



Superior Technical Ceramics

PROVIDING ADVANCED CERAMIC SOLUTIONS WORLDWIDE SINCE 1898

ALUMINA 98% (AL98)

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

- 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

- 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.)

Superior Technical Ceramics products and services are subject to the Company's standard terms and conditions, available on request or at ceramics.net. For more information contact an authorized Superior Technical Ceramics representative. Unless noted otherwise, trademarks and service marks herein are the property of Superior Technical Ceramics and may be registered in the United States and/or other countries. Superior Technical Ceramics products named herein may be protected by one or more U.S. and/or foreign patents. For more information, contact sales@ceramics.net. Specifications are subject to change without notice. Superior Technical Ceramics sells its products and services in accordance with the terms and conditions set forth in the applicable contract between Superior Technical Ceramics and the client.



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 ⁶)	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 ²	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 ⁻⁶ /degrees C	ASTM-C372	8.3	
Specific Heat, 100 Degrees C	J/kg*K	ASTM-E1269	880	
Thermal Shock Resistance, ΔT	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 ¹⁴
	300 degrees C	ohm-cm	ASTM-D257	8x10 ¹¹
	700 degrees C	ohm-cm	ASTM-D257	9x10 ⁸

Form Revised: 7/25/2013

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

600 Industrial Park Rd.
St. Albans, VT 05478
www.ceramics.net

Telephone (802) 527-7726
Fax (802) 527-1181
Email sales@ceramics.net



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