

Pumice Encyclopedia Article

Pumice

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Pumice

Pumice is a vesicular volcanic **rock** that is commonly light enough to float in **water**. It typically has a chemical composition similar to **rhyolite** (or its plutonic counterpart, **granite**), although **magma** of virtually any composition can form pumice. The term vesicular refers to the presence of vesicles, or irregularly shaped cavities, that produce a sponge-like or bubbly texture and very low density in volcanic rocks.

Pumice can be thought of as a volcanic foam that forms when dissolved gases expand rapidly as magma rises towards the surface and confining pressure decreases. This process is similar to the foaming that occurs when a bottle of carbonated water or soda is opened. Upon eruption, the magma surrounding the gas bubbles quickly freezes into a delicate **glass** framework that produces the distinctive vesicular texture and light weight of pumice. Pumice will float if most vesicle walls remain intact and form air-filled chambers.

Reticulite is a type of pumice formed from basaltic magma in which most of the vesicle walls have burst to form a honeycomb-like structure of glassy threads. Because very few of the vesicle walls remain intact, reticulite will not float in water. Scoria, which is darker and heavier than but otherwise superficially similar to pumice, forms as a vesicular **crust** atop basaltic and andesitic **lava** flows. Close examination usually shows that scoria is much more crystalline than pumice—indicating a slower rate of cooling—and is composed of dark ferromagnesian **minerals**. It is too heavy to float in water.

The liberation of dissolved gases that produces pumice is also responsible for explosive pyroclastic eruptions. Thus, pumice fragments are commonly found within deposits of volcanic ejecta known collectively as tephra, and ash-flow deposits known as tuffs.

Pumice has a several commercial uses and is obtained from strip mines or open pit mines in volcanic rocks located throughout the western United States and elsewhere. It is most commonly used for garment softening (principally stone washed denim), as aggregate in lightweight cinder blocks and prefabricated concrete panels, as landscaping rock, as an abrasive, and as an inert filter material.

See Also

Andesite; Basalt; Glass; Igneous Rocks; Volcanic Eruptions; Volcano