

Framework Silicates	End Member	Abbr.	Formula	Related Minerals
Quartz	<b>quartz</b>	Qtz	SiO <sub>2</sub>	amethyst, chalcedony, agate, chert, jasper, onyx, flint, opal, moganite
Silica polymorphs			SiO <sub>2</sub>	tridymite, cristobalite, coesite, stishovite
Alkali Feldspar	<b>orthoclase</b> <b>albite</b>	Or Ab	K(AlSi <sub>3</sub> O <sub>8</sub> ) Na(AlSi <sub>3</sub> O <sub>8</sub> )	sanidine, orthoclase, microcline, adularia, albite, perthite, anorthoclase
Plagioclase Feldspar	<b>albite</b> <b>anorthite</b>	Ab An	Na(AlSi <sub>3</sub> O <sub>8</sub> ) Ca(Al <sub>2</sub> Si <sub>2</sub> O <sub>8</sub> )	albite, oligoclase, andesine, laboradorite, bytownite, anorthite
Nepheline	<b>nepheline</b> kalsilite	Ne Kls	Na(AlSiO <sub>4</sub> ) K(AlSiO <sub>4</sub> )	
Leucite	leucite	Lct	K(AlSi <sub>2</sub> O <sub>6</sub> )	
Sodalite Group	sodalite nosean	Sdl Nsn	Na <sub>8</sub> (Al <sub>6</sub> Si <sub>6</sub> O <sub>24</sub> )Cl <sub>2</sub> Na <sub>8</sub> (Al <sub>6</sub> Si <sub>6</sub> O <sub>24</sub> )SO <sub>4</sub>	haiyue, cancrinite
Zeolite Group				analcite, natrolite, thompsonite, phillipsite, heulandite, stilbite, etc.

Sheet Silicates				
Muscovite	<b>muscovite</b> <b>paragonite</b> margarite	Ms Pg Mrg	K□Al <sub>2</sub> (AlSi <sub>3</sub> O <sub>10</sub> )(OH) <sub>2</sub> Na□Al <sub>2</sub> (AlSi <sub>3</sub> O <sub>10</sub> )(OH) <sub>2</sub> Ca□Al <sub>2</sub> (Al <sub>2</sub> Si <sub>2</sub> O <sub>10</sub> )(OH) <sub>2</sub>	sericite, phengite
Biotite	<b>phlogopite</b> <b>annite</b> clintonite	Phl Ann Cli	KMg <sub>3</sub> (AlSi <sub>3</sub> O <sub>10</sub> )(OH) <sub>2</sub> KFe <sub>3</sub> (AlSi <sub>3</sub> O <sub>10</sub> )(OH) <sub>2</sub> CaMg <sub>3</sub> (Al <sub>2</sub> Si <sub>2</sub> O <sub>10</sub> )(OH) <sub>2</sub>	eastonite, siderophyllite stilpnomelane xanthophyllite
Talc	<b>talc</b>	Tlc	□Mg <sub>3</sub> (Si <sub>4</sub> O <sub>10</sub> )(OH) <sub>2</sub>	
Pyrophyllite	<b>pyrophyllite</b>	Prl	□□Al <sub>2</sub> (Si <sub>4</sub> O <sub>10</sub> )(OH) <sub>2</sub>	
Serpentine	<b>antigorite</b>	Atg	□Mg <sub>3</sub> (Si <sub>2</sub> O <sub>5</sub> )(OH) <sub>4</sub>	lizardite, chrysotile
Kaolinite	<b>kaolinite</b>	Kln	□□Al <sub>2</sub> (Si <sub>2</sub> O <sub>5</sub> )(OH) <sub>4</sub>	
Other clay minerals	illite montmorillonite vermiculite		2:1 dioctahedral 2:1 dioctahedral 2:1 trioctahedral	smectite
Chlorite		Chl	(Mg,Al,Fe) <sub>6</sub> [(Si,Al) <sub>4</sub> O <sub>10</sub> ](OH) <sub>8</sub>	clinochlore

