



PYROTEK SIALON B100 CERAMICS

ALUMINIUM AND HOT METAL PERFORMANCE PRODUCTS

The Pyrotek Sialon B100 ceramic product line consists of a high performance series of products tailored to the aluminium and hot metal industries. This product line includes riser tubes for low-pressure or counter-pressure die casting and thermocouple protection tubes for temperature management.

Pyrotek Sialon B100 ceramic products are characterized by high strength at room and operating temperatures, high corrosion and abrasion resistance and effective thermal shock resistance. The items are also non-wetting to aluminium and its alloys and have a longer product life than cast iron, castable and other ceramic products. This results in fewer changeovers and less manufacturing downtime.

COMPOSITION

Material	Approximate Weight
Si ₃ N ₄ (includes Al ₂ O ₃ and Y ₂ O ₃)	>99%

BENEFITS

- Non-wetting to aluminium and aluminium alloys
- High hardness and fracture toughness ratings
- Excellent abrasion resistance
- Low thermal expansion
- Good thermal conductivity and chemical resistance

APPLICATIONS

Riser Tubes

- Low-pressure or counter-pressure die casting, either in single or dual stalk configurations

Thermocouple Protection Tubes

- Holding furnace dip wells, troughs and tabletops
- Bail-out crucibles
- Gravity casting furnaces
- Crucible holding furnaces
- Low-pressure die casting
- Degassing crucibles



AVAILABILITY

A range of thermocouple protection tube and riser tube sizes are available. Please contact your Pyrotek sales engineer for further information.

PHYSICAL PROPERTIES

Property	Value
Density – g/cm ³ (lb/ft ³)	3.18 (198.52)
Hardness – GPa (psi)	13.5 (0.0019)
Modulus of Rupture – MPa at 25°C (psi at 77°F)	500 (72,519)
Young's Modulus – GPa (psi)	270 (0.039)
Fracture Toughness – MPa√m (psi/in)	6.5 (5915.33)
Coefficient of Thermal Expansion – 10 ⁻⁶ /°C (10 ⁻⁶ /°F)	3.5 (1.94)
Thermal Conductivity – W/m·K (BTU·in/ft ² ·hr·°F)	27 (187.20)

