Mineral Name	Hardness	Crystal System	Formula	Specific Gravity	Color	Luster	Streak	Remarks
Albite	6 - 6.5	triclinic	$NaAlSi_3O_8$	2.6 - 2.65	white to light gray and colorless	Nonmetallic glassy	white	usually massive, coarsely crystilline, platy lamellar
Apatite	5 - 6	hexagonal	$Ca_5(PO_4)_3$ (F,Cl,OH)	3.1 - 3.4	dark red-brown, blue, green, yellow	Nonmetallic dull - glassy	white	red-orange flame, hexagonal prisms, fracture
Asbestos	‹ 2.5	monoclinic or ortho - rhombic	contain combinations of Mg, Ca, Na, Fe with (SiO)(OH)	2.9	white, green	Nonmetallic silky	white	no cleavage, but can be divided into fibers,varieties include; chrysotile, amosite, crocidolite, tremolite, anthophyllite and actinolite
Augite	6	monoclinic	(Ca,Na) (Mg,Fe,Al) $(Al,Si)_2O_6$	3.3	black	Nonmetallic	colorless	square or 8-sided cross section, 2-directional cleavage
Azurite	3 - 5.5	monoclinic	$Cu_3(CO_3)_2(OH)_2$	3.8	blue to black	Nonmetalic dull - glassy	light blue	blue color is distinct
Barite	3 - 3.5	ortho - rhombic	$BaSO_4$	4.5	colorless to white or grayish white, may be tinted other colors	Nonmetallic pearly / glassy	white	rhombic, lime-green flame, usually in clusters or aggregates of platy to tabular crystals
Bauxite	1 - 3	monoclinic or ortho - rhombic	$Al(OH)_3$ or AlO(OH)	2.0 - 2.6	white, stained gray, yellow or red, orange brown	Nonmetallic dull - earthy	brown orange	often pisolitic, Al-ore, three forms include Gibbsite, Böhmite and Diaspore, smells like clay when wet. Fracture
Beryl	7.5 - 8	hexagonal	$Be_3Al_2(SiO_3)_6$	2.6 - 2.9	colorless, brown, white, black, gold, blue to emerald green	Nonmetallic glassy earthy	white	usually as stout prismatic hexagonal prisms. Often found in granite-pegmatite and rhyolite. Fracture. Gems - aquamarine, heliodore, morganite, emerald.
Borax	2 - 2.5	monoclinic	$Na_2B_4O_7{\cdot}10H_2O$ or $Na_2[B_4O_5(OH)_4]{\cdot}$ $8H_2O$	1.7	usually snow white; colorless white, grayish white, may be tinted other colors.	Nonmetallic glassy to resinous	white	dissloves in water, has a sweetish-alkaline taste, swells and fuses to a glassy globule in a candle flame
Bornite	3	tetragonal	Cu_5FeS_4	4.9 - 5.4	bronze, tarnishes to dark blue purple	Metallic	gray - black	source of copper called "peacock ore", uneven fracture

Calcite	2.5 - 3.5	hexagonal	$CaCO_3$	2.7	colorless or white tinted blue, gray, pink, light brown	Nonmetallic pearly / glassy	white, colorless	rhombs, often colored, very common, 3 direction cleavage, reacts in HCl
Calcite (Iceland Spar)	2.5 - 3.5	hexagonal	$CaCO_3$	2.7	clear, cloudy	Nonmetallic glassy	white	rhombs, reacts with HCl, double refraction, transparent
Chalcopyrite	3.5 - 4	tetragonal	$CuFeS_2$	4.2	brassy to golden yellow	Metallic	greenish black	main ore of copper, uneven fracture
Chromite	5.5	cubic	$FeCr_2O_4$	4.6	black to brown	Metallic	brown to black	ore of chromium, stainless steel, metallurgical bricks
Chrysocolla	2.5 - 3.5	ortho - rhombic	$(Cu,Al)_2H_2Si_2O_5(OH)_4 \cdot nH_2O$	1.9 - 2.4	light blue, blue green, turquoise	Nonmetallic dull - glassy	white, light blue, turquoise	occurs as veins in rock. Reacts with HCl, confused with turquoise
Copper	3	cubic	Cu	8.5 - 9	copper red	Metallic	copper red	coins, pipes, cutters, electrical wire, cooking utensils, jewelry, sheeting, malleable and ductile, hackly breakage
Corundum	9	hexagonal	Al_2O_3	4.0	brown, red brown, gray, green, pink or blue	Nonmetallic dull - glassy	colorless - white	gemstones: ruby is red, sapphire is blue. Used as industrial abrasive, forms large hexagonal crystals in good specimens
Diamond	10	isometric	C	3.5	colorless, bluish, pink, green, yellow, or black	Nonmetallic glassy	none	octahedra
