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 CANADA DOMINION BUREAU OF STATISTICS  
 CENSUS OF INDUSTRY  
 MINING, METALLURGICAL AND CHEMICAL BRANCH  
 OTTAWA - CANADA

Montreal, P. Q. Canada

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ANNUAL INDUSTRY REPORTMANUFACTURES OF THE NON-METALLIC MINERALSTHE ARTIFICIAL ABRASIVES INDUSTRY, 1943

The factory selling value of all products made during 1943 by the manufacturers in Canada of artificial abrasives and artificial abrasive products amounted to \$36,609,928. This value represented a gain of 16 per cent over the total of \$31,516,161 for 1942.

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 3,336 and payments in salaries and wages totalled \$6,453,769. Expenditures for manufacturing materials amounted to \$11,531,923 and \$2,988,814 was paid out for fuel and electricity. Capital investment in the industry totalled \$13,172,836, of which \$5,208,394 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 \$31,275,860 and included 190,727 tons of crude fused alumina at \$20,543,657; 51,281 tons of crude silicon carbide at \$6,846,087, and other products and by-products, such as, ferrosilicon, firesand, refractory brick, refractory cements, calcium boride, boron carbide and abrasive wheels. An average of 2,773 people were employed and salaries and wages totalled \$5,318,749.

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 3 made abrasive cloth and paper. The value of all products made in these establishments was \$3,589,579. The number of employees was 563 and payments for salaries and wages amounted to \$1,135,020.

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Table 1 - PRINCIPAL STATISTICS FOR THE ARTIFICIAL ABRASIVES INDUSTRY IN CANADA, 1941-1943

	1941	1942	1943
Number of firms .....	15	15	15
Capital employed ..... \$	9,833,950	11,842,400	13,172,836
Number of employees - On salaries.....	337	409	436
On wages ....	1,738	2,457	2,850
Total ....	2,075	2,866	3,336
Salaried and Wages - Salaries .... \$	842,368	1,056,487	1,083,113
Wages ..... \$	2,688,383	4,050,165	5,370,656
Total .... \$	3,530,751	5,106,652	6,453,769
Cost of fuel and electricity ..... \$	1,821,337	2,469,824	2,988,814
Cost of materials at works ..... \$	7,650,413	10,245,679	11,581,923
Selling value of products at works \$	25,556,330	31,516,161	36,609,928

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, 1942 and 1943

	1942	1943
	\$	\$
Present value of land, buildings, machinery and equipment .....	4,693,377	5,208,394
Inventory value of materials, fuel and other supplies on hand, and stocks in process .....	3,032,109	3,161,557
Inventory value of finished products on hand .....	1,344,039	1,600,433
Cash, bills and accounts receivable, etc. ....	2,772,875	3,202,452
TOTAL .....	11,842,400	13,172,836

Table 3 - WAGE-EARNERS, BY MONTHS, 1942 and 1943 (Number on pay-roll on the last work day of each month)

	1942			1943		
Month	Male	Female	Total	Male	Female	Total
January .....	2,071	47	2,118	2,533	275	2,808
February .....	2,121	50	2,171	2,483	265	2,748
March .....	2,156	51	2,207	2,485	261	2,746
April .....	2,197	76	2,273	2,439	287	2,726
May .....	2,240	106	2,346	2,413	293	2,706
June .....	2,398	113	2,511	2,574	310	2,884
July .....	2,424	121	2,545	2,615	320	2,935
August .....	2,338	133	2,471	2,506	355	2,861
September .....	2,371	178	2,549	2,585	338	2,923
October .....	2,428	238	2,666	2,615	328	2,943
November .....	2,516	261	2,777	2,637	327	2,964
December .....	2,601	256	2,857	2,627	341	2,968
AVERAGE .....	2,321	136	2,457	2,542	308	2,850



Table 4 - HOURS WORKED PER WEEK BY WAGEEARNERS, 1942 and 1943 (In one week of month of highest employment; overtime included)

