

MINERAL INDEX

Name	Composition	Xal Sys	D	H	Notes
Acanthite	Ag ₂ S	Mon	7.2 - 7.4	2 - 2½	Low temperature Ag ₂ S, 87% Ag
Achroite					Colourless tourmaline
Acmite	NaFe ³⁺ Si ₂ O ₆	Mon	3.4 - 3.6	6 - 6½	A pyroxene
Actinolite	Ca ₂ (Mg,Fe) ₅ (Si ₈ O ₂₂)(OH) ₂	Mon	3.0 - 3.24	5 - 6	Tremolite with >2% Fe
Adularia	KAlSi ₃ O ₈				Clear orthoclase
Aegirine	NaFe ³⁺ Si ₂ O ₆				Impure acmite, generally green to black in colour
Agate					Banded chalcedony
Alabandite	MnS	Iso	3.95 - 4.04	3½ - 4	Black
Alabaster					Massive f.gr. gypsum
Albite	NaAlSi ₃ O ₈	Tric	2.6 - 2.65	6 - 6½	Na rich plagioclase, Ab ₁₀₀ to Ab ₉₀ An ₁₀
Alexandrite					Gem chrysoberyl
Allanite	(Ce,Ca,Y)(Al,Fe)(Si ₂ O ₃)(SiO ₄)O(OH)	Mon	3.5 - 4.2	5½ - 6	About 28% REO
Allemontite	AsSb	Trig	5.8 - 6.2	3 - 4	One cleavage
Allophane	Al ₂ O ₃ (SiO ₂) _{1.3-2.0} ·2.5-3.0H ₂ O	Amor	1.85 - 1.89	3	Claylike mineral
Almandine	(Fe ²⁺) ₃ Al ₂ (SiO ₄) ₃	Iso	4.318	7 - 7½	A red garnet
Altaite	PbTe	Iso	8.19	2 - 3	Tin – white, rare
Alumstone					Alunite
Alunite	K Al ₃ (SO ₄) ₂ (OH) ₆	Trig	2.6 - 2.9	3½ - 4	11.4% K ₂ O, 37% Al ₂ O ₃
Amazonite					Green to blue green microcline
Amblygonite	LiAlPO ₄ F	Tric	3.04 - 3.11	5½ - 6	About 10% Li ₂ O, 48% P ₂ O ₅
Amethyst	SiO ₂				Purple quartz. The colour is caused by iron impurities in the 10s to 100s parts per million range
Amosite	Fe,Mg,Si,O,OH				A fibrous variety of grunerite
Amphibole group					See actinolite, antho-phyllite, arfvedsonite, cummingtonite, glauco-phane, horn-blende, riebeckite, tremolite
Analcime	Na(AlSi ₂)O ₆ ·H ₂ O	Tric	2.24 - 2.29	5 - 5½	A zeolite
Anatase	TiO ₂	Tet	3.79 - 3.97	5½ - 6	Low temperature TiO ₂
Anauxite	Al ₂ OSiO ₄	Mon	2.6	2	Si-rich kaolinite
Andalusite	Al ₂ SiO ₅	Orth	3.13 - 3.16	7½	Often as square prisms. 63% Al ₂ O ₃
Andesine	(Na,Ca)(Si,Al) ₄ O ₈	Tric	2.69	6 - 6½	A plagioclase feldspar
Andradite	Ca ₃ (Fe ³⁺) ₂ (SiO ₄) ₃	Iso	3.8 - 3.9	6½ - 7	Calcium-iron garnet
Anglesite	PbSO ₄	Orth	6.37 - 6.39	2½ - 3	Secondary, often banded. 68% Pb
Anhydrite	CaSO ₄	Orth	2.89 - 2.98	3 - 3½	41% CaO
Ankerite	CaFe ²⁺ (CO ₃) ₂	Rho	2.93 - 3.1	3½ - 4	Dolomite with Fe>Mg
Annabergite	Ni ₃ (AsO ₄) ₂ ·8H ₂ O	Mon	3.07	1½ - 2½	Nickel bloom. 29% Ni, 25% As
Anorthite	CaAl ₂ Si ₂ O ₈	Tric	2.74 - 2.76	6 - 6 ½	Ca-rich plagioclase, An ₁₀₀ to An ₉₀ Ab ₁₀
Anorthoclase	(Na,K)AlSi ₃ O ₈	Tric	2.58	6 - 6½	Like orthoclase, with Na>K
Anthophyllite	[Mg ₇ Si ₈ O ₂₂ (OH) ₂	Orth	2.85 - 3.57	5½ - 6	White, greenish grey, green, clove brown, or brownish green amphibole var. of asbestos
Antigorite	Mg ₃ Si ₂ O ₅ (OH) ₄	Mon	2.5 - 2.6	3½ - 4	Platy serpentine
Antimony	Sb	Trig	6.61 - 6.71	3 - 3½	Cl (0001)
Antlerite	(Cu ²⁺) ₃ SO ₄ (OH) ₄	Orth	3.9	3½ - 4	Secondary Cu mineral of arid regions

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Apatite	$\text{Ca}_5(\text{PO}_4, \text{CO}_3)_3(\text{F}, \text{OH}, \text{Cl})$	Hex	3.15 - 3.20	5	38 - 42% P_2O_5
Apophyllite	$(\text{K}, \text{Na})\text{Ca}_4\text{Si}_8\text{O}_{20}(\text{F}, \text{OH}) \cdot 8\text{H}_2\text{O}$	Tet	2.33 - 2.37	4½ - 5	Secondary, in basic lavas
Aquamarine	$\text{Be}_3\text{Al}_2\text{Si}_6\text{O}_{18}$				Pale greenish-blue transparent beryl
Aragonite	CaCO_3	Orth	2.95	3½ - 4	Cl (010), (110). 56% CaO
Arfvedsonite	$\text{NaNa}_2[(\text{Fe}^{2+})_4\text{Fe}^{3+}]\text{Si}_8\text{O}_{22}(\text{OH})_2$	Mon	3.3 - 3.5	6	Na amphibole
Argentite	Ag_2S	Mon	7.2 - 7.4	2 - 2½	Sectile, 87% Ag
Arsenic	As	Trig	5.63 - 5.78	3½	Cl (0001)
Arsenopyrite	FeAsS	Mon	6.07	5½ - 6	Pseudo-orth. 46% As
Asbestos					See amosite, antho-phyllite, chrysotile, crocidolite, tremolite
Asbolite	Cobaltian wad	Amor	2.9 - 4.3		To 15% Co
Atacamite	$\text{Cu}_2\text{Cl}(\text{OH})_3$	Orth	3.75 - 3.77	3 - 3½	Cl (010). 59% Cu
Augite	$(\text{Ca}, \text{Mg}, \text{Fe})_2(\text{Si}, \text{Al})_2\text{O}_6$	Mon	3.19 - 3.56	5½ - 6	Common pyroxene
Aurichalcite	$\text{Zn}_5(\text{CO}_3)_2(\text{OH})_6$	Mon	3.96	1 - 2	14 - 23% Cu, 36 - 47% Zn
Autunite	$\text{Ca}(\text{UO}_2)_2(\text{PO}_4)_2 \cdot 10\text{-}12\text{H}_2\text{O}$	Orth	3.05 - 3.2	2 - 2½	Yellow-green, fluorescent, 67% U_3O_8
Awaruite	Ni_3Fe	Iso	7.8 - 8.2	4 - 5	Magnetic
Axinite	$\text{Ca}_2(\text{Mn}, \text{Fe}, \text{Mg})\text{Al}_2\text{BSi}_4\text{O}_{15}(\text{OH})$	Tric	3.27 - 3.35	6½ - 7	Crystal angles acute
Azurite	$\text{Cu}_3(\text{CO}_3)_2(\text{OH})_2$	Mon	3.77	3½ - 4	Always blue. 55% Cu
B					
Baddeleyite	ZrO_2	Mon	5.4 - 6.02	6½	Minor Zr source
Balas ruby					Red gem spinel
Baryte	BaSO_4	Orth	4.5	3 - 3½	Cl (001), (110). 65.7% BaO
Bastnäsite	$(\text{Ce}, \text{La})(\text{CO}_3)(\text{F})$	Hex	4.9 - 5.2	4 - 4½	75% REO
Bauxite					A mixture of aluminium hydroxides/oxides
Beidellite	$(\text{Na}, \text{Ca})_{0.3}\text{Al}_2(\text{Si}, \text{Al})_4\text{O}_{10}(\text{OH})_2 \cdot n\text{H}_2\text{O}$	Mon	2.6	1 - 2	Al-rich montmorillonite
Bentonite					An impure clay, primarily montmorillonite
Beryl	$\text{Be}_3\text{Al}_2(\text{Si}_6\text{O}_{18})$	Hex	0.63 - 2.92	7½ - 8	14% BeO
Biotite	$\text{K}(\text{Mg}, \text{Fe}^{2+})_3(\text{Si}_3\text{Al})\text{O}_{10}(\text{OH}, \text{F})_2$	Mon	2.7 - 3.3	2½ - 3	Common black mica of the biotite-phlogopite series
Bismite	Bi_2O_3	Mon	8.64 - 9.22	4½	72% Bi
Bismuth	Bi	Trig	9.7 - 9.8	2 - 2½	Cl (0001)
Bismuthinite	Bi_2S_3	Orth	6.78	2 - 2½	Cl (010). 81% Bi
Bismutite	$\text{Bi}_2\text{O}_2(\text{CO}_3)$	Orth	6.7 - 7.4	2½ - 3½	75% Bi
Black Jack					Sphalerite
Blende					Sphalerite
Bloodstone					A dark green/greenish-blue chalcedony with small red blood-like spots
Blue vitriol					Chalcanthite
Böehmite	$\text{AlO}(\text{OH})$	Orth	3.02 - 3.05	3½	In bauxite. 85% Al_2O_3
Boracite	$\text{Mg}_3\text{B}_7\text{O}_{13}\text{Cl}$	Orth	2.91 - 3.1	7 - 7½	62% B_2O_3
Borax	$\text{Na}_2\text{B}_4\text{O}_7(\text{OH})_4 \cdot 8\text{H}_2\text{O}$	Mon	1.7	2 - 2½	Cl (100). 36.5% B_2O_3
Bornite	Cu_5FeS_4	Orth	5.06 - 5.09	3	Purple-blue tarnish. 63.3% Cu
Boulangerite	$\text{Pb}_5\text{Sb}_4\text{S}_{11}$	Mon	6.2	2½ - 3	55% Pb, 25% Sb
Bournonite	PbCuSbS_3	Orth	5.83	2½ - 3	Easily fusible. 13% Cu, 42% Pb, 25% Sb

