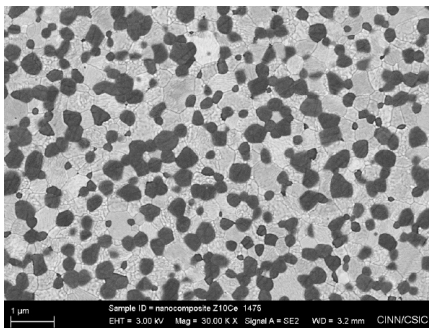


NC2

Ce-stabilized zirconia toughened alumina (*)



Dark – alumina ; bright - zirconia

Key Benefits

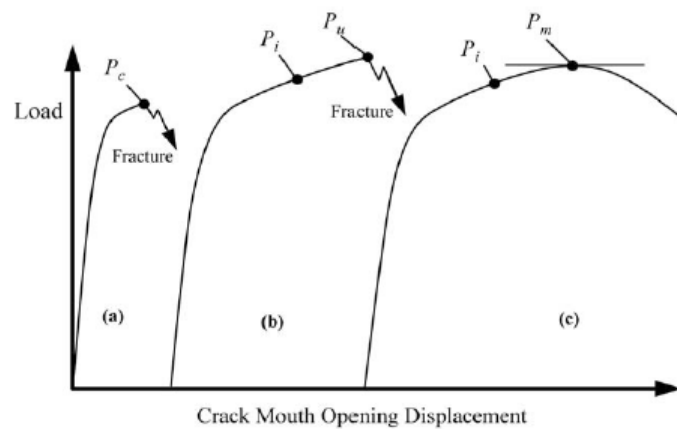
- Good balance between strength and toughness for structural applications
- No susceptibility to hydrothermal degradation
- Elastic-plastic behavior resembling metallic materials
- Low thermal conductivity
- High abrasion resistance
- Biocompatibility

Typical Applications

- Structural applications with high loading conditions

| Main Properties | | |
|-------------------------------|------------------------------------|------|
| Parameters | Unit | NC2 |
| Density | g/cm ³ | 5.4 |
| Elastic modulus | GPa | 260 |
| Biaxial strength @ 20°C | MPa | 1036 |
| Fracture Toughness (SENVB) | MPa x m ^{1/2} | 10 |
| Hardness @ 20°C | HV | 1130 |
| Weibull Modulus @ 20°C | GPa | 16.8 |
| Thermal conductivity @ 20°C | W/m ² K | 10 |
| Thermal expansion coefficient | x10 ⁻⁶ °K ⁻¹ | 9.3 |

(*) The synthesis and processing of this composition is a patented procedure (patent n° WO2011/015697 A1).



Load versus displacement curve in different materials. a) Left – brittle (Y-TZP). b) Medium – elastic-plastic (NC2). c) Right – fully plastic (Hardened steel).