Material Datasheet

Alumina (Al_2O_3) – 96% CeramAlox™

Material webpage

Overview

CeramAlox 96 is a regular grade Alumina (Aluminum Oxide) and one of the workhorses of the technical ceramics industry. Due to the lower sintering temperature, the 96% Alumina material provides a balanced "cost to performance" ratio.

Primary Advantages

- Cost to Performance Ratio
- Electrical Insulation
- Wear & Abrasion Resistance
- High Operating Temperature
- Compressive Strength

Applications

- Electronic Components
- Laser Tubes
- Mechanical Seals
- High Voltage Insulators
- Wear Components
- Roller & Ball Bearings
- Precision Shafts & Axles

	Properties	Units	CeramAlox 96
Mechanical	Compressive Strength	MPa	2000
	Density	g/cm^3	3.75
	Flexural Strength @ 25°C	MPa	200-300
	Fracture Toughness K_{Ic}	$MPa \cdot m^{1/2}$	4.5
	Hardness	GPa	12
	Young's Modulus	GPa	300
	Poisson's Ratio	-	0.23
Thermal	Thermal Conductivity	W/mK	25
	CTE @ 25°C – 400°C	$10^{-6}/K$	6.3
	CTE @ 25°C – 700°C	$10^{-6}/K$	7.0
	Thermal Shock	°C	Good
	Maximum Temperature (Air)	°C	1600
	Maximum Temperature (Inert)	°C	1600
Electrical	Dielectric Constant @ 1 MHz	-	9.8
	Dielectric Constant @ 10 MHz	-	9.6
	Dielectric Strength @ 25°C	kV/mm	9.0
	Volume Resistivity @ 25°C	ohm-cm	$>10^{14}$

Disclaimer: The values presented are mean and typical of those resulted from test samples. They are provided as an indication only to serve as guidance in the design of ceramic components and are not guaranteed in any way. The actual values can vary according to the shape and size of the envisioned component.

PRECISION CERAMICS UK
uk@precision-ceramics.com
+44 121 687 5858

PRECISION CERAMICS USA
info@precision-ceramics.com
+1 727 388 5060

PRECISION CERAMICS EU
eu@precision-ceramics.com
+353 51 550 480