

"Cold Water" Paint. Because of its refractory qualities caustic calcined magnesite is now used in the manufacture of fireproof paint. For this purpose a finely ground mixture of caustic calcined magnesite and magnesium chloride is prepared and is mixed with cold water for application.

Metallic Magnesium. Prior to the war the world's supply of metallic magnesium was largely produced in Germany where it was manufactured from magnesium salts obtained from the salt deposits at Stassfurt. It is now being produced in considerable quantities in France, England, United States, and Canada. Owing to the increased demand for the metal for military purposes and restricted importation the price of magnesium rose rapidly in United States after the outbreak of the war from \$1.40 per pound to \$5 to \$10 per pound in 1914. During 1915 the prevailing price in New York was \$5 per pound, but it has since fallen considerably, present quotations being \$3.50. The importation of magnesium into United States before the war according to the statistics of the Department of Trade and Commerce was 38,000 pounds per annum. This, according to Dr. W. M. Grosvenor,¹ was considerably less than the actual consumption, the magnesium being imported by some manufacturers under other names. The normal consumption in United States for domestic purposes is stated by Dr. Grosvenor to be 50,000 pounds per year, an amount approximately equivalent to 90,000 tons of crude magnesite. The total production of metallic magnesium in United States in 1915 was 87,500 pounds valued at about \$440,000.²

The usual process employed in Germany for the manufacture of magnesium was by the electrolysis of the fused double chloride $MgCl_2$ KCl. It is said that it can also be made by the following processes: the reduction of magnesium chloride with metallic sodium; the reduction of the oxide with carbon; the electrolysis of magnesia; the reduction of fused chloride with aluminum; the reduction of the oxide or carbonate to slag forming residues; and other processes.³

In Canada, metallic magnesium is now being manufactured electrolytically from magnesite by the Shawinigan Electrometals Company at Shawinigan,⁴ Quebec. The details of the process employed have not been published, but Canadian magnesite is being employed⁵ as the crude material.

The principal use of metallic magnesium is as an alloy with aluminum (magnalium) copper, nickel, zinc, lead, iron, bismuth, and other metals.

¹ Metal. and Chem. Eng., vol. 14, 1916, p. 262.

² U.S. Geol. Surv., Mineral Resources, 1915, pt. 1, p. 737.

³ Grosvenor, Dr. W. M., Metal. and Chem. Eng., vol. 14, 1916, pp. 262-264.

⁴ Stansfield, Dr. A., "Electric furnaces as applied to non-ferrous minerals," Min. Jour. (Lond.) vol. 113, 1916, pp. 233-234.

⁵ Letter from Dr. A. Stansfield.