

# 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 (Fiberc®)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel® C	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	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 (Fiberc®)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel® C	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	A
Adipic Acid, Aq.	A	A	A	A	A	A	A	A	A	A	AB	A	A	A	A	A
Air	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							
Alkzene			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		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	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	PiFE	PVC	PVC-GF (Fibrelc <sup>SM</sup> )	PIDF	Ultem <sup>®</sup> (GF 40%)	EPDM	FKM	Nitrile (Buna N)	Hastelloy <sup>®</sup> C	Monel <sup>®</sup> C	18-8 SS	316 SS	416 SS	Titanium
Ammonium Bichrom.			A				A	A								
Ammonium Bifluoride	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	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	
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	
Aqua Regia	X	X	A	X			A						C	C	C	X
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 Sulfonic 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
Aviation Turbine Fuel			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	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						

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CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fibertec™)	PVDF	Ultem® (GF-40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel® C	18-8 SS	316 SS	416 SS	Titanium	CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fibertec™)	PVDF	Ultem® (GF-40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel® C	18-8 SS	316 SS	416 SS	Titanium
Brine Acid	A	A	A	A	A	A	A	A	A								Butyric Acid	B	A	A	X	A		B	B	X	A	A	AC	AB	X	A	
Brine	A	A	A	A	A	A	A	A	A	A	A	A	A	A			Cadmium Cyanide	A			A	A			A								
Bromic Acid	A	X	A	A	A	A	B	A		A			X				Cadmium Salts	A	A			A			A								
Bromine Gas		X	A	C	C	A	X	A	X	A	X	X	X	X	A		Caffeine Citrate			A	A		A										
Bromine Dry			A				X	A	X	A	A	X	X	X	AB		Calamine			A					A	B							
Bromine Liquid, Br	X	X	A	X	X	A	X	A	X	A	A	X	X	X	X		Calcium Acetate	A	A	A	A	A	A	A	X	B		AB	C	AB	C		
Bromine Water	C	C	A	X	X	A	X	A	C	A	X	X	X	X	A		Calcium Bisulfate	A	A	A	A	A	A	X	A	A			C	X	X		
Bromobenzene	X		A	X	X		X	A	C								Calcium Bisulfide	A	A	A	A	A	A	X	A	A	A		AB		A		
Bromotoluene	X	X		X	X												Calcium Carbonate	A	A	A	A	A	A	A	A	A	B	AB	A	AB	A	AB	
Butadiene Gas	A	A	A	B	C	A	X	A	X	AC	A	A	A	A			Calcium Chlorate	A	A	A	A	A	A	A	A	A	AB	AC	A	B	C	A	
Butane	A	A	A	A	A	A	X	A	A	A	A	A	A	A	A		Calcium Chloride	A	A	A	A	A	A	A	A	A	A	AC	X	B	X	A	
Butanediol	B			A	A	A	X	A									Calcium Cyanide			A				A	A								
Butter			A					A	A					A	A		Calcium Hydroxide	A	A	A	A	A	A	A	A	A	A	A	AB	AB	A	A	
Buttermilk			A					A	A					A	A		Calcium Hypochloride			A				A	A	X							
Butyl Acetate	X	C	A	X	X	B	C	B	X	C	A	A	A	A	A		Calcium Hypochlorite	A	B	A	A	A	A	A	A	B	A	X	X	AB	X	A	
Butyl Acrylate Pure	X	X	A	X	X	A		A	X								Calcium Nitrate	A	A	A	A	A	A	A	A	B	AB	A		AB		AB	
Butyl Acrylate Satur.								A	X								Calcium Oxide	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Butyl Alcohol (Butanol)	A	A	A	C	C	A	A	A	A	A	A	A	A	A	A		Calcium Phosphate			A				A	A	A	AB		C	AB	C	AB	
Butyl Amine	X	X	A	X	X	B		X	X	C	AB			A	A	AB	Calcium Sulfate	A	A	A	A	A	A	A	A	A	AB	A		A	AB	A	
Butyl Benzoate			A					A	A	X							Calcium Sulfide	A	A	A	A	A	A	A	A	A		AB	A	AB	BC		
Butyl Bromide			A			A		B	X								Calcium Thiosulfate			A				A	A	B							
Butyl Butyrate			A					B	C	X							Calgon		C	A			A		A	A		A	A	A	A		
Butyl Carbitol	X		A					A	A	C							Cane Sugar Liquors	A	A	A	A	A	A	A	A	A		A	A	A	B		
Butyl Cellosolve	X		A	A	A	A		B	X	C	A	A	C	A	AC	AB	Caprylic Acid			A			A			C							
Butyl Chloride			A			A		A	X	A	A	A	A	A	A		Carbinol			A				A	X	A							
Butyl Diol	A	A	A	B	C	A		A	A								Carbolic Acid	A	A							C	A	B	A	A	AB	AB	
Butyl Ether	X	X	A	X	X	A		X	X	B			A	A	A		Carbon Bisulfide	X	X	A	X	X	A		A	X			C				
Butyl Formate			A						X								Carbon Dioxide	A	A	A	A	A	A	B	A	A	A	A	A	A	A	A	
Butyl Hydrate			A					B	A	A							Carbon Disulfide	X	X	A	X	X	A	X	A	C	A	B	A	A	AC	AB	
Butyl Hydride			A					X	A	A							Carbon Monoxide	A	A	A	A	A		A	A	A	A	A	A	A	A	A	
Butyl Hydroxide			A					B	A	A							Carbon Tetrachloride	X	X	A	X	X	A	A	X	B	C	A	A	AB	AB	A	A
Butyl Mercaptan			A	X	X	A											Carbonic Acid	A	A	A	A	A	A	A	A	B	A	A	AB	A	AC	AB	
Butyl Phenol	A	A		C	C	A					A			A	A		Casein			A			A	A	A								
Butyl Phthalate	X	A	A	X	X	A		B	C	X	AB	AB	AB	AB	A	A	Castor Oil	C	A	A	A	A	A	B	A	A	A	A	A	A	A		
Butyl Stearate			A			A		B	A	B			C	A	AC		Catsup	A	A		A	A			A	A	A			A	A		
Butylbenzene			A					A	X								Caustic Lime																
Butylene	A	X	A	A	A	A		X	A	B	A	A	A	A	A		Caustic Potash																
Butyraldehyde			A					B	X	X	A						Caustic Soda																

