

GasGuard™ 1000 Corrosion Results Guide

Chemical	Concentration %	Maximum Temperature °F/°C
A		
Acetaldehyde	100	NR
Acetic Acid	10	160/71
Acetic Acid	15	170/77
Acetic Acid	25	170/77
Acetic Acid	50	140/60
Acetic Acid, Glacial	100	NR
Acetone	10	NR
Acetone	100	NR
Acetonitrile	100	NR
Acetophenone	100	NR
Acrylic Acid	10	100/38
Acrylic Acid	25	NR
Acrylic Emulsion	All	120/49
Acrylic Latex	All	120/49
Acrylonitrile	100	NR
Alcohol, Amyl	100	100/38
Alcohol, Butyl	100	80/27
Alcohol, Ethyl	10	110/43
Alcohol, Ethyl	50	110/43
Alcohol, Ethyl	100	80/27
Alcohol, Isopropyl	10	110/43
Alcohol, Isopropyl	100	90/32
Alcohol, Methyl	100	NR
Aliphatic Hydrocarbons	100	Contact Laboratory
Alkaline Cleaners	All	NR
Allyl Alcohol	100	NR
Allyl Chloride	100	NR
Alpha Methyl Styrene	100	NR
Alum	All	170/77
Aluminum Chloride	All	170/77
Aluminum Chlorohydrate	All	150/66
Aluminum Chlorohydroxide	50	150/66
Aluminum Citrate	All	170/77
Aluminum Fluoride	All	75/24
Aluminum Hydroxide	20	150/66
Aluminum Nitrate	All	150/66
Aluminum Potassium Sulfate	All	170/77
Aluminum Sulfate	All	170/77
Ammonia Aqueous (See Ammonium Hydroxide)		
Ammonia, Dry	Gas	90/32
Ammonia, Liquid	100	NR
Ammonia, Gaseous	All	NR

Chemical	Concentration %	Maximum Temperature °F/°C
Ammonium Bicarbonate	15	130/55
Ammonium Bicarbonate	20	120/49
Ammonium Bicarbonate	100	NR
Ammonium Bisulfide	All	NR
Ammonium Carbonate	All	NR
Ammonium Chloride	All	170/77
Ammonium Citrate	Sat'd	120/49
Ammonium Fluoride	All	80/27
Ammonium Hydroxide (Aqueous Ammonia)	All	NR
Ammonium Lauryl Sulfate	100	120/49
Ammonium Nitrate	60	160/71
Ammonium Persulfate	All	NR
Ammonium Phosphate (Monobasic)	All	160/71
Ammonium Sulfate	All	170/77
Ammonium Sulfide	All	NR
Ammonium Sulfite	All	NR
Ammonium Thiocyanate	20	170/77
Ammonium Thiocyanate	50	120/49
Ammonium Thiosulfate	60	NR
Amyl Acetate	All	NR
Amyl Alcohol	All	80/27
Amyl Chloride	All	NR
Aniline	100	NR
Aniline Sulfate	Sat'd	NR
Antimony Trichloride	100	160/71
Aqua Regia (Conc. Hydrochloric: Conc. Nitric, 3:1)	Conc.	NR
Arsenious Acid	20	80/27
B		
Barium Bromide	All	—
Barium Carbonate	All	170/77
Barium Chloride	All	170/77
Barium Hydroxide	All	NR
Barium Sulfate	All	170/77
Barium Sulfide	Sat'd	NR
Beer	—	110/43
Beet Sugar Liquor	All	120/49
Benzaldehyde	100	NR
Benzene	100	NR
Benzene, HCl (wet)	All	NR
Benzene Sulfonic Acid	30	150/66
Benzene Sulfonic Acid	Sat'd	NR

