Air Liquide and Canadian Liquid Air Co. Ltd., Vancouver L'Air Liquide and Canadian Liquid Air Co. Ltd., Victoria Liquid Carbonic Canadian Corp. Ltd., Prince George Liquid Carbonic Canadian Corp. Ltd., Vancouver

CONCEPTS AND DEFINITIONS

Census of Manufactures

General

The Census of Manufactures is an annual mail survey covering Canada's Manufacturing Industries. It is based on the Standard Classification of Industries and full details concerning the system may be found in the Standard Industrial Classification manual, Catalogue No. 12-501 which is available from the Queen's Printer or the Dominion Bureau of Statistics. In summary, the Classification as it relates to the manufacturing industries provides for a breakdown into 140 industries arranged in 20 major industry groups. Of the 140 (3 digit) industries, 18 are further broken down into 55 (4 digit) sub classes. At the Canada level, principal statistics are collected and compiled for 176 separate industries. They cannot all be published separately by province, however, because of the confidential nature of the data in certain provinces.

The reporting unit for the Census is designated as the **establishment** (see definition of "Establishment" in following section) and a return is requested from every establishment classified to a manufacturing industry. Although respondents are required to submit reports covering the calendar year, financial year reports other than the calendar year are accepted in instances where respondents find it impossible to supply calendar year data from accounting records. When an establishment is operated for only part of a year a report is required covering the period of operation.

There are four different questionnaires used in the Census of Manufactures; (a) short form (b) long form (c) head office questionnaire and (d) commodity questionnaire. The short and long forms are used to obtain principal statistics and commodities shipped from establishments classified to manufacturing industries and differ only in the amount of detail requested. The short form is a single-sheet questionnaire sent to small manufacturers generally reporting shipments of less than \$100,000; this cut-off, however, varies somewhat between industries. The head office questionnaire is generally used for company head offices and/or auxiliary units separately located from the manufacturing establishment(s), (see following notes on Head offices and auxiliary units). The Commodity questionnaire is used to survey certain establishments which are coded (on the basis of their principal activity) to industries other than manufacturing in the Standard Industrial Classification system, but which undertake some manufacturing as a subsidiary activity. This single-sheet questionnaire is designed to collect information on the quantity and value of goods of own manufacture shipped by such establishments in order to achieve full coverage of domestically manufactured commodities (see the following note under Shipments).

The results of the Census are presented in some 135 publications. In addition to these annual industry publications there are annual summary reports for Canada and the provinces and special reports giving principal statistics by detailed geographic areas, by type of ownership and size of establishment. A special annual report covering the shipments of all manufactured commodities arranged in alphabetical order is also published.

Since 1960 the following major changes have been implemented in the Census of Manufactures; (a) a revised Standard Industrial Classification (b) a new establishment definition and (c) an extension of the establishment definition to cover the non-manufacturing activities of manufacturing establishments. The statistics presented in the reports reflect the complete implementation of these changes and enable comparisons to be made back to and including 1961. For a complete description of the procedures followed in establishing the revised series, reference should be made to the Explanatory Notes included in the 1960, 1961 and 1962 industry publications. The statistical framework within which the Census of Manufactures is now carried out is based on the following concepts and definitions which have been developed as part of a general programme to achieve a fully integrated system of economic statistics.

Establishment

A manufacturing establishment is typically a factory, mill or plant principally engaged in manufacturing activities. The majority of such establishments are firms but many firms have more than one establishment. Such firms are requested to submit a separate Census of Manufactures report for each manufacturing establishment which can meet the reporting requirements embodied in the following definition of the "establishment":

"The smallest unit which is a separate operating entity capable of reporting the following principal statistics:

- Materials and supplies used
- Goods purchased for resale as such
- Fuel and power consumed
- Number of employees and salaries and wages
- Man-hours worked and paid
- Inventories
- Shipments or sales."

Each establishment is required to report on all the activities carried out within its accounting boundaries (except income from investments such as rent, interest and dividends) and data on the different activities (manufacturing, trading in goods not of own manufacture, construction by own labour

force, revenue from services, etc.) are requested to be reported separately. It should be noted that the statistics for separate activities are not completely consistent since some respondents cannot distinguish, in their records, materials, shipments and inventories relating solely to their own manufacturing activities. For example, inventory of goods purchased for re-sale may not be distinguishable from inventory of own manufactured goods. Complete consistency, therefore, can be obtained only at the "all operations" (total activity) level and for studies or statistical measures requiring accurate coordinated data, the "total" statistics should be used.

