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CENSUS OF INDUSTRY  
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ANNUAL INDUSTRY REPORTCHEMICALS AND ALLIED PRODUCTS GROUPTHE ACIDS, ALKALIES AND SALTS INDUSTRY - 1939

Twenty-five plants in Canada made heavy chemicals as their chief products in 1939 and were classified to the Acids, Alkalies and Salts Industry. Production by this group was valued at \$23,056,606 or 12.6 per cent higher than in the previous year. The investment in these plants totalled \$36,978,482 and the number of employees was 3,128.

The following chemicals were made by the factories in this group: sulphuric acid, hydrochloric acid, nitric acid, glacial acetic acid, phosphoric acid, stearic acid, fatty acids of palm oil, coconut and tallow; calcium carbide, calcium cyanamide, calcium chloride, soda ash, nitre cake, salt cake, caustic soda, Glauber's salt, sodium cyanide, sodium silicate, sodium chlorate, sodium hydrochlorite, disodium and trisodium phosphate, anhydrous tetra sodium pyrophosphate, liquid chlorine, satin white, phosphorus, acid calcium phosphate, synthetic ammonia, sulphur dichloride, sulphur monochloride, aluminium fluoride, metallic naphthenates, ferric chloride, hydrogen peroxide, butyl acetate, ethyl acetate, paraldehyde, croton aldehyde, acetone, acetic anhydride, vinyl acetate resins, acetylene carbon black, zinc oxide, liquid sulphur dioxide, perchlorethylene, trichlorethylene, plating and galvanizing salts, weed killer and elemental sulphur. Separate production figures are published for sulphuric acid only, as each of the other items are made by less than three firms.

The output of sulphuric acid dropped to 257,465 tons (66° Be) in 1939 from 268,359 tons in 1938. Seven plants were operated by four companies, as follows: The Consolidated Mining and Smelting Company of Canada, Limited, at Trail, B.C.; Canadian Industries Limited at Copper Cliff, Ont., Hamilton, Ont., and New Westminster, B.C.; Nichols Chemical Company Limited at Sulphide, Ont., and Barnet, B.C.; and the Dominion Steel and Coal Corporation Limited at Sydney, N.S. The first two of these works, at Trail and at Copper Cliff, operated entirely on sulphur-bearing smelter gases. Only 119 tons of sulphuric acid were imported during 1939 and 1,605 tons were exported.

Imports of acids of all kinds were valued at \$2,120,345 in 1939. Stearic acid, citric acid, tartaric acid, boracic acid, salicylic and acetyl salicylic acid, and xanthates and sulpho-thio-phosphoric compounds for use in concentrating ores were among the more important items. Exports of acids were appraised at \$1,652,024.

Imports of inorganic chemicals totalled \$11,588,761 in 1939, including the following among the more important items:--compounds of tetraethyl lead, sodium nitrate, sulphate of potash, muriate of potash, sodium cyanide, alum cake, ammonium nitrate, sodium bicarbonate, sodium bichromate, caustic soda, and borax. Exports of inorganic chemicals amounted to \$11,501,965, mostly cyanamide, ammonium sulphate, and sodium compounds.