NR = Not Recommended

Conc. = Concentrated

Sat'd = Saturated

Chemical	Concentration %	Maximum Temperature °F/°C
Benzene Vapor	All	NR
Benzoic Acid	All	170/77
Benzyl Alcohol	All	NR
Benzyl Chloride	100	NR
Biodegradable, All-Purpose Liquid Cleaner	100	100/38
Biodegradable Detergent, Liquid	100	100/38
Black Liquor (pulp mill)	All	NR
Bleach, Calcium Hypochlorite	All	NR
Bleach, Chlorine Dioxide	All	NR
Bleach, Chlorine Water	All	NR
Bleach, Hydrosulfite	All	NR
Bleach, Sodium Hypochlorite	All	NR
Borax	All	170/77
Boric Acid	All	170/77
Brine	All	170/77
Bromine, Dry Gas	—	NR
Bromine Fumes	—	NR
Bromine, Liquid	100	NR
Bromine, Wet Gas	—	NR
Butyl Acetate	100	NR
Butyl Alcohol (Normal, Secondary, Tertiary)	100	80/27
Butyl Amine	All	NR
Butyl Carbitol	80/27	NR
Butyl Cellosolve	100	NR
Butylene Glycol	100	150/66
Butylene Oxide	100	NR
Butyraldehyde	100	NR
Butyric Acid	25	120/49
Butyric Acid	50	80/27
Butyric Acid	85	NR
C		
Cadmium Chloride	All	150/66
Calcium Bisulfide	All	160/71
Calcium Bisulfite	All	160/71
Calcium Carbonate	All	160/71
Calcium Chlorate	All	150/66
Calcium Chloride	All	170/77
Calcium Hydroxide	15	120/49
Calcium Hypochlorite	All	NR
Calcium Nitrate	All	170/77

Chemical	Concentration %	Maximum Temperature °F/°C
Calcium Sulfate	All	170/77
Calcium Sulfite	All	150/66
Cane Sugar Liquor and Sweet Water	All	110/43
Canning Plant Waste	—	110/43
Capric Acid	5	160/71
Capric Acid	Sat'd	160/71
Caprylic Acid (Octanoic Acid)	All	170/77
Carbon Dioxide Gas	—	180/27
Carbon Disulfide	All	NR
Carbon Monoxide Gas	—	180/27
Carbon Tetrachloride	100	NR
Carbonic Acid	All	150/66
Castor Oil	All	160/71
Chlorine Dioxide	Sat'd	NR
Chlorine, Dry Gas	100	140/60
Chlorine, Liquid	100	NR
Chlorine Water	All	NR
Chlorine, Wet Gas	100	NR
Chloroacetic Acid	25	90/32
Chloroacetic Acid	50	NR
Chlorobenzene	100	NR
Chloroethylene (1,1,1-trichloroethylene)	—	NR
Chloroform	100	NR
Chloropyridine	100	NR
Chlorosulfonic Acid	All	NR
Chromic Acid	5	80/27
Chromic Acid	20	NR
Chromous Sulfate	All	170/77
Citric Acid	All	160/71
Coconut Oil	All	160/71
Copper Acetate	All	160/71
Copper Chloride	All	170/77
Copper Cyanide	All	120/49
Copper Fluoride	All	NR
Copper Nitrate	All	150/66
Copper Sulfate	All	170/77
Corn Starch	Slurry	100/38
Corn Sugar	All	100/38
Cottonseed Oil	100	100/38
Cresol	All	NR
Cresylic Acid	All	NR

