



# SILICON NITRIDE

Sinterall srl Via Calabria 2/4 20072 Pieve Emanuele Milano ITALIA

[info@sinterall.it](mailto:info@sinterall.it) [www.sinterall.eu](http://www.sinterall.eu)

PROPERTIES		Unit	Si <sub>3</sub> N <sub>4</sub>			
Si <sub>3</sub> N <sub>4</sub> Content		%	>99.5			
Color			Black			
Specific weight		g/cm <sup>3</sup>	>3.25			
Porosity		%	0			
Elasticity module		GPa	310			
Flexural strength		MPa	700			
Compressive strength		MPa	3200			
KIC fracture strength		MPam <sup>1/2</sup>	6			
Abrasion resistance		GPa	19			
Volume resistivity	25 °C 300 °C 700 °C	Ohm cm	>10 <sup>14</sup> >10 <sup>11</sup> >10 <sup>8</sup>			
Electrical resistance	25 °C 500 °C 1000 °C	kV/mm	>10			
Electrical permittivity Dielectric constant		100 MHz	8.0			
Specific heat	25-700 °C	J/kg K	780			
Thermal conductivity	25 °C 300 °C 500 °C 800 °C	W/m K	30 35 70 80			
Coefficient thermal expansion	25- 200 °C 25- 700 °C 25- 1000 °C	10 <sup>-6</sup> / °C	2.0 4.3			
Max working temp.		°C	1300			
Res. abrupt temp. variations			excellent			

## Characteristics:

good thermal stability - good thermal conductivity - low coefficient of thermal expansion - excellent resistance to thermal jumps - remarkable resistance to bending and fracture and wear - good resistance to chemical aggression in both acidic and alkaline environments - dielectric properties - excellent degree of hardness combined with a low coefficient of friction