

## Data Sheet

# Hilox™ 880 (Mac-A860S)

### Description

An alumina ceramic of 86% Al<sub>2</sub>O<sub>3</sub> content, that combines mechanical strength with excellent electrical properties.

### Prime Features:

- Excellent electrical insulator at high temperatures
- Good dimensional stability
- High mechanical strength
- Good abrasion resistance
- Non-porous and vacuum tight
- Corrosion resistant

### Specifications

- Quality Assurance to ISO 9002

### Typical Applications:

- Components in domestic appliances, especially where parts handling and assembly operations are automated
- Thermostat assemblies for electric irons, kettles and fires
- Immersion heaters
- End bushes for sheathed heating elements
- Thermocouples
- Cartridge heaters

### Physical Properties

Colour	White
Bulk Density (fired)	3.54 Mg/m <sup>3</sup>
Porosity (apparent)	0% (fully dense) % nominal
Compressive Strength	1800 MPa
Flexural Strength (3-point)	353 MPa @20C
Young's modulus	250 GPa @20C
Rockwell Hardness (R45N)	77.1
Thermal Conductivity	15 W/m.K @20C
Thermal Expansion Coefficient (20-1000C)	8.2 10 <sup>-6</sup> /C
Thermal Downshock	180 σC
Specific Heat	920 J/kg.K
Maximum no-load temperature	1200 C
Dielectric Constant	8.5 @1MHz
Dielectric Loss	20 @ 1MHz, tan δ 10.4
Dielectric Strength	28 kV/mm
Volume Resistivity	
@20C	> 10 <sup>14</sup> ohm.cm
@300C	> 10 <sup>8</sup> ohm.cm
@600C	> 10 <sup>6</sup> ohm.cm

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.

### Production Capabilities:

- Complex components custom-manufactured to close tolerances
- Prototype, batch and volume production
- Comprehensive range of bushes, rings, rods and tubes for high temperature electrical insulators

Morgan Advanced Materials is a global materials engineering company which designs and manufactures a wide range of high specification products with extraordinary properties, across multiple sectors and geographies. From an extensive range of advanced materials we produce components, assemblies and systems that deliver significantly enhanced performance for our customers' products and processes. Our engineered solutions are produced to high tolerances and many are designed for use in extreme environments.

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.