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Brannerite	$(U^{4+}, REE, Th, Ca)(Ti, Fe^{3+})_2(O)_6$	Mono	4.2 - 5.43	4½ - 5½	30 - 50% U_3O_8
Braunite	$Mn^{2+}(Mn^{3+})_6SiO_{12}$	Tet	4.72 - 4.83	6 - 6½	64% Mn
Bravoite	$(Ni, Fe)S_2$	Iso	4.62 - 4.72	6½	Steel gray. 24% Ni
Brazilian emerald					Green tourmaline
Brittle mica					See chloritoid, margarite, ottrelite
Brochantite	$Cu_4(OH)_6SO_4$	Mon	3.97	3½ - 4	A common secondary copper hydroxy sulfate. 56% Cu
Bromargyrite	AgBr	Iso	6.474	2½	Chlorargyrite Group. 57 - 65% Ag
Bronzite	$Ca(Mg, Al)_3(Al, Si)_4O_{10}(OH)_2$	Orth	3.1 - 3.3	5½	Enstatite with 5 - 13% FeO
Brookite	TiO_2	Orth	4.08 - 4.18	5½ - 6	Adamantine lustre
Brucite	$Mg(OH)_2$	Trig	2.39	2½ - 3	Cl (0001). 69% MgO
Bytownite	$(Ca, Na)(Si, Al)_4O_8$	Tric	2.74	6 - 6½	A plagioclase feldspar
C					
Cairngorm					Smoky to black quartz
Calamine	$Zn_4Si_2O_7(OH)_2 \cdot H_2O$				Hemimorphite
Calaverite	$AuTe_2$	Mon	9.1 - 9.4	2½ - 3	Easily fusible. 42% Au
Calcite	$CaCO_3$	Trig	2.7102	3	Fluorescent, Cl (1011), 56% CaO
Californite					Gem idocrase
Calomel	$HgCl$	Tet	7.15	1½ - 2	85% Hg
Cancrinite	$(Na, Ca, [I])_8(Al_6Si_6)O_{24}(Co_3, SO_4)_2 \cdot 2H_2O$	Hex	2.42 - 2.51	5 - 6	A feldspathoid
Capillary pyrites					Millerite
Carnallite	$KMgCl_3 \cdot 6H_2O$	Orth	1.6	2½	Deliquescent. 16.8% K_2O , 14.6% MgO
Carnelian					Red chalcedony
Carnotite	$K_2(UO_2)_2(VO_4)_2 \cdot 3H_2O$	Mon	4.7	2	50% U_3O_8 , 20% V_2O_5
Cassiterite	SnO_2	Tet	6.98 - 7.01	6 - 7	Lustre adamantine. 78.6% Sn
Cat's-eye					Gem variety of chrysoberyl or quartz
Celestine	$SrSO_4$	Orth	3.96 - 3.98	3 - 3½	56% SrO
Celsian	$BaAl_2Si_2O_8$	Mon	3.10 - 3.39	6 - 6½	Feldspar with 41% BaO
Cerargyrite	AgCl	Iso	5.5 - 6	2½	Perfectly sectile. 65 - 75% Ag
Cerussite	$PbCO_3$	Orth	6.53 - 6.57	3 - 3½	Effer. in HNO_3 . 77% Pb
Cervantite	Sb_2O_4	Orth	6.6	4 - 5	After stibnite. 79% Sb
Chabazite	$(Ca, K, Na)(Si, Al)_3O_6 \cdot 3H_2O$	Tric	2.05 - 2.2	4 - 5	Chabazite now is the name of a series of related minerals
Chalcanthite	$CuSO_4 \cdot 5H_2O$	Tric	2.286	2½	Soluble in water. 35% Cu
Chalcedony			2.6 - 2.64		Cryptocrystalline quartz
Chalcocite	Cu_2S	Mon	5.5 - 5.8	2½ - 3	Imperfectly sectile. 79.8% Cu
Chalcopyrite	$CuFeS_2$	Tet	4.1 - 4.3	3½ - 4	Brittle, yellow. 31 - 34.5% Cu
Chalcotrichite	Cu_2O			3½ - 4	Fibrous cuprite
Chalk					Fine grained calcite
Chalybite	$FeCO_3$				Siderite
Chert	SiO_2		2.65	7	Cryptocrystalline quartz
Chessylite	$Cu_3(CO_3)_2(OH)_2$				Azurite
Chiastolite					Andalusite with dark cruciform inclusions
Chloanthite					Nickel skutterudite, 3.5 - 6.5% Co, 14.5 - 21.5% Ni, 71.5 - 73.5% As
Chlorargyrite	AgCl	Iso	5.556	1½ - 2½	AgCl, 75% Ag, member of chlorargyrite group

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Chlorite	$(\text{Mg,Al,Fe,Li,Mn,Ni})_4\text{-}_6(\text{Si,Al,B,Fe})_4\text{O}_{10}(\text{OH},\text{O})_8$	Mon	2.6 - 3.3	2 - 2½	Differentiated by chemical analyses and optical properties into clinochlore, penninite and prochlorite
Chloritoid	$\text{Fe}^{2+}\text{Al}_2\text{OSiO}_4(\text{OH})_2$	Mon	3.4 - 3.8	6½	Brittle micas of the chloritoid group
Chondrodite	$\text{Mg}_5(\text{SiO}_4)_2\text{F}_2$	Mon	3.16 - 3.26	6 - 6½	Similar species are clinohumite, humite, norbergite
Chromite	$\text{Fe}^{2+}\text{Cr}_2\text{O}_4$	Iso	4.5 - 4.8	5½	Lustre submetallic, dark brown streak. 43 - 68% Cr_2O_3
Chrysoberyl	BeAl_2O_4	Orth	3.75	8½	Crystals tabular. 19.8% BeO
Chrysocolla	$(\text{Cu,Al})_2\text{H}_2\text{Si}_2\text{O}_5(\text{OH})_4\text{-nH}_2\text{O}$	Orth	1.93 - 2.4	2½ - 3½	Bluish green. 36% Cu
Chrysolite					Olivine
Chrysoprase					An apple-green variety of chalcedony
Chrysotile	$\text{Mg}_3\text{Si}_2\text{O}_5(\text{OH})_4$				Serpentine asbestos
Cinnabar	HgS	Trig	8.176	2 - 2½	Red streak. 86% Hg
Cinnamon stone					Grossularite
Citrine	SiO_2		7		Pale yellow quartz
Clay					See kaolin, montmorillonite, illite
Cleavelandite	$\text{NaAlSi}_3\text{O}_8$	Tric	2.6 - 2.65	6 - 6½	White, platy albite
Cliachite					Very fine grained to colloidal Al hydroxides in bauxite
Clinochlore	$\text{Mg}_6\text{Si}_4\text{O}_{10}(\text{OH})_8$	Mon	2.6 - 3.02	2 - 2½	Most common member of the chlorite group
Clinoclase	$\text{Cu}_3(\text{AsO}_4)(\text{OH})_3$	Mon	4.38	2½ - 3	Sec. mineral
Clinoenstatite	MgSiO_3	Mon	3.19	5 - 6	Monoclinic form of enstatite – clinopyroxene subgroup
Clinoferrosilite	$\text{Fe}^{2+}\text{SiO}_3$	Mon	3.6	5 - 6	Clinopyroxene subgroup
Clinohumite	$\text{Mg}_9(\text{SiO}_4)_4\text{F}_2$	Mon	3.1 - 3.2	6	Humite group
Clinzoisite	$\text{Ca}_2\text{Al}_3(\text{Si}_2\text{O}_7)(\text{SiO}_4)\text{O}(\text{OH})$	Mon	3.3 - 3.4	7	Crystals striated – epidote group
Cobaltite	CoAsS	Orth	6.33	5½	In pyritohedrons. 29 - 35% Co, 43 - 45% As
Coffinite	$\text{U}[\text{SiO}_4\cdot(\text{OH})_4]$	Tet	7.2		Black U mineral of sed/sandst. deps.
Cogwheel ore					Bournonite
Colemanite	$\text{CaB}_3\text{O}_4(\text{OH})_3\cdot\text{H}_2\text{O}$	Mon	2.423	4 - 4½	Cl (010) perfect. 50.9% B_2O_3
Collophane					A variety of carbonate-rich apatite
Columbite	$(\text{Mn,Fe,Mg})(\text{Nb,Ta})_2\text{O}_6$ with Nb>Ta	Orth	5.2 - 6.7	6	Lustre submetallic. 31 - 79% Nb_2O_5 , max 52% Ta_2O_5 (with Nb = Ta)
Common salt	NaCl	Iso	2.168	2½	Halite
Copper	Cu	Iso	8.9	2½ - 3	Malleable
Copper glance	Cu_2S	Mon	5.5 - 5.8	2½ - 3	Chalcocite
Copper nickel					Niccolite
Copper pyrites	CuFeS_2	Tet	4.1 - 4.3	3½ - 4	Chalcopyrite
Cordierite	$\text{Mg}_2\text{Al}_4\text{Si}_5\text{O}_{18}$	Orth	2.60 - 2.66	7 - 7½	In m. to high grade metamorphics
Corundum	Al_2O_3	Rho	3.98 - 4.14	9	Rhomb. parting 52.9% Al
Cotton-balls					Ulexite
Covellite	CuS	Hex	4.6 - 4.76	1½ - 2	Blue. 66.4% Cu
Cristobalite	SiO_2	Tet	2.32 - 2.36	6 - 7	High temperature quartz, in volcanic rocks (>1470°C)
Crocidolite	$\text{Na}_2(\text{Fe,Mg})_3(\text{Fe}^{3+})_2\text{Si}_8\text{O}_{22}(\text{OH})_2$	Mon	3.2 - 3.3	5 - 5½	Blue asbestos variety of riebeckite
Crocoite	PbCrO_4	Mon	5.97 - 6.02	2½ - 3	Orange-red streak. 23% Cr_2O_3 , 64% Pb
Cryolite	Na_3AlF_6	Mon	2.96 - 2.98	2½	White. 54.4% F
Cubanite	CuFe_2S_3	Orth	4.03 - 4.18	3½	23% Cu

