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# ABRASIVES MANUFACTURERS 1961

The list of firms normally included in this report has been omitted from this issue, along with certain tables. See introductory text for details.

# ANNUAL CENSUS OF MANUFACTURES

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#### SYMBOLS

The interpretation of the symbols used in the tables throughout this publication is as follows:

- .. figures not available.
- ... figures not appropriate or not applicable.
- nil or zero.
- revised figure.

### EXPLANATORY NOTES

This report is one in a series of about 140 publications which present the results of the 1961 Census of Manufactures. Most reports in this series refer to specific industries, but there are summary reports for Canada and the provinces and for major industry groups. Implementation of the new definition of the establishment in the 1961 Census has resulted in certain changes and necessitated some adjustments to the statistics for previous years in order to maintain comparability of the data. (See following note on "Establishment".)

Industry statistics given in these reports refer to number of establishments, employees, salaries and wages, cost of materials, supplies, fuel and electricity, gross value of shipments, inventories and value added by manufacturing. Details of materials used and products shipped are also given. Descriptions of the principal industry statistics, with special reference to 1961, are as follows:

#### **Period Covered**

Firms are asked to submit figures for the calendar year, if at all possible, and most reports are on this basis. Financial year reports for periods differing from the calendar year are accepted in instances where the firms find it impossible to supply calendar year data from accounting records. However the data on employees, salaries and wages are requested on a calendar year basis in all cases.

#### Establishment

The reporting unit in the Census of Manufactures is the **establishment**. Beginning with the 1961 Census, the establishment is defined as follows:

The smallest unit which is a separate operating entity capable of reporting all the following:

Materials and supplies used, Goods purchased for resale as such, Fuel and power consumed, Number of employees and their pay, Inventories, Shipments or sales.

The establishment is to be distinguished from smaller subdivisions or departments which do not have records which permit them to report all items required of an establishment. Prior to 1961, some establishments were required to submit two or more separate reports when they were engaged in operations which were classifiable to different industries. Beginning with 1961, separate reports for such operations will be required only in cases where accounting records can provide all the elements of principal statistics enumerated above. Special reporting arrangements were made with respondents when the acceptance of combined reports would have seriously affected the statistics for particular industries or areas. Where continuity of industry statistics was affected by this change in reporting procedures, adjustments to the data were made back to 1957 in order to maintain comparability of the series for recent years.

A manufacturing establishment is typically a factory, mill or plant principally engaged in manufacturing operations. Prior to 1961, the Census of Manufactures attempted to cover the manufacturing activities of all establishments, whether or not they were principally engaged in manufacturing operations. Beginning with the 1961 Census, establishments (accounting entities) which are not primarily engaged in manufacturing are no longer included as manufacturing establishments in the basic industry statistics. Again adjustments to the industry statistics were made to reflect the removal of such reporting units for the period 1957-1960. These reporting units are now listed as establishments in other Bureau industry surveys, such as Wholesale Trade, Construction, etc. In order, however, to maintain complete coverage of certain commodity items produced mainly in manufacturing establishments, many non-manufacturing establishments are now surveyed for commodity shipments only and the latter are included in those tables of industry reports showing shipments of certain commodities "from all industries".

Many firms have more than one manufacturing establishment. Such firms are requested to submit a separate Census of Manufactures report for each manufacturing establishment which can meet the reporting requirements described earlier.

Prior to 1961, the main emphasis in the Census of Manufactures was on manufacturing activity whereas, beginning with 1961, each establishment reports on the total operations carried out within its accounting boundaries (except income from investments such as rent, interest and dividends). However, data on different activities (manufacturing, selling, construction by own labour force etc.) are requested separately. The 1961 statistics in this report are confined to manufacturing activity in order to maintain comparability with previous years. In the 1962 reports it is planned to show both 1961 and 1962 data on the "total activity" basis in addition to the data on manufacturing operations.