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CHEMICALS															CHEMICALS																	
	CPVC	PP	PTFE	PVC	PVC-GF (Fibrelac™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel® C	18-8 SS	316 SS		416 SS	Titanium	CPVC	PP	PTFE	PVC	PVC-GF (Fibrelac™)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel® C	18-8 SS	316 SS	416 SS
Cellosolve	X	A	A	B	A	C	B	C	C	A	A	C	C	AC	AB	Copper Fluoride	A	A	A	A	A	A	A	A	A	A	C	A	A	A	A	
Chloral Hydrate	A	A	A	A	A			A	C							Copper Nitrate	A	A	A	A	A	A	A	A	A	X	AB	A	B	A		
Chloric Acid 20%	A	X	A	A	A											Copper Salts	A	A	A	A	A	A	A	A								
Chloric Acid	A	A	A	A					X	AB	X	X	X	X		Copper Sulfate 5%	A	A	A	A	A		A	A				A	B	A		
Chlorinated Glue							B	A	C				A			Copper Sulfate	A	A	A	A	A	A	A	B	B	A	AB	AB	A	AB	A	
Chlorine Dioxide	A	C	A	A	A		X	A		A	X	X	X	X	AB	Corn Oil	A	A	A	A	A		B	A	A	A	A	A	A	A		
Chlorine Gas, Dry	X	X	A	X	A	A	X	B	C	A	AB	B	B	BC	X	Corn Syrup	A	A	A	A	A	A	B	A	A			A				
Chlorine Gas, Wet	X	X	A	X	A	C	X	C	C	A	C	X	X	X	A	Cottonseed Oil	A	A	A	A	A	A	B	A	B	A	A	AB	A	A	A	
Chlorine Water	A	C	A	A	A		B	A	C	A	C	X	X	X	A	Cream	A	A					A	A				A				
Chlorine, Dry	X	A					B	C	X				A	X		Creosol	X	C	A	X	X	C	X	A	X		A	A				
Chlorine, Liquid	X	X	C	X	X	A			C							Creosote	X		A	X	X		X	A	B	A	A	A	AB	A		
Chloroacetic Acid		X	A	A			B	X	X	A	B	X	X	X	A	Cresols	X	C	A	X	X	A	X	A	X	AB		A	A	AB		
Chlorohydr. Alum			A													Cresylic Acid	C	A	A	C		A	X	A	X	A	A	A	A	A	A	
Chlorosulfonic Acid	X	X	A	X	X	C	X	X	X	A	AC	X	X	X	A	Croton Aldehyde	X	A	A	X	X	C	B	A								
Chocolate Syrup		A						A	A	AB	AB	A	A	A		Crude Oil	A	A	A	A	A	A	X	A	X	A	AB	A	A	A	A	
Chresylic Acid 50%			A		B			A	X				A			Cryolite	B	A	A	B		A	A	A	B							
Chrome Alum	A	A	A	A	A			A	A							Cupric Fluoride	A	A	A	A	A	A		A	A							
Chrome Alum	A	A	A	A	A			A	A							Cupric Nitrate			A				A	A	A							
Chromic Acid 10%	A	B	A	A	A	A	B	A	X						A	Cupric Salts		A	A	A	A	A	A	A				X				
Chromic Acid 20%	A	X	A	B	C	A		B	B	C					A	Cupric Sulfate	A	A	A	A	A	A	A	A	A							
Chromic Acid 30%	A	X	A	B	C	A			A	X					A	Cutting Oil			A				X	A	A		A	A	A			
Chromic Acid 5%	A	X	A	A		A	A	A	X				A	A		Cyanic Acid			A				A	A		B		A				
Chromic Acid 50%	X	X	A	X	X	A	C	B	A	X			X	A		Cyclohexane	X	X	A	X	X	A	A	X	A	C	AB	A	AC	A	AC	A
Chromium Alum	A	A	A	A	A		A	A								Cyclohexanol	X	A	A	X	X	C	B	A	B	A		C	A	AC		
Citric Acid	A	A	A	A	A	A	A	A	B	A	AB	AB	B	BC	A	Cyclohexanone	X	B	A	X	X	C	C	X	C	A	BC	C	A	BC		
Citric Oils	X	A	A				B	A	A	A			A			Decalin	X	A	A	X	X	A	X	A	X							
Cobalt Chloride			A				A	A	A							Decanal			A					X	X							
Coconut Oil	A	A	A	A	A		B	A	A	A	BC		A	AC		Decane			A		A		X	A	B							
Cod Liver Oil			A				A	A	B	A	A	A	A	A		Detergents	B	B	A	A	A	A	A	A	A	AB	A		A	A	A	
Coffee	A	A					A	A	A	A	AC	A	A	A		Detergents, Heavy Duty	A	A		A	A	A										
Coke Oven Gas	A	A	A	X	X	A		A	A	X			A	A		Developers			A						A	A	AB	A	A	A	A	
Cola Concentrates		A														Dextrin	A	A	A	A	A	A	A	A			A	A				
Copper Acetate	A	A	A	A	A		A	X	B	A	X	A	A	AB		Dextrose	A	A	A	A	A	A	A	A	A	A	A		A	A	A	
Copper Borofluoride	A	A	A	A	A		A	A								Diacetone Alcohol	X	C	A	X	X	B	A	X	C	A	A	A	A	A	A	
Copper Carbonate	A	A	A	A	A		A	A	X	A	X	A	A	BC	A	Diallyl Phthalate																
Copper Chloride	A	A	A	A	A		A	A	A	A	X	X	X	BC	A	Diazo Salts	A	A		A	A	A										
Copper Cyanide	A	A	A	A	A		A	A	B	A	X	A	B	AB	A	Dibenzyl Ether			A		A		C				A	A	A			
Copper Fluoborate			A	A	A			A	B	B	C	X				Dibutyl Amine			A		A		X	C	C							

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# Chemical Resistance Guide, CONTINUED