Dolomite	3.5 - 4	trigonal	$CaMg(CO_3)_2$	2.8 - 2.9	white to tan, gray, pink	Nonmetallic pearly / glassy	white	Rhombs, common sedimentary rock-forming mineral, may flouresce under uv, streak is same as sample, effervesces in acid, 3 cleavage directions
Epidote	6 - 6.5	monoclinic	$Ca_2(Al, Fe)Al_2O(SiO_4)(Si_2O7)(OH)$	3.3 - 3.5	green to yellow green, yellow gray, brownish green, greenish black	Nonmetallic pearly / glassy dull if weathered	white to gray	slender grooved crystals, prismatic crystals, 200 forms known, acicular sprays

Feldspar (Microcline) Amazonite and Perthite	6 - 6.5	triclinic	($KAlSi_3O_8$)	2.6	white to cream to reddish, yellowish, or greenish	Nonmetallic pearly / glassy dull if weathered, may exhibit opalescence	white	common rock-forming mineral, distinguished from orthoclase by fine twinning striations, common in granite and pegmetites, 2 cleavage planes
Feldspar (Orthoclase)	6 - 6.5	monoclinic	$KAlSi_3O_8$	2.5 - 2.7	colorless white to cream, gray, green, and yellow, brownish red, pink	Nonmetallic pearly / glassy dull if weathered, may exhibit pale blue to white opalescence	colorless - white	Common rock-forming mineral, 2 cleavage planes 90°, insoluble in acids, used to make porcelain
Feldspar (Plagioclase) albite, oligoclase, andesine, labradorite, bytownite, anorthite	6 - 6.5	triclinic	from $NaAlSi_3O_8$ to $CaAl_2Si_3O_8$	2.5 - 2.7	white, green, or gray colorless	Nonmetallic glassy/waxy	colorless - white	Common rock-forming mineral, 2 cleavage planes 86°. usually massive, coarsely crystilline, platy lamellar. striations present on some faces. Used in ceramics
Fluorite	4	isometric	CaF_2	2.8 - 3.2	violet, green, white, or blue, clear, yellow, red	Nonmetallic glassy	colorless - white	octahedral cleavage, cubic crystals or coarsely crystalline masses, often fluorescent, used in the manufacture of optical equipment
Franklinite	6	isometric	$(Fe,Zn,Mn)(Fe,Mn)_2O_4$	5.15	brownish black	Metallic to semimetallic	dark brown	usually massive, granular, or octahedral crystals. May be slightly magnetic. Rare outside of Franklin, NJ., USA
Galena	2.5 - 3	isometric	PbS	7.6	lead-gray	Metallic	lead-gray	cubic crystals and cleavage, source of lead, used in pipes, X-ray shields, fishing sinkers
Gold	2.5 - 3	cubic	Au	19.3	pale to golden yellow	Metallic	yellow	jewelry, money, gold leaf, fillings for teeth, medicines, does not tarnish, hackly
Graphite	1 - 2	hexagonal	C	2.1 - 2.3	steel-gray to black	Metallic greasy	steel-gray to black	foliated, greasy feel, used in pencils, used as dry lubricant in machines, battery terminals, nuclear power control rods

Gypsum	2 - 3	monoclinic	$CaSO_4.2H_2O$	2.3	white, gray, or brown	Nonmetallic pearly / silky	white	common mineral, plasticity, makes plaster of paris
Halite	2 - 3	isometric	NaCl	2.2	colorless or white	Nonmetallic glassy	white	cubes, salty taste, greasy feel, cleavage, dissolves in H_2O
Hemitite	5 - 6.5	hexagonal	Fe_2O_3	4.9 - 5.3	Red-brown to black	Metallic	Brick red - red brown	common mineral, irregular fracture, streak is a good indicator, source of iron, visible hex crystals
Hornblende	5 - 6	monoclinic	$Ca_2Na(Mg,Fe^2)_4$, $(Al, Fe^3, Ti)_3$, $Si_8O_{22}(O, OH)_2$	2.9 - 3.3	dark green - black	Nonmetallic glassy / dull	gray-green, brown	common rock-forming mineral, 2 direction cleavage, will transmit light on thin edges, 6-sided cross section
Kaolinite	2 - 2.5	triclinic	$Al_2Si_2O_5(OH)_4$	2.16 - 2.68	white to tan, may be grayish	Nonmetallic dull - earthy	white	usually as compact earthy masses. Has earthy odor when moistened, sticks to a dry tongue. one direction cleavage but rarely seen.
