



TITANIUM OXIDE

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| PROPERTIES | | Unit | TiO ₂ | Ti ₂ O ₃ | | |
|---|--|----------------------|---|--------------------------------|--|--|
| TiO ₂ / Ti ₂ O ₃ Content | | % | 96 | 98 | | |
| Color | | | brown yellow | black blue | | |
| Specific Weight | | g/cm ³ | >4 | >4 | | |
| Porosity | | % | 0 | 0 | | |
| Elasticity module | | GPa | 48 | | | |
| Flexural strength | | MPa | 150 | 150 | | |
| Compressive strength | | MPa | 680 | 680 | | |
| KIC fracture strength | | MPam ^{1/2} | 0.32 | 0.32 | | |
| Abrasion resistance | | GPa | 8.5 | 8.5 | | |
| Volume resistivity | 25 °C 300 °C 700 °C | Ohm cm | >10 ¹² >10 ⁸ >2.5x10 ⁴ | >10 ² | | |
| Electrical resistance | 25 °C 500 °C 1000 °C | kV/mm | >4 >1.0 | | | |
| Electrical permittivity Dielectric constant | | 100 MHz | 85 | | | |
| Specific heat | 25-700 °C | J/kg K | 520 | 520 | | |
| Thermal conductivity | 25 °C 300 °C 500 °C 800 °C | W/m K | 8 10 16 20 | 8 10 16 20 | | |
| Coefficient thermal expansion | 25- 200 °C 25- 700 °C 25-1000 °C | 10 ⁻⁶ /°C | 7.5 8.7 9.2 | 7.5 8.7 9.2 | | |
| Max working temp. | | °C | 1000 | 1000 | | |
| Res. abrupt temp. variations | | | good | good | | |

Characteristics:

low coefficient of friction - good thermal conductivity - good corrosion resistance in acid and alkali environments - excellent dielectric properties in the form of dioxide (TiO₂) - electrical conductivity in the form of trioxide (Ti₂O₃)