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Cumming-tonite	$[\text{Mg}_7\text{Si}_8\text{O}_{22}(\text{OH})_2]$	Mon	3.1 - 3.6	5 - 6	An amphibole
Cuprite	Cu_2O	Iso	6.14	$3\frac{1}{2}$ - 4	Brownish red streak. 88.8% Cu
Cyanite	Al_2OSiO_4	Tri	3.53-3.65	$5\frac{1}{2}$ - 7	Kyanite
Cymophane	BeAl_2O_4	Orth	3.75	$8\frac{1}{2}$	Chrysoberyl
D					
Danaite	$(\text{Fe},\text{Co})\text{AsS}$	Mon	5.9 - 6.2	$5\frac{1}{2}$ - 6	Cobaltian arseno-pyrite, to 12% Co
Danburite	$\text{CaB}_2(\text{SiO}_4)_2$	Orth	2.97 - 3.02	7	In crystals. 28.4% B_2O_3
Datolite	$\text{CaB}(\text{SiO}_4)(\text{OH})$	Mon	2.96 - 3	5 - $5\frac{1}{2}$	Usually in crystals. 21.8% B_2O_3
Davidite	$\text{Ce}(\text{Y},\text{U})\text{Fe}_2(\text{Ti},\text{Fe},\text{Cr},\text{V})_{18}(\text{O},\text{OH},\text{F})_{38}$				Th brannerite. To 9% U_3O_8
Demantoid	$\text{Ca}_3\text{Fe}_2(\text{SiO}_4)_3$	Iso	3.8 - 3.9	$6\frac{1}{2}$ - 7	Green gem andradite
Diallage	$\text{Ca},\text{Mg},\text{Si},\text{O}$				An old name referring to amphibole, pyroxene and/or hypersthene
Diamond	C	Iso	3.5 - 3.53	10	Adamantine lustre, fluorescent
Diaspore	$\text{AlO}(\text{OH})$	Orth	3.2 - 3.5	$6\frac{1}{2}$ - 7	85% Al_2O_3
Diatomite			0.4 - 0.6 (2.2)	2 ($5\frac{1}{2}$ - $6\frac{1}{2}$)	Siliceous tests of diatoms
Dichroite	$(\text{Mg},\text{Fe})_2\text{Al}_4\text{Si}_5\text{O}_{18}$	Orth	2.6 - 2.66	7 - $7\frac{1}{2}$	Cordierite
Dickite	$\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4$	Mon	2.6	2 - $2\frac{1}{2}$	Kaolin group clay mineral
Digenite	Cu_9S_5	Iso	5.546	$2\frac{1}{2}$ - 3	Chalcocite-digenite group. 75 - 79% Cu
Diopside	$\text{CaMgSi}_2\text{O}_6$	Mon	3.22 - 3.38	$5\frac{1}{2}$ - $6\frac{1}{2}$	Pyroxene group - clinopyroxene subgroup
Diopase	$\text{CuSiO}_3 \cdot \text{H}_2\text{O}$	Trig	3.28 - 3.35	5	Emerald green
Disthene	Al_2OSiO_4	Trig	3.53 - 3.65	$5\frac{1}{2}$ - 7	Kyanite
Dolomite	$\text{CaMg}(\text{CO}_3)_2$	Trig	2.84 - 2.86	$3\frac{1}{2}$ - 4	Cl (1011). 30.4% CaO, 21.7% MgO, 54.3% CaCO_3
Dry-bone ore	ZnCO_3	Trig	4.42 - 4.44	4 - $4\frac{1}{2}$	Smithsonite
Dumortierite	$(\text{Al},\text{I})\text{Al}_6\text{BSi}_3\text{O}_{16}(\text{O},\text{OH})_2$	Orth	3.26 - 3.36	7	Radiating fibrous
E					
Edenite	$\text{Ca}_2\text{NaMg}_5(\text{AlSi}_7\text{O}_{22})(\text{OH})_2$	Mon	3.0	5 - 6	Pale iron-free hornblende from the amphibole group
Electrum	Au,Ag	Iso	13.5 - 17.5	3	Natural Au-Ag alloy with >20% Ag
Eleolite	$(\text{Na},\text{K})\text{AlSiO}_4$	Hex	2.55 - 2.66	$5\frac{1}{2}$ - 6	Nepheline
Embolite	Ag(Cl,Br) with Cl = Br	Iso	5.6	$1\frac{1}{2}$ - 2	Intermediate between cerargyrite and bromyrite
Emerald	$\text{Be}_3\text{Al}_2\text{Si}_6\text{O}_{18}$	Hex	2.63 - 2.92	$7\frac{1}{2}$ - 8	Green gem beryl
Emery					Corundum with spinel magnetite and hematite
Enargite	Cu_3AsS_4	Orth	4.43 - 4.45	3	Cl (110). 48.3% Cu, 19.1% As
Endlichite					Arsenical vanadinite, As replacing V
Enstatite	MgSiO_3	Orth	3.2 - 3.9	5 - 6	A pyroxene
Epidote	$\text{Ca}_2\text{Fe}^{3+}\text{Al}_2(\text{Si}_2\text{O}_7)(\text{SiO}_4)\text{O}(\text{OH})$	Mon	3.38 - 3.49	6	The $\text{Al}_2\text{Fe}^{3+}$ analogue of clinozoisite Cl (001)
Epsomite	$\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$	Orth	1.675 - 1.679	2 - $2\frac{1}{2}$	Bitter taste. 16.3% MgO
Epsom salt					Epsomite
Erythrite	$\text{Co}_3(\text{AsO}_4)_2 \cdot 8\text{H}_2\text{O}$	Mon	3.06	$1\frac{1}{2}$ - $2\frac{1}{2}$	Pink cobalt bloom. 37% Co
Essonite					Grossularite
Euclase	$\text{BeAlSiO}_4(\text{OH})$	Mon	2.99 - 3.1	$7\frac{1}{2}$	Cl (010). 17% BeO
Eucryptite	LiAlSiO_4	Trig	2.657 - 2.666	$6\frac{1}{2}$	Phenakite group. After spodumene, fluorescent
Euxenite	$(\text{Y},\text{Ca},\text{Ce},\text{U},\text{Th})(\text{Nb},\text{Ta},\text{Ti})_2\text{O}_6$	Orth	5.3 - 5.9	$5\frac{1}{2}$ - $6\frac{1}{2}$	22 - 30% REO, max. 8% U_3O_8 , 30 - 50% ($\text{Nb}_2\text{O}_5 + \text{Ta}_2\text{O}_5$)

