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DOMINION BUREAU OF STATISTICS  
Industry and Merchandising Division  
OTTAWA

DOMINION BUREAU  
OF STATISTICS

DEC 15 1948

Published by Authority of the Rt. Hon. C. D. Howe, Minister of Trade and Commerce

A32

Price 25 cents

## Annual Industry Report

## Manufactures of the Non-metallic Minerals Group

THE ARTIFICIAL ABRASIVES INDUSTRY, 1948

The factory selling value of all products made during 1948 by the manufacturers in Canada of artificial abrasives and artificial abrasive products amounted to \$33,512,549. This value represented an increase of 5.4 per cent over the total of \$31,809,897 for 1947.

There were 16 firms engaged in manufacturing artificial abrasives and their products during the year, and of these, 14 were located in Ontario and 2 in Quebec.

The average number of employees in the industry was 2,657 and payments in salaries and wages totalled \$7,062,202. Expenditures for manufacturing materials amounted to \$11,565,326, and \$2,420,298 were paid out for fuel and electricity.

Artificial abrasives were made by 4 plants in Ontario and 2 in Quebec. The output of these 6 works was valued at \$24,819,757 and included 144,838 tons of crude fused alumina at \$15,309,651; 52,896 tons of crude silicon carbide at \$6,921,197 and other products and by-products, such as ferrosilicon, firesand, refractory brick, refractory cements, and boron carbide. One of these concerns also made abrasive wheels, stones, files, etc. An average of 1,835 people were employed and salaries and wages totalled \$5,066,307.

Ten other plants were occupied chiefly in making abrasive products, such as wheels, paper, pulpstones, and sharpening stones; 7 made abrasive wheels and segments; 6 made sharpening stones and files, and 2 made abrasive cloth and paper. The value of all products made in these establishments was \$8,692,592. The number of employees was 822 and payments for salaries and wages amounted to \$1,995,895. The total value of Canada's output of abrasive wheels and segments was \$3,703,470.

Table 1 - PRINCIPAL STATISTICS FOR THE ARTIFICIAL ABRASIVES INDUSTRY IN CANADA, 1944-1948

Year	Number of plants	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
			\$	\$	\$	\$
1944 .....	15	2,773	5,511,030	2,580,192	9,926,243	30,065,113
1945 .....	15	2,353	4,771,226	2,189,405	8,223,797	25,492,686
1946 .....	15	2,409	4,929,448	2,106,329	8,425,629	25,444,396
1947 .....	16	2,675	6,467,320	2,382,798	10,736,224	31,809,897
1948 .....	16	2,657	7,062,202	2,420,298	11,565,326	33,512,549
Per cent change, 1948 from 1947..	..	-0.7	+9.2	+1.6	+7.7	+5.4

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.

This report was prepared in the Mining, Metallurgical and Chemical Section.

Table 2 - PRODUCTS OF THE ARTIFICIAL ABRASIVES INDUSTRY, 1947 and 1948

Product	1947		1948	
	Short tons	Selling value at works \$	Short tons	Selling value at works \$
Crude silicon carbide .....	51,704	6,359,937	52,896	6,921,197
Crude fused alumina .....	146,433	15,253,482	144,838	15,309,651
Silicon carbide firesand, etc. ...	2,671	66,773	317	21,791
Abrasive wheels and segments .....	...	3,574,477	...	3,703,470
Sharpening stones and files .....	...	233,747	...	195,224
Ferrosilicon .....	9,157	124,630	10,265	161,013
Other products (*) .....	...	6,196,851	...	7,200,003
TOTAL .....	...	31,809,897	...	33,512,349

(\*) Includes abrasive cloth, abrasive paper, tiles, artificial pulpstones, boron carbide, fused magnesia, refractory cements, firebrick, etc., each of which was reported by only one or two companies.

