Chemical Resistance Guide

The data in the following tables was obtained from numerous sources in the industry. The information is based primarily on the immersion of unstressed strips in the chemicals at ambient temperature and, to a lesser degree, on field experience. The end user should be aware of the fact that actual service conditions will affect the chemical resistance. It should be noted in the following charts that the ″A″ rating does not mean or imply that material will perform within original specification. The chemical resistance table should be used for reference only. It is the ultimate responsibility of the end user to determine the compatibility of the chemical being used in his or her particular application. Contact Hayward for information on Eastar® products.

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fibertoc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Acetal Benzene			A					A	X	X						
Acetal Oxide			A					B	X	C						
Acetaldehyde	X	B	A	X	X	C		B	X	X				A	A	A
Acetaldehyde, Aq.	X	A	A	X	X	X	A	A	B		A	A	A	A		A
Acetamide		A	A				A	A	C	A	A			A	A	
Acetate Solv., Crude	X	X		X	X	A					A		A	A	B	
Acetate Solv., Pure	X	X	A	X	X	A		C	X	X	A		A	A	A	
Acetic Acid 10%	A	A	A	A	A	A	A	B	X	B				A	A	B
Acetic Acid 20%	B	A	A	A	A	A	A	B	C	B				A	B	A
Acetic Acid 30%	B		A	A	A		A	A	C	B						
Acetic Acid 5%	A		A	A			A	A	A	B						
Acetic Acid 50%	B	A	A	A	A	A	A	B	C	A				A	C	
Acetic Acid 60%	B	B	A	A	A	A	A	C	C					A	X	
Acetic Acid 80%	B	C	A	B	C	A	A	B	C	C				A	X	
Acetic Acid, Glacial	X	B	A	X	C	B	C	B	X	X				A	X	B
Acetic Aldehyde			A					A	X	X						
Acetic Anhydride	C	B	A	X	X	B		C	X	C	A		AB	A	X	B
Acetic Ester			A					B	X	X						
Acetic Ether			A					B	X	X						
Acetol			A													
Acetone	X	B	A	X	X	X	C	A	X	C	A		A	A	AB	A
Acetonitrile		B	A	X	X	A	C	A	C	C			A	A	AB	
Acetophenone	X	A	A	X		A		A	X	C			A	A	X	
Acetyl Acetone	X		A	X	X	X		A	X	X			A		AB	
Acetyl Bromide			A			A										
Acetyl Chloride	X	A	A	X	X	A		X	C	C			BC	AC	AB	
Acetyl Propane			A					B	X	X						
Acetylene Dichl.			A						A					X		
Acetylene Tetrachl.			A					X	A	X	A		A	A	A	
Acetylene	C	A	A	C	C	A		A	A	A	A		A	A	A	
Acid Mine Water	A	B	A	A	A	A			A							
Acrylic Acid	X		A	X	X	A								A		

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fibertoc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Acrylic Emulsions		X														
Acrylonitrile	X	B	A	X	X	A		X	X	C	AB	A	A	A	A	A
Adipic Acid, Aq.	A	A	A	A	A	A		A	A	A	A	AB	A	A	A	A
Air	A	A	A	A	A	A	A	A	A	A						
Alcohol	C		A					A	B	A	A	A	A	A	AC	AB
Aldehyde			A					A	X	X						
Alkanes			A					X	A	A						
Alkazene			A					X	B	X						
Allyl Alcohol	X	A	A	X	C	A		A	B	A	A	A	A	A	A	
Allyl Aldehyde			A						A	B						
Allyl Bromide			A						B	X						
Allyl Chloride	X		B	X	X	A		X	B	X	A			AB		A
Allyl Trichloride			A						A	X						
Alum	A	A	A	A	A	A		A	A	A	A	AB	AC	AB	X	A
Aluminum Acetate	A		A					A	C	B	A	AC	A	AB	AC	A
Aluminum Bromide			A					A	A	A						
Aluminum Chloride	A	A	A	A	A	A	A	A	A	A	A		X	X	X	AB
Aluminum Fluoride	A			A	C	A		A	A	A	AB	A	X	C	X	A
Aluminum Formate			A						X	X						
Aluminum Salts		A	A	A	A	A		A	A	A				X	X	
Aluminum Sulfate	A	A	A	A	A	A		A	A	A				B	X	A
Amber Acid	A	A	A	A	A	A		A	A							
Amines	X		A	C	C	B			X	X	AB	A	A	A	A	AB
Ammon. Metaphosph.	A	A	A	A	A	A		A	A	A						
Ammonia 10%	X	A	A	A	A				A	X				A	A	A
Ammonia, Anhydrous	X	A	A	X	X	B		A	X	C	A	AB		A	A	AB
Ammonia, Aq. 25%	A	A		A	A	A									B	
Ammonia, Dry Gas	A	A	A	A	A			A	X	A			A		A	A
Ammonia, Liquid	X	A	A	X	X	A	C	A	X	B	A	A	AB	A	A	AB
Ammonia. Nitrate	B	A		B	C	A		A	A	B				A	A	
Ammonium Acetate	A	A	A	A	A			A	A	A	A	A		A		X
Ammonium Alum	X	A	A	X	C	A		A	A	B	A	BC	A	A	A	

A = Excellent, no effect • B = Good, minor effect • C = Fair, data not conclusive, testing recommended • X = Not recommended.
Ratings are based on testing at an ambient temperature of 70°F. The chemical resistance table is for reference only. End users should test to determine application suitability.
Butterfly valves, Solenoid valves, Diaphragm valves and all other valves with elastomers fully exposed to process media should derate elastomer scores by one level (i.e. "B" becomes "C", "C" becomes "X").

Chemical Resistance Guide, *CONTINUED*

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fibertoc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Ammonium Bichrom.			A					A		A						
Ammonium Bifluoride	A	A	A	A	A	A		A	A	B	A	B	X	X		X
Ammonium Bisulfide				A	A	A										
Ammonium Carbonate	A	A	A	A	A	A		A	A	C	AB	AB	AB	AB	B	A
Ammonium Casenite														A		
Ammonium Chloride	A	A	A	A	A	A		A	A	B	AB	A	X	AB	X	A
Ammonium Dichromate	A		A	A	A			A		A						
Ammonium Fluoride 20%	A	A	A	A	C	A		A	A							
Ammonium Fluoride	A		A	A						B	A			X		BC
Ammonium Hydroxide	X	A	A	A	A	A	X	A	B	B	A	X	AC	A	A	A
Ammonium Nitrate	B	A		B	A	A		A	A	A	AB	C	A	A	B	A
Ammonium Oxalate										A	A	A	A	A	A	
Ammonium Persulfate	A	C	A	A	A	A		B	C	C	B	X	AC	A	AC	A
Ammonium Ph. Di Basic	A	A	A	A	A			A	A	A	AB	AB	BC	A	AC	A
Ammonium Ph. Mono	A	A	A	A	A			A	A	A	A	B	C	A	A	A
Ammonium Ph.Tri.	A	A	A	A	A			A	A	A	A	AB	AB	A	AB	A
Ammonium Phosphate	A	A	A	A	A	A	A	A	A	A					A	
Ammonium Salts		A	A	A	A	A		A	C	A				X		
Ammonium Sulfate	A	A	A	A	A	A	A	A	C	B	A	AB	AB	A	B	A
Ammonium Sulfide	A	A	A	A	A	A		A	C	A	A		BC	A	C	
Ammonium Thiocyanate	A	A	A	A	A			A	A	A	A			A		
Ammonium Thiosulfate			A					A	A	A			AB	A	C	A
Ammonium, Fluoride 10%	A	A	A	A	C	A		A	A							
Ammonium, Fluoride 25%	A	A		X	X	A										
Amyl Acetate	X	X	A	X	X	C		A	X	C	A	A	AB	A	AB	A
Amyl Alcohol	B	A	A	C	C	A		A	A	A	A	A	AB	A	A	AB
Amyl Borate			A			A		X	A	A						
Amyl Bromide			A					X	B	X						
Amyl Chloride	X	X	A	X	X	A		X	A	X	A	A	AB	A	AC	X
Aniline Chlorohydrate				X	X											
Aniline Hydrochloride	X	A	A	X	X	A		B	B	C					X	
Aniline	X	A	A	X	X	C		B	B	X	A	B	AB	A	B	AC
Anthraquinone Sulf. Ac.	A	A		A	A	A			A							
Antichlor			A					A	A	A						
Anti-Freeze		A	A	A	A		C	A	A	A	A			A		
Antimony Chloride		A	A			A			A	X						
Antimony Pentachloride			A							X						
Antimony Trichloride	A	A	A	A		A		A	A	A	A	AB	X	A	X	AB

