

BASIC PROPERTIES

- Low density
- High thermal conductivity (close to Aluminium)
- Good thermal shock resistance
- Liquid and gaz proof
- High refractoriness (can be used at 1450°C in air and 1800°C in neutral atmosphere)
- It is not affected by corrosion and do not wet with melted aluminium or melted zinc.
- High hardness
- Low friction coefficient
- Abrasion resistance
- Resists to basic and strong acids
- Polisheable
- High mechanical strength

APPLICATIONS

Mechanical components
Rotating joints
Plain bearings, bases, pads
Pump components
Chemical components
Mirrors
Ballistic protection
Heat exchanger

MATERIAL		DENSE SILICON CARBIDE	DENSE SILICON CARBIDE WITH POROSITY
Chemical formula		Sic	Sic
Aspect / color		Grey / Black	Grey / Black
Porosity		Impervious	Porous
Mechanical		Measuring unit	
Poisson's ratio		0,16	0,25
Hardness	Mohs	9,5	
Hardness (Vickers)		22 (500 Kg weight)	22 (500 Kg weight)
Shear modulus	GPa	180	140
Young modulus	GPa	420	350
Mechanical resistance (3 pts flexion) at 1400°C	MPa	450	225
Mechanical resistance (3 pts flexion) at 20°C	MPa	450	225
Mechanical resistance (3 pts flexion) at 1000°C	MPa	450	225
Tenacity	MPa.m ^{1/2}	3,5 MN,m ^{<sup>}	3,5 MN,m-3/2
Physical			
Maximum use temperature in air	°c	1450	
Max. use temperature in neutral atmosphere	°c	1800	
Pores' diameter	10-6m	5	5
Open porosity	%	0	
Total porosity	Vol./Vol.	<305%	10%<Pt<14%
Average crystal size	10-6m	5	5
Electrical			
Electrical resistivity 20°C	Ohm, m	10 ⁵	10 ⁵
Thermal			
Specific heat at 1000°C	J/Kg.°K	1180	1180
Specific heat at 20°C	J/Kg.°K	680	680
Specific heat at 500°C	J/Kg.°K	1040	1040
Linear expansion coefficient 20-1000°C	x10 ⁻⁶ /°c	4,6	4,6
Linear expansion coefficient 20-1400°C	x10 ⁻⁶ /°c	5,2	5,2
Linear expansion coefficient 20-500°C	x10 ⁻⁶ /°c	4	4
Thermal conductivity 1000°C	W/m.°K	40	32
Thermal conductivity 20°C	W/m.°K	180	145
Thermal conductivity 500°C	W/m.°K	68	55

*These values are for informational purposes only and do not bind company's responsibility.