Limonite	4 - 5.5	——	hydrous iron oxides $FeO(OH)\cdot nH2O$	2.74 - 4.3	yellow, brown, redish brown, black	Nonmetallic dull - earthy	yellow, brown	source of iron, weathers easily, coloring matter of soils; crumbly fracture
Magnetite	5.5 - 6.5	isometric	Fe_3O_4	5.2	dark gray - black	Metallic	gray - black	common mineral, strongly magnetic, source of iron, common name - lodestone, forms visible cubic crystals
Malachite	3.5 - 4	monoclinic	$Cu_2(CO_3)(OH)_2$	3.9 - 4.03	dark to bright green	Nonmetallic glassy to dull	light green	one direction cleavage, radiaring fibrous masses, stout prismatic crystals, often associated with azurite
Mica (Biotite)	2.5 - 3	monoclinic	$K(Mg, Fe)_3AlSi_3O_{10}(F,OH)_2$	2.7 - 3.1	black or brown-black	Nonmetallic pearly / glassy	gray-white	form of mica, cleavage one direction breaking in thin sheets,common rock-forming mineral, elastic cleavage folia
Mica (Lepidolite)	2.5 - 3	monoclinic pseudo-hexagonal	$(KLi_2Al(Al,Si)_3O_{10}(F,OH)_2)$	2.8 - 3.0	lilac, lavender, grayish to greenish white	Nonmetallic pearly / glassy	white	form of mica, cleavage one direction breaking in thin sheets, usually as aggregates of tiny flakes, elastic

Mica (Muscovite)	2.5 - 3	monoclinic	$KAlSi_3O_{10}$ $(OH,F)_2$	2.8 - 3.0	colorless or tints	Nonmetallic pearly / glassy	white	form of mica, cleavage one direction breaking in thin sheets,common rock-forming mineral, elastic cleavage folia
Mica (Phlogopite)	2 - 2.5	monoclinic	$K(Mg,Fe,Mn)_3$ $(Si_3Al)O_{10}(F,OH)_2$	2.8 - 3.0	yellowish or greenish brown	pearly to slightly metallic	colorless	form of mica, cleavage one direction breaking in thin sheets, elastic cleavage folia, associated with ultramafic intrusions
Olivine	6.5 - 7	ortho - rhombic	$((Mg,Fe)_2SiO_4)$	3.3 - 3.4	yellow green, green to brown	Nonmetallic glassy	white	rock-forming mineral, in mafic rocks, gemstones, refractory sand, conchoidal fracture
Pyrite	6 - 6.5	isometric	FeS_2	5.0	pale brass-yellow, gold	Metallic	Green-black to brown-black	common mineral, crystals as cubes or pyritohedra, called fools gold, alters to limonite
Pyrrhotite	4	hexagonal	$Fe_{1-x}S_x$	4.6	bronze	Metallic	gray - black	an ore of iron and sulfur, may be magnetic, uneven fracture
Quartz (Amethyst)	7	trigonal	SiO_2	2.6 - 2.7	purple	Nonmetallic glassy	colorless white	fracture - conchoidal to irregular,common rock forming mineral, hexagonal crystals or glassy massive, used in glass mfg., electrical eq., radios, computers, watches, jewelry
Quartz (Citrine)	7	trigonal	SiO_2	2.6 - 2.7	yellow -orange - brownish orange	Nonmetallic glassy	colorless white	see above
Quartz (Milky)	7	trigonal	SiO_2	2.6 - 2.7	milky white	Nonmetallic glassy	colorless white	see above
Quartz (Rock Crystal)	7	trigonal	SiO_2	2.6 - 2.7	colorless	Nonmetallic glassy	colorless white	see above