The number of establishments represents the number of operating units that are principally engaged in the activities of the manufacturing industries to which they have been classified. These units do not necessarily represent the total number engaged in the production of a commodity mainly produced in a certain industry. Some commodities are produced as secondary products in other manufacturing and non-manufacturing industries. It should be noted that head offices and auxiliary units which are surveyed separately are not included in the establishment count, (see following notes on head offices and auxiliary units).

Head Offices and Auxiliary Units

All head offices and auxiliary units of companies classified to the manufacturing industries such as sales offices, administrative offices, warehouses, laboratories, etc. are now surveyed as part of the Census of Manufactures.

These head offices and auxiliary units are either included in an establishment report or are surveyed by means of the head office questionnaire. The former is the most common case where a single establishment firm has its executive personnel, sales office, etc. located at the site of the manufacturing plant (establishment). The special head office questionnaire is generally used where a firm, regardless of the number of establishments, has separately located offices or auxiliary units. Such offices or units do not constitute establishments within the Census of Manufactures as they do not normally generate operational revenues, but give rise only to costs of operations (mainly salaries and wages) which are automatically included in the value of shipments or sales. Although not considered as establishments, and hence, not included in the "establishment" count for an industry, the operational costs are reflected in either the "Industry" statistics (3 or 4 digit level) or the "Major group" statistics (2 digit level) according to the following rules:

(a) In the case of single establishment firms, statistics for separately located offices and units are classified to the same industry (3 or 4 digit) as the establishment;

(b) In the case of multi-establishment firms, the statistics for such offices and units are coded to the same industry as the establishments of the firm, when all establishments are in the same industry (3 or 4 digit). When establishments of

such firms are coded (1) to different industries within a major group, (2) to industries in different major groups or (3) to industries in different divisions of the Standard Industrial Classification, then the statistics are included in the major group totals (2 digit level) in which the major part of the company's operations are classified. Although this may result in some distortion of major group statistics in the case of (2) and (3) the statistics at the industry (3 or 4 digit) level in all cases will be left free of these company-wide data.

Employees

(a) Production and related workers – Manufacturing activities

In addition to those engaged in production and assembling activities, they include those employed in storing, inspecting, handling, packing, warehousing, etc. They also include employees engaged in maintenance, repair, janitorial and watchman services and line supervisors (working foremen) engaged in similar work to that of the employees they supervise. For those establishments reporting on the "long" form, production and related workers engaged in manufacturing activity are reported as those receiving pay during the last pay period of each month, an average for the year being obtained by summing the monthly figures and dividing by 12. This procedure is followed even though the establishment did not operate in all months in order to arrive at equivalent annual full-time employment. The numbers are somewhat affected by turnover, in that employment is overstated when an employee changes employment during a pay period. In the case of those establishments reporting on the "short" form, respondents are requested to report average annual figures. The man-hours of production and related workers in manufacturing activity represent total man-hours paid (total hours at work during the calendar year plus hours not worked but nevertheless paid for, such as paid vacations, sick leave, statutory holidays, etc.). Data on man-hours are not collected from establishments reporting on the short form. Man-hours for these establishments are estimated on the basis of ratios derived from the 1958 census. During this census all establishments reported on the long form. In reporting overtime hours, respondents are requested to report only hours actually at work. It should be noted that the division of hours paid into production and related workers payrolls results in average hourly earnings and does not represent hourly wage rates which are collected and published by the Department of Labour and which are based on selected occupations.

(b) Production and related workers – Non-manufacturing activities

Such employees include those on manufacturing establishments' payrolls engaged in activities such as construction undertaken for the use of these establishments, some outside piece-workers employed in certain industries, logging employees who are reported as part of a sawmilling establishment and any other production workers who are not engaged in manufacturing-type operations.

(c) Administrative and office employees

This category includes all executive and supervisory officials such as presidents, vice-presidents, comptrollers, secretaries, treasurers, etc., together with managers, professional, technical and research employees, superintendents and factory supervisors above the line supervisor or working foreman level, and clerical staffs. Also included are employees in activities such as advertising, credit collections, purchasing, personnel, legal, medical, etc. It should be noted that prior to 1961 this category also included working owners and partners. Also included in this category are employees located at head offices or auxiliary units separately located from the establishment; these are generally included in the figures for the province in which they are located according to the rules outlined under "Head offices and auxiliary units" above.