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fibertoc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Aqua Regia	X	X	A	X		A		C	C	C	X	X	X	X	X	A
Argon	X		A	X				A	A	C		A	A	A	A	
Arochlor									A	X	A	A		B		A
Aromatic Hydrocarbons	X			X	X			X	A	X				A		
Arsenic Acid	A	A	A	A	A	A		A	A	B	AB	A	AB	AB	B	AB
Arsenous Acid																
Aryl Supfonic Acid	X	X		X		X										
Asphalt	X	A	A	X	X	A		X	A	B	A	A	A	A	AB	A
Aviation Fuel			A								A	A	A	A	A	
Aviation Turbine Fuel			A								A	A	A	A	A	A
Baking Soda			A					A	A	A					A	
Barium Carbonate	A	A	A	A	A	A		A	A	A	B	AB	AB	B	AB	A
Barium Chloride	A	A	A	A	A	A		A	A	A	A	AB	A	AB	BC	A
Barium Cyanide									A	C	A		A	A	C	
Barium Hydrate			A					A	A	A	A	A	A	A	A	
Barium Hydroxide	A	A	A	A	A	A		A	A	A	B	A	AB	AB	AB	A
Barium Nitrate	A	A	A	A	A				A	A		X	AB	B	B	A
Barium Salts		A	A	A	A	A		A	A	A				A		
Barium Sulfate	A	A	A	A	A	A			A	A	A	AB	AB	AB	C	AB
Barium Sulfide	A	A	A	A	A	A		A	A	A		A	A	AB	A	A
Beer	A	A	A	A	A	A		A	A	C	A	A	A	A	A	A
Beet Sugar Liquid	A	A	A	A	A			A	A	A				A	A	
Beet Sugar Liquor	A	A	A	A	A	A		A	A	A	A	A	A	A	B	A
Benzaldehyde	X	C		X	X	C		C	C	X	A	B	A	A	C	A
Benzalkonium Chl.				A												
Benzene Sulf Ac .	X	X	A	X	X	B		X	A	C	B	B	A	AB		AB
Benzene Sulf. Ac. 10%	X	X	A	X	X	B			A							
Benzene	X	C	A	X	X	B	C	X	B	C	AB	A	A	AB	A	A
Benzoic Acid	A	A	A	A	A	A		B	A	X				B	B	A
Benzyl Alcohol	X	A	A	X	X	A	X	C	A	X		A	C	AB	A	A
Benzyl Benzoate			A					C	A	X			C	AB	C	
Benzyl Chloride	X	A	A					X	A	X	B		C	AB	C	
Bismuth Carbonate	A	A	A	A	A	A		A	A	A						
Black Liquor	A	A	A	A	A	A		B	A	A	AC		A	A	AC	
Borax	A	A	A	A	A	A		A	A	A	A	A	A	A	A	A
Boric Acid	A	A	A	A	A	A		A	A	B	A	AC	B	B	BC	A
Brake Fluid			A				C	A	X	C	A	A	A	A	A	
Brewery Slop									A	A				A		
Brine Acid	A	A	A	A	A	A		A	A	A						

A = Excellent, no effect • B = Good, minor effect • C = Fair, data not conclusive, testing recommended • X = Not recommended.
Ratings are based on testing at an ambient temperature of 70°F. The chemical resistance table is for reference only. End users should test to determine application suitability.
Butterfly valves, Solenoid valves, Diaphragm valves and all other valves with elastomers fully exposed to process media should derate elastomer scores by one level (i.e. "B" becomes "C", "C" becomes "X").

Chemical Resistance Guide, *CONTINUED*

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fiberloc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Brine Acid	A	A	A	A	A	A		A	A	A						
Brine	A	A	A	A	A	A		A	A	A	A	A	A			A
Bromic Acid	A	X	A	A	A	A		B	A		A		X			
Bromine Gas		X	A	C	C	A		X	A	X	A	X	X	X	X	A
Bromine Dry			A					X	A	X	A	A	X	X	X	AB
Bromine Liquid, Br	X	X	A	X	X	A		X	A	X	A	A	X	X	X	X
Bromine Water	C	C	A	X	X	A		X	A	C	A	X	X	X	X	A
Bromobenzene	X		A	X	X			X	A	C						
Bromotoluene	X	X		X	X											
Butadiene Gas	A	A	A	B	C	A		X	A	X	AC	A	A	A	A	
Butane	A	A	A	A	A	A		X	A	A	A	A	A	A	A	A
Butanediol	B			A	A	A		X	A							
Butter			A						A	A			A	A		
Buttermilk			A						A	A			A	A		
Butyl Acetate	X	C	A	X	X	B	C	B	X	C	A	A	A	A	A	A
Butyl Acrylate Pure	X	X	A	X	X	A		A	X							
Butyl Acrylate Satur.								A	X							
Butyl Alcohol (Butanol)	A	A	A	C	C	A		A	A	A	A	A	A	A	A	A
Butyl Amine	X	X	A	X	X	B		X	X	C	AB		A	A	AB	
Butyl Benzoate			A					A	A	X						
Butyl Bromide			A			A			B	X						
Butyl Butyrate			A					B	C	X						
Butyl Carbitol	X		A					A	A	C						
Butyl Cellosolve	X		A	A	A	A		B	X	C	A	A	C	A	AC	AB
Butyl Chloride			A			A			A	X	A	A	A	A		A
Butyl Diol	A	A	A	B	C	A		A	A							
Butyl Ether	X	X	A	X	X	A		X	X	B			A	A	A	
Butyl Formate			A							X						
Butyl Hydrate			A					B	A	A						
Butyl Hydride			A					X	A	A						
Butyl Hydroxide			A					B	A	A						
Butyl Mercaptan			A	X	X	A										
Butyl Phenol	A	A		C	C	A					A		A	A		
Butyl Phthalate	X	A	A	X	X	A		B	C	X	AB	AB	AB	AB	A	A
Butyl Stearate			A			A		B	A	B			C	A	AC	
Butylbenzene			A						A	X						
Butylene	A	X	A	A	A	A		X	A	B	A	A	A	A	A	
Butyraldehyde			A					B	X	X	A					

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fiberloc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Butyric Acid	B	A	A	X		A		B	B	X	A	A	AC	AB	X	A
Cadmium Cyanide	A			A	A				A							
Cadmium Salts		A	A			A			A							
Caffeine Citrate			A	A		A										
Calamine			A						A	B						
Calcium Acetate	A	A	A	A	A	A		A	X	B		AB	C	AB	C	
Calcium Bisulfate	A	A	A	A	A	A		X	A	A			C	X	X	
Calcium Bisulfide	A	A	A	A	A	A		X	A	A	A			AB		A
Calcium Carbonate	A	A	A	A	A	A		A	A	A	B	AB	A	AB	A	AB
Calcium Chlorate	A	A	A	A	A	A		A	A	A	AB	AC	A	B	C	A
Calcium Chloride	A	A	A	A	A	A		A	A	A	A	AC	X	B	X	A
Calcium Cyanide			A					A		A						
Calcium Hydroxide	A	A	A	A	A	A	A	A	A	A	A	A	AB	AB	A	A
Calcium Hypochloride			A					A	A	X						
Calcium Hypochlorite	A	B	A	A	A	A	A	A	A	B	A	X	X	AB	X	A
Calcium Nitrate	A	A	A	A	A	A		A	A	B	AB	A		AB		AB
Calcium Oxide	A	A	A	A	A	A		A	A	A	A	A	A	A		A
Calcium Phosphate			A					A	A	A	AB		C	AB	C	AB
Calcium Sulfate	A	A	A	A	A	A		A	A	A	AB	A		A	AB	A
Calcium Sulfide	A	A	A	A	A	A		A	A	A		AB	A	AB	BC	
Calcium Thiosulfate			A					A	A	B						
Calgon		C	A			A			A	A			A	A	A	
Cane Sugar Liquors	A	A	A	A	A	A		A	A	A		A	A	A	B	
Caprylic Acid			A			A				C						
Carbinol			A					A	X	A						
Carbolic Acid	A	A								C	A	B	A	A	AB	AB
Carbon Bisulfide	X	X	A	X	X	A			A	X				C		
Carbon Dioxide	A	A	A	A	A	A		B	A	A	A	A	A	A	A	A
Carbon Disulfide	X	X	A	X	X	A		X	A	C	A	B	A	A	AC	AB
Carbon Monoxide	A	A	A	A	A			A	A	A	A	A	A	A	A	
Carbon Tetrachloride	X	X	A	X	X	A	A	X	B	C	A	A	AB	AB	A	A
Carbonic Acid	A	A	A	A	A	A		A	A	B	A	A	AB	A	AC	AB
Casein			A			A		A	A	A						
Castor Oil	C	A	A	A	A	A		B	A	A	A	A	A	A	A	A
Catsup	A	A		A	A				A	A	A			A	A	
Caustic Lime	(See Calcium Hydroxide)															
Caustic Potash	(See Potassium Hydroxide)															
Caustic Soda	(See Sodium Hydroxide)															

A = Excellent, no effect • B = Good, minor effect • C = Fair, data not conclusive, testing recommended • X = Not recommended.
Ratings are based on testing at an ambient temperature of 70°F. The chemical resistance table is for reference only. End users should test to determine application suitability.
Butterfly valves, Solenoid valves, Diaphragm valves and all other valves with elastomers fully exposed to process media should derate elastomer scores by one level (i.e. "B" becomes "C", "C" becomes "X").

