Data Sheet

Nilcra® Silicon Carbide Sintered Grade

Description

- A Sintered Silicon Carbide with exceptional strength, hardness, thermal shock and wear resistance.
- Contains fine grains of alpha phase silicon carbide.
- Designed for applications demanding high hardness and wear resistance at elevated temperatures.

Prime Features

- Extremely high hardness & wear resistance
- Excellent corrosion resistance
- High strength at elevated temperatures
- High thermal conductivity
- Low coefficient of thermal expansion
- Very good thermal shock resistance
- Non-wetting in molten metal

Specifications

- Quality Assurance to ISO 9001

Typical Applications:

- Excellent for combating wear and corrosion for components used in chemical processing and abrasive environments

Production Capabilities

- Sintered components
- Precision ground components
- Ceramic / Metal assemblies
- Ceramic design assistance
- Prototyping, batch and volume production

Colour		Black
Density g/cm^3	20°C	3.10
Flexural Strength MPa	20°C	450
	1000°C	450
Weibull Modulus	20°C	12
Compressive Strength MPa	20°C	3000
Modulus of Elasticity GPa	20°C	400
Poisson's Ratio	20°C	0.16
Hardness $HV_{0.3}$ kg/mm^2	20°C	2650
Hardness Knoop HK_5 kg/mm^2	20°C	2250
Fracture Toughness MPa$\sqrt{m}$	20°C	3
Average Grain Size μm		1-5
Maximum Use Temperature °C	Air	1650
	Inert Atmosphere	1900
Thermal Conductivity W/m-K	20°C	125
Specific Heat Capacity J/g-K	20°C	0.67
Thermal Expansion Coefficient x10^{-6} mm/mm/°C	25-250°C	3.2
	25-1000°C	4.5

- Please note that all values quoted are based on test pieces and may vary according to component design. These values are not guaranteed in anyway whatsoever and should only be treated as indicative and for guidance only.