Chemical	Concentration %	Maximum Temperature °F/°C
Crude Oil, Sour	100	160/71
Crude Oil, Sweet	100	160/71
Cyclohexane	All	120/49
Cyclohexanone	100	NR
D		
DETA (see Diethylenetriamine)	—	—
Deionized Water	100	150/66
Demineralized Water	—	150/66
Detergent, Biodegradable, Liquid	—	100/38
Detergents, Organic	100	100/38
Detergents, Sulfonated	—	150/66
Diallylphthalate	All	130/54
Dibromophenol	100	NR
Dibromopropanol	All	NR
Dibutyl Ether	100	80/27
Dibutyl Phthalate	100	120/49
Dichlorobenzene	100	NR
Dichloroethane	100	NR
Dichloroethylene	100	NR
Dichloromethane	100	NR
Dichlorophenol	100	NR
Dichloropropane	100	NR
Dichloropropene	100	NR
Dichloropropionic Acid	100	NR
Diesel Fuel	100	170/77
Diethanol Amine	100	NR
Diethyl Amine	100	NR
Diethyl Benzene	100	NR
Diethyl Ether (Ethyl Ether)	100	NR
Diethyl Formamide	100	NR
Diethyl Ketone	100	NR
Diethyl Maleate	100	NR
Diethylene Glycol	100	170/77
Diethylenetriamine (DETA)	100	NR
Diisobutyl Ketone	100	NR
Diisobutylene	100	NR
Diisopropanol Amine	100	NR
Dimethyl Acetamide	70	—
Dimethyl Phthalate	100	NR
Diocetyl Phthalate	100	120/49
Dipropylene Glycol	All	170/77
Distilled Water	100	150/66
Divinyl Benzene	100	NR

Chemical	Concentration %	Maximum Temperature °F/°C
E		
EDTA (See Ethylenediaminetetraacetic Acid)		
Epichlorohydrin	100	NR
Esters, Fatty Acids	All	150/66
Ethanol Amine	100	NR
Ether	100	NR
Ethyl Acetate	100	NR
Ethyl Acrylate	100	NR
Ethyl Alcohol (Ethanol)	10	110/43
Ethyl Alcohol (Ethanol)	50	110/43
Ethyl Alcohol (Ethanol)	100	80/27
Ethyl Benzene	100	NR
Ethyl Bromide	100	NR
Ethyl Chloride	100	NR
Ethyl Ether	100	NR
Ethylenediaminetetraacetic Acid (EDTA)	100	NR
Ethylene Chloride	100	NR
Ethylene Dibromide	All	NR
Ethylene Dichloride	100	NR
Ethylene Glycol	All	170/77
Ethylene Glycol		
Monobutyl Ether	100	NR
Ethylene Oxide	100	NR
F		
Fatty Acids	All	170/77
Ferric Chloride	All	170/77
Ferric Nitrate	All	170/77
Ferric Sulfate	All	170/77
Ferrous Chloride	All	170/77
Ferrous Nitrate	All	170/77
Ferrous Sulfate	All	170/77
Fluoboric Acid	Sat'd	90/32
Fluosilicic Acid	10	NR
Fluosilicic Acid	35	NR
Formaldehyde	40	90/32
Formic Acid	10	120/49
Formic Acid	25	120/49
Formic Acid	50	NR
Formic Acid	100	NR
Fuel Oil,		
No. 1 and No. 2	100	140/60
Furfural	All	NR

NR = Not Recommended

Conc. = Concentrated

Sat'd = Saturated

Chemical	Concentration %	Maximum Temperature °F/°C
G		
Gas, Natural	All	170/77
Gasohol	All	Contact Laboratory
Gasoline, Auto	All	Contact Laboratory
Gasoline, Aviation	All	110/43
Gasoline, Ethyl	100	Contact Laboratory
Glucose	All	120/49
Glycerine	All	170/77
Glycol, Ethylene	All	170/77
Glycol, Propylene	All	170/77
Glycolic Acid	50	120/49
Green Liquor (pulp mill)	—	NR
H		
Heating Oil	—	90/32
Heptane	100	140/60
Herbicides	—	Contact Laboratory
Hexane	100	120/49
Hydraulic Fluid	100	100/38
Hydrazine	100	NR
Hydrobromic Acid	25	120/49
Hydrochloric Acid	10	140/60
Hydrochloric Acid	20	120/49
Hydrochloric Acid	36	NR
Hydrochloric Acid and Organics	All	NR
Hydrocyanic Acid	10	75/24
Hydrofluoric Acid	1	NR
Hydrofluoric Acid	10	NR
Hydrofluoric Acid	20	NR
Hydrofluoric and Nitric Acids	Mixtures	Contact Laboratory
Hydrofluosilicic Acid	10	NR
Hydrofluosilicic Acid	30	NR
Hydrogen Bromide, Dry Gas	100	100/38
Hydrogen Bromide, Wet Gas	100	80/27
Hydrogen Chloride Gas, Dry	100	120/49
Hydrogen Chloride Gas, Wet	100	120/49
Hydrogen Peroxide	5	120/49
Hydrogen Peroxide	50	NR
Hydrogen Sulfide, Dry Gas	—	140/60
Hydroiodic Acid	10	80/27
Hypochlorous Acid	10	100/38
Hypochlorous Acid	20	80/27
I		
Insecticides	Contact Laboratory	80/27