Chemical Resistance Guide, *CONTINUED*

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fiberloc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Cellosolve	X	A	A	B		A	C	B	C	C	A	A	C	C	AC	AB
Chloral Hydrate	A	A		A	A	A			A	C						
Chloric Acid 20%	A	X		A	A	A										
Chloric Acid	A		A	A		A				X	AB	X	X	X	X	
Chlorinated Glue								B	A	C				A		
Chlorine Dioxide	A	C	A	A	A	A		X	A		A	X	X	X	X	AB
Chlorine Gas, Dry	X	X	A	X	X	A	A	X	B	C	A	AB	B	B	BC	X
Chlorine Gas, Wet	X	X	A	X	X	A	C	X	C	C	A	C	X	X	X	A
Chlorine Water	A	C	A	A	A	A		B	A	C	A	C	X	X	X	A
Chlorine, Dry	X		A					B	C	X				A		X
Chlorine, Liquid	X	X	C	X	X	A				C						
Chloroacetic Acid		X	A	A				B	X	X	A	B	X	X	X	A
Chlorohydr. Alum			A													
Chlorosulfonic,Acid	X	X	A	X	X	C		X	X	X	A	AC	X	X	X	A
Chocolate Syrup		A							A	A	AB	AB	A	A	A	
Chresylic Acid 50%				A		B			A	X				A		
Chrome Alum	A	A		A	A				A	A						
Chrome Alum	A	A		A	A	A			A	A						
Chromic Acid 10%	A	B	A	A	A	A	A	B	A	X						A
Chromic Acid 20%	A	X	A	B	C	A		B	B	C						A
Chromic Acid 30%	A	X	A	B	C	A			A	X						A
Chromic Acid 5%	A	X		A	A		A	A	A	X				A		A
Chromic Acid 50%	X	X	A	X	X	A	C	B	A	X				X		A
Chromium Alum	A	A	A	A	A	A		A	A							
Citric Acid	A	A	A	A	A	A	A	A	A	B	A	AB	AB	B	BC	A
Citric Oils	X	A	A					B	A	A	A			A		
Cobalt Chloride			A					A	A	A						
Coconut Oil	A	A	A	A	A	A		B	A	A	A	BC		A	AC	
Cod Liver Oil			A					A	A	B	A	A	A	A	A	
Coffee	A	A						A	A	A	A	AC	A	A	A	A
Coke Oven Gas	A	A	A	X	X	A		A	A	X			A	A	A	
Cola Concentrates		A														
Copper Acetate	A	A	A	A	A	A		A	X	B	A	X	A	A	AB	
Copper Borofluoride	A	A	A	A	A	A		A	A							
Copper Carbonate	A	A	A	A	A	A		A	A	X	A	X	A	A	BC	A
Copper Chloride	A	A	A	A	A	A		A	A	A	A	X	X	X	BC	A
Copper Cyanide	A	A	A	A	A	A		A	A	B	A	X	A	B	AB	A
Copper Fluoborate			A	A	A				A	B	B	C		X		

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fiberloc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Copper Fluoride	A	A	A	A	A	A		A	A			C		A		
Copper Nitrate	A	A	A	A	A	A		A	A	A	A	X	AB	A	B	A
Copper Salts	A	A	A	A	A	A		A	A	A						
Copper Sulfate 5%	A	A	A	A	A				A	A				A	B	A
Copper Sulfate	A	A	A	A	A	A		A	B	B	A	AB	AB	A	AB	A
Corn Oil	A	A	A	A	A			B	A	A	A	A	A	A	A	
Corn Syrup	A	A	A	A	A	A		B	A	A				A		
Cottonseed Oil	A	A	A	A	A	A		B	A	B	A	A	AB	A	A	A
Cream	A	A							A	A				A		
Creosol	X	C	A	X	X	C		X	A	X			A	A		
Creosote	X		A	X	X			X	A	B	A	A	A	A	AB	A
Cresols	X	C	A	X	X	A		X	A	X	AB			A	A	AB
Cresylic Acid	C	A	A	C		A		X	A	X	A	A	A	A	A	A
Croton Aldehyde	X	A	A	X	X	C		B	A							
Crude Oil	A	A	A	A	A	A		X	A	X	A	AB	A	A	A	A
Cryolite	B	A	A	B		A		A	A	B						
Cupric Fluoride	A	A	A	A	A	A		A	A							
Cupric Nitrate			A					A	A	A						
Cupric Salts		A	A	A	A	A		A	A					X		
Cupric Sulfate	A	A	A	A	A	A		A	A	A						
Cutting Oil			A					X	A	A			A	A	A	
Cyanic Acid			A					A		A		B		A		
Cyclohexane	X	X	A	X	X	A	A	X	A	C	AB	A	AC	A	AC	A
Cyclohexanol	X	A	A	X	X	C		B	A	B	A		C	A	AC	
Cyclohexanone	X	B	A	X	X	C		C	X	C	A	BC	C	A	BC	
Decalin	X	A	A	X	X	A		X	A	X						
Decanal			A						X	X						
Decane			A			A		X	A	B						
Detergents	B	B	A	A	A	A		A	A	A	AB	A		A	A	A
Detergents, Heavy Duty	A	A		A	A	A										
Developers			A						A	A	AB	A	A	A	A	A
Dextrin	A	A	A	A	A	A		A	A				A	A		
Dextrose	A	A	A	A	A	A		A	A	A	A	A		A	A	A
Diacetone Alcohol	X	C	A	X	X	B		A	X	C	A	A	A	A	A	A
Diallyl Phthalate																
Diazo Salts	A	A		A	A	A										
Dibenzyl Ether			A			A		C					A	A	A	
Dibutyl Amine			A			A		X	C	C						

A = Excellent, no effect • B = Good, minor effect • C = Fair, data not conclusive, testing recommended • X = Not recommended.
Ratings are based on testing at an ambient temperature of 70°F. The chemical resistance table is for reference only. End users should test to determine application suitability.
Butterfly valves, Solenoid valves, Diaphragm valves and all other valves with elastomers fully exposed to process media should derate elastomer scores by one level (i.e. "B" becomes "C", "C" becomes "X").

Chemical Resistance Guide, *CONTINUED*

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fiberloc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Dibutyl Ether			A			A		C	C	C			A	A	A	
Dibutyl Phthalate	X	B	A	X	X	A		A	B	X	AB			AB	A	
Dibutyl Sebacate			A	B		A		B	C							
Dichlorobenzene	X		A	X	X	A	X	X	B	X	A		A	A	A	
Dichloroethane			A	X	X		X		C		A	A	A	A	A	AB
Dichloroethylene	X	X	A	X	X	A		X	A	X	AB	A		BC		
Dichloroisopropyl Ether						A										
Dichloromethane			A				X	X	B	X						
Diemethyl Phthalate											A		AB	A		
Diesel Fuel	A	B	A	A	A	A	A	X	A	A	A	A	A	A	A	A
Diethanolamine											A	A	A	A	A	A
Diethyl Cellosolve						A		X								
Diethyl Ether	X	B	A	X	X	A		C	C	X	A	B	AB	A	AB	A
Diethyl Ketone			A					B	X	X						
Diethyl Oxide			A					X	X	B						
Diethylamine	X	A	A	X	X	C		B	X	B		BC	A	A	A	X
Diethylbenzene			A					X	A	X						
Diethylene Glycol	A	A	A				A		A	A	B	AB	A	A	A	A
Diethylenetriamine			A			A				B						
Diglycolic Acid	A	A	A	A	A	A		A	A							
Diisobutyl Ketone						A		X	X							
Diisobutylene			A			A		X	A					A		
Diisooctyl Phthalate			A				A	B	B							
Diisopropyl Ketone			A			B		B	X			C	A	A	A	
Dimethyl Amine	X	A	A	X	X	B		C	X	B						
Dimethyl Benzene			A					X	A	X						
Dimethyl Ether			A					B	B	B	C	C	C	C	C	A
Dimethyl Formamide	X	A	A	X	X	A	X	B	C	B	A	A		A		
Dimethyl Ketone			A					A	X	X						
Dimethyl Phthalate			A			B		B	B	X	A			A		
Dimethylamine	X	A		X	X	X		X	X							
Dioctyl Phthalate	X	X	A	X	X	A		B	A	X	A		A	A	A	
Dioxane	X	B	A	X	X	X	X	B	X	X	X	A	A	AB		
Dioxolane						X		X	X							
Diphenyl Ether											A			A		
Diphenyl Oxide								X	A	X						
Diphenyl			A					X	A	X	B	AB	B	B	A	A
Dipropylene Glycol			A						A	A						

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fiberloc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Disodium Phosphate	A	A	A	A	A	A		A		A	A			A		
Distilled Water	A	A		A	A	A										
Divinylbenzene	X	X		X	X	X										
Dolomite			A					B	A	A						
Dowtherm											A	A	A	A	A	A
Dry Cleaning Solvents			A		X			X	A	A			A	A	A	
Epichlorohydrin	X	A	A	X		A		X	X		A		A	A	A	
Epsom Salt		A	A	A	A	A		A	A	A	A	A	A	AB	AB	A
Esters	X	C	A	X	X	A										
Ethane			A					X	A	A			A	A	A	A
Ethanol	B	A	A	A	A	A	A	A	B	A				A	B	A
Ethanolamine	X	X	A	X	X	X		A	X	B	AB	A	A	A	A	A
Ether Alcohol			A					A	B	C						
Ethers	X	C	A	X	X			C	C	X	A	A	A	A	A	A
Ethyl Acetate	X	C	A	X	X	A	C	B	X	X	A	A	AB	A	A	A
Ethyl Acetoacetate	X		A	X	X	A		A	X	X						
Ethyl Acrylate	X	X	A	X	X	A	C	B	X	X	A	A	A	A	A	BC
Ethyl Alcohol	A	A	A	A	A	A	A	A	B	A	A	A	A	A	A	A
Ethyl Benzene	X		A			A		X	A	X	A	A	A	A	A	
Ethyl Bromide		X											A	A	A	
Ethyl Chloride	X	X	A	X	X	A		A	A	B	B	AB	A	A	A	A
Ethyl Ether	X	B	A	X	X	A	A	X	C	X	A	B	AB	AB	AB	A
Ethyl Formate			A					B	B	X			A	A	A	
Ethyl Hexanol			A			A		A	A	B						
Ethyl Sulfate			A						X	C	A	A	C	X	A	
Ethylene Bromide	X	C	A	X	X	A		C	B	X	AB			AB	B	BC
Ethylene Chloride	X	C	A	X	X	A		C	A	X	A	AB	A	A	A	AB
Ethylene Chlorohydrin	X	A	A	X	X	A		A	A	X	B			AB		BC
Ethylene Diamine	X	A	A	X	X	C	X	A	X	A	AC		A	A	A	A
Ethylene Dichloride	X	C	A	X	X	A		X	A	X	A	AB	A	A	A	AB
Ethylene Glycol	C	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Ethylene Oxide	X	X	A	X	X	A		X	X	X	A	A	A	AB	A	
Extrin	A	A	A	A		A		A	A							
Fatty Acids	B	A	A	A	A	A		X	A	B	A	A	A	A	B	A
Ferric Acetate			A	B	B				X	X						
Ferric Chl. Anhydrous	A	A	A	A	A	A		A	A	B				X	X	A
Ferric Hydroxide	A	A	A	A	A			A	C							
Ferric Nitrate	A	A	A	A	A	A		A	A	A	AB	X	A	B	B	A

