

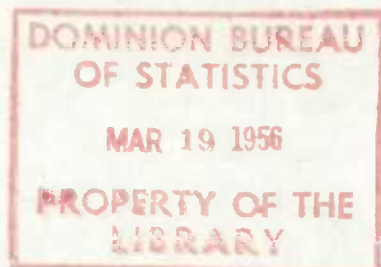
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THE ARTIFICIAL ABRASIVES INDUSTRY

1954



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NOTICE

The annual reports prepared by the Industry and Merchandising Division of the Bureau of Statistics are divided into 3 volumes, as follows: Volume I—The Primary Industries, including mining, forestry and fisheries; Volume II—Manufacturing; Volume III—Merchandising and Services. The volumes are made up of parts, and the parts in turn are subdivided according to the industries or provinces 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 of Canada, (7 sections, as follows):
 - Section A. Summary for Canada, 25¢
 - Section B. Atlantic Provinces, 25¢
 - Section C. Quebec, 25¢
 - Section D. Ontario, 25¢
 - Section E. Prairie Provinces, 25¢
 - Section F. British Columbia, 25¢
 - Section G. The Manufacturing Industries of Canada, Regional Distribution, 75¢
- III—Foods and Beverages
- IV—Tobacco and Tobacco Products
- V—Rubber Products
- VI—Leather Products
- VII—Textile Mills
- VIII—Knitting Mills
- IX—Clothing
 - X—Wood and Paper Products
- XI—Printing Trades
- XII—Iron and Steel Products
- XIII—Transportation Equipment
- XIV—Non-ferrous Metal Products
- XV—Electrical Apparatus and Supplies
- XVI—Non-metallic Mineral Products
- XVII—Products of Petroleum and Coal
- XVIII—Chemicals and Allied Products
- XIX—Miscellaneous Manufactures

The present report belongs in Part XVI, 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 Concrete 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 (also in Mining), 25¢
- G—The Miscellaneous Non-metallic Mineral Products Industry, 25¢

THE ARTIFICIAL ABRASIVES INDUSTRY

1954

Factory shipments of all products made by the manufacturers in Canada of artificial abrasives and artificial abrasives products were valued at \$38,653,517 in 1954, a decrease of 16.4 per cent from the \$46,253,877 reported in the previous year.

There were seventeen firms engaged in manufacturing abrasives and other products during the year and of these, 12 were located in Ontario and 5 in Quebec.

The number of employees in the industry was 2,639 and payments in salaries and wages totalled \$9,990,100. Expenditures for manufacturing materials amounted to \$15,443,744 and \$3,952,382 were paid out for fuel and electricity.

Artificial abrasives were made by 4 plants in Ontario and 4 in Quebec. Shipments by these 8 works were valued at \$31,098,759 and included 199,857 tons of crude fused alumina at \$18,883,589; 50,321 tons of crude silicon carbide at \$6,944,862 and other products and by-products, such as ferrosilicon,

firesand, abrasive wheels, etc. A total of 2,044 people was employed and salaries and wages paid out amounted to \$7,855,376.

Nine other plants were occupied chiefly in making abrasive products such as wheels, paper, pulpstones and sharpening stones. Factory shipments of all products made in these establishments were valued at \$7,554,758. The number of employees was 595 and payments for salaries and wages amounted to \$2,134,724. The total value of Canada's output of abrasive wheels and segments was \$4,422,413.

NOTE: Figures for value added by manufacture, shown in Table 1, prior to 1952 were obtained by subtracting the cost of materials used, including fuel and electricity, from the value of production. In 1952 the gross value of production, in 1952, the gross value of production was replaced by value of factory shipments, f.o.b. plant. As no information on inventory change is available for 1952 and 1953, value added figures for these years were obtained by subtracting from the value of shipments the cost of materials, fuel and electricity. In 1954 information on the value of year-end inventory holdings at plant and plant warehouses was collected as part of the annual Census of Industry and information thus made available was taken into account in calculating the value added figure for 1954.

