



# **General Chemical Resistance Guide**

CORROSION TEST DATA

- A <10% swelling, <15% loss of tensile strength, little or no chemical attack.  
 B <15% swelling, <30% loss of tensile strength, minor chemical attack.  
 C <20% swelling, <50% loss of tensile strength, moderate chemical attack.  
 NR >20% swelling, >50% loss of tensile strength, attacked or dissolved.

\* Entries prefaced with an asterisk are not specifically tested but are estimates based on performance with similar classes of chemicals.

- Note that when boiling is indicated, the boiling temperature varies with the concentration of the corrodent.

- Maximum use temperatures listed are not necessarily upper limits of usability but are limits of data available at time of printing.

	Teflon FEP	Teflon MFA	ECTFE	PVDF
Acetic Acid	A boiling	A boiling	A 100% to 100°F A 10% to 200°F	A to 122°F B at 158°F C at 212°F A 50% to 212°F
Acetic Acid Vapors	A to 200°F	A to 200°F	A to 200°F	NR at 230°F
Acetic Acid Glacial	A boiling	A boiling	A to 100°F	A to 122°F B at 158°F C at 212°F NR at 230°F
Acetone	A to 200°F	A to 200°F	A to 200°F	C/NR at 100°F NR at 122°F B 50% to 122°F
Ammonium Hydroxide	A to 300°F	A to 282°F	A to 200°F	A to 275°F
Ammonium Nitrate	A to 200°F	A to 200°F	A to 70°F	A to 275°F
Aroclor	*A to 200°F	*A to 200°F		
Aqua Regia	A to 248°F	A to 248°F	A to 100°F	A to 212°F
Asphalt	A to 70°F	*A to 200°F		A to 212°F
Beer	A to 200°F	*A to 200°F		A to 212°F
Benzene	A to 200°F	A to 200°F	A to 200°F	A to 125°F
Boric Acid 5%	A to 100% to 300°F	A to 100% to boiling	A to 100% to 70°F	A to 275°F
Boric Acid 10%	A to 100% to 300°F	A to 100% to boiling	A to 100% to 70°F	A to 275°F
Bromine Dry Gas	A to 200°F	A to 138°F	NR	A to 212°F
Calcium Carbonate	A to 300°F	A to 200°F		A to 275°F
Calcium Chloride Saturated	A to 300°F	A to 300°F	A to 300°F	A to 275°F
Calcium Chloride Dilute	A to 300°F	A to 300°F	A to 300°F	A to 275°F
Caustic Potash (Potassium Hydroxide)	A to 300°F	A to 200°F	A to 50% to 250°F	A to 167°F B to 212°F
Caustic Soda (Sodium Hydroxide)	A to 300°F	A to 50% to 248°F	A to 50% to 200°F	A to 250°F brittle at 250°F

	Teflon FEP	Teflon MFA	ECTFE	PVDF
Chlorinated Water	A to 300°F	A to 200°F	A to 100°F	AB to 225°F
Chlorine Dry	A to 300°F	A to 248°F	A to 200°F	A to 212°F
Chlorine Wet	A to 300°F	A to 248°F	A to 200°F	A to 212°F AB liquid to 200°F
Chlorosulfonic Acid	A to 304°F	A to 304°F	A 5% to 200°F	C to 70°F NR at 112°F
Chromic Acid Dilute	A to 300°F	A to 248°F	A to 200°F	A to 120°F
Chromic Acid Concentrated	A 50% to 300°F	A to 248°F	A to 200°F	A 50% to 120°F B 50% to 167°F C 50% at 212°F
Chromic Acid <10% Boiling	A	A	A	NR
Chromic Acid >10% Boiling	A to 50%	A to 50%		NR
Creosote Hot (Wood & Coal Tar)	A to 70°F	*A to 200°F	A to 70°F	
Crude Oil	A to 300°F	A to 200°F	A to 200°F	A to 275°F
Diesel Fuel	A to 300°F	A to 200°F	A to 200°F	A to 275°F
Dow Therm	A to 300°F	*A to 200°F	A to 200°F	
Fluorine Gas Dry	A to 70°F B to 125°F	A to 200°F	NR at 200°F	A to 70°F
Fluorine Gas Dry 300°F	NR	*NR	NR	NR
Fluorine Gas Wet	A to 300°F	A to 200°F	NR at 200°F	A to 70°F
Formaldehyde (Formalin)	A to 300°F	A to 200°F	A to 200°F	A to 120°F C at 212°F
Fuel Oils	A to 300°F	A to 200°F	A to 300°F	AB to 275°F
Furfural (Furfuraldehyde)	A to 300°F	A to 200°F	A to 100°F	B to 122°F C at 167°F NR at 212°F
Gasoline Leaded Refined	A to 300°F	A to boiling	A to 200°F	A to 275°F
Gasoline Unleaded Refined	A to 300°F	A to boiling	A to 200°F	A to 275°F
Glucose	A to 300°F	A to 200°F		A to 275°F
Glycol (Ethylene Glycol)	A to 300°F	A to 200°F	A to 200°F	A to 275°F
Hydrazine	A to boiling	A to boiling		A 48% to 275°F
Hydrobromic Acid	A to 300°F	A to 50% to 200°F	A to 300°F	A 37% to 275°F
Hydrochloric Acid >20%	A conc. to 248°F	A to 36% to 248°F	A to 100% to 200°F	A 100% to 275°F
Hydrochloric Acid 1-20%	A to 248°F	A to 248°F	A to 200°F	A to 275°F
Hydrochloric Acid <1%	A to 248°F	A to 248°F	A to 200°F	A to 275°F
Hydrochloric Acid 1% 175°F	A to 248°F	A to 248°F	A to 200°F	A
Hydrochloric Acid 0.5% to 2% 175°F	A to 248°F	A to 248°F	A to 200°F	A to 275°F
Hydrochloric Acid >2% 175°F	A to 248°F	A to 248°F	A to 200°F	A to 275°F
Hydrochloric Acid <0.25% Boiling	A	A	A	A to 275°F
Hydrochloric Acid <1% Boiling	A	A	A	A to 275°F