Chemical	Concentration %	Maximum Temperature °F/°C
Iodine Vapor	100	—
Isoamyl Alcohol	100	—
Isobutyl Alcohol	All	—
Isooctyl Adipate	100	—
Isooctyl Alcohol	100	—
Isopropyl Alcohol	10	110/43
Isopropyl Alcohol	100	90/32
Isopropyl Palmitate	100	180/82
J		
Jet Fuel	100	120/49
Jet Fuel A	100	90/32
Jet Fuel (JP-4)	100	160/71
K		
Kerosene	100	120/49
Kraft Liquid	—	160/71
L		
Lactic Acid	All	160/71
Latex	All	120/49
Lauric Acid	All	160/71
Lauryl Alcohol	100	120/49
Lead Acetate	All	120/49
Lead Nitrate	All	120/49
Levulinic Acid	All	160/71
Light Water	100	120/49
Lime Slurry	All	170/77
Linoleic Acid	100	160/71
Linseed Oil	All	160/71
Liquid Chlorine	100	NR
Lithium Bromide	All	170/77
Lithium Chloride	All	170/77
M		
Magnesium Bicarbonate	All	130/54
Magnesium Carbonate	All	150/66
Magnesium Chloride	All	170/77
Magnesium Hydroxide	All	100/38
Magnesium Nitrate	All	160/71
Magnesium Sulfate	All	150/66
Maleic Acid	All	140/60
Maleic Anhydride	100	120/49
Manganese Chloride	All	140/60
Manganese Sulfate	All	140/60
Mercaptan, Aromatic	100	NR
Mercaptopropionic Acid	100	NR

Chemical	Concentration %	Maximum Temperature °F/°C
Mercuric Chloride	100	170/77
Mercurous Chloride	All	170/77
Mercury	100	170/77
Methacrylic Acid	100	NR
Methyl Alcohol (Methanol)	100	NR
Methyl Ethyl Ketone	100	NR
Methyl Isobutyl Ketone	100	NR
Methyl Styrene	100	NR
Methylene Chloride	All	NR
Milk and Milk Products	All	140/60
Milk Waste	All	170/77
Mineral Oils	100	170/77
Monochloroacetic Acid	80/27	NR
Monochlorobenzene	100	NR
Monoethanolamine	100	NR
Monomethylhydrazine	100	NR
Morpholine	100	NR
Motor Oil	100	140/60

N

Naphtha	100	140/60
Naphthalene	100	140/60
Nickel Chloride	All	160/71
Nickel Nitrate	All	160/71
Nickel Sulfate	All	170/77
Nitric Acid	5	130/54
Nitric Acid	10	90/32
Nitric Acid	20	NR
Nitric Acid	35	NR
Nitric, Sulfuric and Hydrochloric Acids	Mixtures	NR
Nitrobenzene	100	NR
Nitrogen	100	160/71
Nitrogen Tetroxide	100	NR
Nitrophenol	100	NR
Nitrous Acid	10	120/49
Nitrous Acid	100	NR

