



Technical Products, Inc.

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High Purity (Al₂O₃) Alumina 96% Material Specifications

Alumina Oxide (Al₂O₃) is a readily available material with reasonable processing cost, possessing excellent mechanical, electrical, and wear properties. Our fabricated Alumina is used in a wide range of applications not limited to aerospace, automotive, medical and military.

Technical Products processes include cold isostatic pressing of green billets, pre-fired machining, sintering, and post sintered grinding operations.

Physical Properties	Units	Al ₂ O ₃ -96%
Bulk Density	g/cm ³	3.72
Color	-	white
Water Absorption	%	0
Hardness (Rockwell 45 N)	-	78
Grain Size	Microns	6

Mechanical Properties	Units	Al ₂ O ₃ -96%
Compressive Strength	MPa	2100
Modulus of Elasticity	GPa / psi • 10 ⁶	303 / 44
Flexural Strength	MPa /psi • 10 ³	358 / 52
Poisson's Ratio	-	0.21
Fracture Toughness	MPa m ^{1/2}	4 – 5
Gas Permeation	%	0

Thermal Properties	Units	Al ₂ O ₃ -96%
Max. Use Temperature (no load)	°C / °F	1600 / 2912
Thermal Conductivity	W/mK	24.7
Thermal Expansion 20°C – 1000°C	10 ⁻⁶ /°C	8.2
Specific Heat	J/kg*K	880

Electrical Properties	Units	Al ₂ O ₃ -96%
Dielectric Constant	-	9
Dielectric Strength	ac V/mils	210

**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.