Silicic Encyclopedia Article

Silicic

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Contents

Silicic Encyclopedia Article.....1

Contents.....2

Silicic.....3

Silicic

Igneous rocks are classified by geologists using various schemes. One of the several schemes based on chemical composition divides igneous rocks into four categories according to silica (**silicon** dioxide, SiO_2) content: (1) Rocks containing more than 66% silica are silicic. (2) Rocks containing 52–66% silica are classified as intermediate. (3) Rocks containing 45–52% silica are **mafic**. (4) Rocks containing less than 45% silica are ultramafic.

Because silicon is less dense than the elements that often replace it in rock—especially **iron** and magnesium—silicic rocks are less dense than mafic rocks and tend to rise above them. The continents float on the mantle because they consist primarily of silicic rocks. Mafic and ultramafic rocks predominate in the mantle and oceanic **crust**.

All rocks high in **quartz**, which is simply crystalline silica, are silicic. **Feldspar** is a silicic mineral, and is a major component of many igneous rocks. Some common silicic rocks are **granite**, granodiorite, and **rhyolite**.

The terms silicic and siliceous (suh-LISH-us) are used synonymously by some geologists; others reserve silicic for high-silica igneous rocks, siliceous for high-silica **sedimentary rocks**. The term acid is sometimes used as a synonym for silicic and the terms basic and ferromagnesian as synonyms for mafic.

See Also

Isostasy