Rocks and Minerals Cheat Sheet

by Rachel (psychedxout) via cheatography.com/31385/cs/9514/

Minerals

Potassium Feldspar H = 6	Salmon pink, white Two cleavages at about 90 degrees
Plagioclase H = 6	White to dark gray Two cleavages at almost 90 degrees Straight, parallel striations
Quartz H = 7	Conchoidal fracture Vitreous luster
Muscovite H = 2-2.5	Colorless, silvery white, brownish silvery white One perfect cleavage Transparent, flexible, and elastic in thin sheets
Biotite H = 2.5-3	Black to brownish black One perfect cleavage Flexible and elastic in thin sheets
Hornblende (Amphibole) H = 5	Black Two perfect cleavages at 124 and 56 degrees Splintery
Augite (Pyroxene) H = 5-6	Black to dark green Two imperfect cleavages at almost 90 degrees
Olivine H = 6.5-7	Olive green to yellow green Granular
Gypsum H = 2	Clear, white, light gray Vitreous to pearly
Pyrite H = 6-6.5	Metallic Brass yellow

Minerals (cont)

Calcite H = 3	Clear, white, others Three perfect cleavages form rhombic cleavage fragments Reacts strongly with HCl
Dolomite H = 3-3.5	Reacts slowly or not at all with HCl Three indistinct cleavages
Halite H = 2.5	Clear to gray to red Three perfect cleavages at 90 degrees Salty taste

Igneous Vocabulary

Phaneritic	Coarse-grained (>1 mm)
Aphanitic	Fine-grained (<1 mm)
Pegmatitic	Exceptionally large crystals (>3 cm)
Porphyritic	Two crystal sizes
Phenocrysts	Larger crystals
Groundmass	Smaller crystals surrounding phenocrysts
Vesicular	Bubbles
Pyroclastic	Multiple fragments

Igneous Rocks

Gabbro (phaneritic)	Intrusive, mafic Ca-plagioclase, black pyroxene, olivine

Igneous Rocks (cont)

Diorite (phaneritic)	Intrusive, intermediate Na-Ca-plagioclase and hornblende ⊞ Biotite and quartz
Granite (phaneritic)	Intrusive, felsic Quartz and K-feldspar ⊞ Na-plagioclase, biotite, and hornblende
Granite (porphyritic)	Intrusive, felsic Coarse-grained Two crystal sizes
Granite pegmatite	Intrusive, felsic Very coarse-grained
Basalt (aphanitic)	Extrusive, mafic Dark gray ⊞ Ca-plagioclase and olivine
Basalt (vesicular)	Extrusive, mafic Dark gray ⊞ Ca-plagioclase and olivine
Andesite (porphyritic)	Extrusive, intermediate Fine-grained Gray ⊞ Plagioclase and hornblende or biotite
Rhyolite	Extrusive, felsic Fine-grained version of granite
Tuff (pyroclastic)	Extrusive Particle size less than 6.4 cm
Obsidian (glassy)	Extrusive, felsic
Pumice	Extrusive, felsic Vesicular Very light

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Igneous Rocks (cont)

Scoria	Extrusive, mafic Vesicular Black to reddish brown

Metamorphic Vocabulary

Foliated	Parallel or nearly parallel planes
Slaty	Foliation made of minerals to small to see without a microscope
Phyllitic	Foliation composed of minerals visible with handlens to barely visible to naked eye
Schistose	Foliation composed of mineral crystals large enough to see unaided
Gneissic	Coarse foliation Parallel band or layers of light and dark minerals

Metamorphic Rocks

	Foliated
Slate	Low grade; Very fine grained Generally dark Shale or mudstone
Phyllite	Low grade; Fine grained Silky, shiny Shale or mudstone
Schist	Intermediate Medium to coarse grained Shale or mudstone
Gneiss	High grade Medium to coarse grained Shale, mudstone, or granite
Migmatite	Border between igneous and metamorphic Medium to coarse grained Shale, mudstone, or granite
	Nonfoliated

Metamorphic Rocks (cont)

Marble	Grade varies Coarsely crystalline Limestone or dolostone
Quarzite	Grade varies Crystalline Quartz sandstone
Anthracite coal	Low to medium grade Conchoidal fracture Coal
Greenstone	Low to medium grade Greenish gray to black Basalt or gabbro
Amphibolite	Medium to high grade Dark gray to black Medium to coarse grained Basalt or gabbro
Soapstone	Low to medium grade Gray to dark greenish gray Fine grained; Soft Peridotite
Serpentinite	Variable grade Greenish Mottled or streaked Peridotite
Metaconglomerate	Low to medium grade Conglomerate, graywacke, chert
Hornfels	Low grade; Contact Fine grained; Dark Varies

Sedimentary Rocks

Quartz sandstone	Sand grains of quartz White, rusty brown
Conglomerate	Made of pebbles
Limestone	Calcite Bubbles in acid

Sedimentary Rocks (cont)

Shale	Fissile Black to gray, red, or green
Dolostone	Lesser reaction with acid Crystalline Light gray or buff
Chert	Microcrystalline quartz Conchoidal fracture
Coal	Brown to black Noncrystalline
Mudstone	Not fissile Black to gray, red, or green
Sandstone	Made of sand
Oolite	Limestone Sand-sized spheres
Coquina	Limestone Poorly cemented bioclastic debris
Breccia	Angular particles
Rock Gypsum	White, light gray Crystalline

Sedimentary Vocabulary

Clastic	Clasts bound together
Bioclastic	Abundant fossils or fossil fragments
Crystalline	Interlocking crystals
Fissile	Splits into sheets

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