Table 1 - PRINCIPAL STATISTICS OF THE ACIDS, ALKALIES AND SALTS INDUSTRY, 1929-1939

Years	No. of plants	Capital employed	Average number of employees	Salaries and wages	Cost of fuel and electricity at works	Cost of materials at works	Gross selling value of products at works
		\$		\$	\$	\$	\$
1929 .....	15	49,417,431	2,897	4,338,686	2,921,129	6,301,121	28,021,972
1930 .....	17	52,314,567	2,409	3,502,834	2,490,790	4,712,471	20,111,602
1931 .....	14	44,994,828	1,694	2,426,880	2,167,585	2,407,682	10,952,497
1932 .....	14	44,067,194	1,679	2,211,467	2,103,675	2,283,076	11,357,649
1933 .....	15	44,239,418	1,891	2,315,425	1,407,378	2,463,958	12,713,045
1934 .....	16	45,033,355	2,289	2,841,853	1,872,137	3,674,265	16,494,139
1935 .....	18	33,381,688	2,627	3,490,897	2,158,692	4,606,713	19,012,615
1936 .....	20	32,596,308	2,966	3,988,310	2,316,389	4,680,299	18,959,512
1937 .....	21	35,094,008	3,863	4,896,618	2,810,364	6,008,977	22,410,168
1938 .....	24	32,254,723	2,991	4,571,579	2,349,819	5,223,443	20,476,578
<b>1939 -</b>							
Quebec .....	7	10,983,829	1,117	1,576,998	644,641	1,784,568	4,780,587
Ontario .....	14	25,217,182	1,786	3,064,382	1,871,254	3,883,698	16,293,914
British Columbia ..	3)	777,471	225	391,518	32,322	353,450	1,982,105
Nova Scotia ..	1)						
CANADA ...	25	36,978,482	3,128	5,032,898	2,548,217	6,021,716	23,056,606
Per cent change 1939 from 1938..							
...		/ 14.6	/ 4.6	/ 10.0	/ 8.4	/ 15.3	/ 12.6

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 - CAPITAL EMPLOYED, 1930 - 1939

Years	Present value of lands, buildings, machinery, tools and other equipment	Inventory value of materials on hand, stocks in process, finished products, fuel and other supplies	Operating capital (cash, bills and accounts receivable, etc.)	TOTAL CAPITAL EMPLOYED
	\$	\$	\$	\$
1930 .....	38,064,081	5,054,885	9,195,601	52,314,567
1931 .....	31,608,809	3,385,719	10,000,300	44,994,828
1932 .....	30,746,174	3,803,349	9,517,671	44,067,194
1933 .....	29,840,246	3,470,243	10,928,929	44,239,418
1934 .....	29,775,661	4,206,998	11,050,696	45,033,355
1935 .....	25,907,178	4,172,459	3,302,051	33,381,688
1936 .....	24,971,587	4,174,038	3,450,683	32,596,308
1937 .....	25,845,956	5,200,279	4,047,773	35,094,008
1938 .....	22,512,947	5,021,973	4,719,803	32,254,723
<b>1939 -</b>				
Quebec .....	7,852,370	1,048,855	2,082,604	10,983,829
Ontario .....	15,415,214	3,632,997	6,168,971	25,217,182
Other provinces	742,019	28,852	6,600	777,471
CANADA .....	24,009,603	4,710,704	8,258,175	36,978,482

Table 3 - EMPLOYEES, SALARIES AND WAGES, 1930 - 1939

Years	Average number of employees					Salaries	Wages	TOTAL SALARIES and WAGES
	On salaries		On wages		TOTAL			
	Male	Female	Male	Female				
						\$	\$	\$
1930 .....	351	37	2,017	4	2,409	838,220	2,614,614	3,502,834
1931 .....	341	26	1,324	3	1,694	771,271	1,655,609	2,426,880
1932 .....	312	35	1,329	5	1,679	746,726	1,464,741	2,211,467
1933 .....	327	39	1,521	4	1,891	780,267	1,535,158	2,315,425
1934 .....	403	49	1,832	5	2,289	845,253	1,996,600	2,841,853
1935 .....	584	110	1,925	8	2,627	1,227,893	2,263,004	3,490,897
1936 .....	603	112	2,242	9	2,966	1,297,038	2,691,272	3,988,310
1937 .....	603	114	2,634	8	3,359	1,467,125	3,426,293	4,893,418
1938 .....	576	100	2,305	10	2,991	1,583,938	2,987,641	4,571,579
1939 -								
Quebec .....	178	34	899	6	1,117	549,221	1,027,777	1,576,998
Ontario .....	390	86	1,303	7	1,786	1,080,596	1,983,786	3,064,382
Other provinces..	33	1	191	...	225	77,860	313,658	391,518
CANADA .....	601	121	2,393	13	3,128	1,707,677	3,325,221	5,032,898

Table 4 - WAGE-EARNERS, BY MONTHS, 1938 and 1939 (On the last work day of each month)