\* The information above was extracted with written permission from Compass Publications, La Jolle, CA, USA

	Teflon FEP	Teflon MFA	ECTFE	PVDF
Hydrochloric Acid >1% Boiling	A conc.	A to 36%	A to 50%	A 100% to 275°F
Hydrofluoric Acid <40%	A to 300°F	A to 248°F	A to 300°F	A to 248°F
Hydrofluoric Acid 35%	A to 300°F	A to 248°F	A to 300°F	A to 248°F
Hydrofluoric Acid >40%	A 63% to 73°F A 50% to 300°F	A 100% to 248°F	A 63% to 70°F A 50% to 300°F	A 100% to 212°F AB 60% to 248°F
Hydrofluoric Acid Boiling	A to 50%	A	A to 50%	A
Hydrogen Chloride Gas Dry	A to 300°F	A to 200°F		A to 275°F
Hydrogen Chloride Gas Wet	*A to 300°F	*A to 200°F		A to 275°F
Hydrogen Fluoride Anhydrous	*A to 300°F	*A to 200°F		
Jet Fuel (JP3, JP4, JP5)	A to 300°F	A to 200°F	A to 300°F	A to 212°F
Kerosene	A to 300°F	A to 200°F	A to 300°F	A to 275°F
Mercury	A to 300°F	A to 300°F	A to 70°F	A to 275°F
Methyl Alcohol (Methanol)	A to 300°F	A to 200°F	A to 70°F	A to 275°F
Methyl Ethyl Ketone	A to 300°F	A to 200°F	A to 100°F	C to 150°F NR at 212°F
Methylene Chloride	A to 300°F	A to 200°F		B to 122°F
Milk	A to 212°F	A to 212°F		A to 212°F
Mineral Oil	A to 356°F	A to 356°F	A to 300°F	A to 275°F
Naphtha	A to 300°F	A to 212°F	A to 300°F	A to 275°F
Nitric Acid	A 100% to boiling	A 90% to 75°F A 70% to 248°F	A 70% to 200°F	A conc. to 200°F NR gas at 70°F
Nitric Acid Fuming >70%	A to 248°F	A to 248°F	AB 70% at 212°F	AB to 122°F C/NR anhydrous at 70°F
Nitric Acid Boiling	A 100%	A 70%	NR 70%	C/NR 70°F B 50% A 25%
Oxygen	A to 200°F	A to 200°F	A to 70°F	A to 275°F
Ozone	A to 125°F	A to 200°F		A to 275°F
Perchloroethylene	A to 250°F	A to 250°F	A to 200°F	A to 170°F B to 212°F
Petroleum	A to 200°F	A to 200°F	A to 200°F	A to 270°F
Phosphoric Acid Aerated	A to 100% to boiling	A to 100% to boiling	A to 200°F	A to 100% to 70°F A to 85% to 230°F A 30% to 275°F
Phosphoric Acid Air Free	A to 100% to boiling	A to 100% to boiling	A to 200°F	A to 100% to 70°F A to 85% to 230°F A 30% to 275°F
Phosphoric Acid Boiling	A to 100%	A to 100%		A 85%
Phosphorus	A to 200°F	A to 200°F		
Plating Solutions Brass	A to 300°F	A to 200°F		AB to 200°F
Plating Solutions Cadmium	A to 300°F	*A to 200°F		AB to 200°F
Plating Solutions Chrome	A to 300°F	*A to 200°F		AB to 150°F

