



Selected mechanical and thermal properties

Properties	Silicon Nitride	Tungsten Carbide	Steel
Density	3.23 g/cm ³	14.95 g/cm ³	7.8 g/cm ³
Hardness	~76 HRc	~76 HRc	~60-67 HRc
Flexural Strength	1000 MPa	2600 MPa	2000 MPa
Compressive Strength	>4000 MPa	6200 MPa	1400 MPa
Young's Modulus	310GPa	650GPa	205 Gpa
Poisson's Ratio	0.27	0.22	0.29
Fracture Toughness	7 Mpa-√m	12 Mpa-√m	70 Mpa-√m
Thermal Expansion	3.0 x 10 ⁻⁶ /°C	5 x 10 ⁻⁶ /°C	12.5 x 10 ⁻⁶ /°C
Thermal Conductivity	22 W/m-°C	100 W/m-°C	37 W/m-°C
Specific Heat	0.68 J/g-°C	0.34 J/g-°C	0.50 J/g-°C
Maximum Service Temperature	1000 °C	450 °C	180 °C

This chart is intended to illustrate typical material properties. Engineering data is representative. This information is offered for comparison only, And is not to be construed as absolute engineering data or constituting a warranty or representation for which we assume legal responsibility.