	1938			1939		
	Male	Female	TOTAL	Male	Female	TOTAL
January .....	2,369	9	2,378	2,207	9	2,216
February .....	2,331	10	2,341	2,230	9	2,239
March .....	2,362	9	2,371	2,217	9	2,226
April .....	2,322	8	2,330	2,238	9	2,247
May .....	2,336	8	2,344	2,286	10	2,296
June .....	2,300	8	2,308	2,273	12	2,285
July .....	2,284	8	2,292	2,295	12	2,307
August .....	2,345	9	2,354	2,369	12	2,381
September .....	2,318	9	2,327	2,601	13	2,614
October .....	2,270	9	2,279	2,688	12	2,700
November .....	2,221	9	2,230	2,686	12	2,698
December .....	2,207	9	2,216	2,617	13	2,630
AVERAGE .....	2,305	10	2,315	2,393	13	2,406

Table 5 - REGULAR HOURS WORKED PER WEEK, 1939 (In one week of normal employment; overtime not included)

Regular hours worked per week	Number	Per cent	Regular hours worked per week	Number	Per cent
	of wage-earners	of total		of wage-earners	of total
30 hours or less ...	11	0.4	49 - 50 hours ..	1	0.0
31 - 43 hours .....	927	35.7	51 - 54 hours ..	7	0.3
44 hours .....	388	14.9	55 hours .....	3	1.1
45 - 47 hours .....	38	1.5	56 - 64 hours ..	20	0.8
48 hours .....	1,204	46.3	Total .....	2,599	100.0
			Total wages paid in selected week	\$ 65,644	

Table 6 - FUEL AND ELECTRICITY USED, 1938 and 1939

Kinds	Unit of measure	1 9 3 8		1 9 3 9	
		Quantity	Cost at works \$	Quantity	Cost at works \$
Bituminous coal - Canadian	short ton	7,212	41,792	25,070	99,361
Foreign	short ton	136,632	621,179	132,509	597,241
Anthracite coal .....	short ton	250	2,198	326	3,044
Coke .....	short ton	449	4,818	198	1,665
Gasoline .....	Imp. gal.	26,573	4,267	62,019	10,491
Fuel oil .....	Imp. gal.	648,396	37,219	716,508	35,472
Gas - Manufactured .....	M cu. ft.	63	47	82	61
Natural .....	M cu. ft.	924	494	840	450
Other fuel .....	xxx	...	25,627	...	37,003
Electricity purchased ....	K. W. H.	781,229,985	1,612,178	906,175,541	1,763,429
TOTAL .....	xxx	...	2,349,819	...	2,548,217
Electricity generated for own use .....	K. W. H.	82,072,322	...	93,938,368	...

Table 7 - POWER EQUIPMENT, 1938 and 1939

Kinds	Ordinarily in use		In reserve or idle	
	Number of units	Total rated horse power	Number of units	Total rated horse power
	1 9 3 8			
Steam engines and steam turbines..	28	9,286	4	473
Gasoline, gas and oil engines ....	...	...	1	150
Hydraulic turbines or water wheels	5	10,520	...	...
Total primary equipment .....	33	19,806	5	623
Electric motors operated by purchased power .....	2,377	51,099	109	5,825
TOTAL .....	2,410	70,905	114	6,448
Electric motors operated by above primary units .....	739	9,535	46	1,320
Stationary boilers .....	40	13,347	12	3,101
	1 9 3 9			
Steam engines and steam turbines..	25	9,166	6	653
Gasoline, gas and oil engines ....	...	...	1	150
Hydraulic turbines or water wheels	5	10,520	...	...
Total primary equipment .....	30	19,686	7	803
Electric motors operated by purchased power .....	2,525	55,009	136	5,875
TOTAL .....	2,555	74,695	143	6,678
Electric motors operated by above primary units .....	767	9,024	82	1,764
Stationary boilers .....	22	8,046	10	2,891