Hours worked per week	1 9 4 2		1 9 4 3		Hours worked per week	1 9 4 2		1 9 4 3	
	Male	Fe- male	Male	Fe- male		Male	Fe- male	Male	Fe- male
30 hours or less	69	2	219	15	51-54 hours ....	759	213	535	134
31-43 hours ....	277	10	294	48	55 hours .....	131	1	119	9
44 hours .....	39	4	42	3	56-64 hours ....	333	3	290	1
45-47 hours ....	94	12	61	12	65 hours or over	65	...	34	-
48 hours .....	727	1	1,119	115	Total .....	2,550	256	2,743	338
49-50 hours ....	56	10	30	1	Total wages paid during week ..\$	89,778	4,665	98,715	7,958

Table 5 - FUEL AND ELECTRICITY USED, 1942 and 1943

Kind	Unit of measure	1 9 4 2		Cost at works	1 9 4 3		Cost at works
		Quantity			Quantity		
Bituminous coal - Canadian	ton	192		\$ 1,537	220		\$ 1,887
Imported	ton	8,952		71,614	10,856		89,376
Anthracite coal (for fuel only) .....	ton	455		5,906	687		8,931
Coke (for fuel only) .....	ton	240		2,786	172		2,176
Gasoline .....	Imp.gal.	1,550		503	2,035		661
Kerosene .....	Imp.gal.	420		84	630		126
Fuel oil .....	Imp.gal.	467,999		39,268	405,302		35,567
Gas - Manufactured .....	M cu.ft.	...		...	600		626
Natural .....	M cu.ft.	4,417		3,434	4,327		3,612
Other fuel .....	...	...		3	...		6
Electricity purchased ....	K.W.H.	771,869,977		2,344,689	916,911,625		2,845,846
TOTAL .....	...	...		2,469,824	...		2,988,814

Table 6 - POWER EQUIPMENT, 1942 and 1943

	1 9 4 2		1 9 4 3	
	Number of units	Total rated horse power	Number of units	Total rated horse power
Gasoline engines - In Reserve or Idle .	-	-	1	50
Ordinarily in use ..	1	50	1	50
Electric motors run by purchased power-				
Ordinarily in use .....	1,426	10,656	1,607	12,746
In reserve or idle .....	76	659	132	1,125
Stationary boilers - Ordinarily in use.	12	1,325	13	1,410
In reserve or idle	4	266	1	75
Motor generator sets:				
Ordinarily in use .....	14	462	17	491
In reserve or idle .....	3	116	4	131

# Artificial Abrasives

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Table 7 - MATERIALS USED IN MANUFACTURING, 1942 and 1943

Material	Unit of measure	1 9 4 2		1 9 4 3	
		Quantity	Cost at works	Quantity	Cost at works
			\$		\$
Bauxite and pure alumina ....	ton	197,377	5,427,524	227,662	5,902,393
Coal (not for fuel) -					
For fused alumina .....	ton	682	4,243	245	1,614
For silicon carbide .....	ton	7,379	60,434	8,019	60,343
Coke (not for fuel) -					
For fused alumina .....	ton	11,959	75,950	14,443	89,545
For silicon carbide .....	ton	48,024	664,699	58,146	904,557
Electrodes .....	ton	3,617	437,663	4,279	520,236
Feldspar .....	ton	119	6,113	117	5,776
Iron borings .....	ton	20,830	261,304	20,389	283,311
Salt .....	ton	392	4,172	410	4,793
Sawdust .....	ton	10,320	36,243	12,766	44,223
Silica sand .....	ton	76,943	416,806	89,022	511,649
Artificial abrasive grains -					
Fused alumina .....	ton	5,106	904,573	4,106	826,967
Silicon carbide .....	ton	1,349	313,198	1,543	298,675
Natural abrasive grains -					
Garnet .....	lb.	350,314	33,982	343,929	29,768
Emery .....	lb.	321,353	22,614	308,548	19,982
Quartz or flint .....	lb.	459,991	7,640	349,340	5,410
Other .....	lb.	72,575	7,415	76,545	5,608
Bonding and bushing materials -					
Clay bonds .....	lb.	988,632	38,869	1,152,171	55,907
Silicate (quantity in equivalent solid form) ..	lb.	15,950	881	...	2,799
Elastic mixture .....	lb.	48,528	12,729	12,291	3,221
Bakelite and synthetic resins .....	lb.	409,614	140,954	365,704	123,057
Lead for bushings .....	lb.	111,130	5,370	107,341	5,978
Cotton cloth .....	...	...	97,310	...	340,709
Kraft paper .....	...	...	23,250	...	21,425
Containers and packing material .....	...	...	102,733	...	114,823
All other materials .....	...	...	1,133,450	...	1,398,649
TOTAL .....	...	...	10,245,679	...	11,581,923