	Teflon FEP	Teflon MFA	ECTFE	PVDF
Plating Solutions Copper	A to 300°F	*A to 200°F		AB to 200°F
Plating Solutions Gold	A to 300°F	*A to 200°F		AB to 200°F
Plating Solutions Lead	A to 300°F	*A to 200°F		AB to 200°F
Plating Solutions Nickel	A to 300°F	*A to 200°F		A to 200°F
Plating Solutions Silver	A to 300°F	*A to 200°F		A to 120°F
Plating Solutions Tin	A to 300°F	*A to 200°F		AB to 200°F
Plating Solutions Zinc	A to 300°F	*A to 200°F		AB to 200°F
Potassium Hydroxide	A to 300°F	A to 200°F	A to 50% to 250°F	A to 167°F B to 212°F C to 230°F
Propyl Alcohol (Propanol)	A to 300°F	A to 200°F	A to 70°F	A to 122°F AB at 158°F AC at 212°F
Propylene Glycol	A to 125°F	*A to 200°F		
Propylene Oxide	A to 300°F	A to 200°F		C/NR at 70°F
Salicylic Acid	A to 300°F	A to 200°F		A to 212°F
Salt Brine (Sodium Chloride Solution)	A to 300°F	A to 200°F	A to 70°F A 10% to 250°F	A to 275°F
Sea Water	A to 250°F	A to 200°F	A to 250°F	A to 275°F
Sewage	*A to 200°F	*A to 200°F		A to 225°F
Sodium Chlorate	A to 200°F	A to 200°F		A to 275°F
Sodium Chloride	A to 300°F	A to 200°F	A sat'd. to 70°F A 10% to 250°F	A to 275°F
Sodium Hypochlorite	A to 300°F	A to 200°F	A to 200°F	A to 13% to 100°F B to 13% to 140°F NR at 13% at 212°F
Sodium Silicate (Water Glass)	A to 300°F	A to 200°F		A to 275°F
Sulfur	A to molten	A to molten	*A to molten	A to 248°F
Sulfur Molten 266°F	A	A	*A	
Sulfuric Acid Air Free	A to 100% to 400°F	A to 100% to 400°F	A to 100% to 300°F	NR 99% at 70°F AC 98% at 70°F A to 96% to 175°F A to 60% to 225°F
Sulfuric Acid Aerated	A to 100% to 400°F	A to 100% to 400°F	A to 100% to 300°F	NR 99% at 70°F AC 98% at 70°F A to 96% to 175°F A to 60% to 225°F
Sulfuric Acid Boiling	A to 80%	A to 80%	A to 65%	NR 40% A 30%
Sulfuric Acid Fuming Oleum	A to 400°F	A to 400°F	A to 300°F	NR at 70°F
Sulfurous Acid	A to 300°F	A to 200°F		A to 212°F

	Teflon FEP	Teflon MFA	ECTFE	PVDF
Toluene (Toluol)	A to 300°F	A to 230°F	A to 200°F	A to 70°F AB at 122°F AC at 212°F
Vinylidene Chloride (Resin)	A to 125°F	*A to 200°F		*AB to 70°F
Water, Distilled	A to 300°F	A to 200°F	A to 250°F	A to 275°F
Water, Fresh	A to 250°F	A to 200°F	A to 250°F	A to 275°F
Water, Deionized	A to 212°F	A to 200°F	A to 250°F	A to 275°F
Water, Demineralized	A to 300°F	A to 200°F	A to 250°F	A to 275°F
Water, Brackish	A to 212°F	A to 200°F	A to 250°F	
Water, Salt (See Also Sea Water)	A to 300°F	A to 200°F	A to 250°F	A to 275°F
Whiskey	A to 300°F	*A to 200°F		*A to 200°F
Wine	A to 300°F	*A to 200°F		*A to 200°F
Sunlight	no effect	no effect	no effect	slight bleaching
Ultraviolet Light	no effect	no effect	no effect	Excellent

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**Note:** The ratings given are a guide and do not constitute a warranty of any kind, express or implied, with respect to the performance of the products in any specific applications.

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