ESD-SIC bv

SILICONCARBIDE (α-SIC) DATASHEET

Chem. Formula:	SiC
Rel. Molar mass:	40,097 g/mol
Chem. composition:	70,05% Si 29,95% C
Density:	3,21 g/cm³
Hardness:	9,5-9,75 (Mohs) Hk 0,1 2100-2900 (Knoop) Hv 4020 kg/mm²
Melting point:	2830 ± 40 °C (decomposition)
Heat capacity:	0,67 J/gºK (20 °C) 1,27 J/gºK (1000 °C)
Thermal conductivity:	150 kJ/mh°K (20 °C) 54 kJ/mh°K (1400 °C)
Linearer thermal expansion:	$4{,}7 \times 10^{-}$ °K $^{-1}$ (20-1400 °C α-SIC)
Standard heat of formation:	ΔH° 298K = -71,6 ±6,3 kJ/mol
Entropie:	S° 298K= 16,50±0,13 J/molºK
Specific electrical resistivity:	0,1 Ωcm - 10^{12} Ωcm
Modifications:	α-SIC; several hexagonal and rhomboedric polytypes (6 H, 15 R, 4 H u. a.) ß-SIC, cubic (3C), metastable, transformation in α-SIC above 1900 ºC
Color:	depending on purity and crystal structure: colourless, yellow, green, blue, black
Index of refraction:	no = 2,647-2,649 nE = 2,688-2,693 (Na 589 nm, 20 °C)

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Management System ISO 14001 DEKRA Certification DEKRA certified Accredited by RvA C 013

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Chemical properties:	Resistant to acids and alkalies. Stable during heating in presence of air up to 1500 °C Is decomposed by melting alkalies such as Na2O2+Na2CO3 or KNO3+Na2CO3.