

Chemical Resistance Chart for Valves and Fittings

CHEMICALS AND FORMULA	CONCENTRATION	PLASTICS MAX TEMPERATURE (°F)							SEAL MATERIALS MAX TEMPERATURE (°F)							METAL													
		ABS	CPVC	PP	PVC	PVDF	PEX	PPSU	PTFE	EPDM	NITRILE (BUNA-N)	POLYCHLOROPRENE	FKM	GRAPHITE	BRONZE (85% CU)	SILICON BRONZE	ALUMINUM BRONZE	BRASS	GRAY IRON	DUCTILE IRON	CARBON STEEL	3% NI/IRON	NI PLATED DUCTILE	400 SERIES SS	316 SS	630 SS	COPPER		
Acetaldehyde CH ₃ CHO	Conc.		C	140	C		C		350	B to 200	C	C	C	A	C	C	C	C	B	B	A		B	B	A		C		
Acetamide CH ₃ CONH ₂									200	B to 200	B to 180	B to 200	C		A		A		A	A			A	A	A	A			
Acetic Acid CH ₃ COOH	25%	C	180	180	140		140		B to 73	350	176	C	70	C	A	C	C	C	C	C	C	C	C	C	A	A	A	C	
Acetic Acid CH ₃ COOH	50%					B to 140	B to 176			350	140	C	C	C	A	C	C	C	C	C	C	C	C	C	A	A	A	C	
Acetic Acid CH ₃ COOH	85%	C	C	120	73		73			350	70	C	C	C	A	C	C	C	C	C	C	C	C	C	A	A	A	C	
Acetic Acid CH ₃ COOH	Glacial	C	C	120	73	B to 104	B to 68			350					A	C	C	C	C	C	C	C	C	C	C	A	B	C	
Acetic Anhydride (CH ₃ CO) ₂ O		C	C	73	C	C	73			350	C	B to 70	C	A	C	C	C	C	C	C	C	C	C	C	C	B	B	C	
Acetone CH ₃ COCH ₃		C	C	B	C	B	C	C		350	B to 300	C	C	C	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Acetophenone C ₆ H ₅ COCH ₃										350	B to 176	C	C	C		C	C	C	C	C	C	C	C	C	C	C		C	
Acetyl Chloride CH ₃ COCl		C	C		C	C				200	C	C	B		A	A	A	A	C	C	A		C		A	A	A		
Acetylene	Gas, 100%	73	C	73	C		73			250	B to 250	200	104	200		C	C	C	C	A	A	A	A	A	A	A	A	C	
Acrylonitrile H ₂ C=CHCN			C		C		140			350	104	C	C	C	A	A	A	A	A	A	A	A	A	A	A	A	A		
Adipic Acid COOH(CH ₂) ₄ COOH	Sat'd.		180	140	140	B to 176	140			350	140	B to 220	B to 160	176						C	C	B		C		B to 200		A	
Allyl Alcohol CH ₂ =CHCH ₂ OH	96%		C	140	B to 73		C			250	B to 300	B to 180	B to 120	B to 70		A	A	A	A	A	A	A	A	A	A	A	A		
Allyl Chloride CH ₂ =CHCH ₂ Cl			C		C	140	C			350	C	B to 70	C	C								C							
Aluminum Acetate Al(C ₂ H ₄ O ₂) ₃	Sat'd.									350	176	C	C	C		C		C			C					A			
Aluminum Ammonium Sulfate (Alum) AlNH ₄ (SO ₄) ₂ 12H ₂ O	Sat'd.		180	140	140		140			250	B to 200	B to 140	C	190	A	B	B	B	B			C			B	A		B	
Aluminum Chloride (Aqueous) AlCl ₃	Sat'd.	160	180	180	140	B to 212	140			250	176	B to 200	B to 200	176	A	C	C	C	C	C	C	C	C	C	C	A	C	C	
Aluminum Fluoride AlF ₃	Sat'd.	160	180	180	73	B to 212	140			250	B to 300	B to 200	B to 200	176	A	C	C	C	C	C	C	C	C	C		C	B	C	C