Table 8 - MATERIALS USED IN MANUFACTURING, 1938 and 1939

Materials	Unit of measure	1 9 3 8		1 9 3 9	
		Quantity	Cost at works	Quantity	Cost at works
			\$		\$
Acetylene .....	lb.	4,540,292	20,385	5,392,378	26,426
Acid, hydrochloric (muriatic) 20° Be .....	lb.	148,663	3,081	80,673	2,146
Acid, sulphuric 66° Be .....	lb.	8,580,110	76,393	13,381,180	110,003
Aluminium sulphate .....	lb.	314,934	5,215	410,821	9,573
Ammonia liquor .....	lb. NH <sub>3</sub>	432,736	19,737	402,705	21,325
Ammonia, anhydrous .....	lb.	28,008	2,221	22,370	1,494
Calcium chloride .....	lb.	866,970	11,609	960,343	12,993
Calcium nitrate .....	lb.	315,840	4,627	126,620	1,352
Chlorine, liquid .....	lb.	1,980,458	47,355	2,357,098	48,532
Coal, anthracite (except for fuel) .....	short ton	2,468	21,045	2,880	24,841
Coal, bituminous (except for fuel) .....	short ton	14,406	87,164	23,388	152,609
Coke, petroleum (except for fuel) .....	short ton	34,050	273,305	67,652	471,205
Coke, other (except for fuel) ..	short ton	91,712	736,726	85,939	691,315
Electrodes .....	...	...	242,083	...	307,782
Fluorspar .....	short ton	4,652	107,614	6,395	154,446
Graphite .....	lb.	149,206	21,890	46,208	6,815
Limestone .....	short ton	397,032	523,891	450,188	605,656
Lime, hydrated .....	short ton	357	1,918	662	3,903
Lime, quick .....	short ton	1,017	14,769	1,140	14,743
Potassium hydroxide .....	lb.	190,500	19,497	88,500	8,929
Pyrites .....	short ton	23,935	135,239	22,674	129,965
Quartz, quartzite and silica sand .....	short ton	12,874	52,592	16,265	76,229
Sodium carbonate (soda ash) ..	lb.	15,303,788	203,862	19,196,578	254,112
Sodium chloride, dry and brine (salt content) .....	short ton	199,435	332,411	166,502	331,797
Sodium bichromate .....	lb.	20,840	1,851	21,384	1,874
Sodium hydroxide (caustic soda)	lb.	8,479,060	207,372	9,831,785	237,229
Sodium nitrate .....	lb.	938,049	17,970	1,029,971	21,049
Sodium sulphate (salt cake) ..	lb.	6,824,230	48,486	20,680	314
Sodium sulphide .....	lb.	63,399	1,552	31,738	954
Sulphur (brimstone) .....	short ton	12,103	246,774	13,894	286,296
Sulphur dioxide in smelter gases .....	...	...	72,645	...	73,541
Zinc metal .....	lb.	2,717,080	104,442	4,467,640	173,118
Containers of all kinds and packing materials .....	...	...	356,973	...	442,862
Steel sheets for making con- tainers .....	short ton	4,582	363,299	6,049	447,065
Lumber for making containers and crating .....	M ft.b.m.	299	8,519	318	9,405
All other materials .....	...	...	823,433	...	815,226
<b>TOTAL .....</b>	<b>...</b>	<b>...</b>	<b>5,223,443</b>	<b>...</b>	<b>6,021,716</b>

Table 9 - PRODUCTION, IMPORTS, EXPORTS and APPARENT CONSUMPTION OF SULPHURIC ACID  
(66° Be) 1923 - 1939

Years	Production	Imports (short tons)	Exports	Apparent consumption.
1923 .....	87,150	291	12,203	75,238
1924 .....	71,991	47	7,678	64,360
1925 .....	83,396	52	19,179	64,269
1926 .....	108,230	53	28,137	80,146
1927 .....	98,470	53	17,407	81,116
1928 .....	96,227	55	13,329	82,953
1929 .....	110,749	111	8,397	102,463
1930 .....	107,352	150	571	106,931
1931 .....	119,541	80	997	118,624
1932 .....	136,846	62	712	136,196
1933 .....	148,142	58	1,013	147,187
1934 .....	205,325	82	953	204,454
1935 .....	224,410	83	1,027	223,460
1936 .....	241,075	108	1,128	240,055
1937 .....	282,716	108	1,608	281,216
1938 .....	268,339	95	1,260	267,174
1939 .....	257,465	119	1,605	255,979