A = Excellent, no effect • B = Good, minor effect • C = Fair, data not conclusive, testing recommended • X = Not recommended.
Ratings are based on testing at an ambient temperature of 70°F. The chemical resistance table is for reference only. End users should test to determine application suitability.
Butterfly valves, Solenoid valves, Diaphragm valves and all other valves with elastomers fully exposed to process media should derate elastomer scores by one level (i.e. "B" becomes "C", "C" becomes "X").

Chemical Resistance Guide, *CONTINUED*

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fiberloc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Ferric Sulfate	A	A		A	A	A		A	A	B	A	B	A	B	B	A
Ferrous Chloride	A	A	A	A	A	A		A	A	B	AB	X	X	X	X	A
Ferrous Nitrate	A	A	A	A	A	A		B	A	A						
Ferrous Sulfate	A	A	A	A	A	A		A	A	A	A	AB	A	C	B	A
Fish Solubles	A	B		A	A											
Fluoboric Acid	A	A		A	A	A	B	A	A	B	A	A		B		X
Fluorine Gas (Wet)	A	B	A	A	C	A		A	A	X	A	A				
Fluorine Liquid		X	B	C	X	A		C	B	X				X		X
Fluosilicic Acid 25%	A	A	A	A		A		A	A	A	B	A	X	B	C	X
Formaldehyde 35%	A	A	A	A	A	A		A	A						B	
Formaldehyde 50%	A	A	A	A	A	A		X	B							
Formaldehyde	A	A	A	X	B	A	A	B	B	B	B	A	A	A	B	A
Formic Acid	A	A	A	A	A	A	B	A	X	C	A	AB	B	B	B	C
Freon 11	A	A	A	X	X	A		X	B	B	A	A	A	A	A	
Freon 113	B	X	A	B	C	A		X	B	A	A	A	A	A	A	
Freon 114			A	A	A	A		C	A	A			A			
Freon 12 (Wet)		A	A	B	C			B	A	A				X	A	
Freon 12	A	A	A	C	C	A		A	B	B	A	AB	A	A	A	
Freon 22	X	A	A	X	X	A		B	X	X			A	A	A	
Freon TF	(See Freon 113)															
Fructose	A	A	A	A	A	A		A	A	A	A	A	A	A		
Fruit Juice	A	A	A	A	A	A			A	A	A	A	A	A		
Fruit Pulp	A	A		A	A	A			A							
Fuel Oil		B	A	B	C	A		X	A	A	A	A	A	A		A
Fumaric Acid			A						A	A			A			
Furan			A					X	X		B					
Furfural (Ant Oil)	X	C	A	X	X	B		B	X	X	AB	B	AB	A	A	
Furfuryl Alcohol			A			B		C	X				A			
Gallic Acid	A	A	A	A	A	A		A	A	A	B	B	A	A	B	
Gas, Natural	A	A		A	A	A		X	A	A	A	A				
Gasoline, Leaded	X	X	A	A	A	A	A	X	B	A	A	A	A	A	A	X
Gasoline, Sour	B	X	A	A	A	A		X	A	A	A	X	A	A	A	X
Gasoline, Unleaded	X	X	A	C	C	A	A	X	B	A	A	A	A	A	A	X
Gelatin	A	A	A	A	A	A		A	A	A	A	A	A	A	A	
Gin	A	A	A	A	A	A		A	A							
Glucose	A	A	A	A	A	A		A	A	A	A	A	A	A	A	
Glue	A	A	A	A	A	A		B	A	A	A	A	A	A	A	A
Glycerine	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fiberloc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Glycerol	A	A	A	A	A	A		A	A	A				A		
Glycolic Acid	A	A	A	A	A	A		A	A	A	A					
Glycols	A	A	A	A	A	A		A	A	A		AB				
Glyoxal									A							
Gold Monocyanide									A	A				A		
Grape Juice	A			A	A				A	A				A		
Grape Sugar	A	A	A	A	A	A		A	A	A						
Grease		A	A	A	A	A		X	A	B	A	A	A	A		
Green Liquor	A	A	A	A	A	A		A	A	B		A				
Helium			A					A	A	A			A			
Heptane	A	B	A	A	A	A		X	A	A	A	A	A	A		
Hexane	A	B	A	X	X	A	A	X	A	A	A	A	A	A		
Hexene			A					X	A	A						
Hexyl Alcohol	A	A	A	A	A	A		B	A	A	A	A	A	A		A
Honey		A	A	A	A	A			A	A	A			A		
Hydraulic Oil (Synth.)		X			C				A	C	A	A	A	A		
Hydraulic Oil			A				A	X	A	A	A	A	A			
Hydrazine	X	X	A	X	X	X		A	X	C			A	A		
Hydrobromic Acid 20%	A	A	A	A	A	A		A	A	X				X	X	A
Hydrobromic Acid 50%	A	B	A	A	A	A		A	A	X			X	C	X	X
Hydrobromic Acid	A	B	A	A	A	A		A	A	X	A	X	X	X	X	A
Hydrochloric Acid 10%	A	A	A	A	A	A	A	A	A	B			X		X	C
Hydrochloric Acid 20%	A	A	A	A	A	A	A	A	A	B			X	X	X	C
Hydrochloric Acid 25%	A	A	A	A	A	A	A	A	A	C			X		X	
Hydrochloric Acid 37%	A	A	A	A	A	A	A	C	A	C			X	X	X	C
Hydrochloric Acid	A		A	A			A	A			B	X	X	A		
Hydrocyanic Acid 10%	A	A	A	A	A	A		A	A	B				X	X	
Hydrocyanic Acid	A	A	A	A	A	A		A	A	B	A	AB	A	A	B	A
Hydrofluoric Acid 10%	A	A	A	A	C	A		A	A	B			X		X	
Hydrofluoric Acid 20%	A	A	A	A	C			A	A	X			X	X	X	X
Hydrofluoric Acid 30%	A	A	A	A	C	A		A	A				X		X	
Hydrofluoric Acid 40%	C	A	A	B	C	A		A	A				X		X	
Hydrofluoric Acid 50%	C	A	A	X	X	B	A	A	A	C				X	X	X
Hydrofluoric Acid 65%	C		A					B	A	X			X		X	
Hydrofluoric Acid 75%	C	A	A	X	X	A		X	A	X	A	A	X	X	X	
Hydrofluosilic Acid	A	A	A	A	A	A		A	A	A	B	A	X	X	X	A
Hydrofluosilicic Acid 20%	A	A	A	A	A			A	A	B				X	X	X
Hydrogen Chl. Gas Dry		A				A					A	A	A		X	

A = Excellent, no effect • B = Good, minor effect • C = Fair, data not conclusive, testing recommended • X = Not recommended.
Ratings are based on testing at an ambient temperature of 70°F. The chemical resistance table is for reference only. End users should test to determine application suitability.
Butterfly valves, Solenoid valves, Diaphragm valves and all other valves with elastomers fully exposed to process media should derate elastomer scores by one level (i.e. "B" becomes "C", "C" becomes "X").

