

Tulane Earth & Environmental Sciences

Updated 2/6/2003

PHYSICAL GEOLOGY MINERAL IDENTIFICATION

GENERALLY DARK-COLORED MINERALS

- PYRITE** metallic luster, cubic crystals, H>glass (6-6.5), brass yellow, may have striated faces (aka "fool's gold"), black greenish streak
CHALCOPYRITE metallic luster, brass yellow w/possible purplish tarnish H< glass (3.5-4) copper ore, greenish black streak
MAGNETITE metallic luster, magnetic, aggregate masses, H>glass (6), (aka "lodestone"), black streak
HEMATITE metallic silvery aggregate or red dull lumps, red streak, iron ore, H> or similar to glass (5.5-6.5)
LIMONITE (aka "bog iron"), yellow-brown color, resembles rust, H< or similar to glass (1.5-5.5), yellow or brown streak
GALENA metallic luster, 3 perfect cleavages @ 90, silver color, heavy, cube shaped, lead ore, H<glass (2.5)
GRAPHITE metallic luster, very light and soft, H<glass (1), marks fingers/paper, greasy feel
SPHALERITE may have a metallic luster, red-brown resinous crystals, smells when streaked, pale yellow streak, H<glass (3.5-4)
GARNET red, resinous crystals, rounded shape (dodecahedron), H>glass (7)
OLIVINE olive green, granular aggregates (rarely large crystals), H>glass (6.5-7)
HORNBLende greenish black, 2 cleavages @ 60 +120, may have splintery ends, H>or similar to glass (5-6)
AUGITE greenish or black color, opaque, vitreous to resinous, 2 cleavages @ almost 90, H> or similar to glass (5-6)
BIOTITE black mica, one perfect cleavage H<glass (2.5-3)
CHLORITE greenish color, pale green streak, fine grained aggregates H<glass (2-2.5)

GENERALLY LIGHT-COLORED MINERALS

- ORTHOCLASE*** usually flesh red in color, very common, 2 cleavages @ 90, H>glass (6)
PLAGIOCLASE light gray to dark gray in color, very common, 2 cleavages @ 90, has striations (grooves), H>glass (6)
QUARTZ vitreous, variable color, no cleavage, conchoidal fracture, six sided crystals H>glass (7)
FLUORITE variable colors, 4 cleavages not at 90, H<glass (4)
CALCITE clear-white colors, 3 cleavages not at 90, reacts to acid (fizzes), H<glass (3)
HALITE transparent to translucent clear, 3 cleavages @ 90, greasy feel, salty taste, H<glass (2.5), (aka "rock salt")
KAOLINITE off-white color, powdery aggregates or lumps, earthy odor, used to make chinaware, H< glass (2-2.5)
MUSCOVITE white (clear) mica (may have a brownish tint), one perfect cleavage, H<glass (2-2.5)
TALC soapy feel, very soft H<glass (1), soapy lumps or aggregates, (aka "soapstone")
SULFUR bright yellow, crumbly aggregates, sulfur odor, H<glass (1.5-2.5)
BARITE milky white color, 2 cleavages @ 90 (may be difficult to observe), unusually high specific gravity for a light colored mineral, H< glass (3)

*aka POTASSIUM FELDSPAR