DATA SHEET

Luminex 993
Magnesium Oxide

Description
A very high-purity porous magnesia ceramic of typical composition 99.45% MgO and 0.25% CaO. Other components are 0.15% SiO2, and 0.04% Fe2O3 with less than 0.05% Al2O3 and 0.001% B+Cd.

Prime Features
- Consistent electrical performance at temperatures up to 1100°C.
- Excellent electrical resistance across temperature range.
- Becomes excellent thermal conductor at elevated temperatures.
- Particle size distribution, porosity and crushability can be tailored.
- Minimal traces of boron and cadmium for low neutron capture.
- Made from 100 per cent electrofused magnesium oxide.

Typical Applications
- Special cabling for control systems in nuclear power stations where low neutron capture is of vital importance.
- Thermal processing equipment.
- Electrical control devices in industrial plant.
- Crushable bushes for electrical insulation at high temperature.

Specification
Quality Assurance to ISO 9002

MTC Production Capabilities
- Wide variety of single and multi-hole precision extruded forms.
- Tolerances to customer specification.
- Prototype, batch and volume production.

Physical properties*

**Bulk density (fired), Mg/m³** | 2.2-2.5 (tailorable)
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**Porosity (open), % apparent** | 28-3 (tailorable)
**Compressive strength, MPa** | 12-170 (tailorable)
**Flexural strength (3-point), MPa @ 20°C** | 7-71 (tailorable)

**Thermal expansion coefficient, 10⁻6 @**
- 20-1000°C | 13.0
- 200-500°C | 11.7

**Maximum operating temperature, °C** | 2240

**Volume resistivity, ohm.cm @**
- 600°C | 3.0 x 10⁷
- 700°C | 1.9 x 10⁸
- 800°C | 2.1 x 10⁹
- 900°C | 3.2 x 10⁹
- 1000°C | 6.8 x 10⁹