TABLE 1. Principal Statistics of the Artificial Abrasives Industry, Significant Years 1929-1954, and by Provinces, 1953 and 1954

Year and province	Estab- lish- ments	Em- ployees	Earnings	Cost of fuel and electricity at works	Cost at plant of materials used	Value added by manufacture ¹	Gross selling value of products ¹
	No.	No.	\$	\$	\$	\$	\$
1929	12	828	1,270,898	873,068	2,905,928	5,182,955	8,961,951
1932	14	386	519,013	480,601	449,624	559,330	1,489,555
1937	16	1,289	1,995,589	1,222,529	4,351,854	8,599,968	14,174,351
1939	16	1,099	1,630,889	777,654	2,971,056	5,526,433	9,275,143
1943	15	3,336	6,453,769	2,988,814	11,581,923	22,039,191	36,609,928
1946	15	2,409	4,929,448	2,106,329	8,425,629	14,912,438	25,444,396
1949	18	2,543	6,830,763	2,182,097	10,649,694	14,868,217	27,700,008
1950	19	2,603	7,359,351	2,329,029	12,541,899	17,965,645	32,836,573
1951	19	2,989	9,675,282	3,819,109	17,668,167	23,433,673	44,920,949
1952	20	2,607	9,248,935	3,312,052	13,967,649	19,437,527	36,717,228
1953							
Quebec	5	391	1,313,278	1,202,097	2,485,548	3,094,144	6,781,789
Ontario	13	2,351	8,587,470	2,849,037	14,384,058	22,238,993	39,472,088
Canada	18	2,742	9,900,748	4,051,134	16,869,606	25,333,137	46,253,877
1954							
Quebec	5	365	1,343,262	1,124,745	2,230,893	3,151,356	6,078,914
Ontario	12	2,274	8,646,838	2,827,637	13,212,851	16,869,593	32,574,603
Canada	17	2,639	9,990,100	3,952,382	15,443,744	20,020,949	38,653,517

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.

1. See footnote to text.

TABLE 2. Inventories,¹ by Provinces, 1954

	Raw materials and supplies	Goods in process	Finished goods of own manufacture	Total
	\$	\$	\$	\$
Opening:				
Quebec	850,827	70,513	682,973	1,604,313
Ontario	4,388,932	708,742	1,758,899	6,856,573
Canada	5,239,759	779,255	2,441,872	8,460,886
Closing:				
Quebec	677,692	72,543	1,111,053	1,861,288
Ontario	3,841,159	680,238	2,094,377	6,615,774
Canada	4,518,851	752,781	3,205,430	8,477,062

1. (a) Book value of all manufacturing inventories held at plant and plant warehouses.

(b) Beginning with 1954, information on the value of year-end inventory holdings at plant and plant warehouses is being collected as part of the annual Census of Industry. These data were formerly collected by a separate survey. The summarized results for the Artificial Abrasives Industry for the year under review are shown in the above table.

