

## Alumina 98

### Description:

Alumina is one of the most widely used materials for applications requiring high performance in structural, chemical, electrical, wear and erosion resistant applications. High purity alumina is also capable of very fine surface finishes suitable for valves, pump components and seals.

Composition:			
Al <sub>2</sub> O <sub>3</sub> :	98 %	Glassy Phase:	Balance
Binders:	Proprietary	Additives:	Proprietary

Specifications:		Units
Colour	White	
Compressive (Crushing) Strength	2240	MPa
Density	3.78	g/cm <sup>3</sup>
Hardness	80	R45N
Dielectric Constant (Relative Permittivity)	9.5	N/A
Dielectric Strength (Breakdown Potential)	8.3	kV/mm
Elastic (Young's, Tensile) Modulus	344	GPa
Electrical Resistivity Order of Magnitude	1x10 <sup>14</sup>	Ω-m
Flexural Strength	393	MPa
Fracture Toughness	3.5	MPa
Poisson's Ratio	0.23	N/A
Specific Heat Capacity	880	J/kg-K
Tensile Strength Ultimate (UTS)	221	MPa
Thermal Conductivity	29	W/m-K
Thermal Expansion	8.3	µm/m-K

### Features:

- Low porosity, various surface finishes
- Excellent resistance to chemicals.
- High electrical insulation
- High mechanical strength
- High volume resistivity

### Applications:

- Crucibles
- Pump parts and seals
- Nozzles and igniters
- Feed-throughs and standoffs
- Insulators for laser applications

### Production Capabilities:

- Isostatic and dry pressing, injection moulding and green machining
- Various shapes and sizes as per requirement
- Prototype, batch and volume production

These values represent typical properties of standard materials.  
Values should be used only for comparison and should not be used as a warranty.