Aluminum Hydroxide Al(OH) ₃	Sat'd.	160	180	180	140	B to 212	140			250	176	160	B to 180	176		C	C	C	C	B	B	C		B	B	A	A	C	

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		ABS	CPVC	PP	PVC	PVDF	PEX	PPSU	PTFE	EPDM	NITRILE (BUNA-N)	POLYCHLOROPRENE	FKM	GRAPHITE	BRONZE (85% CU)	SILICON BRONZE	ALUMINUM BRONZE	BRASS	GRAY IRON	DUCTILE IRON	CARBON STEEL	3% NI / IRON	NI PLATED DUCTILE	400 SERIES SS	316 SS	630 SS	COPPER		
Aluminum Nitrate $Al(NO_3)_3 \cdot 9H_2O$	Sat'd.		180	180	140	B to 212	140	250	176	140	B to 200	B to 400	A	C	C	C	C	C	C	C	C	C			A	A	C		
Aluminum Potassium Sulfate (Alum) $AlK(SO_4)_2 \cdot 12H_2O$	Sat'd.	160	180	140	140	B to 212	140	400	B to 200	B to 200	B to 200	248	A	B	B	B	B			C				B	A		B		
Aluminum Sulfate (Alum) $Al_2(SO_4)_3$	Sat'd.	160	180	140	140	B to 212	140	250	B to 300	B to 300	B to 200	B to 390	A	C	C	C	C	C	C	C	C		C	C		B			
Ammonia Gas NH_3	100%	C	C	140	140		140	400	140	B to 140	140		C	A	B			C	A		A					A	A	B	
Ammonia Liquid NH_3	100%	160	C	140	C		140	400	212	70	B to 160		C	A	C	C	C				A				A	A	A	C	
Ammonium Acetate CH_3COONH_4	Sat'd.	120	180	73	140	B to 212	140	400	140	140	140				C	C	C									B			
Ammonium Bifluoride NH_4HF_2	Sat'd.		180	180	140		140	400	140	B to 140	C	140	A	C				C	C	C	C	C	C	C	C	B	B	B	
Ammonium Carbonate $(NH_4)_2CO_3$	Sat'd.		180	212	140	B to 248	140	400	176	B to 200	B to 200	212		C			C				A to 140	C			B	B	B	B	
Ammonium Chloride NH_4Cl	Sat'd.	120	180	212	140	B to 212	140	400	300	B to 200	B to 212	250	A	C				C	C	C	C	C	C	C	C	B	C		
Ammonium Fluoride NH_4F	10%	120	180	212	140	B to 212	140	400	300	B to 200	B to 100	140	A	C				C			C					C		C	
Ammonium Fluoride NH_4F	25%	120	180	212	C		140	400	300	B to 120	B to 100	140	A	C				C			C					C		C	
Ammonium Hydroxide NH_4OH	10%	120	C	212	140		140	400	B to 300	200	200	B to 190	A	C	C			C			C				B	A	A	C	
Ammonia Hydroxide NH_4OH	Sat'd.							400	B to 300	C	200	B to 190	A	C	C						C				B to 70	A to 140		C	
Ammonium Nitrate NH_4NO_3	Sat'd.	120	180	212	140	B to 212	140	400	B to 300	200	200	176	A	C	C			C									A	C	
Ammonium Persulphate $(NH_4)_2S_2O_8$			180	140	140	B to 212	140	200	B to 70	C	70	B to 140		C	C	C	C	C	C	C	C	C	C	C	C	B	A		C
Ammonium Phosphate (Monobasic) $NH_4H_2PO_4$	All	120	180	212	140	B to 248	140	400	B to 200	200	B to 200	B to 180	A	C	C	C	C	B	B	C				B	A	A	A	C	
Ammonium Sulfate $(NH_4)_2SO_4$		120	180	212	140	B to 212	140	400	300	200	200	176	A	C	C	C	C	B	B	C	B	B	B	B	B	B	B	C	