Name	Composition	Xal Sys	D	H	Notes
F					
Fahlore	(Cu,Fe,Ag,Zn) ₁₂ Sb ₄ S ₁₃	Iso	4.97	3½ - 4	Tetrahedrite
Fayalite	Fe ₂ SiO ₄	Orth	4.14	6½	Iron olivine
Feather ore	Pb ₄ FeSb ₆ S ₁₄	Mon	5.63	2½	Jamesonite
Feldspar group	MAI(Al,Si) ₃ O ₈ , M = K,Na,Ca, Ba,Rb,Sr,Fe				See plagioclase, celsian, potassium feldspar
Feldspathoid group					See cancrinite, lazurite, leucite, nepheline, petalite, sodalite
Ferberite	Fe ²⁺ WO ₄	Mon	7.58	4 - 4½	Wolframite series, 76.3% WO ₃
Fergusonite	(RE,Fe)(Nb,Ta,Ti)O ₄	Tet	4.2 - 5.8	5½ - 6½	Max 46% REO, 10% U ₃ O ₈ , 54% Nb ₂ O ₅
Ferrimolybdenite	(Fe ³⁺) ₂ (Mo ⁶⁺ O ₄) ₃ ·7H ₂ O	Orth	2.99	1 - 2	39% Mo commonly formed from the alteration of molybdenite
Ferrosilite	(Fe ²⁺) ₂ (SiO ₃) ₂	Orth	3.60 - 4.00	5 - 6	A pyroxene enstatite-ferrosilite series
Fibrolite	Al ₂ OSiO ₄	Orth		6½ - 7½	Fibrous sillimanite
Flint	SiO ₂		2.65	7	Cryptocrystalline quartz
Florencite	CeAl ₃ (PO ₄) ₂ (OH) ₆	Hex	3.6	5	The original name given to the cerium-dominant member of what is now a group of related phosphates and arsenates
Flos ferri					A stalactitic variety of aragonite
Fluorite	CaF ₂	Iso	3.175 - 3.56	4	Cl octahedral, fluorescent, 48.9% F
Formanite	YTaO ₄			5½ - 6½	Fergusonite with Y
Forsterite	Mg ₂ SiO ₄	Orth	3.27	7	Magnesian olivine
Fowlerite	(Mn,Zn)SiO ₃				Zinc-bearing rhodonite
Franklinite	Zn(Fe ³⁺) ₂ O ₄	Iso	5.07 - 5.22	5½ - 6	Spinel group, dark brown streak, 5 - 19% Zn
Freibergite	Ag ₆ Cu ₄ Fe ₂ Sb ₄ S ₁₃		5.41	3½ - 4	Argentiferous tetrahedrite
Fuchsite	K(Al,Cr) ₂ (AlSi ₃ O ₁₀)(OH,F) ₂	Mon	2.76 - 2.88	2 - 2½	Cr rich muscovite
G					
Gadolinite	Be ₂ Fe ²⁺ Y ₂ Si ₂ O ₁₀	Mon	4.0 - 4.5	6½ - 7	Nom. 48% REO, 10% BeO
Gahnite	ZnAl ₂ O ₄	Iso	4.62	7½ - 8	Zn spinel, green octahedrons
Galaxite	Mn ²⁺ Al ₂ O ₄	Iso	4.03	7½ - 8	Mn spinel
Galena	PbS	Iso	7.4 - 7.6	2½	Cl cubic. 86.6% Pb
Garnet group	A ₃ B ₂ (SiO ₄) ₃ A = Ca,Mg,Fe ²⁺ ,Mn ²⁺ ; B = Al,Fe ³⁺ ,Mn ³⁺ ,Cr	Iso	3.5 - 4.3	6½ - 7½	See almandite, andradite, grossularite, pyrope, spessartite, uvarovite
Garnierite	(Ni,Mg) ₃ Si ₂ O ₅ (OH) ₄	Amor	2.2 - 2.8	2 - 3	Generic name for a green nickel ore. 25 - 30% Ni
Gaylussite	Na ₂ Ca(CO ₃) ₂ ·5H ₂ O	Mon	1.991	2½	Easily fusible. 20% Na ₂ O
Gedrite	[Mg ₅ Al ₂ (Si ₆ Al ₂)O ₂₂ (OH) ₂	Orth		5½ - 6	Al-rich anthophyllite
Geocronite	Pb ₁₄ (Sb,As) ₆ S ₂₃	Orth	6.46	2½ - 3	69% Pb, 8% Sb, 5% As
Gersdorffite	NiAsS	Iso	5.9	5½	35% Ni, 45% As
Geyserite					Opal of hot spring deposits
Gibbsite	Al(OH) ₃	Mon	2.38 - 2.42	2½ - 3	65.4% Al ₂ O ₃
Glauberite	Na ₂ Ca(SO ₄) ₂	Mon	2.75 - 2.85	2½ - 3	22% Na ₂ O
Glaucodot	CO _{0.5} Fe _{0.5} AsS				Danaite – a Co-bearing variety of arsenopyrite
Glaucosite	(K,Na)(Al,Fe ³⁺ ,Mg) ₂ (Al,Si) ₄ O ₁₀ (OH) ₂	Mon	2.4 - 2.95	2	Green sand mica of marine sediments
Glaucophane	[Na ₂ (Mg ₃ Al ₂)Si ₈ O ₂₂ (OH) ₂	Mon	3.0 - 3.2	5 - 6	Na amphibole
Gmelinite	(Na,Ca)(Si ₈ Al ₄)O ₂₄ ·11H ₂ O	Hex	2.04 - 2.17	4½	Zeolite group, var. of chabazite
Goethite	FeO(OH)	Orth	4.27 - 4.29	5 - 5½	Diaspore group, Cl (010), 62% Fe

Name	Composition	Xal Sys	D	H	Notes
Gold	Au	Iso	15.0 - 19.3	2½ - 3	Yellow, soft
Goslarite	ZnSO ₄ ·7H ₂ O	Orth	1.978	2 - 2½	Sol. in water. 22% Zn
Graphite	C	Hex	2.09 - 2.23	1 - 2	Black, platy
Grey copper	(Cu,Fe,Ag,Zn) ₁₂ Sb ₄ S ₁₃	Iso	4.97	3½ - 4	Tetrahedrite
Greenockite	CdS	Hex	4.8 - 4.9	3 - 3½	Yellow-orange. 77.8% Cd
Grossular	Ca ₃ Al ₂ (SiO ₄) ₃	Iso	3.594	6½ - 7	A garnet
Gummite	UO ₃ ·nH ₂ O		3.9 - 6.4	2½ - 5	Field name for hydrous U oxides. 60 - 80% U ₃ O ₈
Gypsum	CaSO ₄ ·2H ₂ O	Mon	2.312 - 2.322	2	Cl (010), (100), (011). 32.5% CaO
H					
Halite	NaCl	Iso	2.168	2½	Natural salt. 53% Na ₂ O equiv.
Halloysite	Al ₂ Si ₂ O ₅ (OH) ₄	Mon	2 - 2.6	1 - 2	Clay mineral
Harmotome	Ba ₂ (Si ₁₂ Al ₄)O ₃₂ ·12H ₂ O	Mon	2.41 - 2.47	4 - 5	Zeolite group, harmotome- phillipsite-Ca series
Hastingsite	Na,Ca ₂ [(Fe ²⁺) ₄ Fe ³⁺](Si ₆ Al ₂)O ₂₂ (OH) ₂	Mon	3.2	5 - 6	Amphibole group, calcic clino- amphibole subgroup
Hausmannite	Mn ₃ O ₄	Tet	4.83 - 4.85	5½	72% Mn
Haüyne	Na ₃ Ca(Si ₃ Al ₃)O ₁₂ (SO ₄)	Iso	2.44 - 2.5	5½ - 6	Sodalite group
Heavy spar	BaSO ₄	Orth	4.5	3 - 3½	Barite
Heazlewoodite	Ni ₃ S ₂	Trig	5.82	4	Brassy yellow, to 73% Ni
Hectorite	Na _{0.3} (Mg,Li) ₃ Si ₄ O ₁₀ (F,OH) ₂ ·nH ₂ O	Mon	2.5	1 - 1½	Li montmorillonite
Hedenbergite	CaFe ²⁺ (Si ₂ O ₆)	Mon	3.56	5½ - 6½	End member of diopside series
Heliotrope					Synonym of bloodstone, green and red chalcedony
Helvite	Mn ₄ Be ₃ (SiO ₄) ₃ S	Iso	3.2 - 3.44	6 - 6½	Helvite group, danalite-helvite series, in pegmatites
Hematite	Fe ₂ O ₃	Trig	5.26	5 - 6	Brownish red streak. 70% Fe
Hemimorphite	Zn ₄ (Si ₂ O ₇)(OH) ₂ ·H ₂ O	Orth	3.475	4½ - 5	Cl (110). 54% Zn
Hercynite	Fe ²⁺ Al ₂ O ₄	Iso	4.39	7½	Iron spinel
Hessite	Ag ₂ Te	Mon	8.24 - 8.45	3	Grey
Heulandite	Na,Ca ₄ (Si ₂₇ Al ₉)O ₇₂ ·24H ₂ O	Mon	2.1 - 2.2	3 - 3½	Heulandite now refers to a group of related minerals
Hiddenite	LiAlSi ₂ O ₆	Mon	3.1 - 3.2	6½ - 7	Green spodumene
Holmquistite	[Li ₂ Mg ₃ Al ₂ Si ₈ O ₂₂ (OH) ₂	Orth		5½	Lithium-bearing glaucophane, amphibole group
Hornblende	(Ca,Na) ₂ (Mg,Fe) ₄ Al(Si,Al)O ₂₂ (OH,F)	Mon	3 - 3.4	6	Common amphibole
Horn silver	AgCl	Iso	5.556	1½ - 2½	A synonym for chlorargyrite
Hübnerite	Mn ²⁺ WO ₄	Mon	4	4½	Ferberite-hübnerite series. 76.6% WO ₃
Humite	Mg ₇ (SiO ₄) ₃ (F,OH) ₂	Orth	3.1 - 3.2	6	Humite group
Hyacinth					Brownish to red-orange zircon
Hyalite					Globular, colourless opal
Hyalophane	(K,Ba)(Al,Si) ₄ O ₈	Mon	2.8	6	Ba-rich orthoclase
Hydromica	K,Al,Mg,Si,H ₂ O				Variety of Illite very low in K and high in water
Hydrozincite	Zn ₅ (CO ₃) ₂ (OH) ₆	Mon	3.5 - 4	2 - 2½	Alteration product generally of sphalerite, also of hemimorphite, and smithsonite. 59% Zn
Hypersthene	(Mg,Fe)SiO ₃	Orth	3.4 - 3.5	5 - 6	Regarded as a synonym of enstatite or ferrosillite
I					
Ice	H ₂ O	Hex	0.917	1½	
Iceland spar					Optically clear calcite
Iddingsite	MgOFe ₂ O ₃ 3SiO ₂ ·4(H ₂ O)	Orth	3.5 - 3.8	3	After olivine

