

Data Sheet

Sintox™ FA Metallizing (Mac-A950R-3)

Description

Alumina ceramic with 95.0% Al₂O₃ content that is specially formulated for accurate grain size. This is feature particularly valuable when a ceramic microstructure is needed to provide a good keying surface for high integrity molybdenum metallizing

Prime Features:

- Dense, non-porous and vacuum tight
- Readily accepts molybdenum metallizing for high temperature brazing of assemblies
- High volume resistivity
- Good high temperature characteristics
- Low coefficient of expansion
- Resists chemical attack
- Fire resistant and non-outgassing

Typical Applications:

- High vacuum equipment and scientific instruments where ceramic components need to be brazed to form high strength connections and complex assemblies
- Insulators for probes and sensors
- Transducer components
- Insulators for vacuum pumps
- Gun assemblies and connectors for X-ray tubes and electron microscopes

Specifications

- Quality Assurance to ISO 9002

Physical Properties

| | |
|--|----------------------------|
| Colour | Pink |
| Bulk Density (fired) | 3.75 Mg/m ³ |
| Grain Size | 5.0 μm |
| Grain size, controlled limits | 4.0-8.0 μm |
| Porosity (apparent) | 0% (fully dense) % nominal |
| Vickers Hardness | 12.5 GPa @ Hv 0.5kg |
| Rockwell hardness (R45N) | 78 |
| Compressive Strength | 2000 MPa |
| Flexural Strength (ASTM C1161) (3-point) | 320 MPa |
| Young's modulus | 325 GPa |
| Thermal Conductivity @20C | 21 W/m.K |
| Thermal Expansion Coefficient (0-800C) | 7.5 10 ⁻⁶ /C |
| Thermal Downshock | 170 σC |
| Dielectric constant | |
| @ 1MHz | 9.5 |
| @ 9.4GHz | 9.4 |
| Dielectric loss @ 1MHz, tan δ | 3.4 |
| Volume resistivity | |
| @20C | > 10 ¹⁴ |
| @600C | > 10 ⁸ |

Production Capabilities

- Pressed and machined components
- Metallizing of components
- High temperature brazing of assemblies
- Prototype, batch and volume production

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.