TABLE 3. Products of the Artificial Abrasives Industry, 1953 and 1954

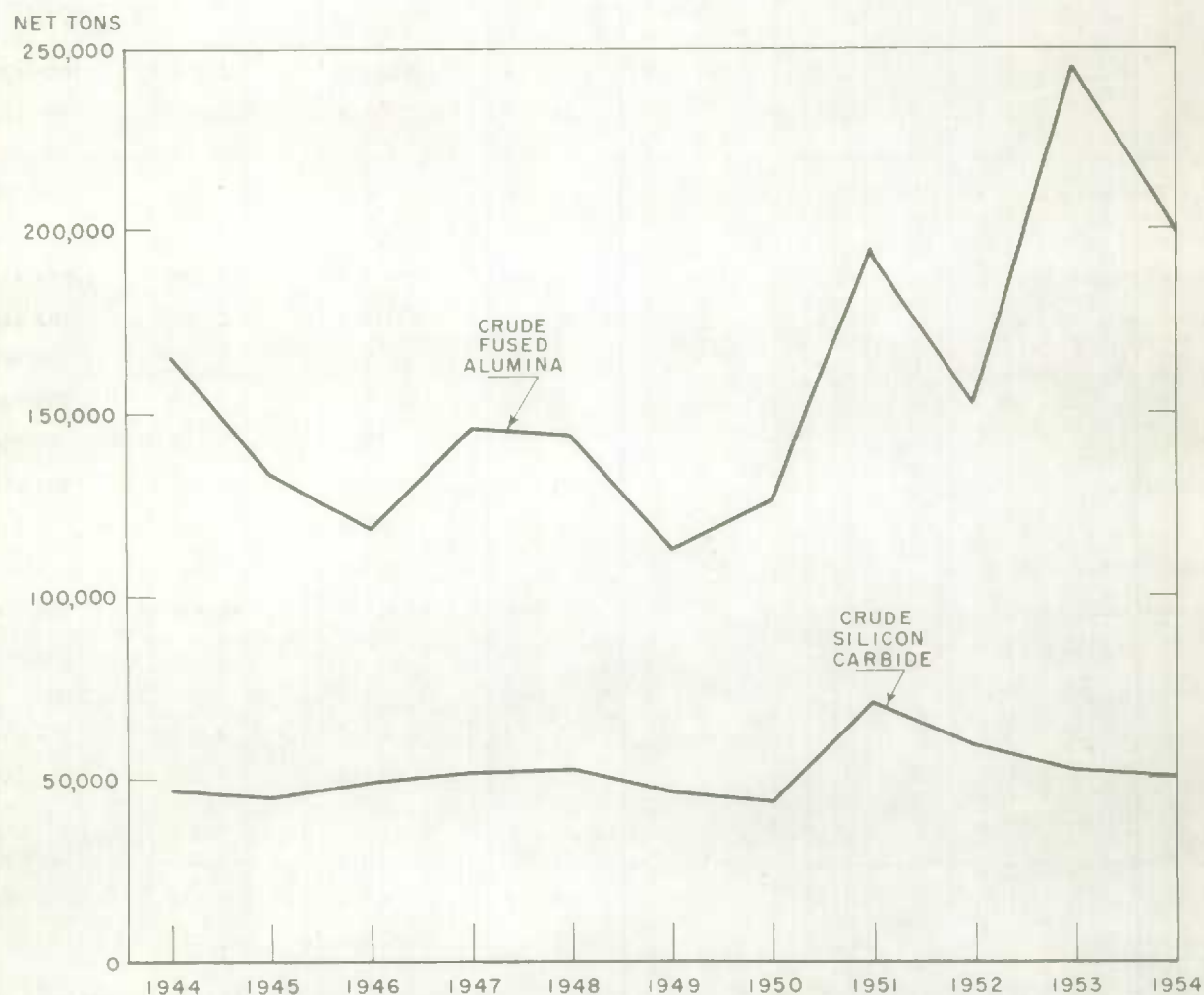
Product	1953		1954	
	Short tons	Value of factory shipments	Short tons	Value of factory shipments
		\$		\$
Crude silicon carbide.....	52,903	7,438,243	50,321	6,944,862
Crude fused alumina.....	245,627	25,499,674	199,857	18,883,589
Silicon carbide firesand, etc.	1,724	69,595	871	103,723
Abrasive wheels and segments.....	—	5,694,066	—	4,422,413
Sharpening stones and files	—	416,414	—	234,575
Ferrosilicon.....	20,088	938,767	22,830	937,090
Other products ¹	—	6,197,118	—	7,127,265
Total.....	—	46,253,877	—	38,653,517

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, 1953 and 1954

Material	Unit of measure	1953		1954	
		Quantity	Cost at works	Quantity	Cost at works
			\$		\$
Alumina, pure	ton	8,644	685,704	5,384	426,820
Bauxite.....	"	250,869	7,479,554	225,580	6,964,785
Boric acid glass	"	132	45,959	63	21,959
Coal (not for fuel).....	"	2,824	20,844	7,255	71,080
Coke (not for fuel):					
Petroleum coke	ton	56,903	1,109,453	56,321	1,218,742
Pitch coke	"	11,819	314,009	3,581	102,440
Other coke	"	10,914	86,710	7,719	59,765
Electrodes	ton	4,581	1,007,750	4,266	1,055,939
Feldspar.....	"	23	828	5	250
Iron borings	"	24,506	775,747	16,169	463,655
Salt	"	289	5,878	101	2,413
Sawdust	—	—	74,425	—	68,715
Silica sand.....	ton	85,517	748,961	81,616	730,790
Artificial abrasive grains:					
For wheels, paper, etc.:					
Fused alumina.....	ton	2,657	665,116	2,262	572,071
Silicon carbide	"	1,707	481,945	1,592	411,359
Natural abrasive grains:					
Garnet.....	lb.	463,960	51,704	457,250	49,616
Emery	"	197,878	16,372	127,515	10,162
Quartz or flint	"	404,180	17,656	392,073	12,602
Other.....	—	—	2,424	—	1,671
Bonding and bushing materials:					
Clay bonds.....	lb.	993,920	56,066	769,757	48,789
Silicate.....	—	—	1,285	—	249
Elastic mixture	—	—	7,156	—	3,719
Bakelite and synthetic resins.....	lb.	236,094	84,259	176,761	60,458
Lead for bushings.....	"	92,959	13,973	68,942	10,612
Glue, animal and hide	"	810,649	261,997	703,781	219,963
Cotton cloth.....	—	—	427,594	—	340,908
Kraft paper and other paper.....	—	—	252,050	—	247,466
Containers and packing material	—	—	137,531	—	171,615
All other materials	—	—	2,036,656	—	2,095,131
Total.....	—	—	16,869,606	—	15,443,744