Chain Silicates	End Member	Abbr.	Formula	Related Minerals
Orthopyroxene (Opx)	<b>enstatite</b>	En	Mg <sub>2</sub> (Si <sub>2</sub> O <sub>6</sub> )	hypersthene, bronzite
	<b>ferrosilite</b>	Fs	Fe <sub>2</sub> (Si <sub>2</sub> O <sub>6</sub> )	
Clinopyroxene (Cpx)  Augite (Aug)	<b>diopside</b>	Di	CaMg(Si <sub>2</sub> O <sub>6</sub> )	omphacite aegirine-augite
	<b>hedenbergite</b>	Hd	CaFe(Si <sub>2</sub> O <sub>6</sub> )	
	<b>jadeite</b>	Jd	NaAl(Si <sub>2</sub> O <sub>6</sub> )	
	acmite	Ac	NaFe <sup>+3</sup> (Si <sub>2</sub> O <sub>6</sub> )	
Pigeonite (Cpx)		Pig	(Mg,Fe) <sub>2</sub> (Si <sub>2</sub> O <sub>6</sub> )	
Pyroxenoids	<b>wollastonite</b>	Wo	Ca <sub>2</sub> (Si <sub>2</sub> O <sub>6</sub> )	rhodonite
Orthoamphibole (Oam)	<b>anthophyllite</b>	Ath	□Mg <sub>7</sub> (Si <sub>8</sub> O <sub>22</sub> )(OH) <sub>2</sub>	hypersthene, bronzite
	gedrite	Ged	Na(Mg,Fe) <sub>6</sub> Al(AlSi <sub>7</sub> O <sub>22</sub> )(OH) <sub>2</sub>	
Clinoamphibole	cummingtonite	Cum	Mg <sub>7</sub> (Si <sub>8</sub> O <sub>22</sub> )(OH) <sub>2</sub>	
	grunerite	Gru	Fe <sub>7</sub> (Si <sub>8</sub> O <sub>22</sub> )(OH) <sub>2</sub>	
Calcic-amphibole  Hornblende (Hbl)	<b>tremolite</b>	Tr	□Ca <sub>2</sub> Mg <sub>5</sub> (Si <sub>8</sub> O <sub>22</sub> )(OH) <sub>2</sub>	
	ferroactinolite	Act	□Ca <sub>2</sub> Fe <sub>5</sub> (Si <sub>8</sub> O <sub>22</sub> )(OH) <sub>2</sub>	
	edenite	Ed	NaCa <sub>2</sub> Mg <sub>5</sub> (AlSi <sub>7</sub> O <sub>22</sub> )(OH) <sub>2</sub>	
	tschermakite	Ts	□Ca <sub>2</sub> Mg <sub>3</sub> Al <sub>2</sub> (Al <sub>2</sub> Si <sub>6</sub> O <sub>22</sub> )(OH) <sub>2</sub>	
Blue Amphiboles	<b>glaucophan</b>	Gln	□Na <sub>2</sub> Mg <sub>3</sub> Al <sub>2</sub> (Si <sub>8</sub> O <sub>22</sub> )(OH) <sub>2</sub>	
	riebeckite	Rbk	□Na <sub>2</sub> Fe <sub>3</sub> Fe <sup>+3</sup> <sub>2</sub> (Si <sub>8</sub> O <sub>22</sub> )(OH) <sub>2</sub>	

Ring Silicates				
Cordierite		Crd	(Mg,Fe) <sub>2</sub> Al <sub>3</sub> (AlSi <sub>5</sub> O <sub>18</sub> )·nH <sub>2</sub> O	
Tourmaline (Tur)	dravite		NaMg <sub>3</sub> Al <sub>6</sub> (Si <sub>6</sub> O <sub>18</sub> )(BO <sub>3</sub> ) <sub>3</sub> (OH) <sub>4</sub>	schorl (Fe,Mn) <sub>3</sub> , elbaite (Li,Al) <sub>3</sub>
Beryl	beryl	Brl	BeAl <sub>2</sub> (Si <sub>6</sub> O <sub>18</sub> )	

Island Silicates				
Olivine	<b>forsterite</b>	Fo	Mg <sub>2</sub> (SiO <sub>4</sub> )	
	<b>fayalite</b>	Fa	Fe <sub>2</sub> (SiO <sub>4</sub> )	
	tephroite	Tf	Mn <sub>2</sub> (SiO <sub>4</sub> )	
Zircon	<b>zircon</b>	Zrn	Zr(SiO <sub>4</sub> )	
Titanite	titanite	Ti	CaTi(SiO <sub>4</sub> )(O,OH,F)	sphene

