

ROCK DESCRIPTION

Rocks are **natural aggregates of minerals**. This definition suggests the two most important elements of a rock description: a) What minerals does it contain? and b) How are these minerals arranged or aggregated in the rock?

Texture is the general name given to the arrangement of minerals in rocks. Minerals are naturally occurring, crystalline solids with definite chemical compositions.

A complete description of a rock contains information on its texture and mineralogy, which can be described in a hand specimen and thin section, and other features which can only be described in outcrop. This outline lists the features which must be included in a complete hand specimen description. It includes features common in sedimentary and metamorphic rocks as well as igneous rocks.

A. Texture

- Describe the texture as **clastic** (composed of particles cemented together), **crystalline** (composed of crystals that have grown together every which way), **foliated** (composed of layers of minerals) or **glassy**. Note **vesicles** (small air bubbles) if present. Describe the sizes of grains and crystals and the proportion of each. For sediments, describe the **sorting** (of grain size; if a rock has mainly one size of grain, it is said to be “well-sorted”) and shapes of grains. Describe the orientation of minerals or fossils in the rock. For crystalline rocks, describe the relative perfection of crystal outlines.

B. Minerals and other constituents

- Identify the minerals and other constituents in the rock. If the minerals cannot be named, describe each one in detail (color, hardness, luster etc.). Other constituents may include rock fragments, cements or fossils in sedimentary rocks or **xenoliths** (foreign rock) in igneous rocks. The proportion of each should be noted.

C. Other

- Describe the **color**, **density** (how heavy it is, compared to its size), **induration** (how hard is it to break?), **porosity** (how many holes does it have) and **permeability** (how quickly does water penetrate into it) of the rock. Is the sample fresh or weathered?

D. Finally - Name the rock.

This is not as important as you may think.

Because of your excellent description, everyone should know the rock you have described! In many cases, analytical work is necessary to determine the precise name.