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CERAMIC

RSLE-57

Description

It is a low expansion high strength reinforced silica matrix composite. It is entirely organic free and contains no refractory ceramic fiber. The RSLE-57 can be machined to precision tolerances with conventional tooling.

Applications

Often used in zones where the temperatues vary rapidly, this material has a very low coefficient of expansion and provides outstanding resistance to thermal chock in an oxidized atmosphere. It is used in induction presses, and since the molten aluminum does not adhere to the RSLE-57, it is used for many applications involving this material. It also resists corrosion, is an excellent electrical insulator and has a low thermal conductivity.

Specifications

Properties & characteristics	
Temperature	1200°C (2192°F)
Thermal Expansion Coeff., Room Temp. to 800°C (1472°F)	0.3 x 10e6/°C
Composition	SiO2: 99.7%, Other oxides: 0.3, Organics: 0%
Density	2.1g/cc (90pcf)
Porosity	31%
Color	White
Hardness, Durometer «D»	87
Charpy impact strength	0.8ft-lb

Compressive Strength At 2.7% consolidation	48Mpa (7000psi)
Modulus of rupture	30MPa (4300psi)
Thermal Conductivity, ASTM C-1113 - W/m°K (BT/hr ft² °F/in) 200°C (392°F)	0.55 (3.8)
Thermal Conductivity, ASTM C-1113 - W/m°K (BT/hr ft² °F/in) 400°C (752°F)	0.64 (4.4)
Thermal Conductivity, ASTM C-1113 - W/m°K (BT/hr ft² °F/in) 600°C (1112°F)	0.61 (4.2)
Thermal Conductivity, ASTM C-1113 - W/m°K (BT/hr ft² °F/in) 800°C (1472°F)	0.67 (4.6)
Thermal Conductivity, ASTM C-1113 - W/m°K (BT/hr ft² °F/in) 1000°C (1832°F)	0.75 (5.2)
Thermal Conductivity, ASTM C-1113 - W/m°K (BT/hr ft² °F/in) Volume Resistivity, ohm-cm ASTM D-257-93	7.5 x 10?
Dielectrical Strength (ASTM D-149-95)	43volts/mil
Linear shrinkage, 24 hrs to 800°C (1472°F)	Length: 0.1 %, Width: 0.1%, Thickness: 0%
Linear shrinkage, 24 hrs to 1100°C (2012°F)	Length:4.9%, Width: 4.9%, Thickness: 7.9%