O

Octanoic Acid	Sat'd	160/71
Oil, Crude Storage Tank Bottoms	—	130/54
Oil, Heating	100	90/32
Oil, Low-Sulfur Crude	100	120/49
Oil, Medium-Sulfur Crude	100	90/32
Oil, Mid-Continent Sweet	100	90/32

Chemical	Concentration %	Maximum Temperature °F/°C
Oil, Sour Crude	100	160/71
Oil, Sweet Crude	100	160/71
Oleic Acid	All	170/77
Oleum (Fuming Sulfuric Acid)	—	NR
Olive Oil	100	170/77
Organic Detergents, pH < 12	All	80/27
Oxalic Acid	15	170/77
Oxalic Acid	100	170/77
Ozone	—	NR

P

Palm Oil	100	160/71
Palmitic Acid	100	160/71
Paper Mill Liquors	All	Consult Laboratory
Paraffin Wax	100	—
Perchloric Acid	All	NR
Perchloroethylene	100	NR
Phenol	5	NR
Phenol	100	NR
Phosphate Salts	25	90/32
Phosphoric Acid	80/27	140/60
Phosphoric Acid, Super	105	90/32
Phosphoric and Nitric Acids	Mixtures	NR
Phosphorus Trichloride	100	90/32
Phthalic Acid	100	160/71
Pickling Acids, Sulfuric and Hydrochloric	—	Consult Laboratory
Picric Acid, Alcoholic	100	NR
Pine Oil	100	NR
Plating Solution	—	Consult Laboratory
Polyphosphoric Acid	115	120/49
Polyvinyl Acetate Emulsion	All	120/49
Polyvinyl Alcohol	100	100/38
Potassium Acetate	All	160/71
Potassium Aluminum Sulfate	All	170/77
Potassium Bicarbonate	All	NR
Potassium Bromide	All	160/71
Potassium Carbonate	10	80/27
Potassium Carbonate	50	NR
Potassium Chloride	All	160/71
Potassium Dichromate	All	170/77
Potassium Ferricyanide	All	140/60
Potassium Ferrocyanide	All	140/60
Potassium Hydroxide	All	NR

NR = Not Recommended

Conc. = Concentrated

Sat'd = Saturated

Chemical	Concentration %	Maximum Temperature °F/°C
Potassium Nitrate	All	170/77
Potassium Permanganate	All	100/38
Potassium Persulfate	All	80/27
Potassium Sulfate	All	170/77
Propylene Glycol	All	170/77
Pyridine	100	NR

Q

Quaternary Ammonium Salts	All	Consult Laboratory
---------------------------	-----	--------------------

R

Radioactive Waste	—	Consult Laboratory
-------------------	---	--------------------

S

Salicylic Acid	Sat'd	90/32
Sea Water	100	160/71
Septic System	—	90/32
Sewage, Anaerobic	—	90/32
Sewage, Municipal, Treated and Untreated	—	90/32
Sewage, Septic Tank	—	90/32
Sewage Treatment	—	90/32
Sewage Treatment Fumes	—	90/32
Sewer Gas: H ₂ S	—	90/32
Silicic Acid (Hydrated Silica)	All	160/71
Silver Nitrate	All	160/71
Silver Plating Solution	—	Consult Laboratory
Soaps	All	120/49
Sodium Acetate	All	160/71
Sodium Aluminate	All	NR
Sodium Benzoate	All	160/71
Sodium Bicarbonate	All	100/38
Sodium Bichromate	100	170/77
Sodium Bisulfate	All	160/71
Sodium Bisulfite	All	170/77
Sodium Borate	All	170/77
Sodium Bromide	All	170/77
Sodium Carbonate (Soda Ash)	All	NR
Sodium Chlorate	All	NR
Sodium Chloride	All	160/71
Sodium Chlorite	10	NR
Sodium Cyanide	10	120/49
Sodium Dichromate	All	120/49
Sodium Diphosphate	Sat'd	170/77
Sodium Ferricyanide	All	170/77
Sodium Ferrocyanide	All	170/77

