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~~Canada~~ DOMINION BUREAU OF STATISTICS  
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 OTTAWA - CANADA

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ANNUAL INDUSTRY REPORTMANUFACTURES OF THE NON-METALLIC MINERALSTHE ARTIFICIAL ABRASIVES INDUSTRY, 1942

The factory selling value of all products made during 1942 by the manufacturers in Canada of artificial abrasives and artificial abrasive products amounted to \$33,631,201. This value represented a gain of 32 per cent over the total of \$25,556,330 for 1941.

There were 15 firms engaged in manufacturing artificial abrasives and their products during the year, and of these, 13 were located in Ontario and 2 in Quebec.

The average number of employees in the industry was 2,866, and payments in salaries and wages totalled \$5,106,652. Expenditures for manufacturing materials amounted to \$10,245,679, and \$2,462,324 was paid out for fuel and electricity. Capital investment in the industry totalled \$11,842,400, of which \$4,693,377 was the value placed on land, buildings and equipment.

Artificial abrasives were made by 4 plants in Ontario and 2 in Quebec. The output of these 6 works was valued at \$28,400,025 and included 160,935 tons of crude fused alumina at \$17,750,623; 44,410 tons of crude silicon carbide at \$5,494,257, and other products and by-products, such as, ferrosilicon, firesand, refractory brick, refractory cements, calcium boride, boron carbide and abrasive wheels. An average of 2,277 people were employed and salaries and wages totalled \$3,914,643.

Nine other plants were occupied chiefly in making abrasive products, such as, wheels, paper, pulpstones and sharpening stones; 7 made abrasive wheels and segments, 4 made sharpening stones and files, and 2 made abrasive cloth and paper. The value of all products made in these establishments was \$5,231,176. The number of employees was 589 and payments for salaries and wages amounted to \$1,122,003.

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Table 1 - PRINCIPAL STATISTICS FOR THE ARTIFICIAL ABRASIVES INDUSTRY IN CANADA, 1940-1942

	1940	1941	1942
Number of firms .....	16	15	15
Capital employed .....	\$ 8,120,998	3,833,950	11,842,400
Number of employees - On salaries.	236	337	409
On wages ...	1,153	1,733	2,457
Total ....	1,439	2,075	2,866
Salaries and wages - Salaries ....	\$ 690,791	842,368	1,056,487
Wages .....	\$ 1,570,704	2,688,383	4,050,165
Total ....	\$ 2,261,495	3,530,751	5,106,652
Cost of fuel and electricity .....	\$ 1,208,439	1,821,337	2,469,824
Cost of materials at works .....	\$ 4,693,931	7,650,413	10,245,679
Selling value of products at works	\$ 15,324,693	25,556,330	33,631,201

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

Table 2 - CAPITAL EMPLOYED, 1941 and 1942

	1941	1942
	\$	\$
Present value of lands, buildings, machinery and equipment .....	3,815,821	4,693,377
Inventory value of materials, fuel and other supplies on hand, and stocks in process .....	2,709,553	3,032,109
Inventory value of finished products on hand .....	971,582	1,344,033
Operating capital (cash, bills and accounts receivable, etc.) .....	2,336,394	2,772,875
TOTAL .....	3,833,950	11,842,400

Table 3 - WAGE-EARNERS, BY MONTHS, 1941 and 1942 (Number on pay-roll on the last work day of each month)

Month	1941	1942	Month	1941	1942
January .....	1,330	2,118	July .....	1,855	2,545
February .....	1,375	2,171	August .....	1,928	2,471
March .....	1,460	2,207	September .....	1,950	2,549
April .....	1,599	2,273	October .....	1,966	2,666
May .....	1,664	2,346	November .....	1,934	2,777
June .....	1,727	2,511	December .....	2,008	2,857
			AVERAGE ....	1,738	2,457

Table 4 - HOURS WORKED PER WEEK BY WAGE-EARNERS, 1941 and 1942 (In one week of month of highest employment; overtime included)

