

## Data Sheet

# Luminex™ 993 (Mac-M0995S)

### Description

A very high-purity porous magnesia ceramic of typical composition **99.45% MgO** and **0.25% CaO**. Other components are **0.19% SiO<sub>2</sub>**, and **0.07% 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 1100C
- 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

### Specifications

- Quality Assurance to ISO 9002

### Production Capabilities:

- Wide variety of single and multihole precision extruded forms
- Tolerances to customer specification
- Prototype, batch and volume production

### Physical Properties

Colour	White	
Bulk Density (fired)	2.2-2.5 Mg/m <sup>3</sup> (tailorable)	
Porosity (open)	28-38 % (tailorable)	
Compressive Strength	12-170 MPa (tailorable)	
Flexural Strength (3-point)	7-71 MPa @20C	
Young's modulus	170 GPa @20C	
Thermal Conductivity @20-900C	8-32 W/m.K	
Thermal Expansion Coefficient 10 <sup>-6</sup> /C	@20-1000C	13.0
	@200-500C	11.7
Maximum operating temperature	1200 C	
Volume resistivity	@600C	1.2 x 10 <sup>11</sup>
	@700C	5.7 x 10 <sup>9</sup>
	@800C	4.8 x 10 <sup>8</sup>
	@900C	6.3 x 10 <sup>7</sup>

Please note that all values quoted are based on test pieces and may vary according to component design. These values are not guaranteed in anyway whatsoever and should only be treated as indicative and for guidance only.

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We design and manufacture products for demanding applications in a variety of markets using a comprehensive range of advanced ceramic, glass, precious metal, piezoelectric and dielectric materials. We utilise core competences of applications engineering and superior materials technology, together with state of the art fully integrated manufacturing processes to offer precision ceramic components, ceramic-to-metal assemblies and special coatings for use in a variety of applications.