PRODUCTION⁽¹⁾ OF SPECIFIED ARTIFICIAL ABRASIVES IN CANADA 1945-1954



(1) FACTORY SHIPMENTS SINCE 1952

TABLE 5. Production¹ of Specified Artificial Abrasives, 1945-1954

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	\$
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
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
1952	59,277	8,275,099	152,086	16,643,519	211,363	24,918,618
1953	52,903	7,438,243	245,627	25,499,674	298,530	32,937,917
1954	50,321	6,944,862	199,857	18,883,589	250,178	25,828,451

1. Factory shipments since 1952.

TABLE 6. Production² of Artificial Abrasive Wheels and Segments¹, 1945-1954

Year	Selling value at works	Year	Selling value at works
	\$		\$
1945	3, 131, 289	1950	4, 683, 163
1946	2, 922, 089	1951	5, 655, 676
1947	3, 574, 477	1952	5, 501, 377
1948	3, 703, 470	1953	5, 694, 066
1949	3, 826, 726	1954	4, 422, 413

1. Does not include artificial pulpstones or sharpening stones.

2. Factory shipments since 1952.

TABLE 7. Principal Statistics, Classified According to Type of Ownership, 1953 and 1954

Type	Establish- ments	Employees	Earnings	Cost at plant of materials used	Selling value of factory shipments
	No.	No.	\$	\$	\$
1953					
Head offices		27	124, 340	—	—
Individual ownership	1	2, 715	9, 776, 408	16, 869, 606	46, 253, 877
Partnerships	1				
Incorporated companies	16				
Total	18	2, 742	9, 900, 748	16, 869, 606	46, 253, 877
1954					
Head offices		27	138, 858	—	—
Individual ownership	1	2, 611	9, 851, 242	15, 443, 744	38, 653, 517
Partnerships	—				
Incorporated companies	16				
Total	17	2, 638	9, 990, 100	15, 443, 744	38, 653, 517

TABLE 8. Principal Statistics of the Artificial Abrasives Industry, Grouped According to Size of Establishment, 1953 and 1954

Establishments having a production of	Estab- lish- ments	Employees	Earnings	Cost at plant of materials used	Selling value of factory shipments
	No.	No.	\$	\$	\$
1953					
Head offices	—	27	124, 340	—	—
Under \$200,000	5	40	120, 244	106, 274	426, 807
\$200,000-\$999,999	4	279	1, 006, 183	749, 896	2, 682, 098
\$1,000,000 and over	9	2, 396	8, 649, 986	16, 013, 436	43, 144, 972
Total	18	2, 742	9, 900, 748	16, 869, 606	46, 253, 877
1954					
Head offices	—	27	138, 858	—	—
Under \$200,000	4	29	98, 578	66, 650	316, 517
\$200,000-\$999,999	4	273	990, 081	736, 107	2, 369, 235
\$1,000,000 and over	9	2, 309	8, 762, 583	14, 640, 987	35, 967, 765
Total	17	2, 638	9, 990, 100	15, 443, 744	38, 653, 517

TABLE 9. Capital and Repair Expenditures in the Artificial Abrasives Industry, 1950-1954

Year	Capital expenditures		Sub-total	Repair and maintenance expenditures		Sub-total	Total capital and repair expenditures
	Construction	Machinery and equipment		Construction	Machinery and equipment		
	\$'000						
1950	494	1,463	1,957	80	1,181	1,261	3,218
1951	726	2,247	2,973	196	1,297	1,493	4,466
1952	1,410	2,011	3,421	139	1,494	1,633	5,054
1953	405	922	1,327	100	1,567	1,667	2,994
1954 ¹	388	943	1,331	121	867	988	2,319

