



Syalon 110

Syalon 110 is a composite grade of the Si-Al-O-N family of ceramics, which is processed under carefully controlled conditions to give a material with some unique properties.

Syalon 110 was originally developed as a break ring for the horizontal continuous casting of steel. As such, its properties include improved **corrosion resistance to steel** compared to other Syalons, outstanding thermal shock resistance and usable up to temperatures in excess of 1450°C.



The table below lists typical mechanical, thermal and electrical property data for Syalon 110.

Property	Value	Units
3 point RT Modulus of Rupture (Specimen 3 x 3 x 50, span 19.05mm)	500	MPa
Weibull Modulus	10	–
RT Unit Tensile Strength	250	MPa
RT Young's Modulus of Elasticity	139	GPa
RT Hardness (HRA)	88	–
RT Hardness (Vickers Hv _{0.3})	1200	Kg/mm ²
Fracture Toughness K ¹ C	3.5	MPam ^{1/2}
Poisson's Ratio	0.19	–
Density	2.65	g/cc
Porosity	< 10	%
Thermal Expansion Coefficient (0-1200°C)	3.04×10 ⁻⁶	K ⁻¹
RT Thermal Conductivity	27.0	W/(mK)
Thermal Shock Resistance	800	ΔT°C quenched in water
Electrical Resistivity	10 ¹⁰	Ohm m

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.

Applications

Syalon 110 is typically used in specialist applications where extreme high temperature durability, thermal shock resistance and corrosion resistance are required. These include **thermocouple protection sheaths** in ferrous and non-ferrous molten metal applications and as a **break ring for horizontal continuous casting of steel**.

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 **Syalon 110** has to offer.

