ville series. e ore carrye magnesite y kilns and at material he process. nesite have ern Town-Scotia, a all amount

the Yukon gnesites a he Yukonhaving an bands of n the first ikon, and 11 niles

und near ge River osits near ind G. A. hat about per cent emainder reported entine at reported erinansen nd 1916 , but of ial is of

carbon cement. ufacture a very e manu-

s, Alaska,"

Carbon Dioxide.1. 2

Carbon dioxide is liberated from magnesite at a temperature about 370 degrees Centrigrade^a lower than from limestone or caleite. Magnesite has, therefore, been used for producing carbon dioxide, but other and cheaper methods of manufacture have led to a decreased production from this source.

Sorel Cement.4

If magnesite be burned to a red heat a product known as "eaustic, caleined magnesite" is formed, which is a mixture of magnesia and magnesite with a carbon dioxide content of less than 8 per cent of CO2. This product, if free from certain impurities, sets into a hard cement when mixed with a solution of magnesium chloride of a certain strength. This mixture, together with fillers, such as sawdust, ground cork, ashes, china clay, asbestos, serpentine, tale, and colouring material, ochre, etc., is used in the manufacture of flooring, artificial marble, and tiles. When successfully laid, the floors are said to be smooth, resilient, and not liable to crack. They are readily coloured, take a good polish, prevent the escape of heat, and are resistant to fire. Failures in the use of this cement have been ascribed to lack of uniformity in the raw materials used, improper mixing, deterioration of the materials before construction, improper foundations, and lack of experience in the laying of the floors. Sorel eement is one of the products which eventually may be successfully produced from high grade hydromagnesites.

Refractory Materials.

When magnesite is raised to a white heat (1,700 degrees C.) and practically all the carbon dioxide is driven off, the resulting magnesia (MgO) is chemically inert and very refractory.⁵ The product is known as "dead-burned magnesite" and is used either as magnesite brick or, crushed to pea size, for the lining of basic steel furnaces, copper convertors, furnaces for refining lead, electrical and other furnaces. The crushed material is employed as a lining for the bottom of open-hearth furnaces, rotary kilns in Portland eement manufacture, and in making crucibles and cupels. The foregoing comprise the principal uses of crystalline magnesite.

Digestion of Wood Pulp.

Magnesium bisulphite made from calcined magnesia, when boiled with pulp wood, dissolves the non-cellulose matter in the wood and the resulting pulp is used in the making of paper.

Manufacture of Magnesium Salts.

"Light magnesium carbonate"' or magnesia alba levis (MgOH 3MgCO₃) is manufactured in some instances from magnesite. It is used as a heat insulator on pipes, etc., as a fire retarding paint, as a toilet pre-

¹U.S. Geol. Surv., Mineral resources of the U.S. for 1913, pt. II, p. 446. ²Geol. Surv., Can., Mem. 98, p. 6. ³Chemical abstrates for 1917, p. 562. ⁴U.S. Geol. Surv., Mineral resources of the U.S., 1913, pt. If, pp. 447, 430-453. ⁴The melting point of MgO is 2,500°C., CaO, 2,572°C., Ai₂O₃, 2,050°C., Cr₂O₃, 1,990°C. Jour. Franklin Inst., 1913, 87 p. 587