Name	Composition	Xal Sys	D	H	Notes
Idocrase	$(Ca,Na)_{19}(Al,Mg,Fe)_{13}(SiO_4)_{10}(Si_2O_7)_4(OH,F,O)_{10}$	Tet	3.35 - 3.45	6½	Prismatic crystals
Illite	$(K,H_3O)Al_2(Si_3Al)O_{10}(H_2O,OH)_2$				Mica-like clay mineral, about 38% Al_2O_3
Ilmenite	$FeTiO_3$	Rho	4.7	5½ - 6	Slightly magnetic. 52.6% TiO_2
Ilmenorutile	$(Ti,Nb,Fe)O_2$		5.1	6 - 6.5	Black, end member of struverite series
Ilvaite	$CaFe^{3+}(Fe^{2+})_2O(Si_2O_7)(OH)$	Orth	4.0	5½ - 6	Black or brown
Indicolite					Dark blue tourmaline
Iodobromite	$Ag(Cl,Br,I)$	Iso	5.7	1 - 1½	To about 15% I, 60% Ag
Iodyrite	AgI	Hex	5.7	1 - 1½	Sectile. 45% Ag
Iolite					Cordierite (gem var.)
Iridium	Ir	Iso	22.7	6 - 7	Platinoid metal
Iridosmine	Ir,Os	Rho	19.3 - 21.1	6 - 7	Platinoid. Max. 77% Ir, max. 80% Os
Iron pyrites					Pyrite
J					
Jacinth					Hyacinth
Jacobsite	$Mn^{2+}(Fe^{3+})_2O_4$	Iso	4.75	5.5 - 6.5	A black magnetic spinel
Jade					See nephrite and jadeite
Jadeite	$NaAlSi_2O_6$	Mon	3.3 - 3.5	6½ - 7	Green pyroxene jade
Jamesonite	$Pb_4FeSb_6S_{14}$	Mon	5.5 - 6.0	2 - 3	50.8% Pb, 29.5% Sb
Jargon					Clear, yellow or smoky zircon
Jarosite	$K(Fe^{3+})_3(SO_4)_2(OH)_6$	Rho	2.91 - 3.26	3	6 - 9% K_2O
Jasper					Red cryptocrystalline quartz
Johannsenite	$CaMn^{2+}Si_2O_6$	Mon	3.4 - 3.6	5 - 6	Brownish-greenish grey
K					
Kainite	$MgSO_4 \cdot KCl \cdot 3H_2O$	Mon	2.1	3	19% K_2O , 16% MgO
Kalinite	$KAl(SO_4)_2 \cdot 11H_2O$				Potash alum
Kaliophilite	$K(AlSiO_4)$	Hex	2.61	6	Dimorph. with kalsilite. 30% K_2O , 32% Al_2O_3
Kalsilite	$KAlSiO_4$				End member of nepheline series
Kaolin group	$LiAlSi_2O_6$				Family of clay minerals, see anauxite, dickite, kaolinite, nacrite, with 39.5% Al_2O_3
Kaolinite	$Al_2(Si_2O_5)(OH)_4$	Mon	2.6 - 2.65	2 - 2½	Earthy
Kernite	$Na_2B_4O_6(OH)_2 \cdot 3(H_2O)$	Mon	1.95	3	22.7% Na_2O , 51% B_2O_3
Krennerite	$(Au,Ag)Te_2$	Orth	8.62	2 - 3	Basal cleavage
Kunzite					Pink spodumene
Kyanite	Al_2SiO_5	Tric	3.56 - 3.66	5 - 7	Blue, Cl (100) perfect, bladed xals. Marked hardness anisotropy
L					
Labradorite	$(Ca,Na)(Si,Al)_4O_8$	Tric	2.71	6	A plagioclase feldspar
Langbeinite	$K_2Mg_2(SO_4)_3$	Iso	2.83	2½ - 3½	22.7% K_2O , or 42% K_2SO_4
Lapis lazuli					Impure lazurite
Larsenite	$PbZnSiO_4$	Orth	5.9	3	Rare olivine
Laumontite	$Ca(Si_4Al_2)O_{12} \cdot 4H_2O$	Mon	2.28	4	A zeolite
Lawsonite	$CaAl_2(Si_2O_7)(OH)_2 \cdot H_2O$	Orth	3.09	8	In gneisses and schists
Lazulite	$MgAl_2(PO_4)_2(OH)_2$	Mon	3.0 - 3.1	5 - 5½	Blue gemstone
Lazurite	$Na_3CaAl_3Si_3O_{12}S$	Iso	2.4 - 2.45	5 - 5½	A feldspathoid
Lechatelierite	SiO_2	Amor	2.2	6 - 7	Fused silica
Lepidocrocite	$Fe^{3+}O(OH)$	Orth	4.09	5	With goethite. 62% Fe
Lepidolite	$K(Li,Al)_3(Si,Al)_4O_{10}(F,OH)_2$	Mon	2.8 - 3.0	2½ - 4	Lithium mica with about 5% Li_2O

Name	Composition	Xal Sys	D	H	Notes
Leucite	$K(AlSi_2O_6)$	Iso?	2.45 - 2.50	5½ - 6	A feldspathoid
Leucoxene	$FeTiO_3$ to TiO_2		3.6 - 4.3		Whitish, opaque ilmenite alteration products
Libethenite	$Cu_2(PO_4)(OH)$	Orth	4	4	53% Cu, 29% P_2O_5
Liddicoatite	$Ca(Li,Al)_3Al_6(BO_3)_3Si_6O_{18}(OH)_4$	Hex	3 - 3.1	7 - 7½	Uncommon form of tourmaline
Limonite	$Fe^{3+}O(OH)$	Amor	3.6 - 4.0	5 - 5½	Field name for brown amorphous hydrous iron oxides, yellowish brown streak, about 60% Fe
Linarite	$PbCu(SO_4)(OH)_2$	Mon	5.3	2½	Deep blue. 15% Cu, 51% Pb
Linnaeite	Co_3S_4	Iso	4.8	4½ - 5½	58% Co, to 7% Ni
Lithia mica					Lepidolite
Lithiophilite	$Li(Mn^{2+})PO_4$	Orth	3.5	5	End member of triphy-lite series. 9.5% Li_2O , 45% P_2O_5
Loellingite	$FeAs_2$	Orth	7.4 - 7.5	5 - 5½	72.8% As
M					
Magnesiochromite	$MgCr_2O_4$	Iso	4.2	5½	End member of chromite series, with 21% MgO, 79% Cr_2O_3
Magnesioferrite	$MgFe^{3+}_2O_4$	Iso	4.5	5½ - 6½	A spinel. 20% MgO, 56% Fe for $MgFe_2O_4$
Magnesite	$MgCO_3$	Rho	3.0 - 3.2	3½ - 5	Commonly massive, sticks to the tongue, 47.6% MgO
Magnetic pyrites					Pyrrhotite
Magnetite	$Fe^{3+}_2Fe^{2+}O_4$	Iso	5.18	6	Iron spinel, strongly magnetic, black streak. 72.4% Fe for Fe_3O_4
Malachite	$Cu_2CO_3(OH)_2$	Mon	3.9 - 4.03	3½ - 4	Green. 57.3% Cu
Manganite	$Mn^{3+}O(OH)$	Orth	4.3	4	Prismatic crystals, dark brown streak. 62% Mn
Manganosite	MnO	Iso	5.0 - 5.4	5½	77% Mn
Manganotantalite	$Mn^{2+}Ta_2O_6$	Orth	7.3	4½	Tantalite with Mn: Fe :: 3:1, 10% Mn, 84% ($Nb_2O_5 + Ta_2O_5$)
Marcasite	FeS_2	Orth	4.89	6 - 6½	White iron pyrites. 46.5% Fe
Margarite	$CaAl_4Si_2O_{10}(OH)_2$	Mon	3.0 - 3.1	3½ - 5	A brittle mica
Marialite	$Na_4Al_3Si_9O_{24}Cl$	Tet	2.7	5½ - 6	End member of scapolite series
Marmatite	$(ZnFe)S$				Iron rich sphalerite, to 20% Fe
Martite					Haematite octahedrons after magnetite
Meerschaum					Sepiolite
Meionite	$Ca_4Al_6Si_6O_{24}(CO_3)$	Tet	2.7	5½ - 6	End member of scapolite series
Melaconite	CuO				Tenorite
Melanite	$Ca_3Fe^{3+}_2(SiO_4)_3Ti$				Black andradite
Melanterite	$FeSO_4 \cdot 7H_2O$	Mon	1.90	2	Green-blue
Melilite	$(Na,Ca)_2(Mg,Al)(Si,Al)_2O_7$	Tet	2.9 - 3.1	5	
Menaccanite					Ilmenite
Meneghinite	$Pb_{13}CuSb_7S_{24}$	Orth	6.36	2½	Jamesonite family
Mercury	Hg		13.6		Fluid, quicksilver
Miargyrite	$AgSbS_2$	Mon	5.2 - 5.3	2½	Cherry red streak. 36% Ag, 41% Sb
Mica group					See biotite, brittle mica, lepidolite, muscovite, phlogopite
Microcline	$K(AlSi_3O_8)$	Tric	2.54 - 2.57	6	Triclinic K feldspar