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fibergl <sup>TM</sup> )	PVDF	Ultr <sup>®</sup> (GF-40%)	EPDM	FPM	Nitrile (Bu <sup>TM</sup> )	Hastelloy <sup>®</sup> C	Monel <sup>®</sup> C	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	A	AB
Dichloroethylene	X	X	A	X	X	A		X	A	X	AB	A		BC		
Dichloroisopropyl Ether					A											
Dichloromethane			A			X	X	B	X							
Diethyl 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	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	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							
Diocetyl 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 (Fibergl <sup>TM</sup> )	PVDF	Ultr <sup>®</sup> (GF-40%)	EPDM	FPM	Nitrile (Bu <sup>TM</sup> )	Hastelloy <sup>®</sup> C	Monel <sup>®</sup> C	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
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

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# Chemical Resistance Guide, CONTINUED

CHEMICALS														CHEMICALS																			
	CPVC	PP	PTFE	PVC	PVC-GF (Fiberglass)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hasstloy® C	Monel® C	18-8 SS		316 SS	416 SS	Titanium	CPVC	PP	PTFE	PVC	PVC-GF (Fiberglass)	PVDF	Ultem® (GF 40%)	EPDM	FPM	Nitrile (Buna N)	Hasstloy® C	Monel® C	18-8 SS	316 SS	416 SS	Titanium
Ferric Sulfate	A	A	A	A	A	A	A	B	A	B	A	B	B	A		Glycerol	A	A	A	A	A	A	A	A	A	A							
Ferrous Chloride	A	A	A	A	A	A	A	B	AB	X	X	X	X	A		Glycolic Acid	A	A	A	A	A	A	A	A	A								
Ferrous Nitrate	A	A	A	A	A		B	A	A							Glycols	A	A	A	A	A	A	A	A	A		AB						
Ferrous Sulfate	A	A	A	A	A	A	A	A	A	AB	A	C	B	A		Glyoxal							A										
Fish Solubles	A	B		A	A											Gold Monocyanide							A	A				A					
Fluoboric Acid	A	A		A	A	A	B	A	A	A		B		X		Grape Juice	A			A	A		A	A									
Fluorine Gas (Wet)	A	B	A	A	C	A	A	A	X	A	A					Grape Sugar	A	A	A	A	A	A	A	A									
Fluorine Liquid		X	B	C	X	A		C	B	X			X	X		Grease		A	A	A	A	A	X	A	B	A	A	A	A				
Fluosilicic Acid 25%	A	A	A	A	A	A	A	A	A	B	A	X	B	C	X	Green Liquor	A	A	A	A	A	A	A	A	B		A						
Formaldehyde 35%	A	A	A	A	A	A	A	A						B		Helium			A				A	A	A			A					
Formaldehyde 50%	A	A	A	A	A	A	X	B								Heptane	A	B	A	A	A	A	X	A	A	A	A	A	A				
Formaldehyde	A	A	A	X	B	A	A	B	B	B	A	A	A	B	A	Hexane	A	B	A	X	X	A	A	X	A	A	A	A	A				
Formic Acid	A	A	A	A	A	A	B	A	X	C	A	AB	B	B	C	Hexene			A				X	A	A								
Freon 11	A	A	A	X	X	A	X	B	B	A	A	A	A	A		Hexyl Alcohol	A	A	A	A	A	A	B	A	A	A	A	A	A				A
Freon 113	B	X	A	B	C	A	X	B	A	A	A	A	A	A		Honey		A	A	A	A	A		A	A	A							
Freon 114			A	A	A	A	C	A	A			A				Hydraulic Oil (Synth.)	X				C		A	C	A	A	A	A					
Freon 12 (Wet)		A	A	B	C		B	A	A				X	A		Hydraulic Oil			A			A	X	A	A	A	A	A					
Freon 12	A	A	A	C	C	A	A	B	B	A	AB	A	A	A		Hydrazine	X	X	A	X	X	X	A	X	C			A	A				
Freon 22	X	A	A	X	X	A	B	X	X			A	A	A		Hydrobromic Acid 20%	A	A	A	A	A	A	A	A	X				X	X	A		
Freon TF	(See Freon 113)													Hydrobromic Acid 50%	A	B	A	A	A	A	A	A	X				X	C	X	X			
Fructose	A	A	A	A	A	A	A	A	A	A	A	A	A			Hydrobromic Acid	A	B	A	A	A	A	A	A	X	A	X	X	X	A			
Fruit Juice	A	A	A	A	A	A		A	A	A	A	A	A			Hydrochloric Acid 10%	A	A	A	A	A	A	A	A	B			X		X	C		
Fruit Pulp	A	A		A	A	A	A									Hydrochloric Acid 20%	A	A	A	A	A	A	A	A	B			X	X	X	C		
Fuel Oil		B	A	B	C	A	X	A	A	A	A	A	A	A		Hydrochloric Acid 25%	A	A	A	A	A	A	A	A	C			X		X			
Fumaric Acid			A					A	A			A				Hydrochloric Acid 37%	A	A	A	A	A	A	A	C	A	C			X	X	X	C	
Furan			A				X	X		B						Hydrochloric Acid	A		A	A		A	A				B	X	X	A			
Furfural (Ant Oil)	X	C	A	X	X	B	B	X	X	AB	B	AB	A	A		Hydrocyanic Acid 10%	A	A	A	A	A	A	A	A	B				X	X			
Furfuryl Alcohol			A			B	C	X				A				Hydrocyanic Acid	A	A	A	A	A	A	A	A	B	A	AB	A	A	B	A		
Gallic Acid	A	A	A	A	A	A	A	A	A	B	B	A	A	B		Hydrofluoric Acid 10%	A	A	A	A	C	A		A	A	B			X		X		
Gas, Natural	A	A		A	A	A	X	A	A	A	A					Hydrofluoric Acid 20%	A	A	A	A	C		A	A	X			X	X	X	X		
Gasoline, Leaded	X	X	A	A	A	A	A	X	B	A	A	A	A	A	X	Hydrofluoric Acid 30%	A	A	A	A	C	A		A	A			X		X			
Gasoline, Sour	B	X	A	A	A	A	X	A	A	A	X	A	A	A	X	Hydrofluoric Acid 40%	C	A	A	B	C	A		A	A			X		X			
Gasoline, Unleaded	X	X	A	C	C	A	A	X	B	A	A	A	A	A	X	Hydrofluoric Acid 50%	C	A	A	X	X	B	A	A	A	C			X	X	X		
Gelatin	A	A	A	A	A	A	A	A	A	A	A	A	A	A		Hydrofluoric Acid 65%	C		A				B	A	X			X		X			
Gin	A	A	A	A	A	A	A	A								Hydrofluoric Acid 75%	C	A	A	X	X	A		X	A	X	A	A	X	X	X		
Glucose	A	A	A	A	A	A	A	A	A	A	A	A	A	A		Hydrofluosilicic Acid	A	A	A	A	A	A	A	A	A	B	A	X	X	X	A		
Glue	A	A	A	A	A	A	B	A	A	A	A	A	A	A		Hydrofluosilicic Acid 20%	A	A	A	A	A		A	A	B				X	X	X		
Glycerine	A	A	A	A	A	A	A	A	A	A	A	A	A	A		Hydrogen Chl. Gas Dry	A					A				A	A	A					X