#### **Employees**

Administrative and office employees include all executives and supervisory officials such as presidents, vice-presidents, secretaries, treasurers, etc., together with managers, professional and technical employees, superintendents and factory supervisors above the working foremen level, and clerical employees. Working owners and partners are also included in this category but will be shown separately in subsequent years.

Production and related workers include all other factory workmen whether paid on a monthly, weekly, hourly or piece-work basis. Working foremen doing work similar to that of the employees they supervise are included, as are maintenance, handling, warehousing and delivery staff, Employees on new construction work, in retail or wholesale operations, on outside piece work, etc, are not included.

Production workers are reported by months, an average for the year being obtained by summing the monthly figures and dividing by twelve. This procedure is followed even though the plant did not operate in all months. Figures on employment refer to the calendar year whether or not some establishments reported other data on a financial year basis.

#### Salaries and Wages

Salaries and wages refer to gross earnings of the employees described above, including salaries, wages, commissions, bonuses, the value of room and board where provided, deductions for income tax and social services such as sickness and unemployment insurance, pensions, etc., as well as any other allowances forming part of the employees' wages. Payments for overtime are included.

Salaries refer to amounts paid to administrative and office employees. Withdrawals by working owners or partners for normal living expenses for self and family are included with salaries, but will be shown separately in subsequent years. Wages refer to the amounts paid to production and related workers as defined above. Data on earnings refer to the calendar year whether or not some establishments reported other data on a financial year basis.

#### Cost of Fuel and Electricity

Figures for fuel refer to amounts actually used (including fuel used in cars and trucks), not to purchases unless the quantities are the same. Values refer to the laid-down cost at the establishment including freight, duty, etc.

#### Materials and Supplies Used

Figures represent quantities and laid-down cost values, at the establishment, of materials, supplies and components actually used during the year whether purchased from others or received as transfers from other plants of the reporting company. Amounts paid to other manufacturers for work done on materials owned by the reporting company are included. Returnable containers or any other items charged to capital account are not included. Fuels are not included. Goods bought from others or received as transfers from other plants or reporting companies for resale without further processing are not included. Maintenance and repair supplies not chargeable to capital account are included.

#### **Factory Shipments**

Factory shipments generally refer to shipments of goods made from own materials either in the reporting establishments or by other manufacturers on the basis of a charge to the reporting establishment for work done. All products and by-products shipped from the establishment are included whether for domestic use, export, or for government departments. Transfer shipments to sales outlets, distributing warehouses or to other manufacturing units of the reporting firm which are treated as separate establishments are included. Goods bought or received as transfers and resold without further processing are not included. Values are requested

on f.o.b. establishment basis, and do not include sales tax or excise duties. Values of containers not returnable are included. Amounts received in payment for work done on materials owned by others are included.

In a few industries such as shipbuilding, air craft, etc., where work on principal products extend over a relatively long period, the value of production is recorded rather than the value of shipments. For those industries production is computed from the value of deliveries of complete units during the year plus the value of work done during the year on unfinished units less the value of work done in previous years on finished units delivered in the year under review.

#### Inventories

Values represent the book value of manufacturing inventory. Figures consist of inventory at the plant and at warehouses or selling outlets which are treated as extensions of the plants for the purpose of reporting shipments.

#### Value added by Manufacturing

Value added is compiled by deducting the cost of materials, fuel and electricity consumed from the value of production (value of shipments adjusted for changes in the value of inventories of finished goods and goods in process). Value added is sometimes referred to as net production.

#### Standard Industrial Classification

The revised Standard Industrial Classification which was introduced with the 1960 Census of Manufactures provides for a breakdown of the universe into 140 industries arranged in 20 major groups compared with 135 industries in 17 major groups in the old classification which was used in the compilations for the years 1949 to 1959 inclusive. Full details are contained in the Standard Industrial Classification Manual, Catalogue No. 12-501, which is available from either the Queen's Printer or the Dominion Bureau of Statistics. Reporting establishments are classified or allotted to specific industries on the basis of the value of principal products made or shipped.