Name	Composition	Xal Sys	D	H	Notes
Microlite	(Na,Ca) ₂ Ta ₂ O ₆ (O,OH,F)	Iso	6.33	5½	End member of pyrochlore series, 75 - 80% (Nb ₂ O ₅ +Ta ₂ O ₅)
Microperthite					Microcline and albite micro layers
Millerite	NiS	Rho	5.3 - 5.7	3 - 3½	Capillary crystals 64.7% Ni
Mimetite	Pb ₅ Cl(AsO ₄) ₃	Hex	7.0 - 7.2	3½	Like pyromorphite. 69% Pb, 15% As
Minium	Pb ₃ O ₄		8.9 - 9.2	2½	90% Pb
Mispickel					Arsenopyrite
Molybdenite	MoS ₂	Hex	4.62 - 4.73	1 - 1½	Platy. 60% Mo
Molybdite	MoO ₃				Ferrimolybdite
Monazite	(Ce,La,Nd,Th)PO ₄	Mon	5.0 - 5.3	5 - 5½	Max 30% ThO ₂ , max 65% REO
Monticellite	CaMgSiO ₄	Orth	3.2	5	Rare olivine
Montmorillonite	(Na,Ca) _{0,3} (Al,Mg) ₂ Si ₄ O ₁₀ (OH) ₂ ·n(H ₂ O)	Mon	2.5	1 - 1½	Clay mineral
Montmorillonite group		Family of clay minerals with 39.5% Al ₂ O ₃ , see beidellite, hectorite, montmorillonite, nontronite and saponite			
Moonstone					Opalescent albite or orthoclase
Morganite					Rose beryl
Mullite	Al _{4+2x} Si _{2-2x} O _{10-x} (x-0.4)	Orth	3.23	6 - 7	Formed by heating andalusite/kyanite or sillimanite
Muscovite	KAl ₂ (Si ₃ Al)O ₁₀ (OH) ₂	Mon	2.76 - 3.1	2 - 2½	Common clear mica
N					
Nacrite	Al ₂ (Si ₂ O ₅)(OH) ₄	Mon	2.6	2 - 2½	Kaolin group clay mineral
Nagyagite	[Pb(Pb,Sb)S ₂][(Au,Te)]	Mon	7.4	1 - 1½	Rare
Natroalunite					Alunite with Na>K
Natrojarosite	NaFe ³⁺ ₃ (SO ₄) ₂ (OH) ₆	Hex	3.1 - 3.3	3 - 3.5	Only in tiny crystals
Natrolite	Na ₂ (Al ₂ Si ₃ O ₁₀)·2H ₂ O	Mon	2.25	5 - 5½	A zeolite
Nepheline	Ca ₂ (Mg,Fe) ₅ Si ₈ O ₂₂ (OH) ₂	Hex	2.55 - 2.65	5½ - 6	A feldspathoid. 22% Na ₂ O, 36% Al ₂ O ₃
Nephrite					Jade-like var. of tremolite
Nicolite	NiAs	Hex	7.78	5 - 5½	Copper-red. 43.9% Ni
Nickel bloom					Annabergite
Nickel iron	Ni,Fe	Iso	7.8 - 8.2	5	In meteorites, 5 - 15% Ni
Nickel skutterudite	NiAs _{2,3}	Iso	6.1 - 6.9	5½ - 6	2 - 6% Co, 12 - 20% Ni, 73 - 78% As
Nitre	KNO ₃	Orth	2.09 - 2.14	2	Saltpetre
Nontronite	Na _{0,3} (Fe ³⁺) ₂ (SiAl) ₄ O ₁₀ (OH) ₂ ·nH ₂ O	Mon	2.5	1 - 1½	Montmorillonite group clay mineral
Norbergite	Mg ₃ SiO ₄ F ₂	Orth	3.1 - 3.2	6	Chondrodite group
Nosean (Noselite)	Na ₈ Al ₆ Si ₆ O ₂₄ ·(SO ₄)·H ₂ O	Iso	2.25 - 2.4	6	A feldspathoid
O					
Octahedrite	TiO ₂				Anatase
Oligoclase	(Na,Ca)(Si,Al) ₄ O ₈	Tric	2.65	6	A plagioclase feldspar

Name	Composition	Xal Sys	D	H	Notes
Olivine group	(Mg,Fe) ₂ SiO ₄				(Forsterite-Fayalite series), also rarer members larsenite, monticellite, tephroite
Omphacite	(Ca,Na)(MgFe ²⁺ ,Fe ³⁺ ,Al)Si ₂ O ₆	Mon	3.3 - 3.4	5 - 6	Light to dark green
Onyx					Layered chalcedony
Opal	SiO ₂ ·nH ₂ O	Amor	1.9 - 2.2	5 - 6	Conchoidal fracture
Orpiment	As ₂ S ₃	Mon	3.49	1½ - 2	Yellow. 61% As
Orthite	(Ce,Ca,Y) ₂ (Al,Fe ³⁺) ₃ (SiO ₄) ₃ OH				Allanite
Orthoclase	K(AlSi ₃ O ₈)	Mon	2.57	6	Common K feldspar
Osmiridium	(Ir,Os)				Hex. iridosmine
Otavite	CdCO ₃	Hex	5	3½ - 4	In cadmium deposits
Ottrelite	(Mn ²⁺)Al ₂ O(SiO ₄)(OH) ₂	Mon	3.5	6 - 7	Mn chloritoid
P					
Palladium	Pd	Iso	11.9	4½ - 5	With platinum
Paradamite	Zn ₂ (AsO ₄)(OH)	Tric	4.5	3½	Pale to dark yellow
Paragonite	NaAl ₂ (AlSi ₃ O ₁₀)(OH) ₂	Mon	2.85	2	Na muscovite
Pargasite	NaCa ₂ (Mg,Al)(Si ₆ Al ₂)O ₂₂ (OH) ₂	Mon	3 - 3.5	5½	Greenish Na hornblende
Patronite	VS ₄				Vanadium ore (Peru)
Peacock ore	Cu ₃ FeS ₄				Bornite
Pearceite	Cu(Ag,Cu) ₆ Ag ₉ As ₂ S ₁₁	Mon	6.15	3	Var. of polybasite
Pectolite	NaCa ₂ Si ₃ O ₈ (OH)	Tric	2.7 - 2.8	5	Crystals acicular
Penninite					Chlorite variety
Pentlandite	(Fe,Ni) ₉ S ₈	Iso	4.6 - 5.3	3½ - 4	With pyrrhotite. 34 - 35% Ni
Periclase	MgO	Iso	3.6 - 3.9	5.5 - 6	Contact met. mineral
Peridot					Gem olivine
Perovskite	CaTiO ₃	Iso	4.03	5½	58% TiO ₂ , variable REO
Perthite					Microcline and albite intergrowth
Petalite	Li(AlSi ₄ O ₁₀)	Mon	2.4	6 - 6½	A feldspathoid. 5% Li ₂ O
Petzite	Ag ₃ AuTe ₂	Iso?	8.7 - 9.0	2½ - 3	
Pezzottaite	Cs(Be ₂ Li)Al ₂ Si ₆ O ₁₈	Hex	2.9 - 3	8	Pink to red
Phenacite	Be ₂ SiO ₄	Rho	2.97 - 3.00	7½ - 8	In pegmatites. 45.6% BeO
Phillipsite	(Na ₆ ,K ₆ ,Ca ₃)(Si ₁₀ Al ₆)O ₃₂ ·12H ₂ O	Mon	2.2	4½ - 5	Var. of stilbite
Phlogopite	K(Mg) ₃ AlSi ₃ O ₁₀ (OH) ₂	Mon	2.86	2½ - 3	Brown mica
Phosgenite	Pb ₂ Cl ₂ CO ₃	Tet	6.0 - 6.3	3	Easily fusible. 75% Pb
Phosphuranylite	KCa(H ₃ O) ₃ (UO ₂) ₇ (PO ₄) ₄ O ₄ ·8(H ₂ O)	Tet		2½	Yellow secondary U mineral
Picotite					Cr spinel
Piedmontite	(Ca,Pb,Ce) ₂ (Mn,Fe)Al ₂ (Si ₂ O ₇)(SiO ₄)(O,OH) ₂	Mon	3.4	6½	Reddish brown
Pigeonite	(Ca,Mg,Fe)SiO ₃	Mon	3.2 - 3.4	5 - 6	Pyroxene in basic volcanics
Pinite	K,Al,Si,O(?)				Muscovite after other minerals
Pitchblende	UO ₂				Uraninite
Plagioclase	NaAlSi ₃ O ₈ (albite-Ab ₁₀₀ An ₀) to CaAl ₂ Si ₂ O ₈ (anorthite-Ab ₀ An ₁₀₀)	Tric	2.62 - 2.76	6	See albite, oligoclase, andesine, labradorite, bytownite, anorthite
Plagionite	Pb ₅ Sb ₈ S ₁₇	Mon	5.56	2½	Jamesonite series
Platinum	Pt alloy	Iso	14 - 19	4 - 4½	Grains in placers
Pleonaste					Iron spinel
Plumbago					Graphite
Polianite	MnO ₂	Tet	5.0	6 - 6½	Crystalline pyrolusite
Pollucite	Cs(Si ₂ Al)O ₆ ·nH ₂ O	Iso	2.9	6½	Colourless > 42% Cs ₂ O

