Corrosion Resistance of Synthetic Resin-Impregnated Graphite GAB GPX

General Information

- All data refers to the qualities of synthetic resin-impregnated graphite GAB GPX1 / GPX1T resp. GAB GPX2.
- Corrosion resistance depends on several factors including both the application process (e.g. process media, concentrations, temperatures) and the equipment used (e.g. graphite quality, wall temperatures, equipment design).
- Temperatures indicated are maximum admissible values for the graphite wall. The respective process temperature may be significantly higher than the values provided in the chart (e.g. in flue gas quenches up to 1,300°C).
- The data given in the following charts reflects the current status of our expertise in application. This data is not guaranteed in all circumstances. It should in now way be used as the basis of any legal claim.
- Based on specific and individual usage data we have been able to gather practical information regarding thermal/corrosion resistance.
- In case of doubt we strongly recommend corrosion resistance tests. Please contact us for free specimen testing advice.

Excellent corrosion resistance against virtually all leaches, acids, solvents and halogens

A maximum temperature range of -60°C to +200°C allows process temperature of up to 1,300°C

Chemicals	Concentration max.	Temperature[1] [°C]	Resistance
Acetaldehyde	all	200	●
Acetate of all common metals	all	200	●
Acetic acid	all	200	●
Acetic acid ester	all	200	●
Acetic anhydride	all	200	●
Acetone	all	200	●
Acetonitrile	all	200	●
Aldehydes	all	200	●
Aliphatic hydrocarbones	all	200	●
Alcohols	all	200	●
Allyl chloride	all	200	●
Amidosulphone acid	20	100	●
Amino acids	all	200	●
Ammonia	all	200	●
Ammonia carbonate	saturated	200	●
Aniline	all	200	●
Aniline hydrochloride	all	200	●
Aqua regia			-

Chemicals	Concentration max.	Temperature[1] [°C]	Resistance
Arsenic acid	all		
Benzaldehyde	all	200	●
Benzene	all	200	●
Benzenesulfonic acid	all	200	●
Benzoic acid	all	200	●
Benzyle chloride	all	150	●
Boric acid	all	200	●
Bromine Br_2			-
Butanol	all	200	●
Butyric acid	all	200	●
Calcium bisulphite solution (pulp digesting liquor)	50	200	●
Calcium hypochlorite	all	≤ 50	●
Carbon bi-sulphide	all	200	●
Carbon dioxide	all	200	●

● resistant
○ restricted resistant
- not resistant

[1] Max. admissible graphite wall temperature for GPX1T bzw. GPX2 (GPX1: 180°C)

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Graphite and SiC Heat Exchangers and Process Equipment Graphite

Corrosion Resistance of Synthetic Resin-Impregnated Graphite GAB GPX

Material Information (W-2)

Chemicals	Concen-- tration max. [%]	Tem- perature[1] [°C]	Resis- tance
Carbon monoxide	all	200	●
Carbon tetrachloride	all	200	●
Carboxylic acids	all	200	●
Chloroacetic acid (mono-, di, tri-)	all	200	●
Chloral	all	200	●
Chlorides all common metals	all	200	●
Chlorine gas, dry	all	≤ 50	●
Chlorine gas, moist	all	≤ 50	○
Chlorine gas, moist, with HCL		100	●
Chlorine liquid			-
Chlorobenzene	all	200	●
Chlorocyan	all	200	●
Chloroform	all	200	●
Chlorosulphonic acid	20	≤20	○
Chlorosulphonic acid	all		-
Chromic acid	< 10	≤ 20	●
Chromic acid	< 20	≤ 20	○
Cresols	all	200	●
Cyanide galvanising baths	all	200	●
Cyclohexane	all	200	●
Dibromoethane	all	200	●
Dichlorobenzene	all	200	●
Dichloroethane	all	200	●
Dichloroethylene	all	200	●
Dimethylacetamide	all	200	●
Dimethylaniline	all	200	●
Dimethylformamide	all	≤ 60	●
Dimethyl sulphoxide	all	≤ 60	●
Dinitrobenzene	all	200	●
Dioxane	all	≤ 60	●
Esters	all	200	●
Ethanol	all	200	●
Ethers	all	200	●
Ethyl chloride	all	200	●
Ethylene chlorohydrin	all	200	●
Fatty acids	all	200	●

