Datenblatt | Data sheet

Silicon carbide

Ceramic balls with good mechanical and stiffness properties, good corrosion and wear resistance. They are electric conductors and suitable for high temperature applications.

Field of application

Special bearings and pumps, electric switches and sensors, medical instruments. They are used in automotive, aviation and aerospace, naval, petroleum, chemical and electronic industry.

Corrosion resistance

Good corrosion resistance in dilute and concentrated acids, moderate strength in alkalis and halogens. Unstable in contact with molten metals. Resistant to hydrofluoric and sulfuric acids and sodium hydroxide. Satisfactory strength in nitric and ideo-chloric acids.

Material

Technical name	Alternative Name	Abbreviation	% Carbide
Silicon Carbide	Carborundum	SiC	99,9

Physical / mechanical / thermal / electrical / magnetic characteristics

Characteristic	Symbol	Unit	Type	Note	Value
Density	δ	g/cm^3	Physical	Environmental temp.	3,15
Modulus of elasticity	E	GPa	Mechanical		405
Friction coefficient	μ	-	Mechanical	Environmental temp.	0,60
Specific heat	C	J/kg*K	Thermal	Environmental temp.	695
Coefficient of linear thermal expansion	α	10^{-6}/°C	Thermal	(ΔT = 0 - 100 °C)	3,7
Thermal conductivity	λ	W/(m*K)	Thermal	Environmental temp.	144,0
Volume resistivity	ρ	Ω*m	Electrical	-	> 10^4
Relative magnetic permeability	μ	-	Mechanical	Diamagnetic	<~1

Technical characteristics

Characteristic	Type	Unit	Value	Unit	Value
Hardness	Mechanical	HV	1250 - 1700	-	-
Ultimate compressive strength	Mechanical	MPa	2100 - 2600	psi * 10^3	246 - 330
Operating temperature	Thermal	° C	-100 - 1600	° F	32 - 2732

Available with

Diameter min/max (mm)	Diameter min/max (in)	Precision grade
1,000 - 50,000	3/64 - 2	G 10 / 16 / 20 / 25 / 28 / 40 / 60 / 100

V1.02 / September 2021

KUGEL POMPEL®
unsere welt ist kugel rund