Ammonium Sulfide $(NH_4)_2S$	Dilute	120	180	212	140		140	350	B to 300	B to 180	B to 160	B to 70		C	C	C	C	C	C	C	C	C				B		C	
Ammonium Thiocyanate NH_4SCN	50 - 60%	120	180	212	140	B to 212	73		B to 300	B to 180	B to 200	B to 190		C	C	C	C	C	C	C	C	C				C	A	A	C
Amyl Acetate $CH_3COOC_5H_{11}$		C	C	C	C	B 122	73	100	210	C	C	C		B	B	B	B	B	B	B	B	A	B	A	A	A			
Amyl Alcohol $C_5H_{11}OH$			C		C	B to 212	B to 140	400	B to 300	B to 180	B to 200	B to 212	A	A	A	A	A	B	B	B	B			B	A	A	A	A	

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		ABS	CPVC	PP	PVC	PVDF	PEX	PPSU	PTFE	EPDM	NITRILE (BUNA-N)	POLYCHLOROPRENE	FKM	GRAPHITE	BRONZE (85% CU)	SILICON BRONZE	ALUMINUM BRONZE	BRASS	GRAY IRON	DUCTILE IRON	CARBON STEEL	3% NI/IRON	NI PLATED DUCTILE	400 SERIES SS	316 SS	630 SS	COPPER	
		n-Amyl Chloride CH ₃ (CH ₂) ₃ CH ₂ Cl		C	C	C	C		C	400	C	C	C	200		A	A	A	A	A	A	A	A	A	A	A	A	A
Aniline C ₆ H ₅ NH ₂		C	C		C	B to 68	C	200	B to 140	C	C	B to 70	A	C	C	C	C	C	B	B	C	B	B	A	A	A	C	
Aniline Hydrochloride C ₆ H ₅ NH ₂ •HCl	Sat'd.		C		C		140						C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
Anthraquinone C ₁₄ H ₈ O ₂			180		140		C						C							C	C	C						
Anthraquinone Sulfonic Acid C ₁₄ H ₇ O ₂ •SO ₃ •H ₂ O			180	73	140		C																					
Antimony Trichloride SbCl ₃	Sat'd.		180	140	140	B to 140	140		C	70	B to 70	70	A	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Aqua Regia (Nitrohydrochloric Acid)		C	B to 73	C	C	C	C	200	C	C	C	B to 190	C	C	C	C	C	C	C	C	C	C	C			B		
Argon Ar	Dry							350	B to 400	250	B to 100	B to 500		A		A		A		A					A	A	A	
Arsenic Acid H ₃ AsO ₄	80%		180	140	140	B to 248	140	400	B to 176	B to 200	B to 180	140	A	C	C	C	C	C	C	C	C		C	B	A	B		
Asphalt			C	73	C		73	350	C	C	C	212		A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Barium Carbonate BaCO ₃	Sat'd.	120	180	140	140	B to 248	140	400	B to 300	140	B to 160	248		A	A	A	A	B	B	B	B	B	B	A	A	A		
Barium Chloride BaCl ₂ •2H ₂ O	Sat'd.	120	180	140	140	B to 212	140	400	B to 300	B to 200	B to 160	B to 400	A	A	A	A	A	B	B	C	B	B	B	A		A		
Barium Hydroxide Ba(OH) ₂	Sat'd.	73	180	140	140			400	B to 300	B to 220	B to 200	248		C	C	C	C	B	B	C		B	A	A	A			
Barium Nitrate Ba(NO ₃) ₂	Sat'd.	73	180	140	73		140	250	176	140	B to 200	248	A	C	C	C	C	A	A	A		A		A				
