

Manufacturing of explosives. In the manufacturing of one kind of high explosive chalk is used. It must be very pure—absolutely free from siliceous grit.

Foundries. In many foundries limestone is added to the cupola charge as a flux for the siliceous matter of the coke ash, and the sand adhering to the pig iron. Little attention is paid to the composition of the resulting slag from the foundry cupola, and, therefore, as one might expect, little attention is paid to the composition of the limestone used. The limestone employed is almost always that which is most easily obtained. A fluid slag may be produced with either a high calcium limestone or a dolomite. The stone should be low in silica, since the silica contained will require part of the lime to slag it, thus reducing the quantity of available lime.

Glass manufacturing. Calcium oxide is one of the principal constituents of several kinds of glass. It is added to the glass mixture in the form of limestone or lime. Most producers prefer the latter, as the evolution of the carbon dioxide of the former is liable to cause flaws in the finished product. A high calcium content is essential. Magnesia, alumina, and iron are objectionable. For the making of the better grades of glass there should not be over three-tenths of one per cent of iron oxide, or the equivalent amount of iron, in the raw limestone; for lime, one-half of one per cent is the limit.

The following analyses will serve to indicate the composition of limestones suitable for glass making purposes.

Analyses of limestone used in glass making.<sup>1</sup>

Calcium carbonate.....	(CaCO <sub>3</sub> )	90.23	97.72	98.90	94.80	99.08
Magnesium carbonate.....	(MgCO <sub>3</sub> )	0.0	0.0	.07	1.21	.34
Iron oxide.....	(Fe <sub>2</sub> O <sub>3</sub> )	0.59	.20	.30	.80	{ .08
Alumina.....	(Al <sub>2</sub> O <sub>3</sub> )	—	1.10			
Silicates and silica.....	(SiO <sub>2</sub> )	8.87	1.01	a .72	3.20	a .47

a. Insoluble in acids.

<sup>1</sup> Extract from table, page 595, Mineral Resources of the United States, Part II, 1911.