(d) Sales and distribution workers

This category includes office personnel whose salaries are charged to selling expense, travelling salesmen, driver salesmen, truckdrivers and their helpers, etc. It may also include some sales employees who are reported as part of a manufacturing establishment but are not working at the establishment's location. These are generally broken down by province in cases where more than 15 employees are involved in any one province. The figures exclude persons working on a commission basis who are not considered regular employees of the establishment.

(e) Total Employees

This total comprises the foregoing categories including employees located at separately located head offices and auxiliary units. The numbers of employees included under categories (b), (c) and (d) are reported in the form of annual averages and represent as closely as possible full time employment; adjustments are made when reported figures indicate the existence of part time or seasonal employment. In all the above categories, figures on employment refer to the calendar year whether or not other establishment statistics can only be reported on a fiscal year other than the calendar year.

Working Owners or Partners

These are not now included in the statistics of employees and salaries and wages. There is some duplication in numbers when a person owns more than one establishment and is reported as a working owner on each Census return. Withdrawals of working owners are defined as amounts withdrawn by owners or partners for normal living expenses excluding withdrawals for payment of income tax.

Salaries and Wages

Salaries and wages refer to gross earnings of employees **before** deductions for income tax and employees contributions to social services such as sickness, accident and unemployment insurance, pensions, etc. They include all salaries, wages,

bonuses, profits shared with employees, the value of room and board where provided, commissions (paid to regular employees only) as well as any other allowance forming part of the worker's earnings. Payments for over-time are included. Figures on salaries and wages refer to the calendar year.

Fuel and Electricity

Figures for fuel refer to amounts actually used (including fuel used in cars, trucks, locomotives, etc.), not to purchases unless the quantities are substantially the same. **Any fuel and electricity produced by establishments for internal consumption are not included in the total cost.** Values represent laid down cost at the establishment including freight, duty, etc. Although fuel and electricity used is considered part of manufacturing activity it should be noted that it also includes relatively small amounts used in non-manufacturing activities since these cannot be reported separately.

Materials and Supplies

(a) Manufacturing activities

Figures represent quantities and laid down cost values, at the establishment, of materials, supplies and purchased components owned and used during the year in manufacturing activities and related processes. These statistics represent only commodity items or physical goods (cost of services or overhead charges such as advertising, insurance, depreciation, etc. are not included) whether purchased from others or received as transfers (in the form of materials, components or semi-processed goods) from other establishments of the reporting company. Included are maintenance and repair supplies not chargeable to fixed assets accounts and any amounts charged by other establishments for work done on materials owned by the reporting establishment. Cost of repairs or maintenance done by outside contractors and cost of returnable containers are not included.

(b) Non-manufacturing activities

1. Purchases for re-sale as such

Figures represent cost of materials or products purchased from others by the reporting establishment (or received as transfers from other establishments of the reporting company) for re-sale as such in the same condition as purchased. Included are any finished products received on consignment from other countries.

2. Other materials and supplies used

Figures represent the cost of materials and supplies, if any, used in new construction and in the production of machinery and equipment (for the use of the reporting establishment) by the establishment's own employees. Included are materials used for any capital repairs and alterations carried out by the establishment's employees. Amounts paid to outside contractors for construction and repair work are not included nor is the cost of

purchased machinery and equipment. Also included is the cost of office supplies not chargeable to fixed assets accounts and the cost of such other items of materials and supplies used as food, beverages and supplies for establishment-operated cafeterias and lunch counters, first aid and medical supplies, laboratory supplies, etc.

Shipments

(a) General

The figures represent revenue from all production, sales, services and related activities of reporting establishments with shipments valued in Canadian dollars at the point at which the establishment relinquishes control. The unsold portion at year end of consignment shipments in Canada is treated as inventory and not as shipments but all shipments to foreign countries for which the form B13 "Customs Canada Export Entry" has been completed, are treated as shipments.

In those industries where work on principal products extends over a relatively long period, (Fabricated Structural Metal Industry, Aircraft and Parts Manufacturers, Railroad Rolling Stock Industry and Shipbuilding and Repair Industry) the value of production rather than the value of shipments is recorded. There are certain establishments in other industries which also operate on a basis of progress payments. For these establishments, shipments are also adjusted to work put in place on the basis of the net change in progress payments over the year.