Hours worked per week	1 9 4 1		1 9 4 2		Hours worked per week	1 9 4 1		1 9 4 2	
	Male	Fe- male	Male	Fe- male		Male	Fe- male	Male	Fe- male
30 hours or less	36	1	69	2	51-54 hours ....	84	...	759	213
31-43 hours ....	327	7	277	10	55 hours .....	119	9	131	1
44 hours .....	9	...	39	4	56-64 hours ....	361	...	333	3
45-47 hours ....	47	...	94	12	65 hours or over	61	...	65	...
48 hours .....	849	...	727	1	Total .....	2,006	48	2,550	256
49-50 hours ....	213	31	56	10	Total wages paid during week.. \$	33,090	153	83,778	4,665

Table 5 - FUEL AND ELECTRICITY USED, 1941 and 1942

Kind	Unit of measure	1 9 4 1		1 9 4 2	
		Quantity	Cost at works \$	Quantity	Cost at works \$
Bituminous coal - Canadian	ton	291	2,408	192	1,537
Imported	ton	7,030	50,126	8,952	71,614
Anthracite coal (for fuel only) .....	ton	298	3,498	455	5,906
Coke (for fuel only) .....	ton	253	2,908	240	2,786
Gasoline .....	Imp.gal.	2,025	562	1,550	503
Kerosene .....	Imp.gal.	208	42	420	84
Fuel oil .....	Imp.gal.	390,703	29,221	467,939	32,268
Gas - Manufactured .....	M cu.ft.	609	528	...	...
Natural .....	M cu.ft.	2,857	2,147	4,417	3,434
Other fuel .....	...	...	2	...	3
Electricity purchased ....	K.W.H.	587,096,441	1,729,895	771,869,977	2,344,689
TOTAL .....	...	...	1,821,337	...	2,469,824

Table 6 - POWER EQUIPMENT, 1941 and 1942

	1 9 4 1		1 9 4 2	
	Number of units	Total rated horse power	Number of units	Total rated horse power
Gasoline engines - Ordinarily in use ..	1	26	1	50
Electric motors run by purchased power- Ordinarily in use .....	1,191	2,169	1,426	10,656
In reserve or idle .....	69	618	76	659
Electric motors run by regenerated power - Ordinarily in use .....	...	...	...	...
Stationary boilers - Ordinarily in use.	11	670	12	1,325
In reserve or idle	1	100	4	266

Table 7 - MATERIALS USED IN MANUFACTURING, 1941 and 1942

Material	Unit of measure	1	9	4	1	1	9	4	2
		Quantity		Cost at works		Quantity		Cost at works	
					\$				\$
Bauxite and pure alumina.	ton	151,815		4,010,127		137,377		5,427,524	
Coal (not for fuel) -									
For fused alumina .....	ton	345		2,182		662		4,243	
For silicon carbide ...	ton	8,345		60,258		7,379		60,434	
Coke (not for fuel) -									
For fused alumina .....	ton	8,859		55,065		11,359		75,950	
For silicon carbide ...	ton	32,759		413,275		48,024		604,639	
Electrodes .....	ton	2,335		236,685		3,617		437,663	
Feldspar .....	ton	84		3,127		119		6,113	
Iron borings .....	ton	13,550		172,713		20,830		261,304	
Salt .....	ton	413		4,280		392		4,172	
Sawdust .....	ton	9,129		28,113		10,820		36,243	
Silica sand .....	ton	57,362		263,605		76,943		416,806	
Artificial abrasive grains -									
Fused alumina .....	ton	5,524		736,569		5,106		904,578	
Silicon carbide .....	ton	1,429		263,571		1,849		318,198	
Natural abrasive grains -									
Garnet .....	lb.	392,846		38,074		350,314		33,982	
Emery .....	lb.	233,765		20,325		321,853		22,614	
Quartz or flint .....	lb.	348,167		6,624		459,991		7,640	
Other .....	lb.	93,568		9,378		72,575		7,415	
Bonding and bushing materials -									
Clay bonds .....	lb.	907,697		40,479		988,632		38,869	
Silicate (quantity in equivalent solid form)	lb.	14,374		623		15,930		881	
Elastic mixture .....	lb.	30,928		6,489		48,528		12,729	
Bakelite and synthetic resins .....	lb.	215,784		76,936		409,614		140,954	
Lead for bushings .....	lb.	113,203		6,307		111,130		5,870	
Cotton cloth .....	...	...		172,727		...		97,310	
Kraft paper .....	...	...		82,767		...		23,250	
Containers and packing material .....	...	...		71,364		...		102,788	
All other materials .....	...	...		812,750		...		1,133,450	
TOTAL .....	...	...		7,650,413		...		10,245,679	

