VOLCANIC MATERIALS

ANDESITE

Andesite is the name used for a family of fine-grained, extrusive igneous rocks that are usually light to dark gray in color. They often weather to various shades of brown, and these specimens must be broken for proper examination. Andesite is rich in plagioclase feldspar minerals and may contain biotite, pyroxene, or amphibole. Andesite usually does not contain quartz or olivine.

BASALT

Basalt is a dark-colored, fine-grained, igneous rockcomposed mainly of plagioclase and pyroxene minerals. It most commonly forms as an extrusive rock, such as a lava flow, but can also form in small intrusive bodies, such as an igneous dike or a thin sill. It has a composition similar to gabbro. The difference between basalt and gabbro is that basalt is a fine-grained rock while gabbro is a coarse-grained rock.

DACITE

Dacite is a felsic extrusive rock, intermediate in composition between andesite and rhyolite. It is often found associated with andesite, and forms lava flows, dikes, and, in some cases, massive intrusions in the centres of old volcanoes. Dacite is the volcanicequivalent of granodiorite.

DIORITE

Diorite is the name used for a group of coarse-grained igneous rocks with a composition between that of granite and basalt. It usually occurs as large intrusions, dikes, and sills within continental crust. These often form above a convergent plate boundary where an oceanic plate subducts beneath a continental plate.

GABBRO

Gabbro is a coarse-grained, dark-colored, intrusiveigneous rock. It is usually black or dark green in color and composed mainly of the minerals plagioclase and augite. It is the most abundant rockin the deep oceanic crust. Gabbro has a variety of uses in the construction industry. It is used for everything from crushed stone base materials at construction sites to polished stone counter tops and floor tiles.

GRANODIORITE

Granodiorite, medium- to coarse-grainedrock that is among the most abundant intrusive igneous rocks. It contains quartzand is distinguished from granite by its having more plagioclase feldspar than orthoclase feldspar; its other mineral constituents include horn blende, biotite, and augite. The plagioclase (andesine) usually forms twinned crystals, sometimes wholly encased by orthoclase. The mode of formation and occurrence, physical appearance, and mineralic composition and texture of granodiorite are much like those of granite.

VOLCANIC MATERIALS

OBSIDIAN

Obsidian is an igneous rock that forms when molten rock material cools so rapidly that atoms are unable to arrange themselves into a crystalline structure.

PEGMATITE

Pegmatites are extreme igneous rocks that form during the final stage of a magma's crystallization.

PERIDOTITE

Peridotite is a generic name used for coarse-grained, dark-colored, ultramafic igneous rocks. Peridotites usually contain olivine as their primary mineral, frequently with other mafic minerals such as pyroxenes and amphiboles.

PLUTONIC

Plutonic rocks are igneous rocks that solidified from a melt at great depth. The name "plutonic" refers to Pluto, Roman god of wealth and the underworld.

PYROXENITE

Pyroxenite is an ultramafic plutonic igneous rock. In pyroxenite the dominant mafic mineral is a pyroxene. Pyroxenite may contain up to 40% olivine.

SCORIA

Scoria is a dark-colored igneous rock with abundant round bubble-like cavities known as vesicles.

RHYOLITE

Rhyolite is an extrusive igneous rock with a very high silica content.

TUFF

Tuff is an igneous rock that forms from the products of an explosive volcanic eruption.

Submitted to: Mr. Mark Steven Payuran
Submitted by: Ma. Elenita T. Gutierrez (9-Violet)
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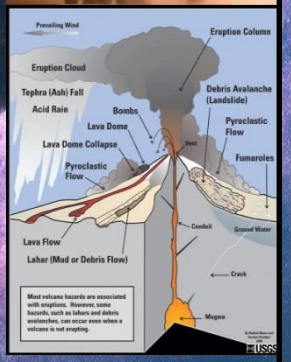
VOLCANIC GASES



An erupting volcano will release gases, tephra, and heat into the atmosphere. The largest portion of gases released into the atmosphere is water vapor. Volcanic gases are also produced when water is heated by magma. Gases also escape from pyroclastic flows, lahars, and lava flows, and may also be produced from burning vegetation. (Text by C.M. Riley, Photo courtesy of the U.S. GeologicalSurvey at CVO)

Sources:

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