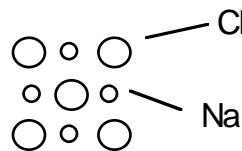


Minerals : Notes-10

What is a mineral?

A **mineral** is a substance composed of one or more elements arranged to form a crystalline solid. It has a definite chemical composition.

Example : Halite or rock salt has a cubic crystal structure and a chemical composition of NaCl (sodium and chlorine).



Halite

There are several properties that can be used to identify minerals. These are; color, streak, luster, crystal shape, cleavage, hardness, density, and chemical composition.

Color is sometimes useful, but some minerals have several different colors. **Streak** is the color that a mineral leaves when it is rubbed on an unglazed piece of porcelain, called a streak plate. **Luster** refers to how the mineral reflects light. It may be metallic (shiny) or earthy (not shiny). **Crystal shape** may also be useful in identifying a mineral. The shape tells how the atoms are arranged. But a mineral may have more than one crystal shape. **Cleavage** refers to the tendency of a crystal to split along certain planes. **Hardness** is a useful property for identifying minerals. A hard mineral will scratch one that is softer. An important property is **density** (in grams/cm³) or specific gravity. The specific gravity of water is 1.0 gram/cm³. All minerals have an S.G. that is greater than this. All minerals have a unique **chemical composition**. However, this method of identification requires a laboratory.

Other properties are; magnetism, and the acid test. Minerals that contain iron are magnetic. These minerals are dark (dark green or black). Hydrochloric acid can be used to test for CaCO₃. When acid is put on this mineral, CO₂ gas bubbles form.

In general, a mineral is identified by using several of the above mentioned properties.