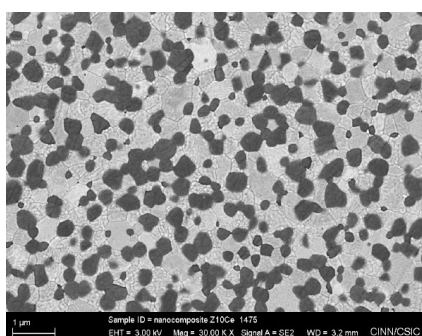




NC2

Ce-stabilised alumina toughened zirconia (ATZ) nanocomposite



Typical microstructure

Main properties

- High strength
- Elastic-plastic behaviour
- Ultra-high toughness
- Low friction coefficient against metals
- No ageing (low temperature degradation)
- High wear resistance under sliding conditions

Applications

- Structural parts for machinery
- Welding pins
- Drilling tools
- Blades

Physical properties

Parameters	Units	Value
Density	g/cm ³	5.4
Flexural Strength	MPa	900
Fracture toughness	MPa·√m	10.0
Hardness	GPa	10.5
Young Modulus	GPa	245
Thermal conductivity	W/m·k	10
Thermal Expansion Coefficient (20-1000°C)	10 ⁻⁶ K ⁻¹	9.3
Weibull modulus	-	18
Electrical resistivity	Ω·cm	>10 ¹¹

*All properties measured at 20°C unless otherwise stated