Table 8 - PRODUCTS MANUFACTURED, 1942 and 1943

Product	1 9 4 2		1 9 4 3	
	Short tons	Selling value at works	Short tons	Selling value at works
		\$		\$
Crude silicon carbide .....	44,410	5,494,257	51,281	6,846,087
Crude fused alumina .....	160,935	17,750,623	190,727	20,543,657
Silicon carbide firesand, etc. .	268	17,062	229	14,336
Abrasive wheels and segments ...	...	5,075,258	...	5,114,962
Sharpening stones and files ....	...	251,320	...	303,913
Ferrosilicon .....	12,875	187,664	15,360	240,430
Other products (x) .....	...	2,732,977	...	3,546,543
TOTAL .....	...	31,516,161	...	36,609,928

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, 1933 - 1943

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
		\$		\$		\$
1933 .....	7,887	765,192	20,967	1,726,191	28,854	2,491,383
1934 .....	16,398	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	59,533	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	51,118	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	27,339,744

Table 10 - PRODUCTION OF ARTIFICIAL ABRASIVE WHEELS AND SEGMENTS(x) IN CANADA, 1933 - 1943

Year	Selling value at works	Year	Selling value at works
	\$		\$
1933 .....	336,647	1939 .....	1,117,689
1934 .....	569,764	1940 .....	1,838,558
1935 .....	785,777	1941 .....	3,713,303
1936 .....	862,283	1942 .....	5,075,258
1937 .....	1,165,406	1943 .....	5,114,962
1938 .....	916,695		

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





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LIST OF FIRMS IN THE ABRASIVES INDUSTRY, 1943

Name of Firm

Address

(a) ARTIFICIAL ABRASIVES

Abrasive Company of Canada, Arvida, Ltd.	Arvida, Que.
Canadian Carborundum Company, Limited ..	P. O. Box 57, Niagara Falls, Ont.
	Plants at Shawinigan Falls, Que.
	and Niagara Falls, Ont.
The Exolon Company .....	H.O. Commercial Ave. & Erie R.R.,
	Blasdell, N.Y., U.S.A.
	Plant at Thorold, Ont.
Lionite Abrasives Ltd. ....	Niagara Falls, Ont.
Norton Company .....	H.O. 1 New Bond St., Worcester,
	Mass., U.S.A.
	Plant at Chippawa, Ont.

(b) ABRASIVE PRODUCTS

Bay State Abrasive Products Co. ....	188 Pearl St., Brantford, Ont.
(Canada) Ltd.	
Canadian Durex Abrasives Limited .....	H.O. 154 Pearl St., Toronto, Ont.
	Plant at Brantford, Ont.
Canada Sand Papers Limited .....	H.O. King & Argyle Sts., Preston, Ont.
	Plant at Plattsville, Ont.
Dominion Abrasive Wheel Co. Limited ....	49 Main St., Mimico, Ont.
The Empire Abrasives .....	24 Lewis St., Brantford, Ont.
Lion Grinding Wheels Ltd. ....	192 Pearl St. E., Brockville, Ont.
Norton Company of Canada Limited .....	3 Beach Road, Hamilton, Ont.
Ontario Abrasive Wheels Limited .....	41 George St., Prescott, Ont.
The Wright Abrasives Co. ....	2 Adam St., Hamilton, Ont.