

## 12 Major Oxides

Our universe comes  
from wonderful things –  
over 100 elements  
from which it all springs.

The atom of course  
is the smallest part  
of an element they say  
so that's where we'll start.

When atoms combine,  
a molecule they make.  
How many of each?  
What will it take?

When atoms of elements  
+ oxygen combine,  
it's an oxide molecule  
that you will find.

One atom of silicon  
always likes to find  
two atoms of oxygen  
and so they combine.

One silicon  
plus two oxygen  
makes S-i-O-2 (SiO<sub>2</sub>)  
That's where glazes begin.

Becoming an oxide  
can change its name,  
silicon becomes silica . . .  
they aren't quite the same.

Alumina is  
AL-2-O-3 (AL<sub>2</sub>O<sub>3</sub>)  
an oxide molecule  
as you can see.

12 major oxides  
are what you will need.  
Learn where to find them  
and you can succeed.

**Silica** and **alumina**  
are the first two.  
Every glaze will need some  
as part of the brew.

For alkali flux oxides  
we do have three –  
**soda, lithia** and **potash**  
as you will see.

Alkaline earth flux oxides  
are never a bore,  
of this type  
we do have four.

**Calcia, magnesia**  
and **strontia** too,  
don't forget **baria**  
with its amazing blue.

Additional flux oxides  
are for low or mid fire.  
Try **lead, zinc** or **boron**  
if that's your desire.

Most of the elements  
that make up a glaze  
turn into oxides  
in the firing phase.

Bonding oxygen only  
with an element  
forms an "oxide."  
It is quite an event!

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### Learn these 12 oxides:

<b>Glass Former:</b>	SiO <sub>2</sub>	Silica
<b>Stabilizer:</b>	Al <sub>2</sub> O <sub>3</sub>	Alumina
<b>Alkali Flux::</b>	Li <sub>2</sub> O	Lithia
	Na <sub>2</sub> O	Soda
	K <sub>2</sub> O	Potash
<b>Alkaline Earth Flux:</b>	CaO	Calcia
	MgO	Magnesia
	SrO	Strontia
	BaO	Baria
<b>Additional Flux:</b>	PbO	Lead Oxide
	ZnO	Zinc Oxide
	B <sub>2</sub> O <sub>3</sub>	Boric Oxide