Establishments engaged solely in repair work are not included in manufacturing industries (except in the case of furniture, shipbuilding, boat building, aircraft and railroad rolling stock industries) but establishments principally engaged in assembling parts into complete units are included.

¹ To arrive at the National Accounts concept of ''gross domestic product at factor cost'', it would be necessary to subtract also the cost of advertising, insurance and other business costs which are not collected in the annual Census of Manufactures. Value added figures for the primary industries, manufacturing and construction are published in D.B.S. publication 61-202, Survey of Production.

#### Short Forms

Since 1949, in order to ease the reporting burden for smaller firms, a one-page short form has been used asking only for certain principal items of shipments. For purposes of publication, missing data were estimated on the basis of appropriate ratios. For the 1959 and 1960 censuses the general limit for short forms was raised from \$50,000 to \$100,000 value of shipments and a new intermediate form was used. This form is a shortened version of the long form in that some of the general questions were pared down and the detailed lists of materials and products were limited to the more important items. The general limits for firms in this category were set at between \$100,000-\$500,000 value of shipments, but in the case of both the short and inter-

mediate forms there are lower cut-offs for a number of industries in which the smaller firms account for a larger share of total shipments.

In the 1961 Census, in addition to the question on shipments of goods of own manufacture, questions on employment and payroll and on total revenue were added on all short forms. The other elements of principal statistics, viz. value of materials, fuel and electricity, and inventories, are generally estimated by using ratios based on the change in the value of shipments from year to year. This is to permit the complete compilation of basic industry statistics by industry and by geographic location. The proportion of the estimated data is generally less than 5 per cent of the total in each category of principal statistics.

## ABRASIVES MANUFACTURERS

## 1961

Data presented in this report under the heading of Abrasives Manufacturers reflect implementation of the revised Standard Industrial Classification (S.I.C.) and the New Establishment Concept which are being used by the Dominion Bureau of Statistics in its compilation of 1961 industry statistics - see items "Standard Industrial Classification" and "Establishment" in the Explanatory Notes section of this report. For statistical purposes the industry titled Abrasives Manufacturers in the revised Standard Industrial Classification covers the operations of establishments primarily engaged in manufacturing abrasive grinding wheels of emery, carborundum and other natural or artificial materials; abrasive sticks, stones, bricks, paper and cloths and buffing and polishing wheels. This industry includes the manufacture of primary abrasive materials such as fused alumina and silcon carbide.

The introduction of the new definition of establishment (reporting unit) in the 1961 Census of Manufactures has resulted in certain changes and necessitated some adjustments to the statistics. For the industry under review, such changes were nil.

Table 1B carries details for this industry taking into account changes resulting from the implementation of the revised Standard Industrial Classification as well as the new definition of establishment.

Due to increased work loads and staff shortages it has been necessary to suspend publication of certain tables normally contained in the reports issued in the Census of Manufactures series. It is planned to resume publication of these tables in the 1962 reports. In general, the tables affected are the following: Directory of Firms, Imports, Exports and Capital and Repair Expenditures.

TABLE 1 A. Principal Statistics of the Artificial Abrasives Industry, Significant Years 1929 - 59

Basis: Standard Industrial Classification in use prior to 1960

Year and province	Estab- lish- ments	Em- ployees	Salaries and wages	Cost of fuel and electricity at plant	Cost at plant of materials used	Value added by manufacture	Selling value of factory shipments
	กนก	nber			dollars	Find Teach	military.
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	8, 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
1955	17	2, 695	10, 567, 048	4, 422, 194	15, 293, 264	21,933,836	42, 519, 695
1956	17	2,816	11,746,942	4,921,814	18, 371, 516	23, 287, 988	46, 023, 192
1957	17	2,851	12,668,517	5, 421, 469	20, 333, 646	24, 902, 569	51, 049, 441
1958	18	2,314	10, 702, 296	4, 355, 238	14, 550, 336	18,573,824	37, 211, 006
1959	18	2, 522	11,853,197	5,022,388	17, 783, 503	21, 249, 607	44, 226, 296

