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## THE ARTIFICIAL ABRASIVES INDUSTRY 1951

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## NOTICE

The annual reports prepared by the Industry and Merchandising Division of the Bureau of Statistics are divided into 4 volumes, as follows: **Volume I**—The Primary Industries, including mining, forestry and fisheries; **Volume II**—Manufacturing; **Volume III**—Construction; **Volume IV**—Merchandising and Services. The volumes are made up of parts, and the parts in turn are subdivided according to the industries which they comprise.

Volume II consists of the following parts, the first two of which deal with manufacturing as a whole and the balance with the major manufacturing groups.

- I—General Review of the Manufacturing Industries, \$1.50.
- II—The Manufacturing Industries, by Provinces
  - Section 1. Principal Statistics of Major Industrial Groups and Leading Industries, 50¢.
  - Section 2. Principal Statistics of Individual Industries, 75¢.
  - Section 3. Principal Statistics by Regional Distribution, 75¢.
- III—Foods and Beverages
- IV—Tobacco and Tobacco Products
- V—Rubber Products
- VI—Leather Products
- VII—Textiles
- VIII—Wood and Paper Products
- IX—Printing Trades
- X—Iron and Steel Products
- XI—Transportation Equipment
- XII—Non-ferrous Metal Products
- XIII—Electrical Apparatus and Supplies
- XIV—Non-metallic Mineral Products
- XV—Products of Petroleum and Coal
- XVI—Chemicals and Allied Products
- XVII—Miscellaneous Manufacturing

The present report belongs to Part XIV, Non-metallic Mineral Products. It is punched to permit of filing in a ring binder along with others of the group. The reports in this group are:

- A—General Review, 25¢.
- B—The Artificial Abrasives Industry, 25¢.
- C—The Asbestos Products Industry, 25¢.
- P—The Cement Manufacturing Industry (also in Mining), 25¢.
- D—The Cement Products Industry, 25¢.
- E—The Glass and Glass Products Industry, 25¢.
- K—The Gypsum Industry (also in Mining), 25¢.
- Q—The Clay and Clay Products Industry (also in Mining), 25¢.
- R—The Lime Industry (also in Mining), 25¢.
- M—The Salt Industry (also in Mining), 25¢.
- T—The Stone Industry, 25¢.
- G—The Miscellaneous Non-metallic Mineral Products Industry, 25¢.

# THE ARTIFICIAL ABRASIVES INDUSTRY

1951

The factory selling value of all products made during 1951 by the manufacturers in Canada of artificial abrasives and artificial abrasive products amounted to \$44,920,949. This value represented a gain of 36.8 per cent over the total of \$32,836,573 for 1950.

There were 19 firms engaged in manufacturing artificial abrasives and other products during the year, and of these, 14 were located in Ontario and 5 in Quebec.

The number of employees in the industry was 2,989 and payments in salaries and wages totalled \$9,675,282. Expenditures for manufacturing materials amounted to \$17,668,167, and \$3,819,109 were paid out for fuel and electricity.

Artificial abrasives were made by 4 plants in Ontario and 4 in Quebec. The output of these 8 works was valued at \$34,480,384 and included 195,374 tons of crude fused alumina at \$20,835,165; 70,282 tons of crude silicon carbide at \$9,913,060 and other products and by-products, such as ferro-silicon, firesand, abrasive wheels, etc. A total of 2,273 people was employed and salaries and wages paid out amounted to \$7,402,609.

Eleven other plants were occupied chiefly in making abrasive products, such as wheels, paper, pulpstones and sharpening stones. The value of all products made in these establishments was \$10,440,565. The number of employees was 716 and payments for salaries and wages amounted to \$2,272,673. The total value of Canada's output of abrasive wheels and segments was \$5,655,676.

TABLE 1. Principal Statistics for the Artificial Abrasives Industry, 1947-1951

Year	Number of plants	Number of employees	Salaries and wages for year	Cost of fuel and electricity at works	Cost of materials at works	Gross selling value of products at works	Net <sup>1</sup> value of production
			\$	\$	\$	\$	\$
1947 .....	16	2,675	6,467,320	2,382,798	10,736,224	31,809,897	18,690,875
1948 .....	16	2,657	7,062,202	2,420,298	11,565,326	33,512,349	19,526,725
1949 .....	18	2,543	6,830,763	2,182,097	10,649,694	27,700,008	14,868,217
1950 .....	19	2,603	7,359,351	2,329,029	12,541,899	32,836,573	17,965,645
1951 .....	19	2,989	9,675,282	3,819,109	17,668,167	44,920,949	23,433,673
Per cent change, 1951 from 1950 .....	—	+14.8	+31.5	+64.0	+40.9	+36.8	+30.4

