

SPECIFICATIONS

- ▶ Chemical formula: Y_2O_3
- ▶ Chemical name: Yttria
- ▶ Appearance: Dense sintered yttria
- ▶ Main characteristics: Good plasma resistance
- ▶ Main applications: SPE parts
- ▶ Colour: White

MECHANICAL & PHYSICAL CHARACTERISTICS (TYP.)

| | | | | |
|--|-------------|-------------------------|------------|-------------------|
| Density | | [g/cm ³] | JIS R 1634 | 4.9 |
| Water absorption | | [%] | JIS C 2141 | 0 |
| Vickers hardness HV9.807N | | [GPa] | JIS R 1610 | 6.0 |
| Flexural strength 3 P.B. | | [MPa] | JIS R 1601 | 130 |
| Compressive strength | | [MPa] | JIS R 1608 | - |
| Young's modulus of elasticity | | [GPa] | JIS R 1602 | 160 |
| Poisson's ratio | | [-] | JIS R 1602 | - |
| Fracture toughness (SEPB) | | [MPa*m ^{0.5}] | JIS R 1607 | 1.1 |
| Coefficient of linear thermal expansion | 40 - 400 °C | [*10 ⁻⁶ /K] | JIS R 1618 | 7.2 |
| | 40 - 800 °C | | | 7.6 |
| Thermal conductivity | | [W/(m*K)] | JIS R 1611 | 14 |
| Specific heat capacity | | [J/(g*K)] | JIS R 1611 | 0.45 |
| Thermal shock temperature difference | | [°C] | JIS R 1648 | - |
| Dielectric strength | | [kV/mm] | JIS C 2141 | 11 |
| Volume resistivity | 20 °C | [Ω*cm] | JIS C 2141 | >10 ¹³ |
| | 300 °C | | | 10 ¹⁰ |
| | 500 °C | | | 10 ⁷ |
| Dielectric constant | | - | JIS C 2141 | 11 |
| Dielectric loss angle | | [*10 ⁻⁴] | JIS C 2141 | 5 |
| Loss factor | | [*10 ⁻⁴] | JIS C 2141 | 55 |

The values are typical material properties and may vary according to products configuration and manufacturing process. For more details, please feel free to contact us.