TABLE 1 B. Principal Statistics: Abrasives Manufacturers, by Provinces, 1957 - 61 Basis: Revised Standard Industrial Classification and New Establishment Concept

Year and province	Estab- lish- ments	Em- ployees	Salaries and wages	Cost of fuel and electricity at plant	Cost at plant of materials used	Value added by manufacture	Selling value of factory shipments
	nur	nber			dollars		
1957							
Ontario	5 13	391 2, 466	1,793,268 10,897,549	1,758,584 3,663,785	3, 142, 244 17, 271, 402	1	8, 923, 82 42, 247, 61
Canada	18	2, 857	12, 690, 817	5, 422, 369	20, 413, 646		51, 171, 44
1958							
Quebec Ontario and British Columbia	5 15	406 1,917	1,769,540 8,969,003	1,902,719 2,453,350	2, 855, 249 11, 766, 912	4, 575, 255 14, 045, 295	9,379,73 27,950,65
Canada	20	2, 323	10, 738, 543	4, 356, 069	14, 622, 161	18, 620, 550	37, 330, 38
1959							
Quebec Ontario and British Columbia	5 15	428 2,105	2,082,366 9,817,263	1,944,516 3,078,635	3, 422, 460 14, 460, 713	4, 126, 422 17, 184, 153	9,466,87° 34,909,820
Canada	20	2, 533	11, 899, 629	5,023,151	17, 883, 173	21, 310, 575	44, 376, 69
1960					I A		
Quebec Ontario and British Columbia	5 15	426 2,093	2, 181, 267 10, 332, 332	1,958,215 3,826,025	3, 180, 755 16, 148, 510	3,911,496 20,033,468	9,054,363 39,514,60
Canada	20	2, 519	12, 513, 599	5, 784, 240	19, 329, 265	23, 944, 964	48, 568, 96
1961							
Quebec Ontario and British Columbia	5 15	426 1,889	2, 213, 225 9, 586, 092	1,934,051 2,946,634	3, 152, 916 13, 489, 777	4, 372, 391 17, 107, 536	9, 192, 127 33, 750, 239
Canada	20	2, 315	11, 799, 317	4, 880, 685	16, 642, 693	21, 479, 927	42, 942, 36

<sup>&</sup>lt;sup>1</sup> Because of lack of inventory data, "'Value added" figures on revised basis are not available for 1957.

Note: Profits or losses cannot be calculated from above figures Tables 1 A and 1 B as data are not available for general expense items, such as interest, rent, depreciation, taxes, insurance, advertising, etc.

TABLE 2. Inventories, by Provinces, 1961

	Raw materials and supplies	Goods in process	Finished goods of own manufacture	Total
		doll	ars	
Opening:2				
Quebec	998,782	52.610	306, 569	1, 357, 961
Ontario and British Columbia	3, 133, 249	1, 105, 091	2,703,701	6,942,041
Canada	4, 132, 031	1, 157, 701	3, 010, 270	8,300,002
Closing:	The state of the s	401.10		
Quebec	971,063	67,694	558,716	1,597,473
Ontario and British Columbia	3, 213, 405	1, 137, 887	2, 464, 613	6.815.905
Canada	4. 184. 468	1. 205. 581	3, 023, 329	8, 413, 378

Book value of all manufacturing inventories owned and held at plant and plant warehouses.
 The opening inventory for 1961 differs from the closing inventory for 1960 because of the receipt of revised data, the inclusion of new establishments, the removal of figures for establishments which did not operate in 1961, changes in classification and the implementation of the new Establishment Concept.