Chemical Resistance Guide, *CONTINUED*

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fluoroloc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Hydrogen Cyanide	A	A	A	A	A	A		A	A	B	A	B	A		C	
Hydrogen Fluoride	X	A		X	X	A					B	AB	AB		C	
Hydrogen Peroxide 10%	A	A	A	A	A	A				A				C	B	C
Hydrogen Peroxide 30%	A	C	A	A	A		A	B	A	X				B	B	B
Hydrogen Peroxide 5%	A	A	A	A	A	A		A	A						B	
Hydrogen Peroxide 50%	A	A	A	B	C	A		C	A	X					C	
Hydrogen Peroxide 90%	X	X	A	X	C	A		C	B	X					X	
Hydrogen Peroxide		A	A	A	A	A		B	A	C	A	AB	AB	B	B	B
Hydrogen Phosphide	A	A		X	C	A				C						
Hydrogen Sulf. (Aq. Sol.)	A	A	A	A	A			A	C	C				A	C	A
Hydrogen Sulfide (Dry)	A	A	A	A	A	A		A	A	A	A	B	C	A	C	
Hydrogen Sulfide	A	A	A	A	A	A		A	A		A	BC	AB		C	
Hydrogen	A	A	A	A	A	A		A	A	A	A	A	A	A	A	
Hydroquinone	A	A	A	A	A	A		A	A	X	B	A	C			
Hydroxide Alum	A	A	A	A	C	A	A	A	C	A				A	A	A
Hydroxyacetic Acid 70%	A			A	A			A	A	A						B
Hydroxyacetic Acid	A								A	A						A
Hydroxylamine Sutfate	A	A		A	A	A		A								
Hypochlorous Acid	A	A	A	A	A	A		B	B	X	A		X	X		
Ink		A				A				A	A	AC	A	A		
Iodine Solution	A	C	A	X	X	A	A	A	A	C	A	A	B	X	X	A
Isobutyl Alcohol			A			A	A	A	A	B	A	A		A		A
Isooctane	A	A	A	A	A	A		X	A	A	A	A	A			
Isophorone	X			X	X			X	X		A					
Isopropyl Acetate			A					B	X	X	B	AB		B		
Isopropyl Alcohol	A	A	A	A	A	B		A	A	B	A	AB	AB	A		A
Isopropyl Ether	X	C	A	X	X	A		X	X	B	A	A		A		
Jet Fuel JP-3		A	A					X	A	A	A	A	A	A	A	
Jet Fuel JP-4	A	C	A	A	A	A		X	A	B	A	A	A	A	A	
Jet Fuel JP-5	A	C	A	A	A	A	A	X	A	A	A	A	A	A	A	
Kerosene	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	A
Ketones	X	A	A	X	X	A		C	X	X	A	A	A	A		A
Kraft Liquor	A	A		A	A	A										
Lacquer Thinner		B	A	C	C			A		X	A	A	A	A		A
Lacquer		A	A					X	X	X	A	A	A	A		
Lactic Acid	A	A	A	A	A	A	A	B	B	B	A	AB	A	A	C	B
Lard Oil	A	A	A	A	A	A		C	A							
Lard	A	A	A	A	A	A	A	C	A	A	A	AC	A	A	A	

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fluoroloc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Latex		A	A					B	A	B	A			A	A	
Lauric Acid	A	A	A	A	A	A										
Lauryl Chloride	A	A	A	A	A	A										
Lead Acetate	A	A	A	A	A	A		A	C	B	AB	A	B	B	B	A
Lead Chloride	A	A	A	A	A	A		A	A							
Lead Nitrate	A	A	A	A	A			A	A	A	B	B	C		B	
Lead Sulfate	A	A	A	A	A	A		A	A	A						
Lemon Oil	A	X	X	A	A	A						A				
Ligroin	X	C		X	X	A		C	A	A	A	A	A	A		
Lime - Sulfur Solution	A	A		A	A	A				X					B	
Lime	(See Calcium Oxide)															
Linoleic Acid	A	A	A	B	C	A		X	B	B	A	A	A		A	
Linseed Oil	A	A	A	A	A	A		B	A	A	A	A	A		A	
Lithium Bromide			A	A	A	A			A	A	AB	AB				
Lithium Chloride	A				A						AB	A	A		X	
LPG			A								A	A	A			
Lubricants		A	A	A	A				A	A				A	A	A
Lubricating Oil	A	A	A	A	A	A			A		A	A	A		A	
Lye Solution											A	A	A			
Machine Oil	A	A	A	A	A	A			A							
Magnesium Acetate			A						X	X						
Magnesium Carbonate	A	A	A	A	A	A		B	A	A	AB	A	AB	A	A	
Magnesium Chloride	A	A	A	A	A	A		A	A	A	A	A	X	B	B	A
Magnesium Citrate	A	A	A	A	A	A		A	A							
Magnesium Hydroxide	A	A	A	A	A	A		A	A		A	A	A			
Magnesium Nitrate	A	A	A	A	A	A		B	A	A	A	B	AB	A	A	A
Magnesium Oxide	A		A					A	A	A	A	AB		A	B	
Magnesium Sulfate (Epsom Salts)	A	A	A	A	A	A		C	A	A	A	A	A	A	A	A
Maleic Acid	A	A	A	A	A	A		C	A	X	A	AC	B	A	A	A
Maleic Anhydride									A	X	A					
Malic Acid	A	A	A	A	A	A		X	A	A	A	A	A	A	B	A
Manganese Sulfate	A	A	A	A	A			A	A	A	A	A				
Mash										A	A	A		A		
Mayonnaise		A	A						A	A	A	AC	A	A		
Melamine										C				X		
Mercuric Chloride	A	A	A	A	A	A		A	A	A	AB	X	X	X	X	A
Mercuric Cyanide	A	A	A	A	A	A		B	A	A	A	X	A	A	X	A
Mercuric Nitrate	A		A					A	A		A				A	

A = Excellent, no effect • B = Good, minor effect • C = Fair, data not conclusive, testing recommended • X = Not recommended.
Ratings are based on testing at an ambient temperature of 70°F. The chemical resistance table is for reference only. End users should test to determine application suitability.
Butterfly valves, Solenoid valves, Diaphragm valves and all other valves with elastomers fully exposed to process media should derate elastomer scores by one level (i.e. "B" becomes "C", "C" becomes "X").

Chemical Resistance Guide, *CONTINUED*

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF Fiberloc™	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Mercuric Sulfate	A	A	A	A	A	A		A	A	A						
Mercurous Nitrate	A	A	A	A	A	A		A	A			X	A			
Mercury	A	A	A	A	A	A		A	A	A	A	B	A	A	A	B
Methacrylic Ac.Glacial				X												
Methane Sulfonic Ac.			A			A										
Methane	A	A	A	A	A	A		C	A	A	A	A	A		A	
Methanol (Methyl Alcohol)	X	A	A	A	A	A	A	A	X	A	A	A	AB	A		A
Methoxyethyl Oleate				A	A											
Methyl Cellosolve	X	A		X	X	A		B	X	X	A	A	AC			
Methyl Acetate	X	B	A	X	X	A		B	X	X		AB	A	A		
Methyl Acetone			A						X	X		AB	A	A		
Methyl Acrylate			A			A		B	X	X		AB	A	A		
Methyl Alcohol	X	A	A	A	A	A		A	X	A				A		A
Methyl Benzene	(See Toluene)															
Methyl Bromide	X	X	A	X	X	A		C	A	X	AB		A			
Methyl Butanol			A						B	A						
Methyl Butyl Ketone			A					B	X	X				A		
Methyl Chloride	X	X	A	X	X	A		C	C	C	A	A	A	A	B	A
Methyl Chloroform	X	C	A	X	X	A		X	B		A	C				
Methyl Ether			A					C	C	B	C	C	C			
Methyl Ethyl Ketone	X	C	A	X	X	X	C	A	X	X	A	A	A	A		A
Methyl Formate	X							A	X		AB		A			
Methyl Isobutyl Alcohol										X						
Methyl Isopropyl Ketone	X	B	A	X	X	A		C	X	X			A	A		
Methyl Isobutyl Carbinol			A					A	A							
Methyl Isobutyl Ketone	X	C	A	X	X	A		B	X	X				A		A
Methyl Methacrylate	X		A	A			C	X	X	X			C			
Methyl Propanol			A					B	A	A						
Methyl Salicylate	A	A		A	A	A										
Methyl Sulfate	A	A		B	C	A										
Methylamine	X	X	A	X	X	C		A		B				A		
Methylene Bromide				X	X	X										
Methylene Chloride	X	X	A	X	X	C		X	B	X	A	A	AC	A	B	A
Methylene Iodine			A	X	X	C			A							
Methylhexane			A					X	A	A						
Methylisobutyl Carb.	A	A		A	A	A		A	A							
Methylmethacrylate			A			A		X	X							
Methylsulfuric Acid	A	A	A	A	A	A										

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF Fiberloc™	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Milk	A	A	A	A	A	A	B	A	A	A	A	BC	A	A	A	
Mineral Oil	A	A	A	B	A	A	A	X	A	A	A	A	A		A	
Molasses	A	A	A	A	A			C	A	A	A	A	A	A	A	
Monochlorobenzene		B	A			A		X	A		A	A	AB			
Monochlorocetic Acid	A	B	A	A	A	A		C	B		A	B			X	
Monoethanolamine	X		A	X	X	X		A	A	A	AB	A	A		A	
Morpholine			A								A			A		
Motor Oil	A	C	A	A	A	A	A	X	A	A	A	A				
Mustard	A	A		A	A				A	B	A	BC	A	A		
Naphtha	A	A	A	A	A	A	A	X	A	B	A	A	A	A	A	A
Naphthalene	X	B	A	X	X	A		X	B	X	A	A	B	B	A	A
Natural Gas	A	A		A	A	A		X	A	A	A	A	A			
Neon			A					A	A	A			A			
Nickel Acetate	A	A	A	A	A	A		A	X	B		A	C			
Nickel Chloride	A	A	A	A	A	A		A	A	B	A	AB	AC	B	X	A
Nickel Cyanide	A			A	A											
Nickel Nitrate	A	A	A	A	A	A		B	A	A	B	B	A		B	
Nickel Sulfate	A	A	A	A	A	A		A	A	A	AB	AB	A	C	B	
Nickel	A	A	A	A	A			A	A	A						
Nicotine Acid	A	A	A	A	A	A		A								
Nicotine	A	X	A	A	A	C										
Nitrate Alum	A	A	A	A	A	A		A	B	A					A	
Nitric Acid 10%	A	A	A	A	A	A	A	B	A	X	B	X	A	A	B	A
Nitric Acid 20%	A	A	A	A	A		A	X	A	X	B	X	A		B	
Nitric Acid 30%	A	A	A	A	A	B	A	B	A	X	B	X	A		B	
Nitric Acid 40%	A	C		A	A	B	A	X	A	X	B	X	A		C	
Nitric Acid 50%	A	C	A	A	A	B		X	A	X	B	X	A		X	
Nitric Acid 70%	A	X	A	X	X	X	A	X	C	X	B	X	A		X	
Nitric Acid Concentr.	A	X	A	X	X	X		X	C	X	B	X	A		C	
Nitric Acid Fuming	X	X		X	X	X									C	
Nitrobenzene	X	C	A	X	X	A	C	C	C	C	A	AB	B	B	B	A
Nitroethane			A			A		A	X				A			
Nitrogen Dioxide			A			A										
Nitrogen			A					A	A	A	A	A	A		A	
Nitroglycerine				X				A			A	A	A			
Nitromethane			A			A		B			A		A			
Nitrous Oxide	A	A	A	A	A	A		A	A	A	A	X	C			
Ocenol	A	X		A	A	A										