Table 3 - MATERIALS USED IN THE ARTIFICIAL ABRASIVES INDUSTRY, 1947 and 1948

Material	Unit of measure	1947		1948	
		Quantity	Cost at works \$	Quantity	Cost at works \$
Alumina, pure .....	ton	5,988	422,967	8,496	609,219
Bauxite .....	ton	167,066	3,701,185	157,024	3,715,702
Boric acid glass .....	ton	18	5,064	50	13,924
Coal (not for fuel): For fused alumina..	ton	43	293	126	956
For silicon carbide	ton	4	80	4,128	42,674
Coke (not for fuel):					
For fused alumina -					
Petroleum coke .....	ton	722	12,506	662	16,968
Other coke .....	ton	10,207	67,443	9,028	63,515
For silicon carbide -					
Petroleum coke .....	ton	42,743	795,487	40,590	966,785
Other coke .....	ton	19,567	374,152	20,433	401,162
For other uses: Other coke .....	ton	10	200	30	585
Electrodes .....	ton	3,455	480,875	3,272	527,701
Feldspar .....	ton	23	530	42	962
Iron borings .....	ton	14,312	204,482	12,200	223,867
Salt .....	ton	555	4,722	280	3,915
Sawdust .....	ton	13,195	42,694	...	49,186
Silica sand .....	ton	90,527	556,181	85,061	543,106
Artificial abrasive grains -					
For re-treatment only: Fused alumina..	ton	4,826	140,192	1,839	47,312
Silicon carbide	ton	138	10,775	67	7,173
For wheels, paper, etc.:					
Fused alumina .....	ton	3,103	660,163	2,774	612,656
Silicon carbide .....	ton	1,270	351,713	1,062	328,581
Natural abrasive grains: Garnet .....	lb.	810,072	73,343	675,048	66,756
Emery .....	lb.	160,219	9,296	174,744	10,408
Quartz or flint.	lb.	378,907	4,740	544,626	7,973
Other .....	lb.	69,687	8,068	...	936
Bonding and bushing materials -					
Clay bonds .....	lb.	757,904	32,826	834,419	38,203
Silicate (quantity in equivalent solid form) .....	lb.	205,787	9,311	...	675
Elastic mixture .....	lb.	5,183	2,674	...	4,691
Bakelite and synthetic resins .....	lb.	386,936	142,501	...	68,229
Lead for bushings .....	lb.	109,007	13,919	91,955	17,100
Glue, animal and hide .....	lb.	1,126,225	304,111	1,161,647	358,886
Cotton cloth .....	...	...	472,098	...	540,839
Kraft paper and other paper .....	...	...	268,516	...	280,596
Containers and packing material .....	...	...	179,165	...	208,646
All other materials .....	...	...	1,383,952	...	1,785,439
TOTAL .....	...	...	10,736,224	...	11,565,326

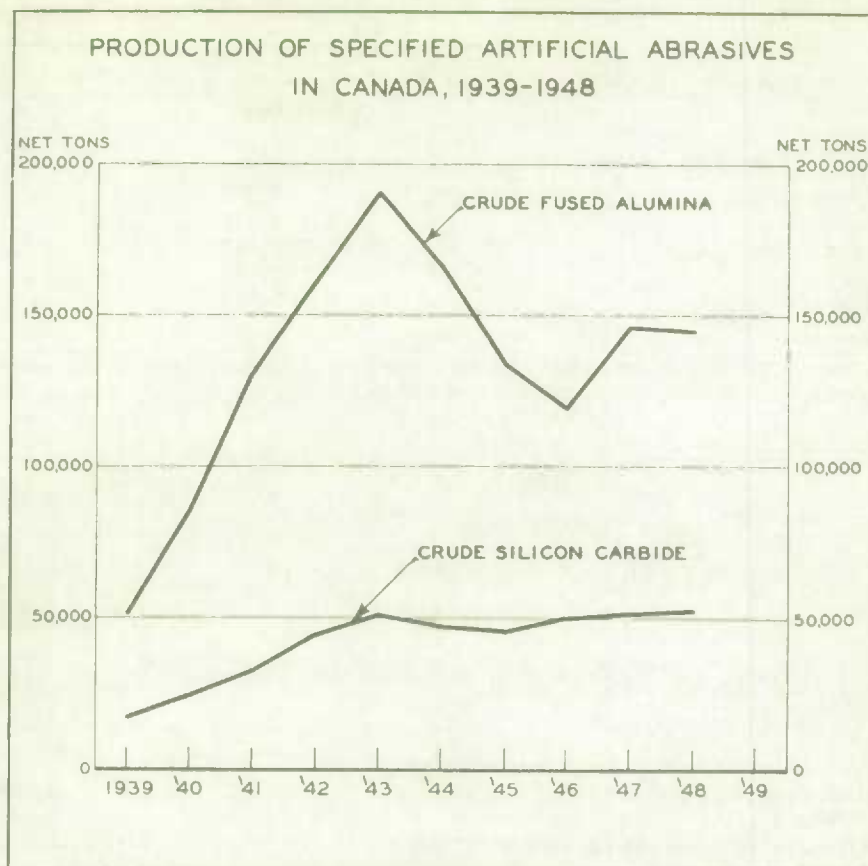


Table 4 - PRODUCTION OF SPECIFIED ARTIFICIAL ABRASIVES IN CANADA, 1939-1948

Year	Crude silicon carbide		Crude fused alumina		T O T A L	
	Quantity	Selling value at works	Quantity	Selling value at works	Quantity	Selling value at works
	tons	\$	tons	\$	tons	\$
1939 .....	17,225	1,865,604	51,118	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
1943 .....	51,281	6,846,087	190,727	20,543,657	242,008	27,389,744
1944 .....	47,100	5,499,628	166,098	17,768,484	213,198	23,268,112
1945 .....	45,419	5,361,279	133,192	13,573,311	178,611	18,934,590
1946 .....	49,953	5,961,490	119,223	12,310,247	169,176	18,271,737
1947 .....	51,704	6,359,937	146,433	15,253,482	198,137	21,613,419
1948 .....	52,896	6,921,197	144,838	15,309,651	197,734	22,230,848

Table 5 - PRODUCTION OF ARTIFICIAL ABRASIVE WHEELS AND SEGMENTS (\*) IN CANADA, 1939-1948

Year	Selling value at works	Year	Selling value at works
	\$		\$
1939 .....	1,117,689	1944 .....	3,321,873
1940 .....	1,838,558	1945 .....	3,151,289
1941 .....	3,713,303	1946 .....	2,922,089
1942 .....	5,075,258	1947 .....	3,574,477
1943 .....	5,114,962	1948 .....	3,703,470

(\*)Does not include artificial pulpstones or sharpening stones.

