

## ALUMINA 98% (AL98)

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Alumina is one of the most widely used materials for applications requiring high performance in structural, chemical, electrical, wear and erosion resistant applications. AL98 can offer a cost effective solution for applications demanding higher strengths & wear/corrosion resistance.



## PRIME FEATURES

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- Superior mechanical wear resistance
- High mechanical strengths
- Maintains surface integrity in corrosive environments
- High electrical resistance
- Able to achieve fine surface finish
- Excellent chemical resistance to acids, bases & organics

## TYPICAL APPLICATIONS

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- Wear-resistant components
- Wear-resistant nozzles
- Wire & thread guides
- Cyclonic separators
- Ballistic armor plates
- Agrospace igniter/exciter insulators
- Industrial igniter insulators
- Spark plug insulator
- Piston & sleeve pump sets
- High temperature insulators
- Washers, seals, thrust plates
- Metalized assemblies
- Electrical connectors
- Electrical feedthroughs
- Electrical standoffs

**(Please see reverse for specifications.)**

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# Superior Technical Ceramics

PROVIDING ADVANCED CERAMIC SOLUTIONS WORLDWIDE SINCE 1898

## ALUMINA 98% SPECIFICATIONS

Property	Units	Test	Value	
Density	gm/cc	ASTM-C20	3.78	
Crystal Size	Microns	Thin-Section	7	
Water Absorption	%	ASTM-373	0	
Gas Permeability	atm cc/sec		0	
Flexural Strength (MOR) 20 Degrees C	MPa (Kpsi)	ASTM-F417	393 (57)	
Elastic Modulus, 20 Degrees C	GPa(psi x 10 <sup>6</sup> )	ASTM-C623	344 (50)	
Poisson's Ratio, 20 Degrees C	--	ASTM-C623	0.23	
Compressive Strength	MPa (Kpsi)	ASTM-C773	2240 (325)	
Hardness	GPa	VICKERS	13.73	
	Kg/mm <sup>2</sup>	Rockwell 45 N	82	
Tensile Strength, 25 degrees C	MPa (Kpsi)	ACMA TEST #4	221 (32)	
Fracture Toughness K (Ic)	MPa $\sqrt{m}$	NOTCHED BEAM	3.5 - 4.0	
Thermal Conductivity, 20 degrees C	W/m K	ASTM-C408	29	
Coefficient of Thermal Expansion, 25-1000 Degrees C	1 x 10 <sup>-6</sup> /degrees C	ASTM-C372	8.3	
Specific Heat, 100 Degrees C	J/kg*K	ASTM-E1269	880	
Thermal Shock Resistance, $\Delta T$	degrees C		200	
Maximum Use Temperature	degrees C	NO LOAD COND.	1700	
Dielectric Strength	acV/mil	ASTM-D149	260	
Dielectric Constant, 1MHz	25 degrees C	ASTM-D150	9.5	
Dielectric Loss (tan delta) 1MHz	25 degrees C	ASTM-D150	0.0006	
Volume Resistivity	25 degrees C	ohm-cm	ASTM-D257	>10 <sup>14</sup>
	300 degrees C	ohm-cm	ASTM-D257	8x10 <sup>11</sup>
	700 degrees C	ohm-cm	ASTM-D257	9x10 <sup>8</sup>

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## CONTACT US

We look forward to working with you to provide a ceramic material solution for your application. You'll find that our nimble service culture, cross-spectrum in-house quality controls and superior engineering insight will make us an ideal partner for your next ceramic material project.

### Superior Technical Ceramics

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Note: The information in this data sheet is for design guidance only. Forming methods and specific geometry will affect exact values.