Barium Sulfate BaSO ₄	Sat'd.	73	180	140	140	B to 212	140	400	B to 300	B to 200	B to 200	B to 380	A	B	B	B	B	B	B	A		B	A	A	A			
Barium Sulfide BaS	Sat'd.	73	180	140	140			400	B to 310	B to 200	B to 200	B to 400		C	C	C	C	B	B	C		B	A	A	A	C		
Beer		120	180	180	140	B to 248	B to 140	300	120	B to 250	B to 140	B to 300		A	A	A	A	C	C	C		C	A	A	A	A		
Beet Sugar Liquors			180	180	140		73		B to 300	200	B to 180	B to 400				A		B	B	B				A	A			
Benzaldehyde C ₆ H ₅ CHO	10%	C	B to 73	73	B to 73		73		200	C	C	C	A	A	A	A	A	C	C	B		C	A	A	A	A		
Benzene C ₆ H ₆		C	C	C	C	C	B to 68	C	250	C	C	C	B to 140	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Benzene Sulfonic Acid C ₆ H ₅ SO ₃ H	10%		180	180	140		B to 73		C	C	B to 100	200		B	B	B	B	C	C	C		C	B	B	B			
Benzoic Acid C ₆ H ₅ COOH		160	180	73	140			350	C	C	B to 150	176		C	C	C	C	C	C		C	A	A	A	A			

ENGINEERING INFORMATION

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		ABS	CPVC	PP	PVC	PVDF	PEX	PPSU	PTFE	EPDM	NITRILE (BUNA-N)	POLYCHLOROPRENE	FKM	GRAPHITE	BRONZE (85% CU)	SILICON BRONZE	ALUMINUM BRONZE	BRASS	GRAY IRON	DUCTILE IRON	CARBON STEEL	3% NI/IRON	NI PLATED DUCTILE	400 SERIES SS	316 SS	630 SS	COPPER	
Benzyl Alcohol C ₆ H ₅ CH ₂ OH			C	120	C	B to 122	140		400	C	C	B to 70	B to 250		A	A	A	A	B	B	B		B	A	A	A	A	
Bismuth Carbonate (BiO) ₂ CO ₃			180	180	140		140			70	70	70	B to 200															
Black Liquor	Sat'd.		180	140	140				225	220	140	70	212		C	C	C	C	B	B	B		B	B	A	B		
Bleach (Sodium Hypochlorite)	12% Cl	73	185	120	140		73																					
Blood									200	70		70	70		B		B		C	C			B		A	A		
Borax Na ₃ B ₄ O ₇ •10H ₂ O	Sat'd.	160	180	212	140		140			300	B to 200	B to 200	200		A	A	A	A	A	A	B	A	A	A	A	A	A	
Boric Acid H ₃ BO ₃	Sat'd.	160	180	212	140	B to 212	140			B to 300	B to 200	B to 200	185	A	B	B	B	B	C	C	B		C	B	A	B		
Brine	Sat'd.		180	140	140		140		400	B	B	B	B		A	A	A		C	C	C	B	C	B	A	B		
Bromic Acid HBrO ₃			180	C	140	B to 212	C			200	C	C	200		C	C	C	C									C	
Bromine Br ₂	Liquid	73	C	C	C	B to 248	C		300	C	C	C	B to 350		C	C	C	C	C	C	C	C	C	C	C	C	C	C
Bromine Br ₂	Gas, 25%		180	C	140		C		200	C	C	C	B to 180		C	C	C	C	C	C	C	C	C	C	C	C	C	
Bromine Water	Sat'd.		180	C	140	B to 176	C		300	C	C	C	B to 210		C	C	C	C	C	C	C		C				C	
Butadiene H ₂ C=CHHC=CH ₂	50%		180	C	140		73		C	C	C	C	70		A	A	A	A	A	A	A	A	A	A	A	A	A	
Butane C ₄ H ₁₀	50%		180	140	140		140	73	350	C	B to 250	B to 200	B to 400		A	A	A	A	A	A	A	A	A	A	A	A	A	
