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Published by Authority of the HON. JAMES A. MACKINNON, M.P. 13-6-10-44

Minister of Trade and Commerce

DOMINION BUREAU OF STATISTICS - 15 cents

DEPARTMENT OF TRADE AND COMMERCE  
DOMINION BUREAU OF STATISTICS  
MINING, METALLURGICAL AND CHEMICAL BRANCH  
OTTAWA - CANADA

OCT 10 1944

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THE TALC AND SOAPSTONE INDUSTRY, 1943

The value of crude and refined talc and soapstone sold by Canadian producers of these minerals totalled \$266,685 in 1943 compared with a corresponding value of \$310,824 in 1942. Mine shipments of soapstone and talc reported in 1943 by operators in the province of Quebec amounted to 14,204 tons worth \$135,469. Production of the higher grades of talc in Canada is confined chiefly to the province of Ontario, and the 1943 shipments totalling 11,959 tons valued at \$131,216 were made almost entirely from a deposit located near Madoc, Hastings county. Included in the Ontario output was a relatively small tonnage of talc obtained from a property situated near Ompah in Frontenac county. In British Columbia, crude talc imported from the United States was treated in a Vancouver mill. From October to December development work was carried on at a talc deposit located at Red Mountain in the Kootenay National Park of British Columbia; this operation is known as the Lava Talc Project and was conducted by the Wartime Metals Corp.; a trial shipment was made to the United States Economic Administration.

Imports of talc or soapstone into Canada in 1943 totalled 12,899,800 pounds valued at \$130,813; exports of talc in the same year amounted to 22,729,200 pounds worth \$146,516.

During 1943 there were 8 firms reported as active in the industry, 5 in the province of Quebec, 2 in Ontario and 1 in British Columbia; of these, 6 made commercial shipments. Capital employed by the industry totalled \$576,691; employees numbered 90, and \$101,719 were distributed as salaries and wages. Fuel and purchased electricity consumed were appraised at \$24,104 and the cost of explosives and other process supplies used was reported at \$33,927. The net value of sales in 1943 was estimated at \$208,654 compared with \$251,711 in 1942.

The following information is from a report "Talc and Soapstone in 1943" as prepared by the Bureau of Mines, Ottawa:

"Annual production of ground talc in Canada in the five-year period 1939-1943, inclusive, ranged from 16,000 to 32,000 tons, these figures including also material classed in statistical records as soapstone, part of which was ground in mills other than those of primary producers. All of the output came from Ontario and Quebec.

"Most of the material from Ontario consists of white, foliated talc, which occurs as veins in crystalline dolomitic limestone of the Madoc area, Hastings county, where an established talc industry has existed for the past forty years. Total output from the Madoc area to the end of 1943 is about 400,000 tons. Since 1937, Canada Talc Limited, operating the Conley and Henderson mines, has been the only important producer. W. C. Spry and Company in recent years has been milling a small tonnage of finely schistose, cream-coloured talc in the plant of Canada Slate

## Talc

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Products, about a mile north of Madoc. The crude rock is trucked in from a deposit near Ompah, in Frontenac county, 65 miles distant.

"In Quebec, the talc produced is also of foliated type, but it occurs in bands in highly-metamorphosed basic rocks, mainly serpentine and pyroxenite, and is often associated with bodies of soapstone, an impure talcose rock. It contains much iron, present mainly in chlorite, and varies rather widely in carbonate content. It yields a slightly off-colour, grey powder, and is used chiefly in the rubber, paper, and roofing trades. The entire production is obtained from the Eastern Townships, mainly from the Thetford Mines area, and there are also a mine and mill at Highwater close to the Vermont boundary. All of Canada's output of sawn soapstone blocks, sold chiefly for use in the alkali recovery furnaces of domestic kraft mills, and also of talc crayons, comes from the Thetford Mines area. Some of the sawing dust from these operations is sold to domestic roofing firms, and a large tonnage of quarry and sawing waste is shipped to the grinding plant of Pulverized Products, Limited, 4820 Fourth Avenue, Rosemount, Montreal.

"Prior to the war, the world production of talc, including ground material, cut soapstone, steatite, and pyrophyllite (a mineral closely resembling talc and used for many similar industrial purposes) amounted to about half a million tons a year, more than half of which was produced in the United States. Manchuria, with an output of about 100,000 tons, was the second largest producer, followed by France and Italy, each with about 50,000 tons, Norway, British India, Canada and Germany (including Austria).

"Many grades of ground talc are marketed, and the price range is wide. Value is dependent upon purity (determined by freedom from lime and gritty or iron-bearing substances, slip, and colour), particle shape, and fineness of grinding, the specifications for which vary in the different consuming industries. Roofing and foundry talcs are the cheapest grades, the trades in these being satisfied with coarser, grey or off-colour material, often soapstone powder or sawing dust, which sells at about \$5 to \$7 a ton f.o.b. rail. Domestic grey talc, suitable for rubber and paper use, sold in 1943 for an average of \$7.50 to \$9 per ton. White talc from the Madoc area was quoted at \$8 to \$10 for the coarser grades, \$12 to \$18 for finer mesh sizes, and \$44 for minus 400-mesh material.

