

G 457 - April 5, 2010

Chemistry of Earth

Element	Abundance by weight
Oxygen	46.10%
Silicon	28.20%
Aluminum	8.23%
Iron	5.63%
Calcium	4.15
Sodium	2.36
Magnesium	2.33
Potassium	2.09
Titanium	0.57
Hydrogen	0.14

Electron Shells: Inner Shell holds 2 electrons, outermost shells hold 8 electrons.

What is a molecule? Two or more bonded atoms

Phases – Solids, Liquids, and Gasses

A mineral is a molecule, rocks are an aggregate.

Mineral: An inorganic solid occurring in nature that is made of a repeating arrangement of atoms.

Atoms 'want' to have full shell, and be electronically neutral.

Important volcanic Rock families and Mineral

Olivine – Silicate Structure: Isolated

Mica – Silicate Structure: Sheet

Feldspar – Silicate Structure: 3D network

Amphibole – Silicate Structure: 2-chain

Pyroxene – Silicate Structure: 1-chain

Quartz – Silicate Structure: Crystalline