A = Excellent, no effect • B = Good, minor effect • C = Fair, data not conclusive, testing recommended • X = Not recommended.
Ratings are based on testing at an ambient temperature of 70°F. The chemical resistance table is for reference only. End users should test to determine application suitability.
Butterfly valves, Solenoid valves, Diaphragm valves and all other valves with elastomers fully exposed to process media should derate elastomer scores by one level (i.e. "B" becomes "C", "C" becomes "X").

Chemical Resistance Guide, *CONTINUED*

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fiberloc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Octane			A			A		X	A							
Octyl Acid			A			A				C						
Octyl Alcohol									A	B	A		A	A		A
Octylamine			A						X	C						
Oils, Crude Sour	X														C	
Oils	X	A		A	A	A										
Oils, Aniline		A	A	X	X			B	A	X				A		A
Oils, Anise														A		
Oils, Bay									A					A		
Oils, Bone									A	A				A		
Oils, Castor				A				B	A	A				A		
Oils, Cinnamon				A					A					A		
Oils, Citric		A							A	A				A		
Oils, Clove		B								A				A		
Oils, Coconut		A						A	A	A				A		
Oils, Cod Liver		A						A	A	A				A		
Oils, Corn	X	A						C	A	A				A		
Oils, Cotton Seed	X	A	A	A	A			C	A	A				A		
Oils, Creosote		X			X			X	A	B				A		
Oils, Diesel Fuel		A			A			X	A	A				A		
Oils, Fuel			A	A	A			X	A	B				A		A
Oils, Linseed	X	A		A	A			X	A	A				A		
Oils, Mineral		A		A	A			X	A	A	A	A	A	A	A	
Oils, Olive	X	A	A	A	A			B	A	A	A	A	A	A	A	
Oils, Pine	X		A	A	A			X	A	C		A	A	A		
Oils, Silicone		A			A				A	A				A		
Oils, Vegetable	X	A		A	A	A			A	A	A	A	A		A	
Oleic Acid	B	A	A	A	A	A	A	C	B	B	A	A	A	A	B	
Oleum	X	X	A	X	X	X		X	X	X				A		
Orange Extract		A	A			A										
Oxalic Acid	A	A	A	A	A	A		A	A	B	A	B	A	B	C	C
Oxychloride Alum	A	A		A	A	A			X							
Oxygen Gas	A	A	A	A	A	A		A	A	C	A	A	A			
Ozone	B	C		B	B	A		A	A	X	A	A	A			
Palmitic Acid 10%	A	A	A	A	A	A		B	A	A						
Palmitic Acid 70%	A	A	A	X				B	A	A						
Paraffin	A	A	A	A	A	A		X	B	A	A	A	A	A	A	
Pentane			A					X	A	A	A	A	A	C		

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fiberloc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Peracetic Acid 40%	X	X	A	X	X	A		B	A							
Perchlorlc Acid 10%	A	A	A	A	A	A		B	A	X					B	
Perchlorlc Acid 70%	X	A	A	X	X	A	X	A	A	X					X	
Perchloroethylene	X	C	A	X	X	A		X	A	X	A	A	AB	A		
Perphosphate	A	A	A	A	A			A	A							
Petrolatum	A	A	A	A	A	A		C	A	A	A	A	A	A		
Petroleum (Sour)				A	A			X	A	A					C	
Petroleum Oils	A	B	A	A	A	A		X	A	A					A	
Phenols 100%	A	A	A	X	X	A	X	C	B	X	A	B	A	A		C
Phenylacetate			A					B	X	X						
Phenylhydrazine Hydrochl	A	X		X	X	A										
Phenylhydrazine	X	X	A	X	X	A		C	C	X						
Phosgene Gas	X	C		X	X	A		A	X	X						
Phosgene Liquid	X	X		X	X	C		A	X	X						
Phosphate Alum			A					A	A	A						
Phosphoric Acid 10%	A	A	A	A	A	A	A	A	A	C	A		A	A		B
Phosphoric Acid 100%	A	A	A	A	A			B	A	X	A		A	B		B
Phosphoric Acid 20%	A	A	A	A	A	A	A	A	A	C	A		A			
Phosphoric Acid 40%	A	A	A	A	A		A	B	A	X	A		A	A		A
Phosphoric Acid 50%	A	A	A	A	A	A	A	A	A	C	A		A	B		B
Phosphoric Acid 80%	A	A	A	A	A	A	A	A	A		A		AB			
Phosphoric Acid 85%	A	A	A	A	A	B	A	A	A	C	A		AB	B		C
Phosphoric Acid Crude			A					B	A	C				C		C
Phosphorous Oxychloride			A										X			
Phosphorous Red	A	A	A	A	A	A										
Phosphorous Trichloride	X	C	A	X	X	A		C	C	X	A	A	A	A		
Phosphorous Yellow	A	A	A	A	A	A										
Photographic Developer	A	A		A	A	A			A	A	A	A	C	A		A
Photographic Solutions	A	A	A	A	A	A			A	A	AB	AC	C			
Phthalic Acid	X	X	A	X	X	A		A	A		A	X	C		B	
Phthalic Anhydride	X	X	A	X	X			A	A	C	A	A	B	B	A	
Pickle Brine	A	A		A	A	A										
Pickling Solutions	A	A	A	A	A	A		C	B	X						
Picric Acid	C	A	A	X	X	A		C	A	B	B	X	AB	A	B	
Plating Solutions, Antimony	A	A	A	A	A				A	A	A	A		A		A
Plating Solutions, Arsenic	A	A		A	A				A	A	A			A		A
Plating Solutions, Brass	A	A	A	A	A	A		A	A	A	A			A		A
Plating Solutions, Bronze	A	A	A	A	A				A	A	A			A		A

A = Excellent, no effect • B = Good, minor effect • C = Fair, data not conclusive, testing recommended • X = Not recommended.
Ratings are based on testing at an ambient temperature of 70°F. The chemical resistance table is for reference only. End users should test to determine application suitability.
Butterfly valves, Solenoid valves, Diaphragm valves and all other valves with elastomers fully exposed to process media should derate elastomer scores by one level (i.e. "B" becomes "C", "C" becomes "X").

Chemical Resistance Guide, *CONTINUED*

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fiberloc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Plating Solutions, Cadmium	A	C	A	A	A	A		A	A	A	A			A		A
Plating Solutions, Chrome	A	C	A	A	A	A		B	C	X	X	C		C	A	A
Plating Solutions, Copper	A	A	A	A	A	A		A	A	A	A			X		A
Plating Solutions, Gold	A	C	A	A	A	A		A	A	A	A			C		A
Plating Solutions, Iron	A	C	A	X	X				A	A	A			C		A
Plating Solutions, Lead	A	A	A	A	A	A		A	A	B	A	A		C		X
Plating Solutions, Indium	A	A	A	A	A				A	A				C		A
Plating Solutions, Nickel	A	A	A	A	A	A		A	A	A	A			C		A
Plating Solutions, Rhodium	A	A	A	A	A	A		A	A	A				X		X
Plating Solutions, Silver	A	A	A	A	A	A		A	A	A	A			A		A
Plating Solutions, Tin	A	A	A	A	A	A		A	A	B	A	A		C		X
Plating Solutions, Zinc	A	A	A	A	A	A		A	A	A	A			X		A
Polyethylene Glycol	A	A	A	A	A	A		A	A	A						
Polyvinyl Acetate Emul			A			A		A	A							
Polyvinyl Alcohol	X	A	A	A	A	A		A	A							
Potash	A	A	A	A	A	A		B	C	C				A		
Potassium Acetate	A	A	A	A	A	A		A	X	B		A	C			
Potassium Alum	A	A	A	A	A	A		A	A	A					X	
Potassium Bichromate	A	A	A	A	A	A		A	A	A		AC	AB		B	
Potassium Bisulfate	A	A	A	A	A	A		A	A	A	A					
Potassium Bromate	A	A	A	A	A	A		A	A	A		A				
Potassium Bromide	A	A	A	A	A	A		A	A	A	A	A	AC	B	B	A
Potassium Carbonate	A	A	A	A	A	A	A	A	A	B	AB	A	AB	A	B	A
Potassium Chlorate	A	A	A	A	A	A		A	A	A	AC		AB	A	B	A
Potassium Chloride	A	A	A	A	A	A		A	A	A	A	AB	C	A	B	A
Potassium Chromate	A	A	A	A	A	A		A	A	A	A	A	C	B	B	
Potassium Coppercyanide	A	A	A	A	A	A		A	A							
Potassium Cyanide	A	A	A	A	A	A		A	B	A	B	B	AC	B	B	A
Potassium Dichromate	A	A	A	A	A	A		A	A	A				A	B	A
Potassium Ferricyanide	A	A	A	A	A	A		A	A	A	A	BC	AC		A	
Potassium Ferrocyanide	A	A	A	A	A	A		A	A	C	B	AC	B		A	
Potassium Fluoride	A	A	A	A	A	A		A	A	A		A				
Potassium Hydroxide 25%	A				A						A	A	A			
Potassium Hydroxide 50%	A	A		A	A	B					A	A	A			
Potassium Hydroxide	A	A	A	A	A	A	A	B	C	C	AB	A	A	C	B	C
Potassium Hypochlorite	A	A	A	A	A	A		A	A	X	B	X	X		X	
Potassium Iodide	A	A	A	A	A	A		A	A	A	A	AB	A		A	
Potassium Nitrate	A	A	A	A	A	A		A	B	A	AB		A	B	B	A