1. Preliminary.

TABLE 10. Employees and Their Earnings in the Artificial Abrasives Industry, 1953 and 1954

	Number of employees					Earnings		
	Supervisory and office		Workmen		Total	Supervisory and office	Workmen	Total
	Male	Female	Male	Female				
1953						\$	\$	\$
Quebec	27	9	349	6	391	158,363	1,154,915	1,313,278
Ontario	311	184	1,779	77	2,351	1,976,853	6,610,617	8,587,470
Canada	338	193	2,128	83	2,742	2,135,216	7,765,532	9,900,748
1954								
Quebec	33	12	315	5	365	210,664	1,132,598	1,343,262
Ontario	382	164	1,663	64	2,273	2,300,076	6,346,762	8,646,838
Canada	415	176	1,978	69	2,638	2,510,740	7,479,360	9,990,100

TABLE 11. Production Workers by Months, 1953 and 1954

Month	1953			1954		
	Male	Female	Total	Male	Female	Total
	Number					
January	1,996	71	2,067	2,057	70	2,127
February	2,018	70	2,088	2,093	73	2,166
March	2,053	75	2,128	2,073	80	2,153
April	2,085	91	2,176	2,080	80	2,160
May	2,162	95	2,257	2,107	80	2,187
June	2,243	98	2,341	2,013	77	2,090
July	2,196	97	2,293	2,022	62	2,084
August	2,217	88	2,305	2,026	64	2,090
September	2,193	82	2,275	1,890	65	1,955
October	2,125	79	2,204	1,828	64	1,892
November	2,129	78	2,207	1,796	63	1,859
December	2,121	79	2,200	1,753	64	1,817
Average	2,128	83	2,211	1,978	69	2,047

TABLE 12. Imports of Abrasives and Abrasive Products, 1953 and 1954

	1953	1954
Artificial abrasive grains, crushed or ground, for use in Canadian manufactures \$	1,767,547	1,552,631
Diamond dust or bort and black diamonds for borers..... \$	6,951,853	6,129,455
Diatomaceous earth or infusorial earth (Kieselguhr), ground or unground cwt.	386,995	387,459
\$	670,610	664,016
Emery in bulk, crushed or ground..... \$	166,855	200,511
Grinding wheels, manufactured by the bonding together of either natural or artificial abrasives..... \$	1,796,502	1,639,289
Grinding stones or blocks, manufactured by the bonding together of either natural or artificial abrasives \$	217,360	243,798
Manufactures of emery or of artificial abrasives, n.o.p..... \$	229,304	314,581
Grindstones, not mounted, and not less than 36 inches in diameter..... No.	230	194
\$	27,306	16,630
Grindstones, n.o.p..... No.	1,574	1,241
\$	7,231	9,520
Pumice and pumice stone, lava and calcareous tufa, not further manufactured than ground \$	165,709	163,028
Sandpaper, glass, flint and emery paper or emery cloth \$	866,526	696,740
Total \$	12,866,803	11,630,199

TABLE 13. Exports and Re-exports of Abrasives and Abrasive Products, 1953 and 1954

	1953	1954
Abrasives, natural, n.o.p., in ore or bulk, crushed or ground, including infusorial earth, rotten stone, tripoli, etc. cwt.	831	296
\$	19,111	5,944
Abrasives, artificial, crude, including carborundum cwt.	6,061,574	5,163,526
\$	28,982,689	27,228,303
Abrasives, artificial, made up into wheels and stones \$	24,294	25,458
Diamonds, industrial, and diamond dust or bort ¹ \$	4,308,298	4,277,394
Sandpaper, glass, flint and emery paper, and emery cloth \$	326,068	450,048
Grindstones, manufactured..... \$	22,736	96,178
Total \$	33,683,196	32,083,325

1. All re-exports.

List of Firms in the Artificial Abrasives Industry, 1954

Name of firm	Address
(a) ARTIFICIAL ABRASIVES	
Canadian Carborundum Company, Limited ¹	P.O. Box 337, Niagara Falls, New York, U.S.A. Plants at Shawinigan Falls, Quebec, and Niagara Falls, Ontario
Electro Refractories & Abrasives 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. Ltd.	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
Norton Company of Canada Limited	3 Beach Road, Hamilton, Ontario
Plasticraft Co.	2027 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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