Butyl Acetate CH ₃ COOCH ₂ CH ₂ CH ₂ CH ₃		C	C	C	C	C	C		175	C	C	C	C		B	B	B	B	B	B	B		B	A	A	A		
Butyl Alcohol CH ₃ (CH ₂) ₂ CH ₂ OH			C	180	140		140		300	B to 250	B to 190	140	B to 390	A	B	B	B			B			A	A	A	A	B	
Butyl Cellosolve			C		73				200	B to 300	C	C	C	A	A	A	A	A	A	A			A	A	A	A		
n-Butyl Chloride C ₄ H ₉ Cl		C	C						400	C	C	C	70		B	B	B	B	B	B	B		B	B	B	B		
Butylene © CH ₃ CH=CHCH ₃	Liquid			C	140		120		400	C	250	C	B to 400		A	A	A	A			A			A	A	A		
Butyl Phthalate C ₁₆ H ₂₂ O ₄			C	180		B 140				250	C	C	C															
Butyl Stearate					73				250	C	C	C	B to 400		A	A	A	A	B	B			B	A	A	A		
Butyric Acid CH ₃ CH ₂ CH ₂ COOH		C	C	180	73		73		300	C	C	C	C		A	A	A	A	C	C	C	C	C	C	B	A	A	
Calcium Bisulfide Ca(HS) ₂ •6H ₂ O			73		C		140		200	200	B to 140	140	140												A			

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Calcium Bisulfite Ca(HSO ₃) ₂			180	180	140		C		350	C	B to 200	B to 200	B to 400		C	C	C	C	C	C	C	C	C	C	B	A		
Calcium Carbonate CaCO ₃			180	180	140	B to 248	140		350	B to 210	B	140	248		C	C	C	C	B	B	B		B	A	A	A	A	
Calcium Chlorate Ca(ClO ₃) ₂ •2H ₂ O			180	180	140	B to 248	140		350	B to 200	B to 200	B to 200	B to 190	140	B	B	B	B	B	B	B	B	B	B	A		C	
Calcium Chloride CaCl ₂		120	180	180	140	B to 248	B to 176		350	B to 212	B to 200	B to 200		300	A	B	B	B	B	A	A	C		C	B	A	B	B
Calcium Hydroxide Ca(OH) ₂		160	180	180	140		140		250	210	B to 200	B to 220		212		C	C	C	C	C	C	C		C	A	A	A	C
Calcium Hypochlorite Ca(OCl) ₂	30%	160	180	140	140		140		200	B to 310	C	C	B to 400	90	C	C	C	C	C	C	C	C		C	B	B	B	C
Calcium Nitrate Ca(NO ₃) ₂			180	180	140		140		200	B to 300	B to 200	B to 200	B to 390		C	B	B	B	B	B	B		B		A		B	
Calcium Oxide CaO			180		140		140			B	B to 200	B to 200	140						A	A	B				A	A		
Calcium Sulfate CaSO ₄		100	180	180	140	B to 212	140		200	B to 300	B to 176	B to 70	B to 212	A	A	B	B	B	A	A	B	A	A	A	A	A	A	A
Camphor C ₁₀ H ₁₆ O		C		73	73		73		350	C	100	C	70		B	B	B	B	B	B	B	B		B	A	A	A	
Cane Sugar C ₁₂ H ₂₂ O ₁₁			180	180	140		140		400						A	A	A	A	A	A	A	A	A	A	A	A	A	
Caprylic Acid CH ₃ (CH ₂)COOH									350		C		B to 140						A	A	B		A		A			
Carbitol			C		73				200	B to 80	B to 80	C	C		B	B	B	B	B	B	B	B		B		B		
Carbon Dioxide CO ₂	Dry, 100%	160	180	140	140	B to 212	140		400	B to 250	200	B to 200	212	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Carbon Dioxide CO ₂	Wet	160	180	140	140		140		400	B to 250	140	C	212	A	A	A	A	A	B	B	B	B	B	B	A	A	A	A