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Hydrogen Cyanide	A	A	A	A	A	A	A	A	B	A	B	A				C	Latex	A	A						B	A	B	A			A	A				
Hydrogen Fluoride	X	A		X	X	A				B	AB	AB				C	Lauric Acid	A	A	A	A	A	A													
Hydrogen Peroxide 10%	A	A	A	A	A	A			A							C	B	C	Lauryl Chloride	A	A	A	A	A	A											
Hydrogen Peroxide 30%	A	C	A	A	A	A	A	B	A	X						B	B	B	Lead Acetate	A	A	A	A	A	A	A	C	B	AB	A	B	B	B	A		
Hydrogen Peroxide 5%	A	A	A	A	A	A	A	A								B			Lead Chloride	A	A	A	A	A	A	A	A									
Hydrogen Peroxide 50%	A	A	A	B	C	A	C	A	X							C			Lead Nitrate	A	A	A	A	A		A	A	A	B	B	C		B			
Hydrogen Peroxide 90%	X	X	A	X	C	A	C	B	X							X			Lead Sulfate	A	A	A	A	A	A	A	A	A								
Hydrogen Peroxide		A	A	A	A	A	B	A	C	A	AB	AB				B	B	B	Lemon Oil	A	X	X	A	A	A							A				
Hydrogen Phosphide	A	A		X	C	A				C									Ligroin	X	C		X	X	A	C	A	A	A	A	A	A				
Hydrogen Sulf. (Aq. Sol.)	A	A	A	A	A		A	C	C							A	C	A	Lime - Sulfur Solution	A	A		A	A	A			X					B			
Hydrogen Sulfide (Dry)	A	A	A	A	A	A	A	A	A	A	B	C				A	C	A	Lime	(See Calcium Oxide)																
Hydrogen Sulfide	A	A	A	A	A	A	A	A		A	BC	AB				C			Linoleic Acid	A	A	A	B	C	A	X	B	B	A	A	A		A			
Hydrogen	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A				Linseed Oil	A	A	A	A	A	A	B	A	A	A	A	A		A			
Hydroquinone	A	A	A	A	A	A	A	A	X	B	A	C							Lithium Bromide			A	A	A	A		A	A	AB	AB						
Hydroxide Alum	A	A	A	A	C	A	A	C	A							A	A	A	Lithium Chloride	A			A					AB	A	A		X				
Hydroxyacetic Acid 70%	A			A	A		A	A	A									B	LPG			A						A	A	A						
Hydroxyacetic Acid	A						A	A											A	Lubricants		A	A	A	A			A	A				A	A	A	
Hydroxylamine Sulfate	A	A		A	A	A	A												Lubricating Oil	A	A	A	A	A	A		A		A	A	A		A			
Hypochlorous Acid	A	A	A	A	A	A	B	B	X	A		X	X						Lye Solution									A	A	A						
Ink		A			A				A	A	AC	A	A						Machine Oil	A	A	A	A	A	A		A									
Iodine Solution	A	C	A	X	X	A	A	A	C	A	A	B	X	X		A			Magnesium Acetate			A				X	X									
Isobutyl Alcohol			A		A	A	A	A	B	A	A								Magnesium Carbonate	A	A	A	A	A	A	B	A	A	AB	A	AB	A	A			
Isooctane	A	A	A	A	A	A	X	A	A	A	A	A							Magnesium Chloride	A	A	A	A	A	A	A	A	A	A	A	X	B	B	A		
Isophorone	X			X	X		X	X		A									Magnesium Citrate	A	A	A	A	A	A	A	A									
Isopropyl Acetate			A				B	X	X	B	AB					B			Magnesium Hydroxide	A	A	A	A	A	A	A	A	A	A	A						
Isopropyl Alcohol	A	A	A	A	A	B	A	A	B	A	AB	AB				A			Magnesium Nitrate	A	A	A	A	A	A	B	A	A	B	AB	A	A	A			
Isopropyl Ether	X	C	A	X	X	A	X	X	B	A	A								Magnesium Oxide	A		A				A	A	A	AB		A	B				
Jet Fuel JP-3		A	A				X	A	A	A	A	A	A	A					Magnesium Sulfate (Epsom Salts)	A	A	A	A	A	A	C	A	A	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					Maleic Acid	A	A	A	A	A	A	C	A	X	A	AC	B	A	A	A		
Jet Fuel JP-5	A	C	A	A	A	A	X	A	A	A	A	A	A	A					Maleic Anhydride								A	X	A							
Kerosene	A	A	A	A	A	A	X	A	A	A	A	A	A	A					Malic Acid	A	A	A	A	A	A	X	A	A	A	A	A	A	A	B	A	
Ketones	X	A	A	X	X	A	C	X	X	A	A	A	A						Manganese Sulfate	A	A	A	A	A		A	A	A	A	A						
Kraft Liquor	A	A		A	A	A													Mash								A	A	A		A					
Lacquer Thinner		B	A	C	C		A		X	A	A	A	A						Mayonnaise		A	A				A	A	A	AC	A	A					
Lacquer		A	A				X	X	X	A	A	A	A						Melamine								C				X					
Lactic Acid	A	A	A	A	A	A	B	B	B	A	AB	A	A			C	B		Mercuric Chloride	A	A	A	A	A	A	A	A	A	AB	X	X	X	X	A		
Lard Oil	A	A	A	A	A	A	C	A											Mercuric Cyanide	A	A	A	A	A	A	B	A	A	A	X	A	A	X	A		
Lard	A	A	A	A	A	A	C	A	A	A	AC	A	A	A					Mercuric Nitrate	A		A				A	A	A						A		

