NONMETALLIC *DARK* MINERALS

Name	Formula	Color	Streak	Hard	Breakage	Mineral group	Mineral Structure	Specific Gravity	Uses & Special properties
Apatite	$Ca_5 (PO_4)_{3F}$	*Glassy: varies,* greenish yellow, blue, brown, purple, white	White	5.0	Cleavage poor basal, fracture conchoidal	Sulfide	Hexagonal	3.1-3.2	Sometimes used as a gem source of phosphorus for fertilizers, phosphoric acid, detergents
Bauxite	Hydrous aluminum Oxide compound	*Dull:* gray, red, white, brown	Gray	1.0-3.0	Uneven Fracture	Oxide	None	2.0-2.5	Ore of Aluminum; used in paints, aluminum foil, and airplane parts; Smell of clay when wet
Biotite (MICA)	$K (Mg, Fe)_3 Al Si_3O_{10} (OH)_2$	*Pearly:* black, brown, dark green	Colorless, white to gray.	2.5-3.0	Perfect Basal cleavage	Silicate	Monoclinic	2.7-3.4	Mica family peels in large Elastic thin sheets. Insulator and in electrical devices
Copper (native)	Cu	Copper red	Copper red	2.5-3.0	Hackly fracture	Native Element	Cubic (rare)	8.5-9	Used in coins, pipes, wire, cooking utensils, jewelry
Corundum	Al_2O_3	*Adamantine to Glassy:* colorless, brown, green, white, pink, blue, red, brilliant	Colorless, white	9	Fracture	Oxides	Hexagonal	4.0	Used in jewelry, industrial abrasives, lasers, mechanical watches, and other precision instruments: red gemstones: Rubies; Blue: Sapphires
Garnet	Fe Mg Ca Al	*Varies and dk red and reddish brown*	White or shade	7.0-7.5	Cleavage none	Silicate	Isometric	3.4-4.2	Gemstone (pyrope (red) and Andradite (green))
Hornblende	$Ca\ Na\ (Mg, Fe)_4 (Al, Fe, Ti)_3 Si_6O_{22} (O, OH)_2$	*Glassy:* green, black	White to gray	5.0-6.0	Cleavage in two directions @ 60 & 120 degree	Silicate	Monoclinic	3.0-3.5	Common material found in igneous rocks; Black strips like Long Prism
Limonite	Hydrous Iron Oxides	*Glassy: Dark Brown, to* black	Yellow Brown	5.0-5.5	Fracture (varies)	*Oxide*	None	3.5-4.0	Ore of Iron; also known as "yellow orcher" pigment
Olivine	$(Mg, Fe)_2SiO_4$	*Olive-green to yellowish (white rich in Ca)*	White or gray	6.5-7.0	Cleavage indistinct	Silicate	Orthorhombic	6.5-7.0	Refractory bricks
Serpentine	$Mg, Al\ SiO_3$	*Dk green to black fibrous forms and platy*	White	2.0-3.0	Cleavage none	Silicate	Monoclinic	2.5-2.6	Asbestos: fire-resistant
Smoky quartz	SiO_2	*Glassy:* white, colorless, gray, black	Colorless	7.0	Shell like fracture, conchoidal	Silicate	Hexagonal	2.6	Used in optical equipment, glass manufacture electronic equipment,