Chemicals	Concen- tration max. [%]	Tem- perature[1] [°C]	Resis- tance
Fluoroboric acid	all	200	●
Fluorides of all common metals	all	200	●
Fluorine gas			-
Formaldehyd	all	200	●
Formic acid	all	200	●
Glycol	all	200	●
Glycerine	all	200	●
Heat transfer fluids (Dowtherm, Diphyl, Mar-lotherm, Syltherm, all types	all	200	●
Hydrobromic acid	all	200	●
Hydrochloric acid	all	200	●
Hydrofluoric acid	< 50	160	●
Hydrofluoric acid	< 60	≤ 50	●
Hydrofluoboric acid	all	200	●
Hydrofluosilicic acid	all	200	●
Hydrogen	all	200	●
Hydrogen bromide gas	all	200	●
Hydrogen chloride gas	all	200	
Hydrogen fluoride gas, dry	all	100	●
Hydrogen peroxide	< 5	≤ 50	○
Hydrogen peroxide	> 5		-
Hydrogen sulphide	all	200	●
Javel water			-
Ketones	all	200	●
Lacitic acid	all	200	●
Methanol	all	200	●
Methylchloroform	all	200	●
Methylene chloride	all	200	●
Methylethylketone	all	200	●
Methylisobuthylketone	all	200	●
n-Methylopyrolidone	all	≤ 60	●
Monochloroacetic acid	all	200	●
Nitraniline	all	100	●

● resistant
○ restricted resistant
- not resistant

[1] Max. admissible graphite wall temperature for GPX1T bzw. GPX2 (GPX1: 180°C)

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Graphite and SiC Heat Exchangers and Process Equipment Graphite

Corrosion Resistance of Synthetic Resin-Impregnated Graphite GAB GPX

Material Information (W-2)

Chemicals	Concen-tration max. [%]	Tem-perature[1] [°C]	Resis-tance
Nitrates of all common metals	all	200	●
Nitric acid	> 20		-
Nitrites of all common metals	all	200	●
Nitrobenzene	all	200	●
Nitrophenol	all	100	●
Nitrous gases, dry	< 20	≤ 60	●
Nitrous gases, moist	< 20	≤ 60	○
Nitrotoluene	all	200	●
Oleum			-
Perchlorethylene	all	200	●
Perchloric acid	all	≤ 100	●
Phenol	all	200	●
Phosgene	all	200	●
Phosphoric acid	all	200	●
Phosphorusoxichloride	all	200	●
Phosphorustrichloride	all	200	●
Photographic solutions	all	200	●
Pickling baths ($HCl + H_2SO_4$)	all	200	●
Plating baths	all	200	●
Potassium hydroxide	< 10	≤ 60	●
Potassium hydroxide	< 30	≤ 20	●
Potassium hypochlorite	all	≤ 30	○
Potassium permanganate	all	200	●
Propanol	all	200	●
Pyridine	all	200	●
Sea water	all	200	●
Sodium carbonate	all	≤ 100	●
Sodium chlorate	all	200	●
Sodium hydroxide	< 10	≤ 60	●

Chemicals	Concen-tration max. [%]	Tem-perature[1] [°C]	Resis-tance
Sodium hydroxide	10 - 20	60 - 20	○
Sodium hydroxide	> 20		-
Sodium hypochlorite	all	≤ 40	○
Sodium hypochlorite		> 40	-
Sodium thiosulphate	all	200	●
Spinning bath solutions (H_2SO_4)	50	200	●
Sulphates of all commom metals	all	200	●
Sulphites of all commom metals	all	200	●
Sulphur dioxide, gas	50	200	●
Sulphuric acid	< 65	200	●
Sulphuric acid	65 - 85	200 - 40	○
Sulphuric acid	> 85		-
Sulphuric acid + Nitric acid			-
Sulphurious acid	all	200	●
Sulphuryl chloride	all	200	●
Tetrachloroethane	all	120	●
Tetrachloroethylen	all	200	●
Tetrahydrofurane	all	≤ 60	●
Thionyl chloride	all	200	●
Toluene	all	200	●
Trichloroethylene	all	200	●
Uric acid	all	200	●
Vinyl chloride	all	200	●
Water (distilled as well)		200	●
Water, vapour		200	●
Xylene	all	200	●

● resistant
○ restricted resistant
- not resistant

[1] Max. admissible graphite wall temperature for GPX1T bzw. GPX2 (GPX1: 180°C)

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