

## DATA SHEET

# Hilox™ 882

### Alumina

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#### Description

An alumina ceramic of 84% Al<sub>2</sub>O<sub>3</sub> content, combining excellent wear and chemical resistance with good electrical and thermal properties. Certified for blood contact devices.

#### Prime Features

- Good electrical insulator
- Good thermal shock resistance
- Good dimensional stability
- Good abrasion resistance
- Non porous and vacuum tight
- Corrosion resistant

#### Typical Applications

- Medical centrifuge seals, blood contact seals
- Hard wearing, chemically resistant counterface seats for automotive water pumps
- Electrical stress relieving equipment for welding operations
- Electrically insulative components for domestic and industrial equipment

#### MTC Production Capabilities

- Complex components custom-manufactured to close tolerances.
- Prototype, batch and volume production.

#### Specifications

Quality Assurance to ISO 9002

#### Physical Properties

Colour	Pink
Density (fired), g/cm <sup>3</sup>	3.5
Porosity (apparent), % nominal	0 (fully dense)
Rockwell hardness (R45N)	77
Fracture Toughness, MPa.m <sup>1/2</sup>	4.0
Flexural Strength (3-point), MPa @ 20 °C	270
Grain Size, µm	2.5
Young's Modulus E, GPa @ 20 °C	243
Shear Modulus G, GPa @ 20 °C	97
Poisson's Ratio ν	0.25

#### Thermal Properties

Thermal Conductivity, W/m.K @ 20C	15
Thermal Expansion Coefficient 10 <sup>-6</sup> @ 20-1000 °C	8.6
Thermal Shock Resistance (R <sub>1</sub> ) ΔT/C	93
Thermal Shock Resistance (R <sub>2</sub> ) W/m	930
Specific Heat J/kg.K	890

#### Electrical Properties

Permittivity, 20C 1MHz	8.8
20C 10 GHz	8.8
Dielectric Loss @ 1MHz, tan δ 10 <sup>-4</sup>	18
@ 10 GHz, tan δ 10 <sup>-4</sup>	18
Dielectric Strength, kV/mm	28
Volume Resistivity, ohm.cm @ 100°C	>10 <sup>14</sup>
300°C	----
600°C	----

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. 12.12.2012