Table 6 - IMPORTS INTO CANADA OF ABRASIVES AND ABRASIVE PRODUCTS, 1947 and 1948

		1947	1948
Artificial abrasive grains, crushed or ground, for use in Canadian manufactures .....	\$	1,598,451	1,483,498
Diamond dust or bort and black diamonds for borers .....	\$	2,997,101	2,485,324
Diatomaceous earth or infusorial earth (Kieselguhr) ground or unground .....	cwt.	301,472	344,010
	\$	431,125	512,115
Emery in bulk, crushed or ground .....	\$	123,661	142,527
Grinding wheels, manufactured by the bonding together of either natural or artificial abrasives .....	\$	502,949	562,865
Grinding stones or blocks, manufactured by the bonding together of either natural or artificial abrasives .....	\$	77,566	85,938
Manufactures of emery or of artificial abrasives, n.o.p. ...	\$	103,246	106,746
Grindstones, not mounted, and not less than 36 inches in diameter .....	No.	667	806
	\$	65,160	62,422
Grindstones, n.o.p. ....	No.	905	680
	\$	5,120	5,318
Pumice and pumice stone, lava and calcareous tufa, not further manufactured than ground .....	\$	62,063	108,684
Sandpaper, glass, flint and emery paper or emery cloth ....	\$	101,518	73,760
TOTAL .....	\$	6,067,960	5,629,197

Table 7 - EXPORTS FROM CANADA AND RE-EXPORTS OF ABRASIVES AND ABRASIVE PRODUCTS, 1947 and 1948

		1947	1948
Abrasives, natural, n.o.p. in ore or bulk, crushed or ground, including infusorial earth, rotten stone, tripoli, etc. ...	cwt.	1,208	474
	\$	6,334	3,604
Abrasives, artificial, crude, including carborundum .....	cwt.	3,936,016	4,005,190
	\$	13,109,614	13,385,123
Abrasives, artificial, made up into wheels and stones .....	\$	297,225	302,626
Sandpaper, glass, flint and emery paper, and emery cloth ....	\$	1,187,190	1,124,593
Grindstones, manufactured .....	\$	24,884	21,650
TOTAL .....	\$	14,625,247	14,837,596

Table 8 - EMPLOYEES, SALARIES AND WAGES IN THE ARTIFICIAL ABRASIVES INDUSTRY, 1947 and 1948

	Average number of employees					Salaries	Wages	TOTAL SALARIES and WAGES	
	On Salaries		On Wages		Total				
	Male	Female	Male	Female					
						\$	\$	\$	
<u>1947</u>									
Quebec .....	)								
Ontario .....	)	253	162	2,096	164	2,675	1,179,702	5,287,618	6,467,320
CANADA .....		253	162	2,096	164	2,675	1,179,702	5,287,618	6,467,320
<u>1948</u>									
Quebec .....	)								
Ontario .....	)	319	184	2,017	137	2,657	1,423,768	5,638,434	7,062,202
CANADA .....		319	184	2,017	137	2,657	1,423,768	5,638,434	7,062,202

## LIST OF FIRMS IN THE ARTIFICIAL ABRASIVES INDUSTRY, 1948

Name of Firm	Address
(a) <u>Artificial Abrasives</u>	
Simonds Canada Abrasive Company Limited	Arvida, Quebec
Canadian Carborundum Company, Limited	P.O. Box 337, Niagara Falls, New York, U.S.A. Plants at Shawinigan Falls, Quebec, and Niagara Falls, Ontario
The Exolon Company	East Niagara St., Tonawanda, New York, U.S.A. Plant at Thorold, Ontario
Lionite Abrasives Ltd.	Niagara Falls, Ontario
Norton Company	1 New Bond St., Worcester, Massachusetts, U.S.A. Plant at Chippawa, Ontario
(b) <u>Abrasive Products</u>	
Bay State Abrasive Products Co. (Canada) Ltd.	188 Pearl St., Brantford, Ontario
Canadian Durex Abrasives Limited	Brantford, Ontario
Canadian Carborundum Company, Limited	Niagara Falls, Ontario
Canadian Grinding Wheel Co.	245 Kenilworth Ave. S., Hamilton, Ontario
Canada Sand Papers Limited	King and Argyle Sts., Preston, Ontario Plant at Plattsville, Ontario
Dominion Abrasive Wheel Co. Limited	49 Main St., Mimico, Ontario
Lion Grinding Wheels Ltd.	192 Pearl St. E., Brockville, Ontario
Micromatic Hone Limited	55 George St., Brantford, Ontario
Norton Company of Canada Limited	3 Beach Road, Hamilton, Ontario
Ontario Abrasive Wheels Limited	41 George St., Prescott, Ontario
The Wright Abrasives Co.	2 Adam St., Hamilton, Ontario

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