"American talcs include high-grade, white Californian material, which sold for \$17.50 to \$43 a ton; fibrous New York "Asbestine", "Tremoline", and "Loomite" grades, which were quoted at \$13 to \$21; and the lower-grade, grey Georgia and Vermont products, which sold for \$8 to \$14; all prices f.o.b. mines. Lava steatite and crayon talc sold for \$100 to \$150 a ton.

"Pyrophyllite (hydrous silicate of alumina) closely resembles talc in appearance and physical characteristics. It is difficult to distinguish from talc even by microscopic means and often requires chemical analysis for its identification. In the ground state it can be employed for many of the industrial uses of talc. Commercial deposits are relatively scarce. Most of the recorded world production comes from North Carolina, where the industry has expanded rapidly in recent years. A large part of the American output goes to the ceramic trade, the remainder being sold for fillers in various products. When fired, pyrophyllite does not flux, as does talc, and it is of value in a wide range of high-grade ceramic products, including refractories.

"Important deposits are known in Newfoundland, and are at present owned and operated by Industrial Minerals Company of Newfoundland, Limited, Box 435, St. John's.



"In 1943, pyrophyllite was quoted at \$10 to \$13 a ton, f.o.b. North Carolina mills, for 200-mesh and 325-mesh material, respectively. The material was in easy supply and was placed throughout the year in Group III of the list of materials issued by the Conservation Division of the United States War Production Board.

"Steatite, is the mineralogical name given to compact, massive talc having no visible grain, that can be sawn, turned, drilled, and otherwise machined into any desired form. Such material has been widely used for the production of fired shapes, used mainly as electrical insulators. There is now a large demand for steatite for use as grid spacers in high-frequency ship and tank radio transmitters, and for the cores, bushings, resistors, etc., in radio, radar, and other electronic equipment. It is used to an important extent also for carbon black and other gas burner tips. An alternative trade name for steatite is "lava talc". Because of the small amount of natural steatite-available, its high cost, and excessive machining and firing losses, the aforementioned articles are now made largely by die-pressing powdered talc. Suitable talc for the purpose is required to be high-grade material, low in lime and iron, and such talc is now commonly termed steatite, or steatitic talc, irrespective of its texture. There is still a limited demand, however, for sawn steatite shapes, and suitable crude is in short supply. The chief sources of supply at present are British India, Sardinia, Maryland, Montana, and California. Specifications call for compact texture, good structural strength, freedom from hair-cracks and parting lines and from gritty impurities, and a low content of lime and iron. In general, grade and suitability are determined by machinability and firing behaviour, followed by tests for electronic performance. Chemical analysis is of secondary importance."

Table 1 - PRINCIPAL STATISTICS OF THE TALC AND SOAPSTONE INDUSTRY IN CANADA,  
1941-1943

	1941	1942	1943
Number of firms .....	8(c)	10(a)	8(b)
Capital employed .....	\$ 695,581	567,665	576,691
Number of employees--On salary .....	8	8	10
On wages .....	140	107	80
Total .....	148	115	90
Salaries and wages--Salaries .....	\$ 21,564	22,729	23,794
Wages .....	\$ 107,256	90,872	77,925
Total .....	\$ 128,820	113,601	101,719
Selling value of products (Gross) ....	\$ 360,909	310,824	266,685
Cost of fuel and purchased electricity \$	26,882	25,905	24,104
Cost of explosives and other process supplies .....	\$ 28,324	33,208	33,927
Selling value of products (net) .....	\$ 305,603	251,711	208,654

(a) 7 firms in Quebec and 3 in Ontario; data for 1 firm in Quebec, other than sales not available.

(b) 5 firms in Quebec, 2 in Ontario and 1 in British Columbia.

(c) 5 firms in Quebec and 3 in Ontario.

Table 2 - CAPITAL EMPLOYED, BY CLASSES (x), 1941-1943

	1 9 4 1	1 9 4 2	1 9 4 3
	\$	\$	\$
Present value of land,, buildings, fixtures, machinery, tools and other equipment .....	590,303	458,036	482,633
Inventory value of materials on hand, stocks in process, fuel and miscellaneous supplies on hand .....	18,343	9,465	9,893
Inventory value of finished products on hand	8,915	21,385	11,018
Operating capital .....	78,020	78,779	73,147
TOTAL .....	695,581	567,665	576,691

(x) By active firms.

Table 3 - WAGE-EARNERS(x), BY MONTHS, 1942 and 1943

Month	Total	1 9 4 3		
	1942	Surface	Underground	Mill
January .....	141	37	21	26
February .....	145	32	21	27
March .....	129	29	21	26
April .....	117	32	17	22
May .....	110	35	19	22
June .....	117	41	17	20
July .....	110	36	15	17
August .....	93	41	18	18
September .....	85	39	18	18
October .....	82	40	16	23
November .....	81	53	20	20
December .....	79	50	17	21

(x) All male.