Name	Composition	Xal Sys	D	H	Notes
Polybasite	$\text{Cu}(\text{AgCu})_6\text{Ag}_9\text{Sb}_2\text{S}_{11}$	Mon	6.0 - 6.2	2 - 3	74% Ag, 10% Sb, to 12% Cu
Polycrase	$\text{AB}_2(\text{O},\text{OH})_6$ A = Y, Ce, Ca, U, Th B = Ti, Nb, Ta, Fe	Orth	4.7 - 5.9	$5\frac{1}{2}$ - $6\frac{1}{2}$	14 - 30% REO, max 13% U_3O_8 , max 26% ($\text{Nb}_2\text{O}_5 + \text{Ta}_2\text{O}_5$)
Polyhalite	$\text{K}_2\text{Ca}_2\text{Mg}(\text{SO}_4)_4 \cdot 2\text{H}_2\text{O}$	Tric	2.78	$2\frac{1}{2}$ - 3	Bitter taste. 15.6% K_2O
Potash alum	$\text{KAl}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$	Iso	1.75	2 - $2\frac{1}{2}$	6 - 10% K_2O
Potassium feldspar	KAlSi_3O_8				See orthoclase, microcline
Potash mica					Muscovite
Powellite	CaMoO_4	Tet	4.23	$3\frac{1}{2}$ - 4	Fluorescent. 48% Mo
Prase					Dull green jasper
Prehnite	$\text{Ca}_2\text{Al}_2(\text{Si}_3\text{O}_{10})(\text{OH})_2$	Orth	2.8 - 2.95	6 - $6\frac{1}{2}$	Tabular crystals
Prochlorite					Chlorite variety
Proustite	Ag_3AsS_3	Rho	5.55	2 - $2\frac{1}{2}$	Light ruby silver, red streak. 65.4% Ag, 15.2% As
Psilomelane	$(\text{Ba},\text{H}_2\text{O})_2\text{Mn}_5\text{O}_{10}$				Field name for massive, hard-manganese minerals. About 50% Mn
Purple copper ore					Bornite
Pyrrargyrite	Ag_3SbS_3	Rho	5.85	$2\frac{1}{2}$	Dark ruby silver, red streak. 22.3% Sb, 59.9% Ag
Pyrite	FeS_2	Iso	5.02	6 - $6\frac{1}{2}$	Crystals striated. 46.5% Fe
Pyrochlore	$\text{Ca}_2\text{Nb}_2\text{O}_7$	Iso	4.2 - 4.5	5	Infusible. 3 - 6% REO, 56 - 73% Nb_2O_5
Pyrolusite	MnO_2	Tet	4.75	1 - 2	Sooty. 63.2% Mn
Pyromorphite	$\text{Pb}_5(\text{PO}_4)_3\text{Cl}$	Hex	6.5 - 7.1	$3\frac{1}{2}$ - 4	Adamantine lustre. 49 - 76% Pb, max 8% As
Pyrope	$\text{Mg}_3\text{Al}_2(\text{SiO}_4)_3$	Iso	3.51	7	Dark red garnet
Pyrophyllite	$\text{Al}_2\text{Si}_4\text{O}_{10}(\text{OH})_2$	Mon	2.8 - 2.9	1 - 2	Resembles talc
Proxene group					See aegerine, augite, diopside, enstatite, jadeite, spodumene
Pyrrhotite (1)	Fe_7S_8	Mon	4.58	4	Magnetic, 59.5% Fe
Pyrrhotite (2)	$\text{Fe}_{11}\text{S}_{12}$	Hex	4.65	4	Nonmagnetic, 62% Fe
Q					
Quartz	SiO_2	Rho	2.65	7	46.7% Si
R					
Rammelsbergite	NiAs_2	Orth?	7.1	$5\frac{1}{2}$ - 6	28% Ni
Rasorite					Kernite
Realgar	AsS	Mon	3.48	$1\frac{1}{2}$ - 2	Red. 70% As
Red copper ore	Cu_2O				Cuprite
Red ochre	Fe_2O_3				Haematite
Rhodochrosite	MnCO_3	Rho	3.45 - 3.6	$3\frac{1}{2}$ - $4\frac{1}{2}$	Pink. 49% Mn
Rhodolite	$(\text{Mg})_3\text{Al}_2(\text{SiO}_4)_3$	Iso	3.84	7	Pale red or purple garnet
Rhodonite	$(\text{Mn}^{2+})\text{SiO}_3$	Tric	3.58 - 3.70	$5\frac{1}{2}$ - 6	Pink. 42% Mn
Riebeckite	$[\text{Na}_2\text{Fe}^{2+}_3\text{Fe}^{3+}_2(\text{Si}_8\text{O}_{22})(\text{OH})_2]$	Mon	3.44	4	Amphibole, end member of glaucophane series
Rock crystal					Euhedral clear quartz
Rock salt					Halite
Roscoelite	$\text{K}(\text{V},\text{Al})_3\text{Si}_3\text{O}_{10}(\text{OH})_2$	Mon	2.97	$2\frac{1}{2}$	Vanadium mica
Rubellite					Red or pink tourmaline

Name	Composition	Xal Sys	D	H	Notes
Ruby	Al ₂ O ₃				Red gem corundum
Ruby copper	Cu ₂ O				Cuprite
Ruby silver					Pyrrargyrite or proustite
Rutile	TiO ₂	Tet	4.18 - 4.25	6 - 6½	Adamantine lustre
S					
Saleeite	Mg(UO ₂) ₂ (PO ₄) ₂ ·10H ₂ O				Platy sec. U mineral, autunite series, fluorescent
Samarskite	(Y,Ce,U,Fe,Nb)(Nb,Ta,Ti)O ₄	Orth	4.1 - 6.2	5 - 6	10 - 22% REO, 28 - 46% Nb ₂ O ₅ , 2 - 27% Ta ₂ O ₅ , 0 - 12% U ₃ O ₈
Sanidine	(K,Na)(Si,Al) ₄ O ₈				High temperature orthoclase
Saponite	(Ca,Na) _{0.3} (Mg,Fe) ₃ (Si,Al) ₄ O ₁₀ (OH) ₂ ·4H ₂ O	Mon	2.5	1 - 1½	Montmorillonite group clay mineral
Sapphire	Al ₂ O ₃				Blue gem corundum
Satin spar					Fibrous gypsum
Scapolite	(Na,Ca) ₄ (Si,Al) ₁₂ O ₂₄ (Cl,CO ₃ ,So ₄)	Tet	2.65 - 2.74	5 - 6	Metamorphic, fluorescent
Scheelite	CaWO ₄	Tet	5.9 - 6.1	4½ - 5	Fluorescent. 70 - 80% WO ₃
Schorlite					Common black tourmaline
Scolesite	Ca(Al ₂ Si ₃ O ₁₀)·3H ₂ O	Mon	2.16 - 2.4	5 - 5½	A zeolite
Scorodite	Fe ²⁺ AsO ₄ ·2H ₂ O	Orth	3.1 - 3.3	3½ - 4	Green to brown. About 32% As
Scorzalite	(Fe)Al ₂ (PO ₄) ₂ (OH) ₂	Mon	3.35	5½ - 6	End member of lazulite series
Selenite					Clear crystalline gypsum
Semseyite	Pb ₉ Sb ₈ S ₂₁	Mon	5.8	2½	Jamesonite series
Sepiolite	Mg ₄ (Si ₂ O ₃) ₃ (OH) ₂ ·6H ₂ O	Mon?	2.0	2 - 2½	Meerschaum, light, sec. Withserpentine
Sericite	K,Al,Si,O				Fine-grained muscovite
Serpentine	Mg ₃ Si ₂ O ₅ (OH) ₄	Mon	2.2	2 - 5	43% MgO
Siderite	FeCO ₃	Rho	3.83 - 3.88	3½ - 4	48.2% Fe
Siegenite	CoNi ₂ S ₄	Iso	4.8	4½ - 5½	Linnaeite series. 29% Co, 29% Ni
Sillimanite	Al ₂ SiO ₅	Orth	3.23	6 - 7	Cl (010) perfect. 63.2% Al ₂ O ₃
Silver	Ag	Iso	10.5	2½ - 3	White, malleable
Silver glance	CoAs _{3-x}				Argentite
Sklodowskite	Mg(UO ₂) ₂ (SiO ₃ OH) ₂ ·6H ₂ O	Orth	3.54	?	64% U ₃ O ₈
Skutterudite	(Co,Ni,Fe)As ₃	Iso	6.1 - 6.9	5	11 - 21% Co, 73 - 79% As, 0 - 9% Ni
Smaltite					Skutterudite variety. 13 - 24% Co, 63 - 71% As, 1 - 15% Ni
Smithsonite	ZnCO ₃	Rho	4.35 - 4.40	5	52% Zn
Soapstone					Talc
Sodalite	Na ₄ Al ₃ Si ₃ O ₁₂ Cl	Iso	2.15 - 2.3	5½ - 6	A feldspathoid
Soda nitre	NaNO ₃	Rho	2.29	1 - 2	36.5% Na ₂ O
Spathic iron	FeCO ₃				Siderite
Specular iron					Foliated haematite
Sperrylite	PtAs ₂	Iso	10.50	6 - 7	54% Pt
Spessartite	Mn ₃ Al ₂ (SiO ₄) ₃	Iso	4.18	7	Brown to red garnet
Sphaerocobaltite	CoCO ₃	Hex	4.13	3.5 - 4	Pink to red
Sphalerite	ZnS	Iso	3.9 - 4.1	3½ - 4	38 - 67% Zn, max 5% Cd
Sphene	CaTiO(SiO ₄)	Mon	3.40 - 3.55	5 - 5½	Wedge-shaped xals. 40% TiO ₂ . Titanite
Spinel group	(Mg,Fe,Zn,Mn)Al ₂ O ₄	Iso	3.6 - 4.0	8	In octahedrons
Spodumene	LiAl(Si ₂ O ₆)	Mon	3.15 - 3.20	6½ - 7	A pyroxene. 8% Li ₂ O
Stannite	Cu ₂ FeSn ₄	Tet	4.4	4	Easily fusible. 29 - 31% Cu, 27% Sn, 12 - 14% Fe