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fiberloc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Potassium Perborate	A	A	A	A	A	A										
Potassium Perchlorate	A	A	A	A	A			A								
Potassium Permanganate	A	B	A	A	A	A		A	B	C	B	AC	AC	B	B	B
Potassium Persulfate	A	A	A	A	A	A		A			A	X				
Potassium Phosphate	A									A						
Potassium Salts		A	A			A		A	A							
Potassium Sulfate	A	A	A	A	A	A		A	A	A	A	A	AB	B	B	A
Potassium Sulfide	A		A	A	A			A	A	A	AB		A		B	
Potassium Thiosulfate			A						A	A						
Potossium Bicarbonate	A	A	A	A	A	A		A	A	A				B	B	A
Propane	A	B	A	A	A	A		X	A	A	A	A	A	A	A	
Propargyl Alcohol	A	A		A	A	A										
Propyl Acetate			A			A		B	X	X		A				
Propyl Alcohol (Propanol)	A	A	A	A	A	A		A	A	A	A	A	A	A	A	A
Propylene Dichloride	X	C	A	X	X	A		X	B	X		A	C			
Propylene Glycol	C		A				A	A	A	A	B	B	AB	A		
Propylene			A					X	A	X			A			
Pyridine	X	C	B	X	X	C	X	C	X	X	A	A	B	C	B	
Pyrogallic Acid			A	B	C	X			A	A	AB	AB	AB	A	B	
Rayon Coagulating Bath	A	A		A	A	A										
Rhodan Salts	A	A	A	A	A	A		A	A							
Rosins		A	A						A	A				A	B	
Rum		A	A	A	A			A	B	A						
Rust Inhibitors		A							A	A				A		
Salad Dressings		A		A	A				A	A				A		
Salicylaldehyde			A	X	X	C	X	A	A							
Salicylic Acid			A	A	A	A	A	A	A	C	A	AB	A		B	
Saline Solutions	A	A		A	A	A										
Salt Brine	A	A	A	A	A	A		A	A	A	A	A				
Sea Water	A	A	A	A	A	A		A	A	A	A	B	AB	C	C	A
Selenic Acid	A	A		A	A	A										
Sewage	A	A	A	A	A	A		A	A	A	A	A	A			
Shellac Orange		A	A						A							
Shellac Bleached		A	A						A					A	A	
Silicic Acid	A	A	A	A	A	A		A	A							
Silicone Oil	A	A	A	A	A			A	A	A	A	A	A	A		
Silver Bromide											A	B	X	C	X	
Silver Cyanide	A	A	A	A	A	A		A	A		A	AB	A		A	

A = Excellent, no effect • B = Good, minor effect • C = Fair, data not conclusive, testing recommended • X = Not recommended.
Ratings are based on testing at an ambient temperature of 70°F. The chemical resistance table is for reference only. End users should test to determine application suitability.
Butterfly valves, Solenoid valves, Diaphragm valves and all other valves with elastomers fully exposed to process media should derate elastomer scores by one level (i.e. "B" becomes "C", "C" becomes "X").

Chemical Resistance Guide, *CONTINUED*

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fiberloc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Silver Nitrate	A	A	A	A	A	A		C	A	C	AB	X	B	B	B	A
Silver Salts		A	A	A	A	A		A	A					A		
Silver Sulfate	A	A	A	A	A	A		A	A	C						A
Soap Solutions	A	A	A	A	A	A		A	A	A	A	A	A	A	A	A
Soda Ash			A					A	A	A						
Sodium Acetate	A	A	A	A	A	A		A	C	C	A	A	AB	B	B	A
Sodium Aluminate	A	A	A	A	A	A		A	A	A	AB	AB	AB	A	C	B
Sodium Benzoate	A	A	A	A	A	A					A	AB				
Sodium Bicarbonate	A	A	A	A	A	A		A	A	A	A	A	A	A	A	A
Sodium Bichromate	A	A	A	A	A	A		A	A		B		AC		B	
Sodium Bisulfate	A	A	A	A	A	A		A	A	B	B	AB	X	A	A	A
Sodium Bisulfite	A	A	A	A	A	A		A	A	A	B	B	C	A	C	A
Sodium Borate	A	A	A	C	C	A		A	A	A	A	AB	A		A	
Sodium Bromide	A	A	A	A	A	A		A	A		AB	AC	A		C	
Sodium Carbonate	A	A	A	A	A	A		A	A	A	A	A	A	A		A
Sodium Chlorate	A	A	A	A	A	A		A	A	C	A	X	BC	B	B	A
Sodium Chloride	A	A	A	A	A	A		A	A	A	A	A	A	C	B	A
Sodium Chlorite	X	X	B	X	X			X	X							
Sodium Chromate	A	A	A						B	A	A	AB	AC	A	B	
Sodium Cyanide	A	A	A	A	A	A		A	A	A	A	X	A	A	A	A
Sodium Dichromate	A	A	A	A	A	A		A	A							
Sodium Ferricyanide	A	A	A	A	A	A		A	A		A	AC	C		B	
Sodium Ferrocyanide	A	A	A	A	A	A		A	A		A	A				
Sodium Fluoride	A	A	A	A	A	A		A	B	C	A	A	B		C	A
Sodium Hydrosulfide											A	A				
Sodium Hydrosulfite			A	C					A		A	A				
Sodium Hydroxide 15%	A	A	A	A	A	A	A	A	C	A	A			B	B	A
Sodium Hydroxide 20%	A	A	A	A	A	A		A	C	A	A			B	B	A
Sodium Hydroxide 30%	A	A	A	A	A	A		A	C		A			B	B	
Sodium Hydroxide 50%	A	A	A	A	A	A		A	C	X	A			B	C	A
Sodium Hydroxide 70%	A	B	A	A	A	B		A	X	X	A				X	A
Sodium Hydroxide Conc	A	A	A	A	A	A		A	B	X	A	AB	A		C	
Sodium Hypochlorite 20%	A	C	A	A	A	A		X	A	C	A			C		A
Sodium Hypochlorite 5% (Bleach)	A	C	A	A	A	A	A	B	A	X	AB	X	X	B	X	AC
Sodium Hypochlorite	A	C	A	A	A	A	A	X	X	X	AB	X	X		X	
Sodium Hyposulfate			A											A		
Sodium Metaphosphate	A	C	A	A	A	A		A	A	A		A	A	A		
Sodium Metasilicate	A	A	A	A	A	A		A	A	A	A	A	A	A	A	

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fiberloc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Sodium Nitrate	A	A	A	A	A	A		A	B	C	AB	B	A	B	B	A
Sodium Nitrite	A	A	A	A	A	A		A	A		AC	BC	A	B		
Sodium Palmitrate	A	A	A	A	A	A										
Sodium Perborate	A	A	A	A	A	A		A	A	C	A	A	AB	C	B	
Sodium Perchlorate	A	A	A	A	A	A					B	A				
Sodium Peroxide	A	A	A	A	A	A		B	A	C	AB	AC	A	A	A	
Sodium Phosphate Acid	A	A	A	A	A	A		A	A	A	A	A	B			
Sodium Phosphate Alkaline	A	A	A	A	A	A		A	A	A	A	A	A			
Sodium Phosphate Neutral	A	A	A	A	A	A		A	A	A	A	AB	AC			
Sodium Polyphosphate			A					A	A	B				A		A
Sodium Silicate	A	A		A	A	A		A	A	A	A	A	AB	B	B	A
Sodium Sulfate	A	A	A	A	A	A		A	A	A	A	A	A	B	B	A
Sodium Sulfide	A	A	A	A	A	A		A	A	C	A	AB	AC	B	X	A
Sodium Sulfite	A	A	A	A	A	A		A	A	A	A	B	A	C	B	A
Sodium Tetraborate				A					A	A	A	AB	A	A	A	
Sodium Thiocyanate	A	A	A	A	A	A		A	A							
Sodium Thiosulfate	A	A	A	A	A	A		A	A	B	A	AB	A	A	A	
Sodium	A	A	A	A	A	A		A	A							
Sorghum									A	A				A		
Soy Sauce									A	A				A		
Soybean Oil	A	A	A	A	A	A		A	A		A	AB	A			
Stannic Chloride	A	A	A	A	A	A		A	A	A	AB	X	X	A	X	A
Stannic Salts		A	A	A	A	A		A	A							
Stannous Chloride	A	A	A	A	A	A		B	B	C	B	C	X	C	C	A
Starch	A	A	A	A	A			A	A	A		A	AB	A		
Stearic Acid	A	B	A	A	A	A		C	A	B	A	A	A	B	B	A
Stoddard Solvent	X	C	A	X	X	A		X	A	B	A	A	A	A		A
Styrene			A			A		X	C	X		AC	A	A		
Succinic Acid	A	A	A	A	A	A		A	A		A	AC	B			
Sugar Solutions	A	A	A						A	A				A	A	
Sulfamic Acid	X	X		X	X	X					B					
Sulfate Liquors	A	A		A	A	A		A	A	A	A	B	X	C	A	
Sulfated Detergents	A	A		A	A	A										
Sulfite Liquor	A	A	A	A	A	A		A	A	B	A	C	C		X	
Sulfur 10%	A	A	A	A	A			X	A	C	A		A	C		A
Sulfur Chloride	A	C	A	A	A	A		X	A	X	A	C	X	X	C	
Sulfur Dioxide Dry	A	A	A	A	A	A		A	A	X	B		A	B	B	
Sulfur Dioxide Wet	A	A	A	X	X	A		A	A	X	AC	X	A		B	