Table 4 - WAGE-EARNERS WORKING NUMBER OF HOURS SPECIFIED DURING ONE WEEK IN MONTH OF  
HIGHEST EMPLOYMENT, 1943

Number of hours worked	Number of wage-earners	Number of hours worked	Number of wage-earners
30 hours or less .....	5	49-50 hours .....	2
31-43 hours .....	7	51-54 hours .....	21
44 hours .....	3	55 hours .....	3
45-47 hours .....	5	56-64 hours .....	63
48 hours .....	5	65 hours and over ....	13
Grand total number of employees in week specified .....			127
Total wages paid in week specified .....			\$ 2,720



Table 5 - FUEL AND ELECTRICITY USED, 1942 and 1943

Item	Unit of measure	1 9 4 2		1 9 4 3	
		Quantity	Value \$	Quantity	Value \$
Bituminous coal--Canadian	ton	...	30	...	...
Foreign.	ton	...	...	...	...
Lignite .....	ton	...	...	41	190
Gasoline .....	Imp.gal.	17,194	5,237	8,044	2,475
Kerosene .....	Imp.gal.	187	39	60	12
Fuel oil and diesel oil..	Imp.gal.	3,940	851	14,668	2,336
Wood .....	cord	68	339	102	750
Electricity purchased (x)	K.W.H.	1,648,880	19,409	1,578,590	18,341
TOTAL .....	...	...	25,905	...	24,104

(x) In addition, 156,250 K.W.H. generated for own use in 1943.

Table 6 - POWER EQUIPMENT INSTALLATION, 1943

	Number of units	Horse power--Manu- facturers' rating
Diesel engines .....	4	343
Other gas engines .....	10	230
Electric motors operated by purchased power ...	42	1,005
Electric motors operated by own power .....	13	132

Table 7 - PRODUCTION OF TALC AND SOAPSTONE IN CANADA, 1930-1943

Year	Value \$	Year	Value \$
1930 .....	186,216	1937 .....	163,814
1931 .....	157,083	1938 .....	144,848
1932 .....	159,038	1939 .....	170,066
1933 .....	190,836	1940 .....	229,639
1934 .....	180,777	1941 .....	360,809
1935 .....	171,532	1942 .....	310,824
1936 .....	177,270	1943 .....	266,685

Production of talc and soapstone in Canada from 1886 to the end of 1943 totalled 577,832 short tons valued at \$5,394,790. The largest annual tonnage produced during these years was 34,632 in 1941, also, the greatest annual value was \$360,809 in 1941.

Table 8 - PRODUCTION (SALES) IN CANADA OF TALC AND SOAPSTONE(/), 1941-1943

	1 9 4 1		1 9 4 2		1 9 4 3	
	Quantity tons	Value \$	Quantity tons	Value \$	Quantity tons	Value \$
Soapstone (Quebec) (x)	16,461	155,925	14,369	136,529	14,204	135,469
Talc--Ontario .....	18,171	204,884	15,499	174,295	11,959	131,216
TOTAL CANADA .....	34,632	360,809	29,868	310,824	26,163	266,685

(x) Shipments by some firms usually include a considerable quantity of material classified as talc.

(/) Includes both crude and milled grades.



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Talc

Table 9 - CONSUMPTION OF TALC IN CANADA, BY INDUSTRIES, AS REPORTED IN THE ANNUAL CENSUS OF MANUFACTURES, 1942

Industry	Short tons	Cost at works
		\$
Rubber industry .....	1,409	27,459
Electrical apparatus .....	354	9,776
Paints .....	5,428	154,814
Soaps and cleansing preparations .....	602	13,640
Toilet preparations .....	513	22,015
Polishes .....	18	397
Products from imported clays .....	565	7,774
Prepared roofing .....	4,166	47,928
Pulp and paper .....	1,812	31,378

Table 10 - IMPORTS AND EXPORTS OF TALC, 1942 and 1943

	1942	1943		1942	1943
	Pounds	\$		Pounds	\$
Imports - Talc or soapstone ...	10,881,900	114,852		12,899,800	130,813
Exports - Talc .....	32,110,200	214,033		22,729,200	146,516

DIRECTORY

FIRMS IN THE TALC AND SOAPSTONE INDUSTRY, 1943

Name of Firm	Head Office Address	Location of Plant or Mine
<u>Quebec -</u>		
Baker Mining & Milling Co. Ltd.	4010 St. Catherine St. W., Montreal	Highwater
Broughton Soapstone & Quarry Co. Ltd.	Broughton Station	Broughton Station
Fortin, Charles	Robertsonville	Thetford Tp.
Pharo, L. C.	187 St. Maurice St., Thetford Mines	Leeds Tp.
Maple Leaf Soapstone (x)	West Broughton	W. Broughton
<u>Ontario -</u>		
Canada Talc Limited	Madoc	Huntingdon Tp.
Spry, W. C.	Madoc	Ompah
<u>British Columbia -</u>		
Wartime Metals Corp. (x)	637 Craig St. W., Montreal, Que.	Kootenay National Park

(x) Active but not producing.