Chemical	Concentration %	Maximum Temperature °F/°C
Sodium Fluoride	All	NR
Sodium Hydroxide	All	NR
Sodium Hypochlorite	All	NR
Sodium Hyposulfite	20	150/66
Sodium Monophosphate	All	170/77
Sodium Nitrate	Sat'd	170/77
Sodium Nitrite	All	170/77
Sodium Sulfate	All	170/77
Sodium Sulfide	10	80/27
Sodium Sulfide	Sat'd	NR
Sodium Sulfite	All	NR
Sodium Tetraborate	All	170/77
Sodium Thiocyanate	All	80/27
Sodium Thiosulfate	All	120/49
Soy Sauce	All	—
Soya Oil	100	170/77
Soybean Oil	—	170/77
Soybean Oil, Epoxydized	100	—
Spearmint Oil	All	—
Stannic Chloride	All	170/77
Stannous Chloride	All	170/77
Stearic Acid	100	170/77
Styrene	100	NR
Sucrose	All	140/60
Sugar, Beet and Cane Liquor	All	160/71
Sugar, Sucrose	All	140/60
Sulfamic Acid	15	130/54
Sulfated Detergents		0-50/160/71
Sulfite Liquors	—	150/66
Sulfonyl Chloride, Aromatic	—	NR
Sulfur Dioxide, Dry or Wet (Vapors)	—	170/77
Sulfur Trioxide, Dry or Wet	100	NR
Sulfuric Acid	25	170/77
Sulfuric Acid	50	150/66
Sulfuric Acid	93	NR
Sulfuric Acid	Fumes	170/77
Sulfuric and Chromic Acids	Mixtures	NR
Sulfurous Acid	10	NR
Sulfuryl Chloride	100	NR

T

Tannic Acid	All	170/77
Tartaric Acid	All	170/77
Tetrachloroethane	100	NR

Chemical	Concentration %	Maximum Temperature °F/°C
Tetrachloropyridine	100	NR
Tetrahydrofuran	100	NR
Tetrasodium Pyrophosphate	5	125
Thionyl Chloride	100	NR
Toluene	100	NR
Toluene Di-isocyanate (TDI)	100	NR
Transformer Oil		
Mineral Types	100	100/38
Nonchlorinated	All	NR
Tributyl Phosphate	100	120/49
Trichloroacetic Acid	—	NR
Trichloroethylene	—	NR
Trichloromethane (Chloroform)	100	NR
Trichlorophenol	100	NR
Triethanolamine	All	NR
Triethylamine	All	NR
Trisodium Phosphate	Sat'd	NR
Turpentine	All	NR
U		
Urea	All	140/60
V		
Vegetable Oils	All	170/77
Vinegar	100	150/66
Vinyl Acetate	All	NR
Vinyl Toluene	100	NR

Chemical	Concentration %	Maximum Temperature °F/°C
W		
Water, City	100	150/66
Water, Deionized	100	150/66
Water, Distilled	100	150/66
Water-Oil Separation	—	90/32
Water, Salt	100	160/71
Water, Sea	100	160/71
Weed Killers	—	NR
Wine	All	80/27
Wine Fermentation	—	90/32
Winery Waste	—	90/32
X		
Xylene	All	NR
YZ		
Zinc Chlorate	All	170/77
Zinc Chloride	All	170/77
Zinc Nitrate	All	170/77
Zinc Sulfate	All	170/77
Zinc Sulfit	All	150/66

Effective chemical resistance is determined by several criteria. The principal test procedure is ASTM C581 with a minimum exposure time of one year. The temperature and/or concentration limits shown in the tables above do not necessarily constitute the limits to which the laminate can be safely used; they may only represent the limits to which testing has been performed.

NR = Not Recommended

Conc. = Concentrated

Sat'd = Saturated