Table 5-1 Minerals that can be represented in the ACF diagram.

Very rich in Al	
Pryophyllite	A = 100; $Al_2[(OH)_2/Si_4O_{10}]$
Andalusite, kyanite; sillimanite	A = 100; Al_2SiO_5
Rich in Al and Mg, Fe	
Staurolite	A = 69, F = 31; 4 FeO·9 Al_2O_3·8 SiO_2·H_2O*
Cordierite	A = 50, F = 50; 2 (Mg,Fe)O·2 Al_2O_3·5 SiO_2
Chloritoid	A = 50,F = 50; FeO·Al_2O_3·SiO_2·H_2O. Fe may be replaced by Mg up to about 60 molecular percent, but commonly this replacement is only 5 to about 25%.
Rich in Al and Ca	
Margarite	A = 67, C = 33; $CaAl_2[(OH)]_2/Si_2Al_2O_{10}]$
Laumonite	A = 50, C = 50; $Ca[Al_2Si_4O_{12}]4H_2O$
Lawsonite	A = 50, C = 50; $CaAl_2[(OH)_2/Si_2O_7]H_2O$
Anorthite	A = 50, C= 50; $CaAl_2Si_2O_8$, component in plagioclase.
Scapolite	A = 43, C = 57 for the end member mejonite $Ca_8(Cl_2,SO_4,CO_3,(OH)_2)_2(Al_2Si_2O_8)_6$; the other end member is mariolite $Na_8(Cl_2,SO_4,CO_3,(OH)_2)(AlSi_3O_8)_6$
Epidote group	A = 43, C = 57; 4 CaO·3 $(Al,Fe^{3+})_2O_3$·6 SiO_2·H_2O; up to one-third of the Al may be replaced by trivalent Fe. The orthorhombic *orthozoisite* contains none or very little Fe; among the monoclinic members of the epidote group, *clinozoisite* with positive optical sign and less Fe is distinguished from *epidote* proper (formerly pistacite) with negative optical sign. This latter has one-sixth to one-third of the Al replaced by Fe.
Pumpellyite	A = 34, C = 53, F = 13; similar to epidote, but contains Mg and Fe^{2+}. Approximate composition is 8 CaO·2 (Mg,Fe,Mn)O·5 $(Al,Fe)_2O_3$·12 SiO_2·7 H_2O
Prehnite	A = 33, C = 67; $Ca_2[(OH)_2/Al_2Si_3O_{10}]$
Rich in Ca	
Grossularite—andradite	C =75, A = 25; $Ca_3Al_2(SiO_4)_3$—$Ca_3Fe_2(SiO_4)_3$ (note that A comprises Fe^{3+} substituting for Al).
Idocrase	C = 72, A = 14, F = 14; 10 CaO·2MgO·2 Al_2O_3·9 SiO_2·2 H_2O
Wollastonite	C = 100; $CaSiO_3$
Calcite	C = 100; $CaCO_3$
Rich in Mg and Fe^{2+}	
Diopside—hedenbergite	F = 50, C = 50; $CaMgSi_2O_6$—$CaFeSi_2O_6$
Dolomite	F = 50, C = 50; $CaMg(CO_3)_2$
Tremolite	F = 71.5, C = 28.5; $Ca_2(Mg,Fe)_5[(OH)_2/Si_8O_{22}]$. Only up to 20 mole% of MgO is replaced by FeO.
Actinolite	Similar to tremolite but containing more Fe, and a little Mg + Si is replaced by 2 Al.
Hornblende	Belongs to the amphibole group as tremolite and actinolite, but contains more Al in variable amounts. Compositions are shown as elongated field in Figure 5-5, extending from tremolite.
Cummingtonite-grunerite	F = 100; $(Mg,Fe)_7[(OH)_2/Si_8O_{22}]$; in grunerite more than 70 atom% of Mg is replaced by Fe^{2+}
Anthophyllite-gedrite	F = 100; similar in composition as above, but orthorhombic instead of monoclinic†
Enstatite-hypersthene	F = 100; $Mg_2Si_2O_6$—$(Mg,Fe)_2Si_2O_6$
Talc	F = 100; $Mg_3[(OH)_2/Si_4O_{10}]$
Almandine	F = 75, A = 25; $Fe_3Al_2(SiO_4)_3$
Spessartite	F = 75, A = 25; $Mn_3Al_2(SiO_4)_3$
Pyrope	F = 75, A = 25; $Mg_3Al_2(SiO_4)_3$
Chlorite	Variable composition: F = 90-65, A = 10-35; *e.g.*, $Mg_5(Mg,Al)[(OH)_8/(Al,Si)Si_3O_{10}]$ up to $(Mg,Fe)_4Al_2[(OH)_8/Al_2Si_2O_{10}]$
Minerals containing alkali that cannot be represented in an ACF diagram:	
Glaukophane, crossite	Na-amphibole $Na_2(Mg,Fe)_3(Al,Fe)_2[(OH)_2/Si_8O_{22}]$
Jadeite, jadeitic pyroxene	Pyroxene containing $NaAlSi_2O_6$ as component
Stilpnomelane	$K_{<1}(Mg,Fe,Al)_{<3}[(OH)_2/Si_4O_{10}]$·$xH_2O$; contains very little Al and K.
Muscovite	$KAl_2[(OH)_2/Si_3AlO_{10}]$
Phengite	Similar to muscovite but has more Si + Mg and less Al
Paragonite	$NaAl_2[(OH)_2/Si_3AlO_{10}]$; also as component in solid solution with muscovite.
Biotite	$K(Mg,Fe,Mn)_3[(OH)_2/Si_3AlO_{10}]$
Phlogopite	$KMg_3[(OH)_2/Si_3AlO_{10}]$

*The composition of staurolite, particularly the content of OH, is not exactly known; some $(OH)_4$ has been suggested to substitute for SiO_4. In staurolite FeO may be replaced by MgO up to about 20 to 30 molecular percent.

†Robinson *et al.* (1971) give the following compositions for the two end members

$$R^{2+}_2R^{2+}_5[(OH)_2/Si_8O_{22}] \text{ and } Na_{0.5}R^{2+}_2(R^{2+}_{3.5}R^{3+}_{1.5})[(OH)_2/Si_6Al_2O_{22}]$$

respectively, where R^{2+} = Mg, Fe^{2+}, Mn^{2+}, Ca, and R^{3+} = Al, Fe^{3+}, $(Ti^{4+}_{0.5} + Fe^{2+}_{0.5})$. Except at high metamorphic temperatures, members with intermediate Al and Na content exsolve to an anthophyllite-gedrite intergrowth which often can be detected by X-ray diffraction only.