



2. RAW MATERIALS

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CULLET

Pieces of broken glass.

OXIDE

Chemical compound consisting of oxygen and another element, e.g. silicon + oxygen = silicon dioxide.

ALKALI

Substance containing an alkaline metal (Li, Na, K) and reacting as a base in water – the opposite of acids.



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Figure 2.1 Raw materials of a soda glass.

Sand (SiO_2 = silicon dioxide)

+ Soda (Na_2CO_3 = sodium carbonate)

+ Lime (CaCO_3 = calcium carbonate)

INTRODUCTION

Glass is melted from a mixture of raw materials known as the batch. Glassmakers can either mix their own batch or buy it ready-mixed, sometimes in the form of pellets. *Cullet*, too, can be used as a raw material.

It may be useful to know something about the most common raw materials of glass and how they affect the glass itself. This Chapter is therefore about raw materials and how they should be handled.

In the simplest glasses, only a few raw materials are used – *see Figures 2.1 and 2.2* – while many others may contain ten or more. Glass consists of just a few principal components which form the skeleton of the glass. To these are added small quantities of additives in order to modify the properties of the melt and the finished glass.

Although some raw materials are natural minerals, most are refined chemical products. To understand what happens to the raw materials when they are mixed and melted, it is useful to know their chemical names – *Table 2.1*. Occasionally, trade names are used that are inaccurate from a chemical point of view. For example, the term “barytes” (which is actually barium sulphate) is sometimes used to designate barium carbonate.