

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
Calcite H = 3	Clear, white, others Three perfect cleavages form rhombic cleavage fragments Reacts strongly with HCl

Minerals (cont)	
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
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

Igneous Rocks (cont)	
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
Scoria	Extrusive, mafic Vesicular Black to reddish brown

Metamorphic Vocabulary	
Foliated	Parallel or nearly parallel planes
Slaty	Foliation made of minerals so 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

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

Metamorphic Rocks (cont)

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

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