

BASIC PROPERTIES

- Refractoriness up to 1700°C
- High mechanical strength
- High electrical resistivity
- Resist to chemical attacks e.g. hydrogen and other reduced gases
- Very hard
- Abrasion-resistant
- Can be milled with great precision
- Can be polished
- Stable at high temperatures
- No open porosity
- Excellent electrical properties
- High corrosion resistance
- Chemically inert
- Suitable for high vacuum

APPLICATIONS

Mechanical components
Pistons, pump stages
Mechanical seals
Sealing bushes
Faucet keys and seats
Electrical insulator
Pyrometry
Laboratory items, crucibles
Vacuum items
Welding nozzles

CHEMICAL COMPOSITION

Alumina 99,7%
Silicon : 0,05%
Magnesia : 0,03 %
Sodium Oxide : 0,15%
Iron Oxide : 0,02%
Calcium Oxide : 0,03%
Titanium Oxide : <0,01%
Boric Oxide : <0,02%

MATERIAL	C799 according to DIN VDE 0335	ALUMINA 99,7%
Chemical Formula		Al ₂ O ₃
Aspect / color		
Porosity		Impervious
Mechanical		Measuring unit
Poisson's ratio	-	
Hardness Mohs	Mohs	
Hardness Vickers		1800
Young modulus	GPa	310
Bending strength	MPa	250
Crushing strength at 20°	MPa	1800
Tenacity	MPa.m^{1/2}	4,6
Max. use temperature	°c	1850
Max. use temperature in air	°c	1750
Opened porosity	%	0
Absolute density	g/cm³	3,9
Density	g/cm³	3,8
Melting point	°c	2050
Electrical		
Electrical resistivity at 20°	Ohm, m	10¹⁴
Electrical resistivity at 600°c	Ohm, m	10⁸
Loss tangent for 1 Ghz	Hz	2,5 x 10⁻⁴
Loss tangent for 1 Mhz	Hz	6 x 10⁻³
Thermal		
Thermal conductivity at 1000°c	W/m. °K	9,1
Thermal conductivity at 20°c	W/m. °K	29
Thermal conductivity at 500°c	W/m. °K	12,1
Thermal choc resistance	°c	medium
Linear expansion	x 10⁻⁶	8,6

*These values are for informational purposes only and do not bind company's responsibility.