

Match manufacturing. Magnesite and whiting are used in compounding the mixture for the heads of matches. A fairly pure material is required, and should be very finely ground.

Glue and fertilizer manufacturing. In the manufacturing of glue and fertilizer, lime is used. The purity of the lime is not a matter of importance, except in its effect on the percentage of calcium oxide and magnesia available.

It is said¹ that lime for fertilizer purposes should contain sufficient magnesia to make its ratio to the calcium oxide as four is to seven.

Metallurgical works. In the extraction of metals from their ores by smelting, the metals are reduced to the metallic form or converted into sulphides, called mattes. The gangue minerals of the ore and the ash of the fuel must be removed. This is accomplished by smelting with some fluxing material and allowing the slag to flow from the furnace. The nature of the flux depends upon the chemical composition of the material to be fluxed. If they are basic, an acid flux, such as quartz, must be used, but if they are acid the flux must be basic. Being the most active of the cheap bases, lime, in the form of limestone, is most frequently used in the smelting of acid ores.

As already pointed out, under foundries, the limestone should be of low silica content. The desirability or undesirability of magnesia is determined by the particular process of smelting in which it is to be employed. Sulphur and phosphorus are most undesirable, especially in the smelting of iron and the converting of iron into steel. As a rule arsenic is a very objectionable impurity.

In the basic method of steel converting, calcined magnesite is frequently used as a furnace lining, either in the form of bricks or shaped within the furnace from the ground material. For this purpose it should be very low in silica. Calcined dolomite is also used as a furnace lining.

Oil refining. Lime is used in the refining of petroleum for the purpose of removing acidity from the oil after treatment with sulphuric acid.

¹ Page 17, Circular 30, "Lime: Its Properties and Uses," Bureau of Standards, Washington.