INTERNATIONAL Syalons

ADVANCED ALUMINA CERAMICS

Aluminon 999

Alumina (or aluminium oxide, Al_2O_3) is the most widely used advanced ceramic in the world. It combines good hardness and corrosion resistance with reasonable strength and can be used in applications up to 1700°C.

Alumina is available in a range of purities. The high purity ceramics offered by **International Syalons** are especially suitable for wear and corrosion resistant applications. In addition they offer excellent electrical properties and possess good thermal stability.

Aluminon 999 is a high purity advanced ceramic with an alumina content of 99.9%. It is a very high purity material with excellent mechanical, thermal and corrosion resistant properties.

The table below lists typical mechanical, thermal and electrical property data for **Aluminon 999**.

Property	Value	Units
Alumina Content	99.9	%
Density	3.95	g/cc
Porosity	0	%
3 point Modulus of Rupture 20°C (Specimen 3 x 3 x 50, span 19.05mm)	500	MPa
3 point Modulus of Rupture 1000°C	350	MPa
Weibull Modulus	15	–
Compressive Strength	2500	MPa
Young's Modulus of Elasticity	400	GPa
Poisson's Ratio	0.22	–
Hardness (HRA)	92	–
Hardness (Vickers Hv_{50})	17.65 (1800)	GPa (Kg/mm^2)
Fracture Toughness K^1C	4.5	$MPam^{½}$
Thermal Expansion Coefficient (0-1200°C)	8.5×10^{-6}	K^{-1}
Thermal Conductivity	30.0	W/(mK)
Thermal Shock Resistance	220	ΔT°C quenched in water
Maximum Use Temperature	1700	°C
Electrical Resistivity	10^{15}	Ohm cm

Typical physical property data obtained under test conditions. All properties have been measured by independent testing authorities. The values given only apply to the test bodies on which they were determined, and therefore can only be recommended values.

Technical Support

The successful integration of ceramics into industrial and engineering systems requires close collaboration between you, the end-user, and us, the material suppliers. Our Technical Specialists are available to discuss your requirements in detail and assist in exploiting the significant advantages which **Aluminon 999** has to offer.

Certificate No. 930359

International Syalons (Newcastle) Limited
Stephenson Street, Willington Quay
Wallsend, Tyne & Wear NE28 6TT

Tel: +44(0)191 2951010
Fax: +44(0)191 2633847
Email: enquiries@syalons.com

www.syalons.com