

Of these alloys, that with aluminum has been found to be exceptionally valuable. An addition of 2 per cent of magnesium to aluminum doubles its tensile strength, quadruples its resistance to jar or shock, and reduces its cost of machining over 50 per cent.¹ Magnesium is also used for scavenging alloys and for the illumination in flashlight photography and fireworks, and for military purposes in star shells, shrapnel trailers, etc.

Magnesium Sulphate. Large quantities of magnesium sulphate (Epsom-salt) are consumed in United States and Canada annually, the larger part of which prior to the war was imported from Germany, where it was produced as a by-product from the Stassfurt salt deposits. It can also be manufactured by treating magnesite or dolomite with sulphuric acid and is produced in this manner in United States. Magnesium sulphate is used chiefly for medicinal purposes, in tanning leather, in cotton manufacture, and in chemical laboratories.

Magnesium Chloride. The magnesium chloride consumed in America was formerly imported almost entirely from Germany, but is now being produced in United States by treating magnesite or serpentine with hydrochloric acid. It is also obtained as a by-product from the bitterns of salt refineries. Magnesium chloride is used in the manufacture of oxychloride cement, in the manufacture of cold water paint, in the manufacture of cotton goods, and in chemical laboratories.

Light Magnesium Carbonate (magnesia alba levis). The light or basic magnesium carbonate (MgOH , 3MgCO_3) can be prepared from magnesium sulphate or chloride, but is also manufactured from magnesite and dolomite. This product is used as a toilet preparation, for medicinal purposes, and as a heat insulator on boilers, pipes, etc.

Miscellaneous Uses. There are numerous other minor uses to which magnesite and its derivatives are applied. It is used as carbonate to prevent scale in boilers, where sulphurous waters are used; as carbonate in tooth paste; as oxide in dynamite; as oxide in the rubber industry, and as hydrate (milk of magnesia) for medicinal purposes.

FOREIGN SOURCES OF SUPPLY.

Although deposits of magnesite are known to occur in numerous localities throughout the world, the principal part of the world's production, prior to the war, was derived from only two countries, Austria-Hungary and Greece. The deposits in United States are also of interest in this connexion, however, since a large part of the magnesite mined in Canada is exported to that country.

Austria-Hungary. Magnesite is known to occur in numerous widely scattered localities in Austria-Hungary, but the deposits on which mining operations are being carried on are limited to the central part of

¹ Grosvenor, Dr. W. M., Metal and Chem. Eng., vol. 14, 1916, p. 263.