

## Ceramic Materials for Glaze Calc

Material Raw formula	Mol. Wt.	Fired Formula	Eq. Wt.
<b>alumina</b> oxide $Al_2O_3$	102	$Al_2O_3$	102
<b>alumina</b> hydrate $Al_2(OH)_6$	156	$Al_2O_3$	156
<b>barium</b> $BaCO_3$ carbonate	197	$BaO$	197
<b>bentonite</b> $Al_2O_3 \cdot 4SiO_2 \cdot H_2O$	360.4	$Al_2O_3 \cdot 4SiO_2$	360.4
<b>bone ash</b> $Ca_3(PO_4)_2$	310	$CaO$	103
<b>borax</b> (soluble) $Na_2O \cdot 2B_2O_3 \cdot 10H_2O$	382	$Na_2O \cdot 2B_2O_3$	382
<b>boric acid</b> (soluble) $B_2O_3 \cdot 3H_2O$	124	$B_2O_3$	124
<b>cadmium</b> carbonate $CdCO_3$	172.4	$CdO$	
<b>calcium</b> carbonate $CaCO_3$	100	$CaO$	100
<b>china clay</b> (kaolin) $Al_2O_3 \cdot 2SiO_2 \cdot 2H_2O$	258	$Al_2O_3 \cdot 2SiO_2$	258
<b>clay</b> (kaolin) $Al_2O_3 \cdot 2SiO_2 \cdot 2H_2O$ ideal formula	258	$Al_2O_3 \cdot 2SiO_2$	258
<b>cornwall stone</b> .304 $CaO$ • .340 $Na_2O$ • .356 $K_2O$ • 1.075 $Al_2O_3$ • 8.10 $SiO_2$	667	same	667
<b>cryolite</b> $Na_3 \cdot AlF_6$	210	$3Na_2O \cdot Al_2O_3$	420
<b>dolomite</b> $CaCO_3 \cdot MgCO_3$	184	$CaO \cdot MgO$	184
<b>Epsom salts</b> magnesium sulfate $MgSO_4 \cdot 7H_2O$			
<b>feldspar</b> $KNaO \cdot Al_2O_3 \cdot 6SiO_2$ Idealized formula	556 K 524 Na	same	556 K 524 Na
<b>flint</b> (silica) $SiO_2$	60	$SiO_2$	60
<b>fluorspar</b> $CaF_2$	78	$CaO$	78

<b>frit</b> various formulas. See mfg info			
<b>gerstley borate</b> .177 $Na_2O$ • .823 $CaO$ • .886 $B_2O_3$ • .658 $SiO_2$	213.3	same	213.3
<b>kaolin</b> $Al_2O_3 \cdot 2SiO_2 \cdot 2H_2O$	258	$Al_2O_3 \cdot 2SiO_2$	258
<b>lead</b> carbonate $2PbCO_3 \cdot Pb(OH)_2$	775	$PbO$	258
Monosilicate $3PbO \cdot 2SiO_2$	789	same	263
oxide litharge	223	$PbO$	223
oxide red $Pb_3O_4$	684	$PbO$	228
<b>lepidolite</b> .55 $Li_2O$ • .39 $K_2O$ • .06 $Na_2O$ • $Al_2O_3$ • 3.74 $SiO_2$	383	same	383
<b>lithium carbonate</b> $Li_2CO_3$	74	$Li_2O$	74
<b>Macaloid</b> $Li_2O \cdot MgO \cdot SiO_2$			
<b>magnesium</b> carbonate $MgCO_3$	84	$MgO$	84
<b>magnesium</b> sulfate $MgSO_4 \cdot 7H_2O$	246.5		
<b>nepheline syenite</b> .75 $Na_2O$ • .25 $K_2O$ • 1.11 $Al_2O_3$ • 4.65 $SiO_2$	477	same	477
<b>pearl ash</b> $K_2CO_3$	138	$K_2O$	138
<b>petalite</b> $Li_2O \cdot Al_2O_3 \cdot 8SiO_2$	612	same	612
<b>plastic vitrox</b> .045 $CaO$ • .058 $MgO$ • .054 $Na_2O$ • .842 $K_2O$ • 1.693 $Al_2O_3$ • 14.634 $SiO_2$	1139	same	1139
<b>potassium carbonate</b> $K_2CO_3$	138	$K_2O$	138
<b>pyrophyllite</b> $Al_2O_3 \cdot 4SiO_2 \cdot H_2O$	360	$Al_2O_3 \cdot 4SiO_2$	360
<b>quartz</b> see silica			
<b>salt</b> $NaCl$	58.4	$Na_2O$	

<b>Material Raw formula</b>	<b>Mol. Wt.</b>	<b>Fired Formula</b>	<b>Eq. Wt.</b>
<b>silica</b> SiO <sub>2</sub>	60	SiO <sub>2</sub>	60
<b>silicon carbide</b> SiC	40.07		
<b>sodium silicate</b> Na <sub>2</sub> O•SiO <sub>2</sub>			
<b>soda ash</b> sodium carbonate Na <sub>2</sub> CO <sub>3</sub>	106	Na <sub>2</sub> O	106
<b>sodium chloride</b> salt NaCl	58.5	Na <sub>2</sub> O	117
<b>spodumene</b> Li <sub>2</sub> O•Al <sub>2</sub> O <sub>3</sub> •4SiO <sub>2</sub>	372	same	3725
<b>strontium</b> carbonate SrCO <sub>3</sub>	148	SrO	148
<b>talc</b> 3MgO•4SiO <sub>2</sub> •H <sub>2</sub> O	378	MgO• 1.3SiO <sub>2</sub>	126
<b>tin</b> oxide SnO <sub>2</sub>	151	SnO <sub>2</sub>	151
<b>titanium</b> dioxide TiO <sub>2</sub>	80	TiO <sub>2</sub>	80
<b>whiting</b> CaCO <sub>3</sub>	100	CaO	100
<b>wollastonite</b> CaO•SiO <sub>2</sub>	116	same	116
<b>zinc</b> oxide ZnO	81	ZnO	81
<b>zirconium</b> oxide ZrO <sub>2</sub>	123	ZrO	123