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# Chemical Resistance Guide, CONTINUED

CHEMICALS														CHEMICALS																		
	CPVC	PP	PTFE	PVC	PVC-GF (Fiberglass)	PVDF	Ultram® (GF 40%)	EPDM	FKM	Nitrile (Buna N)	Hastelloy® C	Monel® C	18-8 SS		316 SS	416 SS	Titanium	CPVC	PP	PTFE	PVC	PVC-GF (Fiberglass)	PVDF	Ultram® (GF 40%)	EPDM	FKM	Nitrile (Buna N)	Hastelloy® C	Monel® C	18-8 SS	316 SS	416 SS
Mercuric Sulfate	A	A	A	A	A	A	A	A	A	A	A						Milk	A	A	A	A	A	B	A	A	A	A	BC	A	A	A	
Mercurous Nitrate	A	A	A	A	A	A	A	A			X	A					Mineral Oil	A	A	A	B	A	A	X	A	A	A	A	A	A	A	
Mercury	A	A	A	A	A	A	A	A	A	A	B	A	A	A	B		Molasses	A	A	A	A	A		C	A	A	A	A	A	A	A	
Methacrylic Ac. Glacial			X														Monochlorobenzene	B	A		A	X	A		A	A	AB					
Methane Sulfonic Ac.		A			A												Monochloroacetic Acid	A	B	A	A	A	A	C	B		A	B		X		
Methane	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A		Monoethanolamine	X		A	X	X	X	A	A	A	AB	A	A		A	
Methanol (Methyl Alcohol)	X	A	A	A	A	A	A	X	A	A	A	AB	A	A	A		Morpholine			A							A		A			
Methoxyethyl Oleate			A	A													Motor Oil	A	C	A	A	A	A	X	A	A	A	A				
Methyl Cellosolve	X	A	X	X	A		B	X	X	A	A	AC					Mustard	A	A		A	A			A	B	A	BC	A	A		
Methyl Acetate	X	B	A	X	X	A	B	X	X		AB	A	A				Naphtha	A	A	A	A	A	A	X	A	B	A	A	A	A	A	
Methyl Acetone			A					X	X		AB	A	A				Naphthalene	X	B	A	X	X	A	X	B	X	A	A	B	B	A	A
Methyl Acrylate			A		A		B	X	X		AB	A	A				Natural Gas	A	A		A	A	A	X	A	A	A	A	A			
Methyl Alcohol	X	A	A	A	A	A	A	X	A				A	A	A		Neon			A				A	A	A		A				
Methyl Benzene							(See Toluene)																									
Methyl Bromide	X	X	A	X	X	A	C	A	X	AB		A					Nickel Acetate	A	A	A	A	A	A	A	X	B		A	C			
Methyl Butanol			A					B	A								Nickel Chloride	A	A	A	A	A	A	A	A	B	A	AB	AC	B	X	A
Methyl Butyl Ketone			A				B	X	X			A					Nickel Cyanide	A			A	A										
Methyl Chloride	X	X	A	X	X	A	C	C	C	A	A	A	A	B	A		Nickel Nitrate	A	A	A	A	A	A	B	A	A	B	B	A		B	
Methyl Chloroform	X	C	A	X	X	A	X	B		A	C						Nickel Sulfate	A	A	A	A	A	A	A	A	A	AB	AB	A	C	B	
Methyl Ether			A				C	C	B	C	C	C					Nickel	A	A	A	A	A		A	A	A						
Methyl Ethyl Ketone	X	C	A	X	X	X	C	A	X	X	A	A	A	A	A		Nicotine Acid	A	A	A	A	A	A	A								
Methyl Formate	X						A	X		AB		A					Nicotine	A	X	A	A	A	C									
Methyl Isobutyl Alcohol									X								Nitrate Alum	A	A	A	A	A	A	A	B	A				A		
Methyl Isopropyl Ketone	X	B	A	X	X	A	C	X	X			A	A				Nitric Acid 10%	A	A	A	A	A	A	B	A	X	B	X	A	A	B	A
Methyl Isobutyl Carbinol			A				A	A									Nitric Acid 20%	A	A	A	A	A	A	X	A	X	B	X	A		B	
Methyl Isobutyl Ketone	X	C	A	X	X	A	B	X	X			A	A				Nitric Acid 30%	A	A	A	A	A	B	A	B	A	X	B	X	A	B	
Methyl Methacrylate	X		A			C	X	X	X			C					Nitric Acid 40%	A	C		A	A	B	A	X	A	X	B	X	A	C	
Methyl Propanol			A				B	A	A								Nitric Acid 50%	A	C	A	A	A	B	X	A	X	B	X	A		X	
Methyl Salicylate	A	A		A	A	A											Nitric Acid 70%	A	X	A	X	X	X	A	X	C	X	B	X	A	X	
Methyl Sulfate	A	A		B	C	A											Nitric Acid Concentr.	A	X	A	X	X	X	X	C	X	B	X	A		C	
Methylamine	X	X	A	X	X	C	A		B			A					Nitric Acid Fuming	X	X		X	X	X								C	
Methylene Bromide			X	X	X												Nitrobenzene	X	C	A	X	X	A	C	C	C	C	A	AB	B	B	A
Methylene Chloride	X	X	A	X	X	C	X	B	X	A	A	AC	A	B	A		Nitroethane			A		A	A	X			A					
Methylene Iodine			A	X	X	C		A									Nitrogen Dioxide			A		A										
Methylhexane			A				X	A	A								Nitrogen			A			A	A	A	A	A	A	A	A	A	
Methylisobutyl Carb.	A	A		A	A	A	A	A									Nitroglycerine				X		A			A	A	A				
Methylmethacrylate			A			A	X	X									Nitromethane			A		A	B			A	A	A				
Methylsulfuric Acid	A	A	A	A	A	A											Nitrous Oxide	A	A	A	A	A	A	A	A	A	A	X	C			
																	Ocenol	A	X		A	A	A									

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# Chemical Resistance Guide, CONTINUED