Carbon Disulfide CS ₂		C	C	C	C		B to 68		200	C	C	C	B to 400	A	B	B	B	B	A	A	A		A	A	A		C	
Carbon Monoxide CO	Gas		180	180	140	B to 140	140		400	B to 300	160	140	B to 400	A	A	A	A	A	A	A	B		A	A	A	A		
Carbon Tetrachloride CCl ₄		C	C	C	73	C	C	B to 73	350	C	C	C	B to 350	A	A	A	A	A	C	C	A		C	A	A	A	B	
Carbonic Acid H ₂ CO ₃	Sat'd.	185	180	140	140		140		350	B to 300	70	200	B to 400	A	C	C	C	C	B	B	B	B	B	B	A	A	A	
Castor Oil			C	140	140		73		350		212	200	B to 400	550	A	A	A	A	A	A	A	A	A	A	A	A	A	
Caustic Potash (Potassium Hydroxide) KOH	50%	160	180	180	140		140			200	B to 150	B to 70	B to 140															



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		ABS	CPVC	PP	PVC	PVDF	PEX	PPSU	PTFE	EPDM	NITRILE (BUNA-N)	POLYCHLOROPRENE	FKM	GRAPHITE	BRONZE (85% CU)	SILICON BRONZE	ALUMINUM BRONZE	BRASS	GRAY IRON	DUCTILE IRON	CARBON STEEL	3% NI/IRON	NI PLATED DUCTILE	400 SERIES SS	316 SS	630 SS	COPPER	
Caustic Soda (Sodium Hydroxide) NaOH	40%	160	180	180	140		140			B to 200	212	B to 200	80															
Cellosolve			C	73	73		C	200		C		C	A	A	A	A	A	A	A	A	A		A		A			
Cellosolve Acetate CH ₃ COOCH ₂ CH ₂ OC ₂ H ₅			C	73	73			300	C	C	C	C			B		B			B						B		
Chloral Hydrate CCl ₃ CH(OH) ₂			180	C	140		120			B to 70	C	70	C															
Chloramine NH ₂ Cl	Dilute		C	73	73		73		70		B to 80	70			B	B	B	B	C	C	C					B		
Chloric Acid HClO ₃ •7H ₂ O	10%		180	73	140		73		140	212	C	B to 120	B to 120		C	C	C	C	C	C	C	C	C	C	C	C	B	C
Chloric Acid HClO ₃ •7H ₂ O	20%		185	73	140		73		140	212	C	70	C		C	C	C	C	C	C	C	C	C	C	C	C	C	C
Chlorine Gas (Moisture Content < 150 ppm)									400	C	C	C	B	A	C	C	C	C	B	A*	A*	B	B	B	B	A		C
Chlorine Gas (Moisture Content > 150 ppm)		C	C	C	C		C		400	C	C	C	C		C	C	C	C	C	C	C	C	C	C	C	C	C	C
Chlorine	Liquid	C	C	C	C		C			C	C	C	B		B	B		B	C	C	C		C	C	C	C	C	
Chlorinated Water (< 3500 ppm)									400					73	B	B	C	C			C		C	B	A	A	C	
Chlorinated Water (> 3500 ppm)									400					73	C	C	C	C			C		C	A	B	C		
Chloroacetic Acid CH ₂ ClCOOH	50%	C	180	C	140		120		200	B to 175	C	C	C		C	C	C	C	C	C	C	C	C	C	C	C	C	C
Chlorobenzene C ₆ H ₅ Cl	Dry	C	C	73	C		C	C	200	C	C	C	B to 400	A	A	A	A	A	C	C	B		C	A	A	A		
Chloroform CHCl ₃	Dry	C	C	C	C		C	C	200	C	C	C	B to 400	A	A	A	A	A	C	C	C		C	A	A	A		
Chlorosulfonic Acid ClSO ₂ OH			73	C	73		C		200	C	C	C	C		C	C	C	C	B	B	C	C	B	C	C	C	C	