1. Gross value less cost of materials, fuel and electricity.

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. Principal Statistics for the Artificial Abrasives Industry, by Provinces, 1950 and 1951

Province	Number of plants	Number of employees	Salaries and wages for year	Cost of fuel and electricity at works	Cost of materials at works	Gross selling value of products at works
			\$	\$	\$	\$
1950						
Quebec .....	4	244	768,768	572,216	1,405,356	4,247,382
British Columbia .....	1					
Ontario .....	14	2,359	6,590,583	1,756,813	11,136,543	28,589,191
Canada .....	19	2,603	7,359,351	2,329,029	12,541,899	32,836,573
1951						
Quebec .....	5	408	1,277,302	1,060,324	2,434,899	6,578,704
Ontario .....	14	2,581	8,397,980	2,758,785	15,233,268	38,342,245
Canada .....	19	2,989	9,675,282	3,819,109	17,668,167	44,920,949

TABLE 3. Products of the Artificial Abrasives Industry, 1950 and 1951

Product	1950		1951	
	Short tons	Selling value at works	Short tons	Selling value at works
		\$		\$
Crude silicon carbide .....	44,761	6,316,299	70,282	9,913,060
Crude fused alumina .....	126,923	12,197,308	195,374	20,835,165
Silicon carbide firesand, etc. ....	328	16,103	263	12,137
Abrasive wheels and segments .....	—	4,683,163	—	5,655,676
Sharpening stones and files .....	—	296,904	—	285,897
Ferrosilicon .....	9,681	281,597	19,019	757,732
Other products <sup>1</sup> .....	—	9,045,199	—	7,461,282
<b>Total</b> .....	—	<b>32,836,573</b>	—	<b>44,920,949</b>

1. Includes abrasive cloth, abrasive paper, tiles, artificial pulpstones, boron carbide, fused magnesia, etc., each of which was reported by only one or two companies.

TABLE 4. Materials Used in the Artificial Abrasives Industry, 1950 and 1951

Material	Unit of measure	1950		1951	
		Quantity	Cost at works	Quantity	Cost at works
			\$		\$
Alumina, pure .....	ton	7,699	548,080	17,345	1,360,560
Bauxite .....	"	137,197	3,804,875	213,048	6,001,874
Boric acid glass .....	"	47	12,022	67	23,277
Coal (not for fuel) .....	"	1,990	18,573	945	8,798
Coke (not for fuel):					
Petroleum coke .....	ton	38,609	765,672	64,909	1,322,295
Pitch coke .....	"	13,970	436,676	22,748	610,413
Other coke .....	"	6,666	49,246	11,149	88,431
Electrodes .....	ton	2,590	520,311	4,302	926,337
Feldspar .....	"	9	200	32	960
Iron borings .....	"	10,542	238,027	19,026	581,029
Salt .....	"	209	3,467	309	5,893
Sawdust .....	—	—	59,682	—	88,325
Silica sand .....	ton	72,336	517,721	114,616	945,805
Artificial abrasive grains:					
For re-treatment only:					
Fused alumina .....	ton	3,040	80,460	2,384	28,514
Silicon carbide .....	"	—	—	—	—
For wheels, paper, etc.:					
Fused alumina .....	ton	2,752	711,706	3,098	792,053
Silicon carbide .....	"	1,254	419,388	1,642	496,757
Natural abrasive grains:					
Garnet .....	lb.	577,036	65,611	751,345	85,097
Emery .....	"	223,509	17,746	288,912	21,613
Quartz or flint .....	"	823,735	15,168	534,542	14,337
Other .....	"	—	3,079	—	2,604
Bonding and bushing materials:					
Clay bonds .....	lb.	817,692	48,785	963,320	58,327
Silicate (quantity in equivalent solid form) .....	"	—	483	—	1,364
Elastic mixture .....	"	—	5,975	—	3,729
Bakelite and synthetic resins .....	"	233,430	85,965	291,864	101,135
Lead for bushings .....	"	89,136	14,600	109,948	22,957
Glue, animal and hide .....	"	1,200,223	339,208	1,148,211	355,916
Cotton cloth .....	—	—	771,612	—	694,886
Kraft paper and other paper .....	—	—	321,839	—	307,258
Containers and packing material .....	—	—	447,668	—	219,756
All other materials .....	—	—	2,218,054	—	2,497,867
<b>Total</b> .....	—	—	<b>12,541,899</b>	—	<b>17,668,167</b>