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fibercoc™)	PVDF	Ulitem® (GF-40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel® C	18-8 SS	316 SS	416 SS	Titanium	CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fibercoc™)	PVDF	Ulitem® (GF-40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel® C	18-8 SS	316 SS	416 SS	Titanium
Octane			A		A	X	A										Peracetic Acid 40%	X	X	A	X	X	A	B	A								
Octyl Acid			A		A				C								Perchloric Acid 10%	A	A	A	A	A	A	B	A	X							B
Octyl Alcohol									A	B	A	A	A	A	A		Perchloric Acid 70%	X	A	A	X	X	A	X	A	X							X
Octylamine			A					X	C								Perchloroethylene	X	C	A	X	X	A	X	A	X	A	A	AB	A			
Oils, Crude Sour	X														C		Perphosphate	A	A	A	A	A		A	A								
Oils	X	A		A	A												Petrolatum	A	A	A	A	A	A	C	A	A	A	A	A	A			
Oils, Aniline	A	A	X	X		B	A	X						A	A		Petroleum (Sour)				A	A		X	A	A						C	
Oils, Anise														A			Petroleum Oils	A	B	A	A	A	A	X	A	A						A	
Oils, Bay								A						A			Phenols 100%	A	A	A	X	X	A	X	C	B	X	A	B	A	A	C	
Oils, Bone								A	A					A			Phenylacetate			A				B	X	X							
Oils, Castor				A		B	A	A						A			Phenylhydrazine Hydrochl	A	X		X	X	A										
Oils, Cinnamon				A				A						A			Phenylhydrazine	X	X	A	X	X	A	C	C	X							
Oils, Citric	A							A	A					A			Phosgene Gas	X	C		X	X	A	A	X	X							
Oils, Clove	B							A						A			Phosgene Liquid	X	X		X	X	C	A	X	X							
Oils, Coconut	A						A	A	A					A			Phosphate Alum			A				A	A	A							
Oils, Cod Liver	A						A	A	A					A			Phosphoric Acid 10%	A	A	A	A	A	A	A	A	C	A	A	A	A	B		
Oils, Corn	X	A					C	A	A					A			Phosphoric Acid 100%	A	A	A	A	A		B	A	X	A	A	B	B			
Oils, Cotton Seed	X	A	A	A	A		C	A	A					A			Phosphoric Acid 20%	A	A	A	A	A	A	A	A	C	A	A					
Oils, Creosote	X			X		X	A	B						A			Phosphoric Acid 40%	A	A	A	A	A	A	B	A	X	A	A	A	A			
Oils, Diesel Fuel	A			A		X	A	A						A			Phosphoric Acid 50%	A	A	A	A	A	A	A	A	C	A	A	B	B			
Oils, Fuel		A	A	A		X	A	B						A	A		Phosphoric Acid 80%	A	A	A	A	A	A	A	A	A	A	AB					
Oils, Linseed	X	A		A	A		X	A	A					A			Phosphoric Acid 85%	A	A	A	A	B	A	A	A	C	A	AB	B	C			
Oils, Mineral	A			A	A		X	A	A	A	A	A	A	A			Phosphoric Acid Crude			A				B	A	C			C	C			
Oils, Olive	X	A	A	A	A		B	A	A	A	A	A	A	A			Phosphorous Oxychloride			A								X					
Oils, Pine	X	A	A	A		X	A	C		A	A	A		A			Phosphorous Red	A	A	A	A	A	A										
Oils, Silicone	A			A				A	A					A			Phosphorous Trichloride	X	C	A	X	X	A	C	C	X	A	A	A	A			
Oils, Vegetable	X	A		A	A			A	A	A	A	A		A			Phosphorous Yellow	A	A	A	A	A	A										
Oleic Acid	B	A	A	A	A	A	C	B	B	A	A	A	A	B			Photographic Developer	A	A		A	A	A		A	A	A	A	C	A	A		
Oleum	X	X	A	X	X		X	X	X					A			Photographic Solutions	A	A	A	A	A	A		A	A	AB	AC	C				
Orange Extract	A	A			A												Phthalic Acid	X	X	A	X	X	A	A	A	A	X	C	B				
Oxalic Acid	A	A	A	A	A		A	A	B	A	B	A	B	C	C		Phthalic Anhydride	X	X	A	X	X		A	A	C	A	A	B	B	A		
Oxychloride Alum	A	A		A	A			X									Pickle Brine	A	A		A	A	A										
Oxygen Gas	A	A	A	A	A		A	A	C	A	A	A					Pickling Solutions	A	A	A	A	A	A	C	B	X							
Ozone	B	C		B	B	A	A	A	X	A	A	A					Picric Acid	C	A	A	X	X	A	C	A	B	B	X	AB	A	B		
Palmitic Acid 10%	A	A	A	A	A		B	A	A								Plating Solutions, Antimony	A	A	A	A	A		A	A	A	A		A	A			
Palmitic Acid 70%	A	A	A	X			B	A	A								Plating Solutions, Arsenic	A	A		A	A			A	A	A		A	A			
Paraffin	A	A	A	A	A		X	B	A	A	A	A	A	A			Plating Solutions, Brass	A	A	A	A	A	A	A	A	A	A		A	A			
Pentane			A				X	A	A	A	A	A	C				Plating Solutions, Bronze	A	A	A	A	A			A	A	A		A	A			

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# Chemical Resistance Guide, CONTINUED