(b) Shipments of goods of own manufacture

These figures represent 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 establishments for work done. Included are revenue from repair and custom work, amounts received in payment for work done on materials owned by other establishments and the cost (book value) of any goods shipped on a rental basis.

All products and by-products of own manufacture shipped from the establishment are covered, including transfer shipments to sales outlets, distributing warehouses or to other manufacturing plants of the reporting firm, when such units are treated as separate establishments. The value of shipments are net of returned goods, discounts, returns, allowances, sales tax and excise taxes and duties, returnable containers and charges for outward transportation by common or contract carriers. Transportation or delivery expense incurred by the reporting establishment's own carriers are included.

Shipments of goods of own manufacture of establishments which are coded to some other division of the Standard Industrial Classification (on the basis of principal activity) but which are engaged in manufacturing as a subsidiary activity

are collected by means of the Commodity questionnaire referred to earlier. Such shipments together with shipments of goods of own manufacture of establishments forming the universe of manufacturing industries are compiled and recorded in the various industry publications.

(c) Shipments of goods not of own manufacture

These figures represent the net selling value at establishment (net of discounts, returns, allowances, sales taxes and excise duties and taxes and transportation charges by common or contract carriers) of all products or materials (including products transferred from other establishments of the reporting firm) sold as such in the same condition as purchased or received as transfers. For those industries which ship such goods on a rental basis, the value of shipments represents the book value of these goods. All sales of consignment goods from other countries are included.

(d) Other revenue

Figures represent the book value of fixed assets, if any, (new construction and machinery and equipment including major repairs, alterations, additions, modifications, installation and assembly work) produced during the year for the use of reporting establishments by the establishment's own employees and for which depreciation accounts are maintained. Included also are any revenues from the sale of electricity and from any operations performed by the establishment's own employees, such as revenue from goods produced or purchased for rental (the book value of such goods are included as part of shipments of goods of own manufacture or shipments of goods not of own manufacture), servicing revenues, commissions on sales (when not included in value of sales), revenue for company-operated cafeterias and lunch counters and revenue from outside installation or construction work not related to the establishment's own products, sale of used materials (excluding sale of used fixed assets) research and development work, etc. As mentioned previously the figures do not include non-operating revenue such as rent, dividends, interest, etc.

Inventories

(a) Manufacturing activities

Values represent the book values of manufacturing inventory owned in Canada. Inventories held for which progress payments have been received are not included. Where progress payment accounts are maintained, the change in these accounts is treated as a net adjustment to shipments. Figures consist of inventory owned at the plant and at warehouses or selling outlets which are treated as extensions of establishments for the purpose of reporting shipments. Inventory owned in transit in Canada or on consignment in Canada is included. Goods shipped abroad and held in inventory are included in shipments. Opening inventories may differ from the closing inventories of the previous year because of changes in classification, the

receipt of revised data, the inclusion of new establishments and the removal of establishments which did not operate during the survey year.

(b) Non-manufacturing activities

Figures represent the book value of inventory of goods purchased for re-sale as such without further processing, owned by the reporting establishments and held at plants and at any warehouses or selling outlets which are treated as extensions of establishments. Other characteristics are the same as in (a) above.

Value Added

(a) By manufacturing activities

Figures are compiled by deducting the cost of manufacturing materials, supplies, etc. and fuel and electricity consumed from the (value of shipments of goods of own manufacture adjusted for changes in the value of inventories of finished goods and goods in process).

(b) By non-manufacturing activities

The figures are compiled by deducting the cost of goods purchased for re-sale (adjusted for changes in the value of inventories of goods pur-

chased for re-sale) and the cost of non-manufacturing materials and supplies used from the value of shipments of goods not of own manufacture, plus other revenue.

(c) By Total activities

The figures consist of value added by manufacturing activities plus value added by non-manufacturing activities. This total value added figure may, in some cases, be less than value added by manufacturing activities as a result of expenditures associated with non-manufacturing exceeding revenues from such activities or because of a decrease in inventory of goods not of own manufacture exceeding the mark-up on the sale of such goods. "Value added" is sometimes referred to as net output or net production. However, to arrive at the National Accounts concept of net production, or Gross Domestic Product at "Factor cost" it would be necessary to subtract also the cost of advertising, insurance and other business expenses which are not collected as part of the annual Census of Manufactures. "Value added" figures for the primary industries, manufacturing and construction are published in DBS publication Catalogue No. 61-202, "Survey of Production".

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