

Corrosion Test Results of Hexoloy® SA Silicon Carbide



Saint-Gobain Ceramics
Structural Ceramics

Corrosion Test Results in Liquid

Test Environment* Conc. Reagent (Wt%)	Corrosive Weight Loss (mg/cm ² yr)**				
	Temp (°C)	Hexoloy® SA (No Free SiC)	Reaction Bonded SiC (12% SiC)	Tungsten Carbide (6% Co)	Aluminum Oxide (99%)
98% H ₂ SO ₄	100	1.8	55.0	>1000	65.0
50% NaOH	100	2.6	>1000	5.0	75.0
53% HF	25	<0.2	7.9	8.0	20.0
85% H ₃ PO ₄	100	<0.2	8.8	55.0	>1000
70% HNO ₃	100	<0.2	0.5	>1000	7.0
45% KOH	100	<0.2	>1000	3.0	60.0
25% HCl	70	<0.2	0.9	85.0	72.0
10% HF plus 57% HNO ₃	25	<0.2	>1000	>1000	16.0

*Test Time: 125 to 300 hours of submersive testing, continuously stirred.

**Corrosion Weight Loss Guide:

>1000 mg/cm ² yr	Completely destroyed within days.
100 to 99 mg/cm ² yr	Not recommended for service greater than a month.
50 to 99 mg/cm ² yr	Not recommended for service greater than one year.
10 to 40 mg/cm ² yr	Caution recommended based on the specific application.
0.3 to 9.9 mg/cm ² yr	Recommended for long term service.
<0.2 mg/cm ² yr	Recommended for long term service.
	No corrosion, other than as a result of surface cleaning was evidenced.

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