



INTERNATIONAL  
**Syalons**

**HIGH PERFORMANCE  
ADVANCED CERAMICS**

## Syalon 201

**Syalon 201** is a specially formulated grade based on the  $\beta$ -SiAlON phase found in Syalon 101 but with a crystalline intergranular phase of yttrium aluminium garnet (YAG). This enables Syalon 201 to exhibit significant retention of strength at high temperatures up to 1350°C.

**Syalon 201** is used in applications such as molten metal handling where the use of Syalon 101 is limited due to its reduction in strength above about 1000°C.



The table below lists typical mechanical, thermal and electrical property data for Syalon 201.

Property	Value	Units
3 point RT Modulus of Rupture (Specimen 3 x 3 x 50, span 19.05mm)	825	MPa
3 point Modulus of Rupture at 1000°C	750	MPa
3 point Modulus of Rupture at 1350°C	600	MPa
Weibull Modulus	10	–
RT Unit Tensile Strength	350	MPa
RT Young's Modulus of Elasticity	290	GPa
RT Hardness (HRA)	92.7	–
RT Hardness (Vickers Hv <sub>0.3</sub> )	1600	Kg/mm <sup>2</sup>
Fracture Toughness K <sup>1</sup> C	4.5	MPam <sup>1/2</sup>
Poisson's Ratio	0.19	–
Density	3.24	g/cc
Porosity	0	%
Thermal Expansion Coefficient (0-1200°C)	3×10 <sup>-6</sup>	K <sup>-1</sup>
RT Thermal Conductivity	21.0	W/(mK)
Thermal Shock Resistance	600	ΔT°C quenched in water
Electrical Resistivity	10 <sup>10</sup>	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 201** is typically used in specialist applications where strength retention at high temperatures is required. These include thermocouple protection sheaths and crucibles in non-ferrous molten metal applications. The material is also excellent in hot wear applications.

### 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 201** has to offer.



**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](mailto:enquiries@syalons.com)

[www.syalons.com](http://www.syalons.com)