

# Calcium and Calcium Compounds

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Calcium metal was manufactured by one company in Connecticut. Calcium-magnesium chloride was produced by two companies in California and three companies

in Michigan. Synthetic calcium-magnesium chloride was manufactured by three companies, in New York, Ohio, and Washington.

## DOMESTIC PRODUCTION

Pfizer, Inc., produced calcium metal at Canaan, Conn., by the Pidgeon process, in which quicklime and aluminum powder are heated in vacuum retorts. At a temperature of 1170° C, calcium vaporizes and is collected at one end of the retort.

Leslie Salt Co. and National Chloride Co. of America produced calcium-magnesium chloride from dry lake beds in San Bernardino County, Calif. Output declined 32%.

The Dow Chemical Co., Michigan Chemical Corp., and Wilkinson Chemical Corp. recovered calcium-magnesium chloride from

wells in Gratiot, Lapeer, Mason, and Midland Counties, Mich. Output decreased 3%.

Total production of natural calcium-magnesium chloride was 4% less than that of 1971 and was 9% below the 1969 record high.

Allied Chemical Corp., Syracuse, N.Y., PPG Industries, Inc., Barberton, Ohio, and Reichold Chemicals, Inc., Tacoma, Wash., manufactured synthetic calcium-magnesium chloride as a byproduct of soda ash. Total output decreased 2% below the 1968 record.

## CONSUMPTION AND USES

Calcium metal was used as a reducing agent to separate metals such as columbium, tantalum, thorium, titanium, uranium, vanadium and zirconium from their oxides; to form alloys with aluminum, lead, lithium, magnesium, and silicon; as a scavenger in the steel industry; and in the manufacture of calcium hydride.

The principal use for calcium-magnesium chloride was to melt snow and ice from roads, streets, bridges, and pavements. It was also used to keep down dust on roads and driveways and as an accelerator for concrete.

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Table 1.—Price quotations for calcium chloride  
(Per short ton)

Grade	Dec. 27, 1971	Dec. 24, 1972
Flake or pellet, 94-97% <sup>1</sup> .....	\$ 55.00	\$ 56.50
Flake, 77-80% <sup>1</sup> .....	44.00	44.50
Powdered, 77% minimum <sup>1</sup> .....	52.50	52.50
Liquor, 40% <sup>2</sup> .....	16.50	17.00
Granulated, U.S.P. <sup>3</sup> .....	780.00	780.00

<sup>1</sup> Paper bags, carload lots, plant, freight equalized.

<sup>2</sup> Tank cars, freight equalized.

<sup>3</sup> 225-pound drums, freight equalized.

Source: Oil, Paint and Drug Reporter, v. 198, No. 26, Dec. 28, 1971; Chemical Marketing Reporter, v. 202, No. 26, Dec. 25, 1972.

## PRICES AND SPECIFICATIONS

Prices for calcium metal ranged from \$1 to \$5 per pound. Calcium chloride is usually sold either as solid flake or pellet

averaging about 75%  $\text{CaCl}_2$  or as a concentrated liquid averaging about 40%  $\text{CaCl}_2$ .

## FOREIGN TRADE

Exports of calcium chloride, mainly to Canada, Mexico, the United Kingdom, Venezuela, and Sweden, were 18,750 tons valued at \$868,400. Exports of dicalcium phosphate, mainly to Mexico, Canada, Brazil, Taiwan, and Thailand, were 19,710 tons valued at \$3,277,000. Exports of precipitated calcium carbonate, mainly to Mexico, Canada, Venezuela, South Vietnam, and Honduras, were 8,940 tons valued at \$823,000.

Total imports of calcium and calcium compounds were 137,200 tons valued at \$7,291,000. Imports of calcium metal from Ontario were 124 tons valued at \$181,400. Imports of calcium chloride, mainly from

Canada and Belgium, were 6,128 tons valued at \$225,500, a decrease of 53% from those of 1971. Imports of other calcium compounds, mainly from Norway, Turkey, Belgium, France, and Canada, were 131,000 tons valued at \$6,884,000.

Imports of other calcium compounds included 46,810 tons of calcium nitrate from Norway, Trinidad, Sweden, and West Germany; 20,780 tons of whiting from France, the United Kingdom, Switzerland, and Belgium; 20,230 tons of calcium borate from Turkey; 19,580 tons of dicalcium phosphate from Belgium, Canada, West Germany, and Japan; 11,110 tons of calcium carbide from Canada; 3,165 tons of calcium

Table 2.—U.S. imports for consumption of calcium and calcium chloride

Year	Calcium		Calcium chloride	
	Pounds	Value	Short tons	Value
1968.....	137,251	\$120,416	14,069	\$522,680
1969.....	662,200	619,000	9,226	349,998
1970.....	164,769	141,125	8,280	359,096
1971.....	48,391	29,751	13,019	543,656
1972.....	248,080	181,437	6,128	225,463

cyanamide from Canada, Norway, West Germany, and Belgium; 2,467 tons of calcium cyanide from Canada and Japan; 1,895 tons of precipitated calcium carbonate from United Kingdom, Japan, and West Germany; 999 tons of calcium hypochlorite from Japan; 327 tons of chlorinated lime from the United Kingdom and West Germany; and 3,637 tons of miscellaneous calcium compounds.

Table 3.—U.S. imports for consumption of calcium chloride in 1972, by country

Country	Short tons	Value
Belgium-Luxembourg.....	964	\$44,859
Canada.....	4,977	169,445
France.....	21	1,151
Germany, West.....	1	733
Japan.....	165	9,225
Total.....	6,128	225,463

## WORLD REVIEW

**Canada.**—Chromasco Corp. Ltd., produced calcium metal at its Haley, Ontario, smelter. Canada continued to lead all other countries in the production of calcium metal; output in 1971 was 304,000 pounds

valued at \$282,000. Canada was the leading source of U.S. imports of calcium chloride.

**France.**—Planet-Wattohm S.A., a subsidiary of Compagnie de Mokta, produced calcium metal by the Pidgeon process.