

## Silicon Nitride Materials Data Sheet

Property	Units	Syalon 101	Silicon Nitride (KN01)
<b>Description</b>			
Nominal Composition		Si-AL-O-N	Si <sub>3</sub> N <sub>4</sub>
<b>Microstructure</b>			
Density	[g/cm <sup>3</sup> ]	3.25	3.2
Water Absorption	[%]	0	0
Apparent Porosity	[vol%]	0	0
<b>Colour</b>		Grey	Grey
<b>Mechanical Properties</b>			
Compressive Strength	[MPa]	>3500	-
Flexural (Bending) Strength	[MPa]	945	780
Young's Modulus E	[GPa]	288	290
Fracture Toughness	[MPa.m <sup>1/2</sup> ]	7.7	7.2
Vickers Hardness	[kg/mm <sup>2</sup> ]	1600	1400
Poisson's Ratio		-	-
<b>Thermal Properties</b>			
Max Working Temperature	[°C]	1650	-
Thermal Conductivity @ RT	[W/mK]	21.3	17
Thermal Expansion Coefficient	[x 10 <sup>-6</sup> /K]	3.04	3.0
Thermal Shock Resistance (ΔT <sub>C</sub> )	[°C]	Up to 900	-
<b>Electrical Properties</b>			
Specific Resistance (@ 20°C)	[Ωcm]	10 <sup>10</sup>	10 <sup>10</sup>

**Note:** The above data represent typical values of Rojan Silicon Nitride.