Name	Composition	Xal Sys	D	H	Notes
Staurolite	(Fe ²⁺) ₂ Al ₉ Si ₄ O ₂₃ (OH)	Orth	3.65 - 3.75	7 - 7½	In cruciform twins. 56% Al ₂ O ₃
Steatite					Talc
Stephanite	Ag ₅ SbS ₄	Orth	6.2 - 6.3	2 - 2½	68.5% Ag, 15.2% Sb
Sternbergite	AgFe ₂ S ₃	Orth	4.1 - 4.2	1 - 1½	34% Ag, 35% Fe
Stibnite	Sb ₂ S ₃	Orth	4.52 - 4.62	2	71.7% Sb
Stilbite	(NaCa) ₃ (SiAl) ₁₈ O ₃₆ ·12H ₂ O	Mon	2.1 - 2.2	3½ - 4	A zeolite
Stillwellite	(Ce,La,Ca)BSiO ₅	Rho	4.57		58% REO, 11% B ₂ O ₃
Stishovite	SiO ₂	Tet	4.3	7½ - 8	Found only at meteorite sites
Stolzite	PbWO ₄	Tet	8.3 - 8.4	2½ - 3	45% Pb, 50% WO ₃
Stromeyerite	(Cu,Ag)S	Orth	6.2 - 6.3	2½ - 3	53% Ag, 31% Cu
Strontianite	SrCO ₃	Orth	3.7	3½ - 4	Efferv. in HCl. 90% SrO
Struverite	(Ti,Ta,Nb,Fe)O ₂				Ta rich ilmenorutile
Sulfur	S	Orth	2.05 - 2.09	1½ - 2½	Burns with blue flame
Sunstone					Brilliant translucent oligoclase
Sylvanite	(Au,Ag)Te ₄	Mon	8.0 - 8.2	1½ - 2	Cl (010) perfect. 25% Au, 15% Ag
Sylvite	KCl	Iso	1.99	2	Cl cubic perfect. 63% K ₂ O
T					
Talc	Mg ₃ (Si ₄ O ₁₀)(OH) ₂	Mon	2.7 - 2.8	1	Greasy feel
Tantalite	(Mg,Mn ²⁺)Ta ₂ O ₆	Orth	6.2 - 8.0	6 - 6½	52 - 86% Ta ₂ O ₅ , max 31% Nb ₂ O ₅ (with Ta = Nb)
Tapiolite	(Fe,Mn)(Ta,Nb) ₂ O ₆	Tet	7.3 - 7.8	6	Dimorphous with tantalite
Tennantite	Cu ₁₂ As ₄ S ₁₃	Iso	4.6 - 5.1	3 - 4½	Max 11% Fe, 9% Zn, 14% Ag, 4% Pb, 13% Bi, 1% Co, 30 - 53% Cu
Tenorite	CuO	Tric	5.8 - 6.4	3 - 4	Black. 79.9% Cu
Tephroite	(Mn ²⁺) ₂ SiO ₄	Orth	4 - 4.1	6	Light grey, rare olivine
Tetrahedrite	Cu ₁₂ Sb ₄ S ₁₃	Iso	4.6 - 5.1	3 - 4½	In tetrahedrons. Max. 45% Cu, 13% Fe, 8% Zn, 18% Ag, 17% Hg, 16% Pb, 4% Ni, 4% Co, 4% Bi
Thenardite	Na ₂ SO ₄	Orth	2.68	2½	In saline lakes
Thomsonite	NaCa ₂ Al ₃ Si ₅ O ₂₀ ·6H ₂ O	Orth	2.3	5	A zeolite
Thorianite	ThO ₂	Iso	9.7	6½	To 17% U ₃ O ₈
Thorite	Th(SiO ₄)	Tet	5.3	5	Usually hydrated
Thorogummite	(Th,U)[(SiO ₄),(OH) ₄]	Tet	4 - 4.5	4½	A replacement of thorite
Thulite					Pink-red zoisite
Tiger's-eye					Yellow brown quartz aftercrocidolite
Tin	Sn	Tet	7.3	2	Very rare
Tincalconite	Na ₂ B ₄ O ₅ (OH) ₄ ·3H ₂ O	Hex	1.88	1	A pseudomorph of borax
Tinstone	SnO ₂				Cassiterite
Titanic iron ore					Ilmenite
Titanite	CaTiSiO ₅				Sphene
Topaz	Al ₂ (SiO ₄)(F,OH) ₂	Orth	3.4 - 3.6	8	Cl (001) perfect
Torbernite	Cu(UO ₂) ₂ (PO ₄) ₂ ·12H ₂ O	Tet	3.22	2 - 2½	Green. 61% U ₃ O ₈ , 13.5 - 15% P ₂ O ₅ , 6 - 7% Cu
Tourmaline	XY ₃ Al ₆ (BO ₃) ₃ (Si ₆ O ₁₈)(OH) ₄ X = Na, Ca Y = Al, Fe, Li, Mg	Rho	3.0 - 3.25	7 - 7½	Trigonal section
Tremolite	[Ca ₂ Mg ₅ (Si ₈ O ₂₂)(OH) ₂	Mon	3.0 - 3.3	5 - 6	Ca amphibole, short fibre asbestos
Tridymite	SiO ₂	Orth	2.26	7	In volcanic rocks (870 - 1470°C)
Triphylite	Li(Fe)PO ₄	Orth	3.42 - 3.56	4½ - 5	9.5% Li ₂ O, 45% P ₂ O ₅
Troilite	FeS				Pyrrhotite
Trona	Na ₂ CO ₃ ·NaHCO ₃ ·2H ₂ O	Mon	2.13	3	Alkaline taste. 41% Na ₂ O

Name	Composition	Xal Sys	D	H	Notes
Troostite					Manganiferous willemite
Tungstite	WO ₃ ·H ₂ O	Orth?	?	2½	Sec. mineral
Turgite		?	4.2 - 4.6	6½	With goethite
Turquoise	CuAl ₆ (PO ₄) ₄ (OH) ₈ ·4H ₂ O	Tric	2.6 - 2.8	6	Blue-green. 5.5 - 7.8% Cu, 28 - 35% P ₂ O ₅
Tyuyamunite	Ca(UO ₂) ₂ (VO ₄) ₂ ·5·8H ₂ O	Orth	3.7 - 4.3	2	Ca analogue of carnotite. About 56% U ₃ O ₈ , 20% V ₂ O ₅
U					
Ulexite	NaCaB ₃ O ₆ (OH) ₆ ·5H ₂ O	Tric	1.69	1	7.7% Na ₂ O, 43% B ₂ O ₃
Uralian emerald					Green gem andradite
Uralite	Ca ₂ (Mg,Fe) ₃ Si ₈ O ₂₂ (OH) ₂				Hornblende after pyroxene
Uraninite	UO ₂	Iso	9.0 - 9.7	5½	Pitchy lustre, nom. U ₃ O ₈
Uranophane	Ca(UO ₂) ₂ (SiO ₃ OH) ₂ ·5H ₂ O	Orth	3.81 - 3.90	2 - 3	63% U ₃ O ₈
Urano-sphaerite	Bi(UO ₂) ₂ O ₂ (OH)	Orth	6.36	2 - 3	61% U ₃ O ₈ , 42% Bi ₂ O ₃
Uvarovite	Ca ₃ Cr ₂ (SiO ₄) ₃	Iso	3.45	7½	Green garnet
Uvite	CaMg ₃ (Al ₃ Mg)(BO ₃) ₃ (SiAl) ₆ O ₁₈ (OH) ₃ F	Hex	3 - 3.2	7½	A rare form of tourmaline
V					
Vanadinite	Pb ₅ (VO ₄) ₃ Cl	Hex	6.7 - 7.1	3	19.4% V ₂ O ₅ , 68 - 73% Pb
Variscite	Al(PO ₄) ₂ ·2H ₂ O	Orth	2.4 - 2.6	3½ - 4½	Green, massive. 43 - 45% P ₂ O ₅
Verde antique					Variegated serpentine and whitemarble
Vermiculite	Mg _{0.7} (Mg,Fe,Al) ₆ (Si,Al) ₈ O ₂₀ (OH) ₄ ·8H ₂ O	Mon	2.4	1½	Altered biotite
Vesuvianite	(Ca,Na) ₁₉ (Al,Mg,Fe) ₁₃ (SiO ₄) ₁₀ (Si ₂ O ₇) ₄ (OH,F,O) ₁₀				Idocrase
Violarite	Ni ₂ FeS ₄	Iso	4.8	4½ - 5½	34 - 43% Ni, 15 - 18% Fe
Vivianite	(Fe ²⁺) ₃ (PO ₄) ₂ ·8H ₂ O	Mon	2.58 - 2.68	1½ - 2	Cl (010) perfect. 28% P ₂ O ₅
W					
Wad	Hyd. Mn oxides				25 - 48% Mn
Wavellite	Al ₃ (OH) ₃ (PO ₄) ₂ ·5H ₂ O	Orth	2.33	3½ - 4	35% P ₂ O ₅ , 38% Al ₂ O ₃
Wernerite	(Na,Ca) ₄ (Si,Al) ₁₂ O ₂₄ (Cl,CO ₃ ,SO ₄)				Scapolite
White iron pyrites					Marcasite
White mica					Muscovite
Willemite	Zn ₂ SiO ₄	Rho	3.9 - 4.2	5½	Fluorescent, 58.5% Zn
Witherite	BaCO ₃	Orth	4.3	3½	Efferv. in HCl. 77.7% BaO
Wolframite	(Fe,Mn,Mg)WO ₄	Mon	7.0 - 7.5	5 - 5½	About 75% WO ₃
Wollastonite	Ca(SiO ₃)	Tric	2.8 - 2.9	5 - 5½	Cl (001), (100)
Wood tin	SnO ₂				Cassiterite
Wulfenite	PbMoO ₄	Tet	6.5 - 7.5	3	Orange-red. 56% Pb, 26.6% Mo
Wurtzite	ZnS	Hex	4.0	4	Max. 67% Zn, 8% Fe, 3.6% Cd
X					
Xenotime	YPO ₄	Tet	4.4 - 5.1	4 - 5	61.4% REO, 38.6% P ₂ O ₅
Y					
Yellow copper ore					Chalcopyrite
Z					
Zeolite group					See analcime, chabazite, heulandite, natrolite, stilbite.
Zinc blende					Sphalerite
Zincite	ZnO	Hex	5.68	4 - 4½	80% Zn, orange-yellow streak
Zinc spinel	ZnAl ₂ O ₄				Gahnite
Zinkenite	Pb ₆ Sb ₂₂ S ₄₂	Hex	5.3	3 - 3½	Jamesonite series

Name	Composition	Xal Sys	D	H	Notes
Zinnwaldite	$K(Al,Fe,Li)_3(Si,Al)_4O_{10}(OH)F$	Mon	3	2.5 - 3	About 5% Li_2O
Zircon	$ZrSiO_4$	Tet	4.68	$7\frac{1}{2}$	67.2% ZrO_2
Zoisite	$Ca_2Al_3Si_3O_{12}(OH)$	Orth	3.3	6	Orth var. of clinozoisite

Reproduced from *Field Geologists' Manual*, fifth edition (The Australasian Institute of Mining and Metallurgy: Melbourne).

Sources: Gary, M, McAfee, R Jr and Wolf, C L, 1972. *Glossary of Geology* (American Geological Institute: Washington, DC), reprinted with permission; Hurlburt, C S, 1961. *Dana's Manual of Mineralogy* (Wiley: New York), reprinted with permission of John Wiley & Sons, Inc; Palache, C, Berman, H and Frondel, C, 1944. *Dana's System of Mineralogy*, seventh edition (Wiley: New York); <<http://www.webmineral.com>>.

A more detailed list is available from the IMA Database of Mineral Properties: <<http://rruff.info/ima/>>.