

## CLAY MINERALS

Clay minerals refers to a group of hydrous aluminosilicates that predominate the clay-sized fraction of soil. These minerals are similar in chemical and structural composition to the primary minerals that originate from the Earth's crust. However, transformation in the geometric arrangement of atoms and ions within their structures occur due to weathering. Primary minerals form at elevated temperatures and pressures and are usually derived from igneous or metamorphic rocks. Inside the Earth these minerals are relatively stable, but transformations may occur once exposed to the ambient conditions of the Earth's surface.

The secondary minerals are the culmination of either alteration of the primary mineral structure or neoformation through precipitation or recrystallization of dissolved constituents into a more stable structure. These secondary minerals are often referred to as phyllosilicates.

CLAY MINERALS are hydrous aluminum phyllosilicates sometimes with variables of magnesium, alkali metals, alkaline earths, iron and other cations found on or near some planetary surfaces.

CLAY MINERALOGY is the scientific discipline of all aspect of clay minerals, including their composition, properties, classification, crystal structures and occurrence in nature.