

MATERIAL DATA SHEET

Material type: Silicon Nitride

Starceram® N 3000+ HIP
Properties of Microstructure

Si ₃ N ₄ (incl. Al ₂ O ₃ ; Y ₂ O ₃)	%	> 99
Density	g/cm ³	3,24
Open porosity	%	0
Mean Grain Size	µm	-

Mechanical Properties

Hardness (HV 10)	GPa	14,4
Compressive strength	MPa	4275
Flexural strength (RT)	MPa	1150
Young's modulus (RT)	GPa	300
Poisson's ratio		0,28
Fracture toughness	MPa*m ^{1/2}	5,9
Weibull modulus	-	15

Thermal Properties

Max. working temperature	°C	1200
Thermal conductivity (RT)	W/mK	21
Thermal expansion (RT-400 °C)	10 ⁻⁶ /K	2,3
Thermal shock coefficient R1	K	670
Typical Colour		black

The data indicated relates to the test specimen from which it was obtained and is not unconditionally applicable to other forms of the same material. The data must, therefore be regarded as indicative only.