Quartz (Rose)	7	trigonal	SiO_2	2.6 - 2.7	pink	Nonmetallic glassy	colorless white	see above
Quartz (Smokey)	7	trigonal	SiO_2	2.6 - 2.7	smoky-gray to black	Nonmetallic glassy	colorless white	see above

Quartz (Chalcedony)	7	trigonal	SiO_2	2.6 - 2.7	colorless, milky, grey to black, red, yellow to brownish-yellow, brown, green, blue, may be tinted other shades by inclusions	glassy to waxy, dull	colorless white	cryptocrystalline and non-crystalline varieties include; agate, agatized wood, onyz, jasper, chert, flint, sard, bloodstone, aventurine, carnelian, plasma, tiger's eye, prase, aberine, binghamite
Serpentine	2.5 - 5.5	various	$((Mg, Fe)_3Si_2O_5(OH)_4)$	2.2 - 2.9	olive green, dark green black	Nonmetallic glassy, greasy, silky	white	might have unusual markings, very poor cleavage, light infusable
Silver	2.5	cubic	Ag	10-12	silvery white, tarnishes to black	Metallic	light gray to silver	coins, fillings for teeth, jewelry, silverplate, wires, malleable and ductile
Siderite	3.5 - 4	trigonal	$FeCO_3$	3.8 - 4.0	dark brown to tan to cream, blackish brown weathered	Nonmetallic waxy, greasy, glassy	white	calcite group, 3 cleavage directions, coarcely crystalline masses, acid soluble with little to no effervescence
Spodumene	6.5 - 7	monoclinic	$LiAl(SiO_3)_2$	3.0 - 3.2	grey to white, colorless, tan, yellow, pale green to bright green	Nonmetallic glassy	white	pyroxene group, perf. 2 direction cleavage, in pegmatites, tinted green, gray, yellow, purple, or pink, faces have wood-grain look, heavily vertically striated.
Stibnite	2	ortho - rhombic	Sb_2S_3	4.55 - 4.65	gray	Metallic	gray - black	good cleavage, reacts with HCl
Sulfur	1.5 - 2.5	ortho - rhombic	S	2 - 2.1	bright yellow, amber yellow	Nonmetallic waxy, greasy	white, yellowish white	odor of rotten eggs, burns with blue flame, very poor cleavage, use to make gunpowder, matches, fertilizers, insecticides fungicides
Talc	1 - 1.5	monoclinic	$Mg_3Si_4O_{10}(OH)_2$	2.7	green to white	Nonmetallic dull - greasy/waxy	white	greasy feel, plastic cleavage folia
Topaz	8	ortho - rhombic	$(Al_2SiO_4(F, OH)_2)$	3.5	white, pink, yellow, pale blue, greenish, colorless	Nonmetallic glassy, may be greasy on fractured surfaces	colorless	perfect one direction cleavage (pinacoidal, basal). Usually as stout prismatic to equant crystals. gemstone

Tourmaline	7 - 7.5	hexagonal	$(Ca,K,Na)(Al,Fe,Li,Mg,Mn)_3(Al,Cr,Fe,V)_6(BO_3)_3(Si,Al,B)_6O_{18}(OH,F)_4$	3.0 - 3.2	black, green, or red, brown, violet, pink w/green	Nonmetallic glassy	white	elongated striated crystals, fibrous, fair one direction cleavage, spherical triangle cross section
Willemite	5.5	trigonal	Zn_2SiO_4	4.05 - 4.20	light green to yellow green, yellow brown to reddish brown, flesh pink, colorless	glassy to resinous	white	usually massively crystilline or granular, rarely in prismatic hexagonal crystals. flouresces bright green (sw)