

## 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% SiO<sub>2</sub>, and 0.04% Fe<sub>2</sub>O<sub>3</sub> with less than 0.05% Al<sub>2</sub>O<sub>3</sub> 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\*

<b>Bulk density (fired), Mg/m<sup>3</sup></b>	2.2- 2.5 (tailorable)
<b>Porosity (open), % apparent</b>	28- 3 (tailorable)
<b>Compressive strength, MPa</b>	12- 170 (tailorable)
<b>Flexural strength (3-point), MPa @ 20°C</b>	7- 71 (tailorable)
<b>Thermal expansion coefficient, 10<sup>-6</sup>@</b>	20-1000°C 13.0 200-500°C 11.7
<b>Maximum operating temperature, °C</b>	2240
<b>Volume resistivity, ohm.cm @</b>	600°C 3.0 x 10 <sup>10</sup> 700°C 1.9 x 10 <sup>9</sup> 800°C 2.1 x 10 <sup>8</sup> 900°C 3.2 x 10 <sup>7</sup> 1000°C 6.8 x 10 <sup>6</sup>