CATION SITES IN SILICATE MINERALS

SITE	CATION	C.N.	Radius (Å)	R_x/R_o
Z	Si^{4+}	4	.42	.300
	Al^{3+}	4	.51	.364
Y	Al^{3+}	6	.51	.364
	Fe^{3+}	6	.64	.457
	Mg^{2+}	6	.66	.471
	Ti^{4+}	6	.68	.486
	Fe^{2+}	6	.74	.529
	Mn^{2+}	6	.80	.571
X	Na^{2+}	8	.97	.693
	Ca^{2+}	8	.99	.707
X	K^{+}	8-12	1.33	.95
	Ba^{2+}	8-12	1.34	.957
	Rb^{+}	8-12	1.47	1.05

C.N. - Coordination Number

R_x/R_o is the ratio of the radius of the cation to the radius of oxygen.

General Formula: $X_mY_n(Z_pO_q)W_r$ where

X - 8-12 fold site
Y - octahedral site
Z - tetrahedral site
W - (OH)

Ionic substitution occurs readily within a site, but rarely between sites.