

BASIC PROPERTIES

- High mechanical strength
- High thermal stability
- High heat transmission
- Chemically inert
- Very high electrical insulation
- Very high hardness
- Very good wear resistance
- Low friction coefficient
- High temperature resistance
- Good optical properties
- Good resistance to acids
- UV transparent, infrared and visible radiation.

APPLICATIONS

Semi-conductor wafers
Watch windows
Electronical applications
Measuring tools.
Optical prisms and lenses
Pistons

| MATERIAL | | SAPPHIRE |
|---|----------------------|--|
| Chemical Formula | | α -Al ₂ O ₃ |
| Aspect / color | | White / transparent |
| Porosity | | Impervious |
| Mechanical | | Measuring unit |
| Poisson's ratio | - | 0,29 |
| Hardness Mohs | Mohs | 9 |
| Hardness Knoop | | 2200 |
| Young modulus | GPa | 250/400 |
| Compression resistance | MPa | 2000 |
| Tensile resistance | MPa | 250/400 |
| Flexion resistance | MPa | 760-1035 |
| Fracture resistance | MPaxm ^{1/2} | 1,89 |
| Physical | | |
| Maximum temperature use in neutral atmosphere | °c | 2000 |
| Crystalline structure | | |
| Density | g/cm ² | 3,97 |
| Water absorption | % | 0 |
| Electrical | | |
| Electrical resistivity | Wcm | 10 ¹⁷ |
| Dielectric strength | kV/mm | 15-50 |
| Dielectric constant at 25°C and 1 MHz | kV/mm | 9,3-11,4 |
| Thermal | | |
| Specific heat at 25° | cal/g.°c | 0,18 |
| Thermal conductivity at 20° | W/m.°K | 40 |
| Thermal shock resistance | Δ T°c | 200 |

**These values are for informational purposes only and do not bind company's responsibility.*