# PRODUCTION OF SPECIFIED ARTIFICIAL ABRASIVES IN CANADA, 1941 - 1951

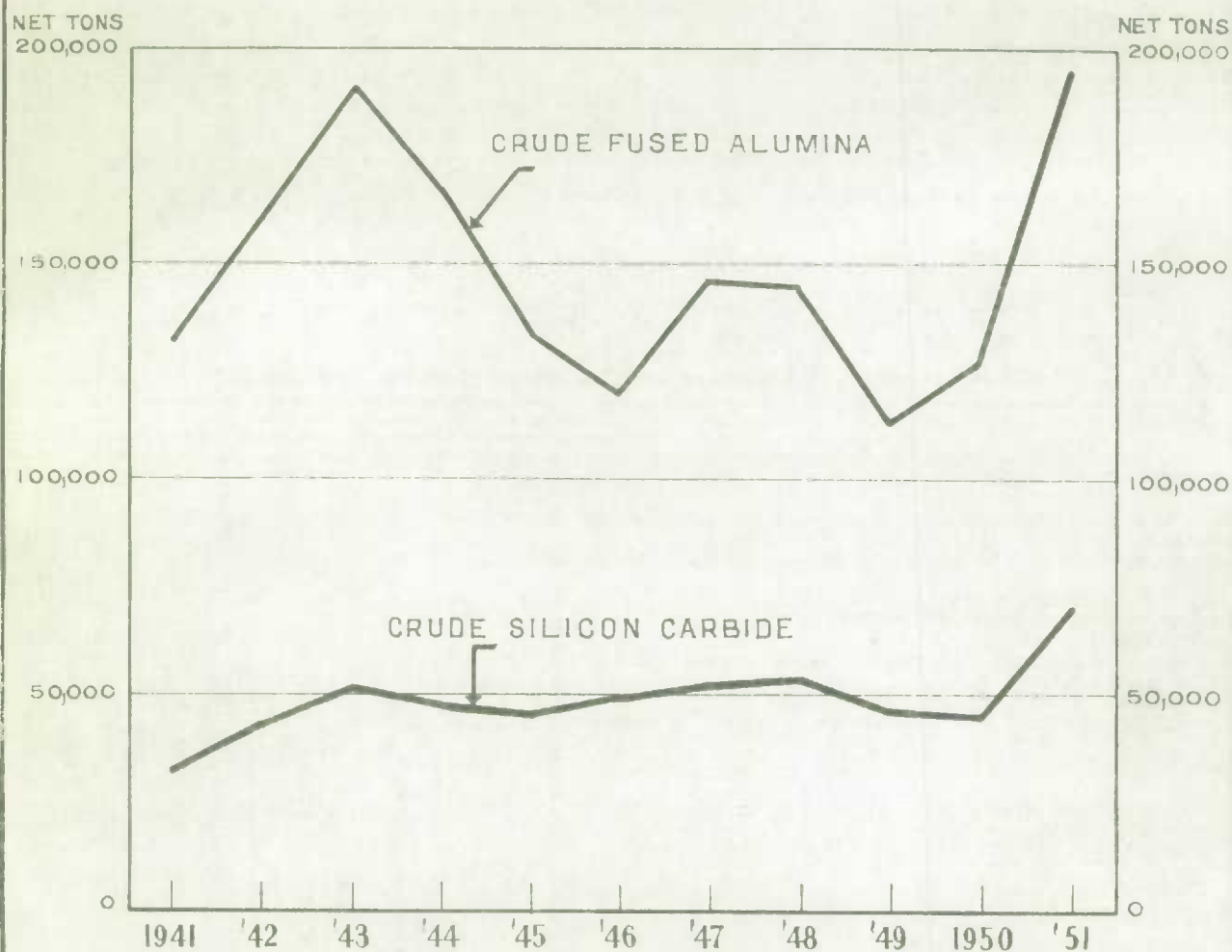


TABLE 5. Production of Specified Artificial Abrasives, 1942-1951

Year	Crude silicon carbide		Crude fused alumina		Total	
	Quantity	Selling value at works	Quantity	Selling value at works	Quantity	Selling value at works
	tons	\$	tons	\$	tons	\$
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	22,230,484
1949	46,398	6,008,384	113,199	10,230,521	159,597	16,238,905
1950	44,761	6,316,299	126,923	12,197,308	171,684	18,513,607
1951	70,282	9,913,060	195,374	20,835,165	265,656	30,748,225

**TABLE 6. Production of Artificial Abrasive Wheels and Segments<sup>1</sup>, 1942-1951**

Year	Selling value at works	Year	Selling value at works
	\$		\$
1942 .....	5,075,258	1947 .....	3,574,477
1943 .....	5,114,962	1948 .....	3,703,470
1944 .....	3,321,873	1949 .....	3,826,726
1945 .....	3,131,289	1950 .....	4,683,163
1946 .....	2,922,089	1951 .....	5,655,676