Table 10 - IMPORTS INTO CANADA OF ACIDS AND CERTAIN INORGANIC CHEMICALS, 1939

Commodities	Quantity	Value \$
<u>ACIDS</u>		
Inorganic acids -		
Acid, boracic, in packages not less than 25 pounds .. lb.	2,305,886	111,091
Acid, hydrofluosilicic .....	15,705	2,451
Acid, muriatic .....	280,951	18,897
Acid, nitric .....	279,765	29,073
Acid, phosphoric .....	288,787	15,909
Acid, sulphuric .....	238,621	14,610
Acid, salicylic and acetyl salicylic .....	291,043	116,896
Organic acids -		
Acid, acetic and pyroligneous, crude, of any strength not exceeding 30% .....	gal. 47	52
Acid, acetic and pyroligneous, n.o.p. ....	gal. 860	1,431
Acid, citric .....	lb. 1,288,746	299,002
Acid, cresylic, for use only in the manufacture of preparations for disinfecting, dipping and spraying. lb.	245,713	12,866
Cresylic acid and compounds of cresylic acid used in concentrating ores, n.o.p. ....	lb. 192,555	7,004
Xanthates and sulpho-thio-phosphoric (dithio-phosphor- ic) compounds for use in concentrating ores, etc. .. lb.	4,482,279	784,076
Acid, oxalic .....	lb. 270,849	29,559
Acid, stearic, n.o.p. ....	lb. 2,693,644	170,047
Acid, stearic, when imported by manufacturers of candles or crayons for use only in their own fac- tories in the manufacture of candles or crayons ....	lb. 67,052	5,696
Acid, tannic .....	lb. 54,124	32,190
Tartaric acid, crystals .....	lb. 722,666	176,488
Acids, others, n.o.p. ....	lb. 2,965,437	293,005
TOTAL ACIDS .....	\$ ...	2,120,343

Table 10 - IMPORTS INTO CANADA OF ACIDS AND CERTAIN INORGANIC CHEMICALS, 1939 (Con.)

Commodities	Quantity	Value
		\$
<u>INORGANIC CHEMICALS, N.O.P.</u>		
Alum in bulk, ground or unground, but not calcined ...	cwt. 12,142	20,141
Chloralum, or chloride of aluminium .....	cwt. 833	6,181
Sulphate of iron (copperas) .....	cwt. 11,862	10,983
Sulphate of alumina or alum cake .....	cwt. 667,011	761,207
Ammonia and its compounds -		
Ammonia, nitrate of .....	lb. 11,084,265	459,073
Sal ammoniac .....	lb. 3,582,139	111,564
Sal ammoniac skimmings .....	lb. 494,575	26,029
Ammonia, anhydrous (From April 1, 1939) .....	lb. 321,918	17,014
Ammonia compounds, n.o.p. ....	lb. 2,538,557	59,648
Antimony, arsenic, copper, tin and zinc compounds -		
Antimony salts, viz. tartar emetic, chloride and lactate (antimonine) .....	lb. 27,755	7,283
Arsenic, sulphide of .....	lb. 125	54
Arsenious oxide .....	lb. 516,236	7,976
Copper sulphate (blue vitriol) .....	lb. 6,285,766	234,259
Tin, bichloride of, and tin crystals .....	lb. 84,942	22,889
Zinc, sulphate of .....	lb. 566,118	14,037
Zinc, chloride of .....	lb. 2,128,454	84,290
Bismuth and lead compounds -		
Bismuth salts .....	xxx ...	8,671
Lead, acetate of, not ground .....	lb. 164,717	10,469
Lead, arsenate of .....	lb. 568,344	49,238
Compounds of tetraethyl lead .....	lb. 6,373,494	2,927,449
Lead, nitrate of, not ground .....	lb. 286,801	20,860
Lead, red, and orange mineral .....	lb. 450,885	31,619
Bromine, chlorine and iodine compounds -		
Bromine .....	lb. 72,883	16,199
Bromides, crude, for the production of bromine .....	lb. ...	...
Chlorine, liquid or chlorine gas .....	lb. 10,692,096	213,207
Iodine, crude .....	lb. 79,982	90,340
Iodized mineral salts, for use exclusively in the feeding of animals .....	xxx ...	2,647
Calcium compounds -		
Arsenate of lime .....	lb. 389,557	23,643
Calcium chloride, in packages of not less than 25 pounds .....	cwt. 2,392	2,866
Calcium chloride, in packages of less than 25 pounds .....	lb. 229	69
Calcium chloride, not in solution, for road treating purposes .....	cwt. 111,816	104,578
Chloride of lime and hypochlorite of lime, in packages of not less than 25 pounds .....	cwt. 4,008	26,550
Chloride of lime and hypochlorite of lime, in packages of less than 25 pounds .....	lb. 32,986	5,127
Calcium molybdate, when imported by manufacturers of steel for use exclusively in the manufacture of steel in their own works .....	lb. 222,990	136,321
Potash and potassium compounds, n.o.p. -		
Argols .....	lb. 1,451	300
Cream of tartar in crystals .....	lb. 727,852	143,032
Potash and pearl ash, in packages of not less than 25 pounds .....	lb. 276,108	17,296