TABLE 3. Factory Shipments: Abrasives Manufacturers, 1960 and 1961

	1	960	1961		
Product	Quantity	Value of factory shipments	Quantity	Value of factory shipments	
	tons	\$	tons	\$	
Crude silicon carbide	84,611	13,026,009	79, 188	12, 478, 654	
Crude fused alumina	187, 105	19, 417, 568	128, 661	13, 597, 378	
Abrasive wheels and segments		6, 425, 394		6, 863, 217	
Sharpening stones and files		264, 477		279, 254	
Ferrosilicon	19, 335	752,862	20,801	867,574	
Other products <sup>1</sup>		8,682,659	2 + +	8,951,688	
Less adjustment for value of sales taxes, excise duties and outward transportation charges which were not deducted from individual commodity items detailed above	_			95, 399	
Totals		48, 568, 969		42, 942, 366	

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

TABLE 4. Materials Used: Abrasives Manufacturers, 1960 and 1961

		1	960	1961	
Material		Quantity	Cost at plant	Quantity	Cost at plant
			\$		\$
Alumina, pure	ton	6,895	760, 156	8,661	951,621
Bauxite	6.6	206, 925	5,975,899	142, 289	4, 119, 750
Coal (not for fuel)	1.6	1,571	22, 136	2,091	29, 467
Coke (not for fuel): Petroleum coke Pitch coke Other coke	e e e e e e	104, 426 3, 822 7, 571	2,081,500 127,152 79,423	91, 183 4, 490 13, 687	1,815,110 152,396 183,193
Electrodes	66	3, 103	877, 220	2, 213	657, 546
ron borings	4.6	13,725	383, 119	11,068	294, 433
5alt	66	67	871	63	820
Sawdust	4.4	16,149	122, 448	13, 167	86,716
Silica sand	44	140, 269	1, 364, 631	132,006	1, 299, 308
Artificial abrasive grains: For wheels, paper, etc: Fused alumina Silicon carbide Natural abrasive grains: Garnet Emery Quartz or flint Other	lb.	2,472 2,036 468,965 84,950 210,845 2,280	714,619 582,891 64,449 5,301 6,797 545	2,444 2,273 446,041 92,621 213,229 13,231	744, 617 592, 447 64, 656 10, 312 7, 166 3, 495
Bonding and bushing materials: Clay bonds Bakelite and synthetic resins Lead for bushings Glue, animal and hide Other	44	876, 247 480, 720 33, 988 688, 168	60,906 201,070 4,748 201,738 37,737	854,609 465,865 37,210 649,933	62, 546 204, 890 4, 781 193, 277 41, 197
Cotton cloth		0.0	399,010		362, 118
Craft paper and other paper			384, 338		360, 586
Containers and packing material			295, 444		306, 435
all other materials <sup>1</sup>			4, 575, 117		4,093,810
Totals			19, 329, 265		16, 642, 693

<sup>&</sup>lt;sup>1</sup> No detailed information on materials used was collected from small establishments. The estimated value of materials used by these firms was \$230,523 in 1960 and \$206,300 in 1961. These amounts are included in "All other materials".

TABLE 5. Factory Shipments of Specified Abrasives, 1952-61

	Crude silicon carbide		Crude fu	sed alumina	Total		
Year	Quantity	Selling value at plant	Quantity	Selling value at plant	Quantity	Selling value at plant	
	tons	\$	tons	\$	tons	\$	
1952 1953 1954 1955 1956	59, 277 52, 903 50, 321 74, 947 80, 467	8, 275, 099 7, 438, 243 6, 944, 862 9, 681, 788 10, 430, 549	152,086 245,627 199,857 177,162 181,830	16,643,519 25,499,674 18,883,589 16,676,424 17,636,382	211, 363 298, 530 250, 178 252, 109 262, 297	24, 918, 618 32, 937, 917 25, 828, 453 26, 358, 212 28, 066, 933	
957 958 959 960 961	83,321 77,528 86,248 84,611 79,188	11,828,856 11,676,630 12,660,211 13,026,009 12,478,654	218, 187 109, 507 152, 319 187, 105 128, 661	21, 902, 425 10, 994, 270 15, 414, 241 19, 417, 568 13, 597, 378	301,508 187,035 238,567 271,716 207,849	33,731,28 22,670,90 28,074,45 32,443,57 26,076,03	