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fibertec™)	PIDF	Ultram® (GF-40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel® C	18-8 SS	316 SS	416 SS	Titanium	CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fibertec™)	PIDF	Ultram® (GF-40%)	EPDM	FPM	Nitrile (Buna N)	Hastelloy® C	Monel® C	18-8 SS	316 SS	416 SS	Titanium
Plating Solutions, Cadmium	A	C	A	A	A	A	A	A	A	A			A	A			Potassium Perborate	A	A	A	A	A	A										
Plating Solutions, Chrome	A	C	A	A	A	A	B	C	X	X	C		C	A	A		Potassium Perchlorate	A	A	A	A	A		A									
Plating Solutions, Copper	A	A	A	A	A	A	A	A	A	A			X	A			Potassium Permanganate	A	B	A	A	A	A	A	B	C	B	AC	AC	B	B	B	
Plating Solutions, Gold	A	C	A	A	A	A	A	A	A	A			C	A			Potassium Persulfate	A	A	A	A	A	A	A			A	X					
Plating Solutions, Iron	A	C	A	X	X			A	A	A			C	A			Potassium Phosphate	A							A								
Plating Solutions, Lead	A	A	A	A	A	A	A	A	B	A	A		C	X			Potassium Salts		A	A		A		A	A								
Plating Solutions, Indium	A	A	A	A	A			A	A				C	A			Potassium Sulfate	A	A	A	A	A	A	A	A	A	A	AB	B	B	A		
Plating Solutions, Nickel	A	A	A	A	A	A	A	A	A	A			C	A			Potassium Sulfide	A		A	A	A		A	A	A	AB	A		B			
Plating Solutions, Rhodium	A	A	A	A	A	A	A	A	A				X	X			Potassium Thiosulfate		A					A	A								
Plating Solutions, Silver	A	A	A	A	A	A	A	A	A	A			A	A			Potassium Bicarbonate	A	A	A	A	A	A	A	A	A			B	B	A		
Plating Solutions, Tin	A	A	A	A	A	A	A	A	B	A	A		C	X			Propane	A	B	A	A	A	A	X	A	A	A	A	A	A	A		
Plating Solutions, Zinc	A	A	A	A	A	A	A	A	A	A			X	A			Propargyl Alcohol	A	A		A	A	A										
Polyethylene Glycol	A	A	A	A	A	A	A	A	A								Propyl Acetate			A		A		B	X	X	A						
Polyvinyl Acetate Emul			A		A	A	A	A									Propyl Alcohol (Propanol)	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
Polyvinyl Alcohol	X	A	A	A	A	A	A	A									Propylene Dichloride	X	C	A	X	X	A	X	B	X	A	C					
Potash	A	A	A	A	A	A	B	C	C				A				Propylene Glycol	C		A			A	A	A	A	B	B	AB	A			
Potassium Acetate	A	A	A	A	A	A	A	X	B		A	C					Propylene			A			X	A	X		A						
Potassium Alum	A	A	A	A	A	A	A	A	A				X				Pyridine	X	C	B	X	X	C	X	C	X	X	A	A	B	C	B	
Potassium Bichromate	A	A	A	A	A	A	A	A	A	AC	AB		B				Pyrogallic Acid			A	B	C	X		A	A	AB	AB	AB	A	B		
Potassium Bisulfate	A	A	A	A	A	A	A	A	A	A							Rayon Coagulating Bath	A	A		A	A	A										
Potassium Bromate	A	A	A	A	A	A	A	A	A	A							Rhodan Salts	A	A	A	A	A	A	A									
Potassium Bromide	A	A	A	A	A	A	A	A	A	A	AC	B	B	A			Rosins		A	A				A	A				A	B			
Potassium Carbonate	A	A	A	A	A	A	A	A	B	AB	A	AB	A	B	A		Rum		A	A	A	A		A	B	A							
Potassium Chlorate	A	A	A	A	A	A	A	A	A	AC	AB	A	B	A			Rust Inhibitors		A					A	A				A				
Potassium Chloride	A	A	A	A	A	A	A	A	A	AB	C	A	B	A			Salad Dressings		A		A	A		A	A				A				
Potassium Chromate	A	A	A	A	A	A	A	A	A	A	C	B	B				Salicylaldehyde			A	X	X	C	X	A	A							
Potassium Coppercyanide	A	A	A	A	A	A	A	A									Salicylic Acid			A	A	A	A	A	A	C	A	AB	A		B		
Potassium Cyanide	A	A	A	A	A	A	A	B	A	B	B	AC	B	B	A		Saline Solutions	A	A		A	A	A										
Potassium Dichromate	A	A	A	A	A	A	A	A	A				A	B	A		Salt Brine	A	A	A	A	A	A	A	A	A	A	A					
Potassium Ferricyanide	A	A	A	A	A	A	A	A	A	BC	AC		A				Sea Water	A	A	A	A	A	A	A	A	A	A	B	AB	C	C	A	
Potassium Ferrocyanide	A	A	A	A	A	A	A	A	C	B	AC	B		A			Selenic Acid	A	A		A	A	A										
Potassium Fluoride	A	A	A	A	A	A	A	A	A	A							Sewage	A	A	A	A	A	A	A	A	A	A	A					
Potassium Hydroxide 25%	A			A					A	A	A						Shellac Orange		A	A					A								
Potassium Hydroxide 50%	A	A		A	A	B			A	A	A						Shellac Bleached		A	A					A				A	A			
Potassium Hydroxide	A	A	A	A	A	A	A	B	C	C	AB	A	A	C	B	C		Silicic Acid	A	A	A	A	A	A	A	A							
Potassium Hypochlorite	A	A	A	A	A	A	A	A	X	B	X	X		X			Silicone Oil	A	A	A	A	A		A	A	A	A	A	A	A			
Potassium Iodide	A	A	A	A	A	A	A	A	A	AB	A		A				Silver Bromide										A	B	X	C	X		
Potassium Nitrate	A	A	A	A	A	A	A	B	A	AB		A	B	B	A		Silver Cyanide	A	A	A	A	A	A	A	A	A	A	AB	A				