Table 10 - IMPORTS INTO CANADA OF ACIDS AND CERTAIN INORGANIC CHEMICALS, 1939  
(Concluded)

Commodities	Quantity	Value
		\$
<u>INORGANIC CHEMICALS, N.O.P. (Concluded)</u>		
Potash and potassium compounds, n.o.p. -		
Potash end pearl ash, in packages of not less than 25 pounds .....	lb. 119	45
Potash, bicarbonate of .....	lb. 13,584	1,310
Potash, bichromate of, crude .....	lb. 188,479	16,819
Potash, sulphate of, crude .....	cwt. 127,953	193,652
Potash, muriate of, crude .....	cwt. 907,822	1,135,151
Potash, caustic, in packages of not less than 25 pounds .....	lb. 1,347,137	76,481
Potash, caustic, in packages of less than 25 pounds.	lb. 1,431	523
Potash, chlorate of, not further prepared than ground .....	lb. 302,518	16,357
Potash, red and yellow prussiate of .....	lb. 50,859	10,881
Saltpetre or nitrate of potash .....	lb. 1,486,526	55,512
Potash compounds, n.o.p. ....	lb. 536,844	80,466
Soda and sodium compounds, n.o.p. -		
Borax, in packages of not less than 25 pounds .....	lb. 7,436,563	210,485
Glauber's salt .....	lb. 2,660,372	20,102
Soda, arseniate, biarseniate and stannate of .....	lb. 32,054	6,739
Soda ash or barilla .....	lb. 3,145,499	45,377
Soda, bicarbonate of .....	lb. 16,645,777	269,756
Soda, bichromate of .....	lb. 3,246,413	211,173
Soda, bisulphate of, or nitre cake .....	lb. 1,153,752	16,900
Soda, bisulphite of .....	lb. 884,047	27,721
Soda, caustic, when in packages of not less than 25 pounds .....	lb. 6,222,004	160,429
Soda, caustic, when in packages of less than 25 pounds .....	lb. 64,188	7,851
Soda, caustic, in solution .....	lb. 13,126,564	248,635
Soda, chlorate of .....	lb. 45,390	2,520
Soda, hyposulphite, when imported by tanners for use in their own factories in the tanning of leather ..	lb. 430,799	9,837
Soda, hyposulphite of, n.o.p. ....	lb. 2,067,779	50,599
Soda, nitrate of, n.o.p. ....	lb. 802,626	1,148,575
Soda, nitrate of .....	lb. 513,826	26,512
Soda, peroxide of .....	lb. 100,306	16,715
Soda, phosphate, di-sodium .....	lb. 222,231	7,474
Soda, phosphate, tri-sodium .....	lb. 1,506,893	33,610
Soda, phosphate, n.o.p. ....	lb. 641,717	41,003
Soda, prussiate of .....	lb. 520,310	50,783
Soda, sulphite of .....	lb. 1,399,224	41,072
Soda, sal .....	lb. 228,198	6,918
Soda, cyanide of .....	lb. 7,202,301	928,188
Soda, silicate of, in crystals or in solution .....	lb. 7,064,753	115,494
Soda, sulphate of, crude, known as salt cake .....	lb. 13,083,040	73,575
Soda, sulphide of .....	lb. 5,873,073	132,360
Sodium compounds, n.o.p. ....	lb. 7,706,618	415,052