TABLE 6. Factory Shipments of Abrasive Wheels and Segments, 1952-61

Year	Selling value at plant	Year	Selling value at plant
	\$		\$
952	5,501,377	1957	7, 100, 348
953	5,694,066	1958	6,013,543
954	4, 422, 413	1959	7,550,473
1955	5,666,352	1960	6,425,394
1956	7, 206, 636	1961	6,863,217

<sup>1</sup> Does not include artificial pulpstones or sharpening stones.

TABLE 7. Principal Statistics, classified according to Type of Ownership:
Abrasives Manufacturers, 1961

Туре	Estab- lish- ments	Em- ployees	Salaries and wages	Cost at plant of materials used	Selling value of factory shipments
	num	ber		dollars	
Individual ownership	1 19	2,315	11,799,317	16,642,693	42, 942, 366
Totals	20	2,315	11,799,317	16, 642, 693	42, 942, 366

TABLE 8. Principal Statistics grouped according to Selling Value of Factory Shipments:
Abrasives Manufactures, 1961

Establishments reporting value of factory shipments	Estab- lish- ments	Em- ployees	Salaries and wages	Cost at plant of materials used	Selling value of factory shipments
	num	ber		dollars	
Under \$500,000	7	56	255,668	216,317	678,009
\$500,000 - \$999,999	4	176	881,985	1, 110, 262	3, 252, 441
\$1,000,000 and over	9	2, 083	10,661,664	15, 316, 114	39,011,916
Totals	20	2,315	11,799,317	16, 642, 693	42, 942, 366

TABLE 9. Employees and their Earnings: Abrasives Manufacturers, 1961

	Employees					Earnings		
	Supervisory and office		d office Working		Total	Supervisory	Workmen	Total
	Male	Female	Male	Female	Iorat	and office	WORKINGH	10021
			number				dollars	
Quebec	35	7	384	-	426	258, 851	1,954,374	2, 213, 225
Ontario and British Columbia	397	140	1,259	93	1,889	3, 221, 794	6, 364, 298	9, 586, 092
Canada	432	147	1, 643	93	2, 315	3, 480, 645	8, 318, 672	11, 799, 317

TABLE 10. Production Workers, by Months: Abrasives Manufacturers, 1961

Month	Establishments reporting monthly detail <sup>1</sup>		
	Male	Female	
January February March April May June July August September October November December December Average for establishments reporting monthly detail Average estimated for small establishments² Average for all establishments	1,586 1,573 1,557 1,530 1,537 1,622 1,702 1,755 1,744 1,747 1,631 1,699	91 96 94 84 88 87 92 99 98 95 96 100 93 —	

<sup>&</sup>lt;sup>1</sup> The number of production workers by months was collected only for large establishments.

<sup>2</sup> The monthly detail of production workers was not collected from small establishments. Only annual averages were collected from these establishments.

TABLE 11. Fuel and Electricity Used: Abrasives Manufacturers, 1961

Kind	Quantity	Cost at plant
Bituminous coal:  (a) From Canadian mines  (b) Imported  Anthracite coal  Coke  Gasoline (including gasoline used in cars and trucks)  Fuel oil including kerosene or coal oil  Gas:  (a) Liquefied petroleum gases  (b) Natural gas  M cu. ft.  Electricity purchased	2,691 5,460 76 350 33,393 700,438 72,766 47,968 982,394,866	28, 263 69, 439 1, 594 4, 340 11, 869 73, 675 12, 369 45, 227 4, 617, 699
2. Estimate for establishments for which no data were collected:  Cost of fuel and electricity	• • •	16,210
. All establishments: Total cost of fuel and electricity		4,880,685

<sup>&</sup>lt;sup>1</sup> Large establishments. <sup>2</sup> Small establishments.