Table 8 - PRODUCTS MANUFACTURED, 1941 and 1942

Product	1	9	4	1	1	9	4	2
	Short tons		Selling value at works		Short tons		Selling value at works	
				\$				\$
Crude silicon carbide .....	32,258		3,661,868		44,410		5,494,257	
Crude fused alumina .....	130,381		13,665,811		160,935		17,750,623	
Silicon carbide firesand, etc.	1,096		30,889		268		17,062	
Abrasive wheels and segments..	...		3,713,303		...		5,075,258	
Sharpening stones and files ..	...		191,757		...		251,320	
Ferrosilicon .....	10,489		124,383		12,875		187,664	
Other products (x) .....	...		4,168,319		...		4,855,017	
TOTAL .....	...		25,556,330		...		33,631,201	

For Footnote (x), see Page 5.

## Footnote to Table 8 -

(x) Includes abrasive cloth, abrasive paper, tiles, artificial pulpstones, artificial graphite, boron carbide, boron carbide shapes, calcium boride, fused magnesia, refractory cements, firebrick, etc., each of which was reported by one or two companies.

Table 9 - PRODUCTION OF CRUDE ARTIFICIAL ABRASIVES IN CANADA, 1931 - 1942

Year	Crude Silicon Carbide		Crude Fused Alumina		T O T A L	
	Quantity	Selling	Quantity	Selling	Quantity	Selling
		value at works		value at works		value at works
		\$		\$		\$
1931 .....	10,754	1,060,712	35,781	3,007,307	46,535	4,068,019
1932 .....	3,164	263,405	6,658	427,628	9,822	697,033
1933 .....	7,887	765,192	20,967	1,726,191	28,854	2,491,383
1934 .....	16,393	1,858,746	44,596	3,955,837	60,994	5,814,583
1935 .....	18,475	1,738,657	51,194	4,735,019	69,669	6,523,676
1936 .....	23,805	2,299,602	52,533	5,762,217	83,338	8,061,819
1937 .....	25,644	2,808,016	86,604	8,435,371	112,248	11,243,387
1938 .....	19,094	2,002,041	50,515	5,165,920	69,609	7,167,961
1939 .....	17,225	1,865,604	51,113	4,565,569	68,343	6,431,173
1940 .....	24,562	3,053,047	85,336	8,249,815	109,898	11,302,862
1941 .....	32,258	3,661,868	130,881	13,665,811	163,139	17,327,679
1942 .....	44,410	5,494,257	160,935	17,750,623	205,345	23,244,880

Table 10 - PRODUCTION OF ARTIFICIAL ABRASIVE WHEELS AND SEGMENTS(x) IN CANADA, 1931-1942

Year	Selling value at works	Year	Selling value at works
	\$		\$
1931 .....	347,345	1937 .....	1,165,406
1932 .....	293,523	1938 .....	316,695
1933 .....	336,647	1939 .....	1,117,689
1934 .....	563,764	1940 .....	1,838,558
1935 .....	785,777	1941 .....	3,713,303
1936 .....	862,233	1942 .....	5,075,258

(x) Does not include artificial pulpstones or sharpening stones.

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