Table 11 - EXPORTS FROM CANADA OF ACIDS AND INORGANIC CHEMICALS, 1939

Commodities	Quantity	Value
	Cwt.	\$
Acid, sulphuric .....	32,106	21,203
Acids, other, n.o.p. ....	220,675	1,630,821
Total Acids .....	252,781	1,652,024
Ammonium sulphate .....	2,185,203	2,508,364
Cyanamide .....	3,322,137	3,714,975
Soda and sodium compounds .....	1,185,561	4,802,777
Cobalt oxides and cobalt salts .....	30,347	814,807
Other inorganic chemicals, n.o.p. ....	...	1,254,675
Acetate of lime .....	40,972	58,391
Total Other Chemicals .....	...	13,153,989

LIST OF FIRMS INCLUDED IN THE ACIDS, ALKALIES AND SALTS INDUSTRY, 1939

<u>Names of Companies and Location of Plants</u>	<u>Products reported in 1939</u>
Dominion Steel & Coal Corporation Limited, Sydney, N.S.	Sulphuric acid
Aluminum Company of Canada Ltd., Arvida, P.Q.	Aluminium fluoride
Canadian Industries Limited, Shawinigan Falls, P.Q. (3 plants)	Hydrogen peroxide, chlorine, sodium hydroxide, trichlorethylene and perchlorethylene.
Electric Reduction Company of Canada, Limited, Buckingham, P.Q.	Phosphorus, phosphoric acid, ferro-phosphorus, sodium chlorate, acid calcium phosphate, disodium phosphate (2 hydrate and 12 hydrate), trisodium phosphate, sodium acid pyrophosphate, chlorate weed-killing mixture, anhydrous tetrasodium pyrophosphate and potash talc
Shawinigan Chemicals Limited, Shawinigan Falls, P.Q. (2 plants)	Calcium carbide, acetylene black, glacial acetic acid, acetic anhydride, butyl acetate, dibutyl acetate, ethyl acetate, paraldehyde, croton aldehyde, hydrated lime, acetone, frothing reagent, vinyl acetate resins.
Zinc Oxide Co. of Canada, Ltd., Montreal, P.Q.	Zinc oxide.
Brunner, Mond Canada, Limited, Amherstburg, Ont.	Sodium carbonate (soda ash), calcium chloride, farmers' alkali (sodium carbonate and sodium hydroxide), super-alkali (sodium carbonate and sodium hydroxide).
Canadian Hanson & Van Winkle Co. Ltd., 15 Morrow Avenue, Toronto, Ont.	Plating and galvanizing salts (copper cyanide, copper carbonate, zinc cyanide, nickel salts).

LIST OF FIRMS INCLUDED IN THE ACIDS, ALKALIES AND SALTS INDUSTRY, 1939  
(Concluded)

<u>Names of Companies and Location of Plants</u>	<u>Products reported in 1939</u>
Canadian Industries Limited, Copper Cliff, Ont.	Sulphuric acid
Canadian Industries Limited, Cornwall, Ont.	Hydrochloric acid, liquid chlorine, sodium hydroxide (caustic soda), sodium hypochlorite.
Canadian Industries Limited, Burlington St., Hamilton, Ont.	Hydrochloric acid, sulphuric acid, sodium sulphate (Glauber's salt), sodium sulphate (salt cake), soldering flux and liquid sulphur dioxide.
Canadian Industries Limited, Windsor, Ont.	Liquid chlorine, sodium hydroxide (caustic soda), sodium hypochlorite, anhydrous ammonia, aqua ammonia, 26°, sulphur dichloride, sulphur mono- chloride, ferric chloride, lye-vat alkali, chloride of lime.
Electro Metallurgical Co. of Canada, Ltd., Welland, Ont.	Calcium carbide.
Hardesty of Canada Ltd., W. C. 521 Front St. E., Toronto	Hydrogenated stearic acid, crude glycer- ine, fatty acids of palm oil, cocoanut and tallow.
Nuodex Products of Canada Ltd. 34 Industrial St., Leaside	Metallic naphthenates
H. S. & T. Crystal Co. Ltd., New Toronto, Ont.	Satin white, solvents
National Silicates Limited, New Toronto, Ont.	Sodium silicate
The Nichols Chemical Company Limited, Sulphide, Ont.	Nitric acid, sulphuric acid, sodium bisulphate (nitre cake)
North American Cyanamid Limited, Niagara Falls, Ont.	Calcium cyanamide, cyanide, and sodium silicate
Watts Chemical Co., 355 Weston Rd., Toronto, Ont.	Zinc oxide and zinc dust
Canadian Industries Limited, New Westminster, B.C.	Sulphuric acid and hydrochloric acid
Consolidated Mining & Smelting Company of Canada, Limited, Trail, B.C.	Sulphuric acid and sulphur (brimstone)
The Nichols Chemical Company Limited, Barnet, B.C.	Sulphuric acid.

