

Silicon Carbide SiC Pressureless Sintered α -Silicon Carbide (SSiC)

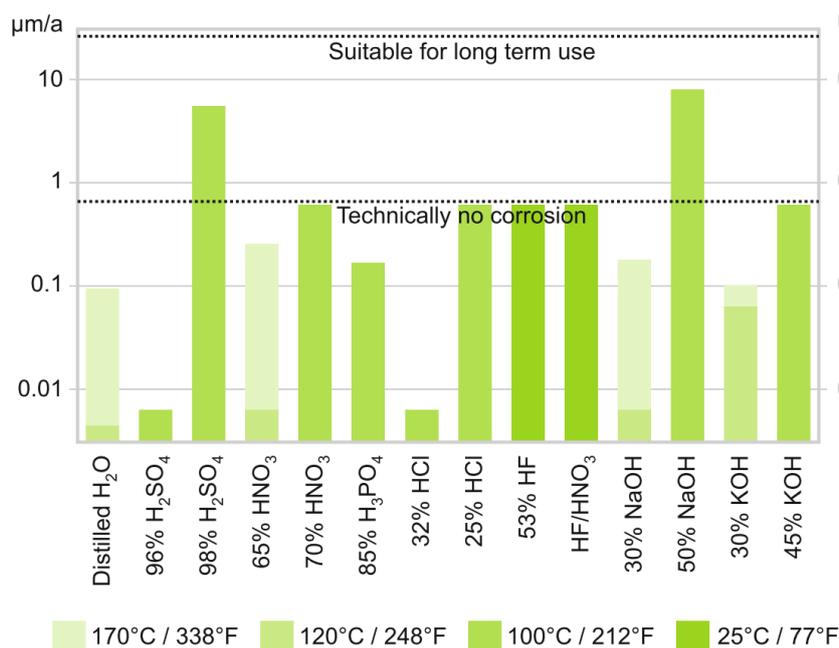
Material Information (W-3)

Silicon Carbide

- Silicon carbide is characterised by its thermal conductivity, corrosion resistance, strength, hardness and abrasion resistance. It is therefore an ideal material for the construction of corrosion-resistant heat exchangers.
- Its shaping in the "green" state is followed by a sintering process, in which the above mentioned properties are obtained.

Material Properties	Units	SSiC
Density (20°C)	kg/dm ³	3,1
Flexural strength (4-Points 20°C)	MPa	460
Compression strength (20°C)	MPa	2900
Elastic modulus (20°C)	GPa	410
Mohs hardness		9.6
Weibull-modulus		>12
Coefficient of thermal expansion (20°C/200°C)	K ⁻¹	2,9 x 10 ⁻⁶
Thermal conductivity (20°C/200°C)	W/mK	130
Open porosity	%	0
Surface roughness R _a	µm	1.3

Nearly universal corrosion resistance



Nearly universal corrosion resistance against acids, bases, halogens and halogenated compounds, oxidizing and reducing

Suitable with all organic solvents

Highest abrasion resistance

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Material Information (W-3)

Material purity

- SSiC shows a very high purity.
- For use in high purity processes SSiC is pre-treated with suitable media to remove production dust
- As a result, SSiC is suitable for the production of high purity chemicals for the electronics industry.

High purity

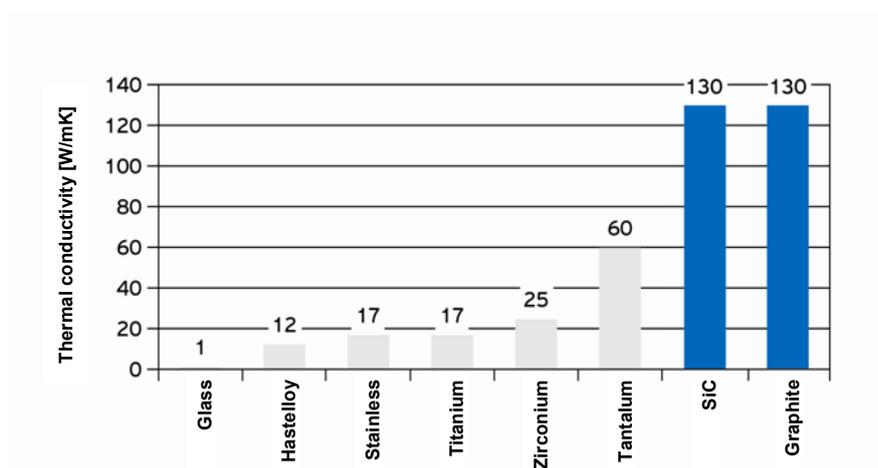
Suitability for the production of high purity chemicals

Thermal Properties

SSiC's very high thermal conductivity (130 W/m.K) is the basis for its good thermal shock resistance

Excellent thermal conductivity

Great resistance against thermal shock



The CORRESIC® Heat Exchanger Program

- GAB Neumann has developed three types of apparatus for different applications:
 - | CORRESIC®-SR shell-and-tube heat exchangers
 - | CORRESIC®-SE Block Heat Exchanger
 - | CORRESIC®-SP Plate Heat Exchanger
- The specific properties of the different designs provide different advantages depending on the application
- This ensures maximum performance for every process

Design Parameters

Admissible operating pressure (depending on design): -1 to +16 bar

Admissible operating temperature (depending on design): -60°C to +220°C

Further information

- The product information SR-1, SE-1, SP-1 contains further information about our CORRESIC® heat exchangers

