



## Alumina Silicate Grade “A” Lava Material Specifications

We have tons of the finest quality Lava in stock and ready to deliver. Grade "A" Lava is a natural ceramic material. In chemical terms it is a hydrous alumina silicate. Lava is a machinable ceramic material that is easy to machine in an unfired state and can be used unfired in applications up to 1000°F. After simple firing, parts are as hard as carbide and usable up to 2100°F.

Physical Properties	Units	Test	Unfired Lava	Fired Lava
Chemical Formula	-	-	Al <sub>2</sub> (Si <sub>4</sub> O <sub>10</sub> )(OH <sub>2</sub> )	Al <sub>2</sub> (Si <sub>4</sub> O <sub>10</sub> )(OH <sub>2</sub> )
Density	g/cc	C 20-97	2.60	2.30
Color	-	-	gray	pink
Water Absorption	%	C 20-97	2.5	3
Gas Permeability	atms-cc/sec	-	porous	porous
Hardness	Moh’s Scale	-	2	6

Mechanical Properties	Units	Test	Unfired Lava	Fired Lava
Compressive Strength	psi	-	12,000	25,000
Tensile Strength	psi	-	1,000	3,000
Flexural Strength	psi	F 417-87	4,000	10,000

Thermal Properties	Units	Test	Unfired Lava	Fired Lava
Max Use Temperature (Non-Loading)	°F	-	1200	2000
Max Use Temperature (Non-Loading)	°C	-	650	1100
Thermal Conductivity 25°C	W/m-K	C408	-	2
Coefficient of Linear Thermal Expansion	µm/m-°C (~25°C though +/- 1000°C)	-	-	3.6

Electrical Properties	Units	Test	Unfired Lava	Fired Lava
Dielectric Constant	@1MHz	D150-98	5.8	5.3
Dielectric Strength (.125” Thick)	V/mil	D149-97A	80	100

\*\*The information provided in this table is a compilation of publicly available data. This information is provided for comparison purposes only, and is not intended to be warrantable. Further, *Technical Products, Inc.* disclaims any and all liability from errors, in accuracies, or omissions.

Lava is a natural mineral that is mined it may have grain, fractures, color, or other natural characteristics out of TPI’s control. Thermal processing may also cause in inconsistencies as this material grows. TPI tries to control sizes and fractures but we claim no responsibility for the fractures after firing. Normal as-fired tolerances is 2%.