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CHEMICALS														CHEMICALS																		
	CPVC	PP	PTFE	PVC	PVC-GF (Fiberc®)	PVDF	Ultram® (GF 40%)	EPDM	FPM	Nitrile	Hastelloy® (H)	Monel® C	18-8 SS		316 SS	416 SS	Titanium	CPVC	PP	PTFE	PVC	PVC-GF (Fiberc®)	PVDF	Ultram® (GF 40%)	EPDM	FPM	Nitrile	Hastelloy® (H)	Monel® C	18-8 SS	316 SS	416 SS
Silver Nitrate	A	A	A	A	A	A	C	A	C	AB	X	B	B	B	A	Sodium Nitrate	A	A	A	A	A	A	A	B	C	AB	B	A	B	B	A	
Silver Salts		A	A	A	A	A	A	A						A		Sodium Nitrite	A	A	A	A	A	A		A	A	AC	BC	A	B			
Silver Sulfate	A	A	A	A	A	A	A	A	C						A	Sodium Palmitrate	A	A	A	A	A	A										
Soap Solutions	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	Sodium Perborate	A	A	A	A	A	A		A	A	C	A	A	AB	C	B	
Soda Ash			A				A	A	A							Sodium Perchlorate	A	A	A	A	A	A				B	A					
Sodium Acetate	A	A	A	A	A	A	A	C	C	A	A	AB	B	B	A	Sodium Peroxide	A	A	A	A	A	A		B	A	C	AB	AC	A	A	A	
Sodium Aluminate	A	A	A	A	A	A	A	A	A	AB	AB	AB	A	C	B	Sodium Phosphate Acid	A	A	A	A	A	A		A	A	A	A	A	B			
Sodium Benzoate	A	A	A	A	A	A				A	AB					Sodium Phosphate Alkaline	A	A	A	A	A	A		A	A	A	A	A	A			
Sodium Bicarbonate	A	A	A	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 Bichromate	A	A	A	A	A	A	A	A		B	AC			B		Sodium Polyphosphate			A					A	A	B			A		A	
Sodium Bisulfate	A	A	A	A	A	A	A	A	B	B	AB	X	A	A	A	Sodium Silicate	A	A		A	A	A		A	A	A	A	AB	B	B	A	
Sodium Bisulfite	A	A	A	A	A	A	A	A	A	B	B	C	A	C	A	Sodium Sulfate	A	A	A	A	A	A		A	A	A	A	A	A	B	B	A
Sodium Borate	A	A	A	C	C	A	A	A	A	A	AB	A		A		Sodium Sulfide	A	A	A	A	A	A		A	A	C	A	AB	AC	B	X	A
Sodium Bromide	A	A	A	A	A	A	A	A		AB	AC	A		C		Sodium Sulfite	A	A	A	A	A	A		A	A	A	A	B	A	C	B	A
Sodium Carbonate	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	Sodium Tetraborate				A				A	A	A	AB	A	A	A	A	
Sodium Chlorate	A	A	A	A	A	A	A	A	C	A	X	BC	B	B	A	Sodium Thiocyanate	A	A	A	A	A	A		A	A							
Sodium Chloride	A	A	A	A	A	A	A	A	A	A	A	A	C	B	A	Sodium Thiosulfate	A	A	A	A	A	A		A	A	B	A	AB	A	A	A	A
Sodium Chlorite	X	X	B	X	X		X	X								Sodium	A	A	A	A	A	A		A	A							
Sodium Chromate	A	A	A				B	A	A	AB	AC	A	B			Sorghum								A	A				A			
Sodium Cyanide	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	Soy Sauce								A	A				A			
Sodium Dichromate	A	A	A	A	A	A	A	A								Soybean Oil	A	A	A	A	A	A		A	A		A	AB	A			
Sodium Ferricyanide	A	A	A	A	A	A	A	A		A	AC	C		B		Stannic Chloride	A	A	A	A	A	A		A	A	A	AB	X	X	A	X	A
Sodium Ferrocyanide	A	A	A	A	A	A	A	A		A	A					Stannic Salts		A	A	A	A	A		A	A							
Sodium Fluoride	A	A	A	A	A	A	A	B	C	A	A	B		C	A	Stannous Chloride	A	A	A	A	A	A		B	B	C	B	C	X	C	C	A
Sodium Hydrosulfide										A	A					Starch	A	A	A	A	A			A	A	A		A	AB	A		
Sodium Hydrosulfite			A	C			A		A	A						Stearic Acid	A	B	A	A	A	A		C	A	B	A	A	A	B	B	A
Sodium Hydroxide 15%	A	A	A	A	A	A	A	C	A	A			B	B	A	Stoddard Solvent	X	C	A	X	X	A		X	A	B	A	A	A	A	A	
Sodium Hydroxide 20%	A	A	A	A	A	A	A	C	A	A			B	B	A	Styrene			A		A		X	C	X		AC	A	A			
Sodium Hydroxide 30%	A	A	A	A	A	A	A	C		A			B	B		Succinic Acid	A	A	A	A	A	A		A	A		A	AC	B			
Sodium Hydroxide 50%	A	A	A	A	A	A	A	C	X	A			B	C	A	Sugar Solutions	A	A	A					A	A				A	A		
Sodium Hydroxide 70%	A	B	A	A	A	B	A	X	X	A			X	A		Sulfamic Acid	X	X		X	X	X				B						
Sodium Hydroxide Conc	A	A	A	A	A	A	A	B	X	A	AB	A		C		Sulfate Liquors	A	A		A	A	A		A	A	A	A	B	X	C	A	
Sodium Hypochlorite 20%	A	C	A	A	A	A	X	A	C	A			C	A		Sulfated Detergents	A	A		A	A	A										
Sodium Hypochlorite 5% (Bleach)	A	C	A	A	A	A	B	A	X	AB	X	X	B	X	AC	Sulfite Liquor	A	A	A	A	A	A		A	A	B	A	C	C		X	
Sodium Hypochlorite	A	C	A	A	A	A	X	X	X	AB	X	X		X		Sulfur 10%	A	A	A	A	A			X	A	C	A		A	C		A
Sodium Hyposulfate			A										A			Sulfur Chloride	A	C	A	A	A	A		X	A	X	A	C	X	X	C	
Sodium Metaphosphate	A	C	A	A	A	A	A	A	A		A	A	A			Sulfur Dioxide Dry	A	A	A	A	A	A		A	A	X	B		A	B	B	
Sodium Metasilicate	A	A	A	A	A	A	A	A	A	A	A	A	A			Sulfur Dioxide Wet	A	A	A	X	X	A		A	A	X	AC	X	A		B	

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# Chemical Resistance Guide, CONTINUED

CHEMICALS	CPVC	PP	PTFE	PVC	PVC-GF (Fiberc®)	PVDF	Ultem® (GF 40%)	EPDM	FKM	Nitrile (Buna N)	Hastelloy® C	Monel® C	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	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	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	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							
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	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	A			
Vegetable Oil	C	A	A	A	A	A	A	A	A	A	A	A	A	A		
Vinegar	A	A	A	A	A	A	A	A	C	A	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	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	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			
Xylol	X	X	A	X	X	A	X	A	C							

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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	B	X	B	C	A	
Zinc Chromate			A													
Zinc Nitrate	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	B	A	A	A		
Zirillite		A					A	C	B							

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