



BC-5 – Reaction Bonded Silicon Carbide (Si-SiC)

MATERIAL TECHNICAL DATA SHEET

TRADE NAME: BC-5

MATERIAL DESCRIPTION

Chemical Name & Formula: Silicon infiltrated Silicon Carbide – Si-SiC

MAIN COMPONENTS

SiC: 88% min
Si: 12% max

PHYSICAL DATA

Physical Form: Polycrystalline structure
Boiling Temperature: N.A.
Melt Temperature: N.A.
Vapour Pressure: N.A.
Evaporation Rate: N.A.
Specific gravity: N.A.
Density: $\geq 3,05 \text{ g/cm}^3$
Water solubility: Insoluble
Colour: Black
Odour: None

MECHANICAL PROPERTIES AT ROOM TEMPERATURE

Water Absorption	%	0
Vickers Hardness	(HV 0,5)	≥ 2000
Flexural Strength	MPa	≥ 350
Compressive Strength	MPa	≥ 2000
Young's Modulus	GPa	≥ 350
Maximum service temperature	°C	1000
Thermal Conductivity @20°C	W/(m·K)	<170
Thermal Expansion Coefficient (RT-1000°C)	$10^{-6}/^{\circ}\text{C}$	$\leq 5,0$
Thermal Shock Resistance (ΔT)	°C	250

PHYSICAL AND CHEMICAL PROPERTIES

High mechanical strength, strong wear resistance, good self-lubrication, low friction coefficient, high thermal conductivity, high temperature resistance. Electrical conductivity due to free silicon contained.

Please, note that all values quoted are based on test pieces and may vary according to component design. These values are not guaranteed in any way and should only be treated as indicative values. They should be used for guidance only and for no other purpose.

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