Garnet	<b>pyrope</b>	Prp	$Mg_3Al_2(Si_3O_{12})$	<b>PyrAlSp</b> ite series
	<b>almandine</b>	Alm	$Fe_3Al_2(Si_3O_{12})$	
	<b>spessartine</b>	Sps	$Mn_3Al_2(Si_3O_{12})$	
	<b>uvarovite</b>	Uvr	$Ca_3Cr_2(Si_3O_{12})$	<b>UGrAnd</b> ite Series
	<b>grossularite</b>	Grs	$Ca_3Al_2(Si_3O_{12})$	
	<b>andradidite</b>	Adr	$Ca_3Fe^{+3}_2(Si_3O_{12})$	
Sillimanite	<b>sillimanite</b>	Sil	$Al_2(SiO_4)O$	mullite
Kyanite	<b>kyanite</b>	Ky	$Al_2(SiO_4)O$	
Andalusite	<b>andalusite</b>	And	$Al_2(SiO_4)O$	
Staurolite		Sta	$(Fe,Mg)_2(Al,Fe^{+3})_9(Si_4O_{16})O_6(O,OH)_2$	
Chloritoid		Ctd	$(Fe,Mg)Al_2(SiO_4)O(OH)_2$	
Lawsonite	lawsonite	Lws	$CaAl_2(Si_2O_7)(OH)_2 \cdot H_2O$	pumpellyite
Zoisite	zoisite	Zo	$Ca_2AlAl_2(Si_2O_7)(SiO_4)O(OH)$	
Epidote	clinozoisite	Czo	$Ca_2AlAl_2(Si_2O_7)(SiO_4)O(OH)$	
	epidote	Epi	$Ca_2Fe^{+3}Al_2(Si_2O_7)(SiO_4)O(OH)$	

Oxides	End Member	Abbr.	Formula	Related Minerals
Periclase	periclase	Per	MgO	
Corundum	<b>corundum</b>	Crn	$Al_2O_3$	ruby, sapphire
Hematite	<b>hematite</b>	Hem	$Fe_2O_3$	
Ilmenite	<b>ilmenite</b>	Ilm	$FeTiO_3$	
Rutile	<b>rutile</b>	Rt	$TiO_2$	
Magnetite	<b>magnetite</b>	Mt	$Fe(Fe^{+3})_2O_4$	
	ulvöspinel	Usp	$Fe(FeTi)O_4$	
Spinel	<b>spinel</b>	Spl	$MgAl_2O_4$	chromite
	hercynite	Hc	$FeAl_2O_4$	

Hydroxides				
Brucite	brucite	Brc	$Mg_3(OH)_6$	
Gibbsite	gibbsite	Gbs	$\square Al_2(OH)_6$	
Goethite	goethite	Got	$Fe^{+3}O(OH)$	lepidocrocite, limonite

<b>Sulfides</b>	<b>End Member</b>	<b>Abbr.</b>	<b>Formula</b>	<b>Related Minerals</b>
Pyrite	<b>pyrite</b>	Py	FeS <sub>2</sub>	
Pyrrhotite	<b>pyrrhotite</b>	Po	Fe <sub>1-x</sub> S	
Chalcopyrite	<b>chalcopyrite</b>	Ccp	CuFeS <sub>2</sub>	
Sphalerite	<b>sphalerite</b>	Sp	ZnS	
Galena	<b>galena</b>	Gn	PbS	

<b>Sulfates</b>				
Barite	barite	Brt	BaSO <sub>4</sub>	
	celestite	Cls	SrSO <sub>4</sub>	
Gypsum	<b>gypsum</b>	Gyp	CaSO <sub>4</sub> ·2H <sub>2</sub> O	
Anhydrite	anhydrite	Anh	CaSO <sub>4</sub>	

<b>Carbonates</b>				
Calcite	<b>calcite</b>	Cc	CaCO <sub>3</sub>	rhodochrosite
	magnesite	Mgs	MgCO <sub>3</sub>	
	siderite	Sid	FeCO <sub>3</sub>	
Aragonite	<b>aragonite</b>	Arg	CaCO <sub>3</sub>	strontianite, witherite
Dolomite	<b>dolomite</b>	Dol	CaMg(CO <sub>3</sub> ) <sub>2</sub>	
	ankerite	Ank	CaFe(CO <sub>3</sub> ) <sub>2</sub>	

<b>Phosphates</b>				
Apatite	apatite	Ap	Ca <sub>5</sub> (PO <sub>4</sub> ) <sub>3</sub> (OH,F,Cl)	
Monazite	monazite	Mnz	(Ca,La,Th)(PO <sub>4</sub> )	

<b>Halides</b>				
Fluorite	<b>fluorite</b>	Fl	CaF <sub>2</sub>	
Halite	<b>halite</b>	HI	NaCl	
	sylvite	Syl	KCl	