1. Does not include artificial pulpstones or sharpening stones.

**TABLE 7. Imports of Abrasives and Abrasive Products, 1950 and 1951**

	1950	1951
Artificial abrasive grains, crushed or ground, for use in Canadian manufactures .. \$	1,895,024	2,024,096
Diamond dust or bort and black diamonds for borers ..... \$	5,888,861	6,286,694
Diatomaceous earth or infusorial earth (Kieselguhr) ground or unground ..... cwt. \$	364,948	421,370
	599,216	709,433
Emery in bulk, crushed or ground ..... \$	106,890	160,115
Grinding wheels, manufactured by the bonding together of either natural or artificial abrasives ..... \$	944,713	1,359,756
Grinding stones or blocks, manufactured by the bonding together of either natural or artificial abrasives ..... \$	104,939	213,955
Manufactures of emery or of artificial abrasives, n.o.p. .... \$	124,957	167,809
Grindstones, not mounted, and not less than 36 inches in diameter ..... No. \$	333	575
	30,150	54,992
Grindstones, n.o.p. .... No. \$	1,343	2,257
	5,949	9,865
Pumice and pumice stone, lava and calcareous tufa, not further manufactured than ground ..... \$	127,885	128,957
Sandpaper, glass, flint and emery paper or emery cloth ..... \$	47,551	1,060,039
<b>Total</b> .....	<b>\$ 9,876,135</b>	<b>12,175,711</b>

**TABLE 8. Exports and Re-Exports of Abrasives and Abrasive Products, 1950 and 1951**

	1950	1951
Abrasives, natural, n.o.p., in ore or bulk, crushed or ground, including infusorial earth, rotten stone, tripoli, etc. .... cwt.	276	588
	\$ 5,649	11,930
Abrasives, artificial, crude, including carborundum ..... cwt.	3,741,005	5,405,842
	\$ 14,768,268	21,388,672
Abrasives, artificial, made up into wheels and stones ..... \$	73,329	73,285
Diamonds, industrial, and diamond dust or bort <sup>1</sup> ..... \$	3,016,856	2,418,095
Sandpaper, glass, flint and emery paper, and emery cloth ..... \$	972,358	1,061,395
Grindstones, manufactured ..... \$	55,290	73,560
<b>Total</b> .....	<b>\$ 18,891,750</b>	<b>25,026,937</b>

1. All re-exports.

TABLE 9. Employees and Their Earnings in the Artificial Abrasives Industry, 1950 and 1951

	Number of employees					Earnings		
	Supervisory and office		Workmen		Total	Supervisory and office	Workmen	Total
	Male	Female	Male	Female				
						\$	\$	\$
<b>1950</b>								
Quebec .....	23	4	217	—	244	124,306	644,462	768,768
British Columbia .....	344	210	1,666	139	2,359	1,730,756	4,859,827	6,590,583
Ontario .....								
<b>Canada .....</b>	<b>367</b>	<b>214</b>	<b>1,883</b>	<b>139</b>	<b>2,603</b>	<b>1,855,062</b>	<b>5,504,289</b>	<b>7,359,351</b>
<b>1951</b>								
Quebec .....	28	9	371	—	408	146,266	1,131,036	1,277,302
Ontario .....	296	177	1,990	118	2,581	1,664,965	6,733,015	8,397,980
<b>Canada .....</b>	<b>324</b>	<b>186</b>	<b>2,361</b>	<b>118</b>	<b>2,989</b>	<b>1,811,231</b>	<b>7,864,051</b>	<b>9,675,282</b>

## List of Firms in the Artificial Abrasives Industry, 1951

Name of firm	Address
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## (a) ARTIFICIAL ABRASIVES

Canadian Carborundum Company, Limited <sup>1</sup> .....	P.O. Box 337, Niagara Falls, New York, U.S.A. Plants at Shawinigan Falls, Quebec, and Niagara Falls, Ontario
Electro Refractories & Alloys Canada Ltd. ....	Cap-de-la-Madeleine, Quebec
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. Plants at Chippawa, Ontario, and Cap-de-la-Madeleine, Quebec
Simonds Canada Abrasive Company Limited .....	Arvida, Quebec

## (b) ABRASIVE PRODUCTS

Bay State Abrasive Products Co. (Canada) Ltd. ....	188 Pearl St., Brantford, Ontario
Behr-Manning (Canada) Limited .....	Brantford, Ontario
Canadian Grinding Wheel Co. ....	245 Kentilworth 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
Empire Abrasives .....	34 Lewis St., Brantford, 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
Plasticraft Co. ....	2,027 St. Timothee St., Montreal, Quebec
Wright Abrasives .....	2 Adam St., Hamilton, Ontario

1. This company also makes abrasive wheels, etc., at its Niagara Falls works and all operations at that point are covered by the one report.

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