TOTAL PRODUCTION OF CHEMICALS IN CANADA

It is very difficult, if not impossible, to get from official reports the statistics covering the total production in Canada of heavy and fine chemicals. There are two reasons for this, the first being that data for many of the individual items cannot be shown because they were made by only one or two concerns, and the second being that chemicals are made in a great number of different industries. Ethyl alcohol, for example, is a product of the distilled liquors industry, methyl alcohol comes under wood distillation, fine chemicals are made in the pharmaceutical industry, ammonium sulphate is produced in coke plants, cobalt and nickel salts are made in the non-ferrous metal smelters and refineries, and so on. The Bureau has made, therefore, a special compilation which gives a fairly good summary of the total output as gathered up from all industries, this being shown below. The values cover only the products made for sale as there is no adequate record of the intermediates made for the further use of the producers. The output in 1939 was around \$39,800,000 compared with \$36,800,000 in 1938. Imports in 1939, on a similar basis, amounted to \$23,000,000 and exports totalled \$18,000,000. Canadian factories thus accounted for about 50 per cent of the chemical requirements of this country, besides contributing to exports.

Table 12 - TOTAL PRODUCTION OF INDUSTRIAL CHEMICALS IN CANADA, 1938 and 1939

Commodity	Selling value at works	
	1938	1939
	\$	\$
<u>Acids, including acetic, muriatic, nitric, sulphuric, phosphoric, and stearic</u> .....	2,700,000	2,400,000
<u>Calcium Compounds, including carbide, chloride, cyanamide, cyanide, acid phosphate, grey acetate, arsenate and chloride of lime</u> .....	8,600,000	9,900,000
<u>Sodium Compounds, including hydroxide, phosphate, silicate, hypochlorite, bisulphite, salt cake, Glauber's salt, chlorate, acid pyro-phosphate, soda ash, sal soda, bisulphate, etc. (pharmaceutical salts included elsewhere)</u> ...	4,700,000	4,500,000
<u>Organic Chemicals, including acetic anhydride, butyl acetate, iso-butyl acetate, croton aldehyde, ethyl acetate, paraldehyde, pentasol acetate, vinyl acetate, ethyl alcohol, methyl hydrate, glycerine, phenol, cresol, benzol, etc. (acetic acid and acetylene included elsewhere)</u> .....	6,500,000	6,800,000
<u>Fine Chemicals and Precious Metal Salts, including salts of bismuth, mercury, potassium, sodium, ammonium, magnesium, silver, gold, uranium and radium</u> .....	1,300,000	1,700,000
<u>Compressed and Liquefied Gases, etc., including acetylene, carbon dioxide, oxygen, nitrous oxide, liquid sulphur dioxide, liquid chlorine, anhydrous and aqua ammonia, etc.</u>	4,800,000	5,300,000
<u>Ammonium Sulphate and Phosphate, and Superphosphate</u> .....	5,000,000	5,200,000
<u>Other Chemicals, including white lead, zinc oxide, red lead, litharge, cobalt salts, nickel salts, ferric chloride, lead arsenate, zinc stearate, phosphorus, white arsenic, sulphur, etc.</u> .....	3,200,000	4,000,000
<b>TOTAL</b> .....	<b>36,800,000</b>	<b>39,800,000</b>





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