

Silicon Carbide SiC

Pressureless Sintered α -Silicon Carbide (SSiC)

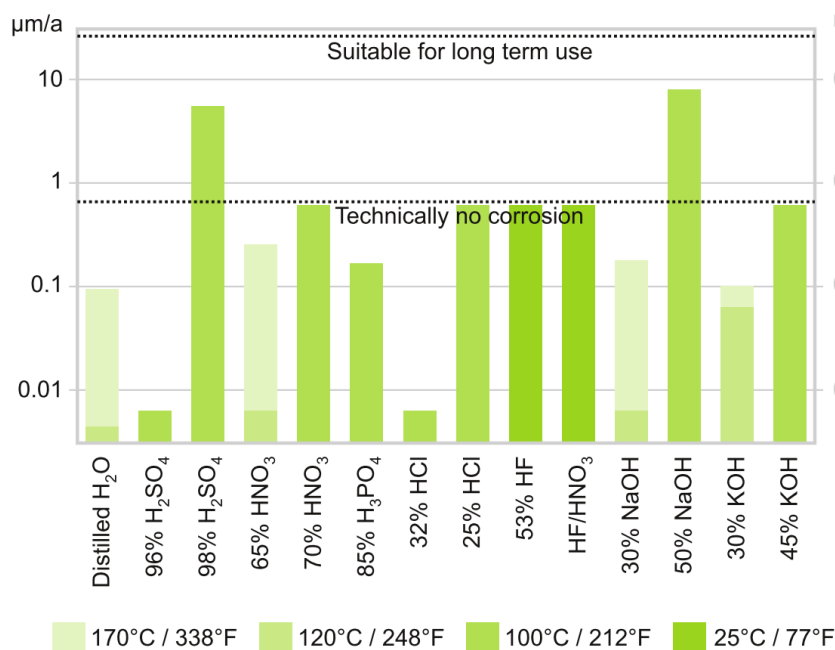
Material Information (W-3)

Silicon Carbide

- Silicon carbide is characterized 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 (68°F)	oz/gal	413.9
Flexural strength (4-Points 68°F)	ksi	66.7
Compression strength (68°F)	ksi	420.6
Elastic modulus (68°F)	msi	59.5
Mohs hardness		9.6
Weibull-modulus		>12
Coefficient of thermal expansion (68°F/392°F)	°F ⁻¹	1.6 x 10 ⁻⁶
Thermal conductivity (68°F/392°F)	BTU.in/ hr.ft ² .°F	900
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

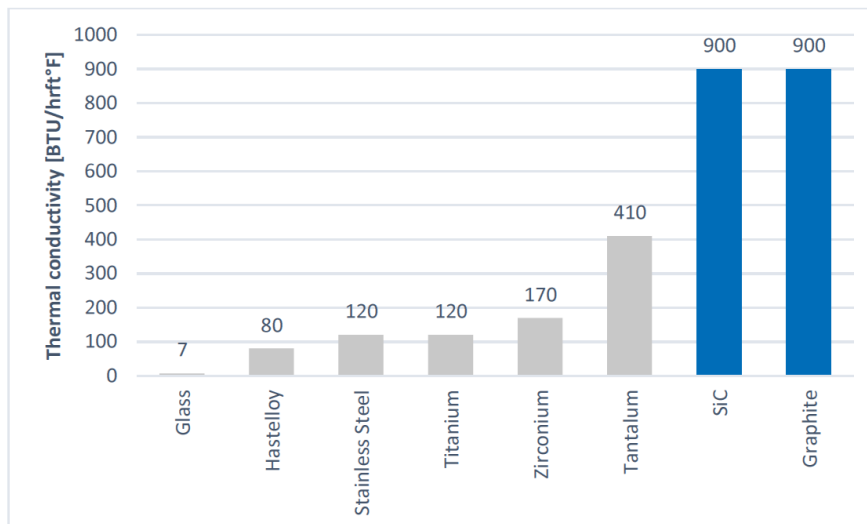
Suitability for the
production of high purity
chemicals

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): Full
vacuum to 232 psig

Admissible operating
temperature (depending on
design): -76°F to +428°F

Further information

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