A = Excellent, no effect • B = Good, minor effect • C = Fair, data not conclusive, testing recommended • X = Not recommended.
Ratings are based on testing at an ambient temperature of 70°F. The chemical resistance table is for reference only. End users should test to determine application suitability.
Butterfly valves, Solenoid valves, Diaphragm valves and all other valves with elastomers fully exposed to process media should derate elastomer scores by one level (i.e. "B" becomes "C", "C" becomes "X").

Chemical Resistance Guide, *CONTINUED*

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF Fiberloc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Sulfur Dioxide		X	A	X	C			A	C	X				A		A
Sulfur Slurries	A	A		A	A	A										
Sulfur Trioxide Dry	C	X	B	C	C	X		C	C	C		AB	A	C	B	
Sulfur	A	X	A	A	A	A		C	A	C	A		BC		A	
Sulfuric Acid 10%	A	A	A	A	A	A	A	B	A	C				C	X	A
Sulfuric Acid 100%	A	X	B	X	X	C		X	C	X				C	C	X
Sulfuric Acid 30%	A	A	A	A	A	A		A	A	C				X	X	C
Sulfuric Acid 50%	A	A	A	A	A	A		B	A	C				X	X	C
Sulfuric Acid 60%	A	A	A	A	A	B		B	A	X				X	X	C
Sulfuric Acid 70%	A	C	A	A	A	A		A	A	C				X	X	C
Sulfuric Acid 80%	A	A	A	X	X	A		A	A	C				X	X	X
Sulfuric Acid 90%	A	C	A	X	X	A		A	A	C				X	X	X
Sulfuric Acid 95%	A	X	A	X	X	A	X	X	A	X				X	X	X
Sulfuric Acid 98%	A	X	B	X	X	A		X	X					X	X	
Sulfurous Acid	A	A	A	A	A	A		C	A	X	B	X	BC	B	C	A
Sulfuryl Chloride			A	A												
Syrup		A	A	A	A				A	A				A		
Tall Oil	A	A	A	A	A	A		X	A	A	A	A	C		X	
Tallow		A	A			A		A	A	A		B	A	A		
Tannic Acid	A	A	A	A	A	A		B	A	C	A	A	AC	C	B	A
Tanning Liquors	A	A	A	A	A	A		B	A	C	A			A		A
Tar	X	B	A	X	X	A		X	A	C	A	A	A		B	
Tartaric Acid	A	A	A	A	A	A		B	A	C	A	A	A	B	B	A
Tertiary Butyl Alcohol	A	A	A	A	A	A		B	A							
Tetrachlorethane		A	A	X	X			X	A	X	A	A	AB	A		A
Tetrachloroethane			A		X	A		X	A		A	A	A			
Tetraethyl Lead	A	A	A	B	C	A		X	B	C		A				
Tetrahydrofuron	X	B	A	X	X	B	X	X	X	X	A	B		A		
Tetralin	X	X	A	X	X	A		X	A	X						
Thionylchloride	X	X	A	X	X	X										
Thread Cutting Oils	A	A		A	A	A		X			A		A			
Titanium Tetrachloride	X	X	A	X	X	X		X	A	C	A	B	A			
Titanous Sulfate	A	A	A	A	A	A										
Toluene (Toluol)	X	C	A	X	X	B	C	X	C	X	A	A	A	A	A	A
Tomato Juice	A	C	A	A	A	A		A		A	A	AB	A	A	C	
Toxaphene-Xylene	X	X		X	X	A										
Transformer Oil	A	A	A	A	A	A		X	A	A	A	A	A			
Tributyl Phosphate	X	C	A	X	X	A		A	X	X						

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF Fiberloc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Trichloroacetic Acid	A	C	A	A	A	A		X	X	X	A	BC	X	X	X	
Trichloroethane			A		X		X	X	A	X	A	C		A		A
Trichloroethylene	X	B	A	X	X	A	X	X	A	C	A	B	A	A	A	B
Trichloropropane			A		X				A	A	A	A	A	A	A	
Tricresyl Phosphate			A	X	X			A	B	X	A		A	A		B
Triethanolamine		C		B	C	C		A	X		A	A	A			
Triethyl Phosphate	A	A	A	A	A	A	C	A	A					A		
Triethylamine	A	X		A	A	C	A		A	A		A	A			
Trimethylpropane	A	A	A	A	A	A										
Trisodium Phosphate	A	A	A	A	A	A		A	A	A				A	B	
Turbine Oil	A	B	A	A	A			X	A	B			A			
Turpentine	A	B	A	X		A	A	C	A	C	A	AB	AB	A	B	
Urea	A	A	A	A	A	A	A	A	A	C	A					
Urine	A	A	A	A	A	A		A	A	A		A		A		
Vanilla Extract		A	A		A											
Varnish		A	A			A		X	A	B	A	A	A	A	A	
Vaseline	A	A	A	X	X	A		X	A	A	A	A	A			
Vegetable Oil	C	A	A	A	A	A		A	A	A	A	A	A	A		
Vinegar	A	A	A	A	A	A	A	A	A	C	A	A	A	A	A	A
Vinyl Acetate	X		A	X	X	A	X	B	X	X	A		AC			
Vinyl Chloride			A					C	A	X	A	B	B		A	
Vinyl Ether			A						X	B						
Water Potable	A	A	A	A	A	A		A	A	A	A	A	A	A	A	
Water Salt	A	A	A	A	A	A		A	A	A	A	B	AB	A	C	
Water Sewage	A	A	A	A	A	A		A	A	A						
Water, Acid Mine	A	A	A	A	A	A		A	A	A	A			A	C	
Water, Deionized	A	A	A	A	A	A		A	B	A	A	A	A	A		
Water, Demineralized	A	A		A	A	A		A	A	A	A	A	A			
Water, Distilled	A	A	A	A	A	A		A	A	A	A	A	A	A	A	
Weed Killers									A	B				A		
Whey									A	A				A		
Whiskey	A	A	A	A	A	A		A	A	A	A	AB	A	A		
White Acid			A			A										
White Liquor	A	A	A	A	A	A		A	A	B	A	A		A		
Wines	A	A	A	A	A	A		A	A	A	A	AB	A	A	C	
Xenon			A					A	A	A			A			
Xylene	X	X	A	X	X	A	X	X	B	X	A	A	A	A		
Xylol	X	X	A	X	X	A		X	A	C						

A = Excellent, no effect • B = Good, minor effect • C = Fair, data not conclusive, testing recommended • X = Not recommended.
Ratings are based on testing at an ambient temperature of 70°F. The chemical resistance table is for reference only. End users should test to determine application suitability.
Butterfly valves, Solenoid valves, Diaphragm valves and all other valves with elastomers fully exposed to process media should derate elastomer scores by one level (i.e. "B" becomes "C", "C" becomes "X").

Chemical Resistance Guide, *CONTINUED*

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fiberloc™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel®	18-8 SS	316 SS	416 SS	Titanium
Yeast		A	A			A		A	A							
Zeolite			A					A	A	B						
Zinc Acetate	A	A	A	A	A	A		A	C	B		A				
Zinc Carbonate	A		A						A	A	B	B	C		B	
Zinc Chloride	A	A	A	A	A	A	A	A	A	A	A	B	X	B	C	A
Zinc Chromate			A													
Zinc Nitrate	A	A	A	A	A	A		A	A							
Zinc Salts		A	A		A	A		A	A	A						
Zinc Sulfate	A	A	A	A	A	A		A	A	A	A	A	B	A	A	A
Zirilite			A					A	C	B						

A = Excellent, no effect • B = Good, minor effect • C = Fair, data not conclusive, testing recommended • X = Not recommended.
Ratings are based on testing at an ambient temperature of 70°F. The chemical resistance table is for reference only. End users should test to determine application suitability.
Butterfly valves, Solenoid valves, Diaphragm valves and all other valves with elastomers fully exposed to process media should derate elastomer scores by one level (i.e. "B" becomes "C", "C" becomes "X").