Chromic Acid H ₂ CrO ₄	10%	73	180	140	140		B to 212	73	350	70	C	C	B to 400	C	C	C	C	C	C	C	C	C	C	C	B to 212	A to 70	C	
Chromic Acid H ₂ CrO ₄	30%	C	180	73	140		B to 212	73	350	70	C	C	B to 400	C	C	C	C	C	C	C	C	C	C	C	B to 212	B to 70	C	
Chromic Acid H ₂ CrO ₄	50%	C	C	73	C		B to 212	73	200	C	C	C	B to 400	C	C	C	C	C	C	C	C	C	C	C	B to 70	C		
Citric Acid C ₆ H ₈ O ₇	Sat'd.	160	180	140	140		B to 248	140	200					A	C	C	C	C	C	C	C	C	C	B	A	A	C	
Coconut Oil			C	73	140		B to 248	73	400	C	250	C	B to 390		B	B	B	B	C	C	B		C	B	A			
Coffee			180	140	140			140		B to 140	140	140	B to 200		A	A	A	A	C	C	C			A	A	A	A	
Coke Oven Gas				73	140			140	400	C	C	C	B to 390		B	B	B	B	A	A	A	A	A	A	A	A	A	

Chemical Resistance Chart

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		ABS	CPVC	PP	PVC	PVDF	PEX	PPSU	PTFE	EPDM	NITRILE (BUNA-N)	POLYCHLOROPRENE	FKM	GRAPHITE	BRONZE (85% CU)	SILICON BRONZE	ALUMINUM BRONZE	BRASS	GRAY IRON	DUCTILE IRON	CARBON STEEL	3% NI/IRON	NI PLATED DUCTILE	400 SERIES SS	316 SS	630 SS	COPPER		
Copper Acetate <chem>Cu(C2H3O2)2.H2O</chem>	Sat'd.		73	73	73				350	B to 300	C	C	C		C	C	C	C	C	C	C	C	C	C	B	A			
Copper Carbonate <chem>CuCO3</chem>	Sat'd.		180		140		140		350	B to 210	C	70	B to 190												B	A			
Copper Chloride <chem>CuCl2</chem>	Sat'd.	73	180	140	140		140		350	B to 212	176	B to 210	B to 400	A	C	C	C	C	C	C	C	C	C	C	C	B	A	C	
Copper Cyanide <chem>CuCN</chem>			180		140	B to 212	140		350	B to 300			B to 390		C	C	C	C	C	C	C	C	A	C	B	A		C	
Copper Fluoride <chem>CuF2.2H2O</chem>	2%		180	73	140		140			B to 250	80	140	B to 190	A															
Copper Nitrate <chem>Cu(NO3)2.3H2O</chem>	30%		180	140	140					B to 210	B to 230	B to 200	212	A	C	C	C	C	C	C	C	C		C	B	A		C	
Copper Sulfate <chem>CuSO4.5H2O</chem>	Sat'd.	120	180	120	140	B to 212	140			B to 300	B to 212	200	B to 212	A	C	C	C	C	C	C	C	C		C	A	A	A	C	
Corn Oil			C	73	140		120		400	C	250	C	B to 400		B	B	B	B	B	B	B	B	B	B	B	A	A	A	A
Corn Syrup			185	140	140		140			200	200	C	212																
Cottonseed Oil		120	C	140	140		B to 140		400	B to 70	200	C	B to 400		B	B	B	B	B	B	B			B	A	A	A		
Creosote			C	73	C		140		350	C	B to 220	C	B to 400		B	B	B	B	A	A	A	A	A	A	A	A	A	A	B
Cresol <chem>CH3C6H4OH</chem>	90%	C	C	B to 73	C	B to 68	73		200		C	C	B														B		
Cresylic Acid	50%		180		140		C		200	C	C	C	140		A	A	A	A	A	A	B	A	A	A	A	A	A	A	
Crude Oil			C	140	140	B to 212	C		400	C	B to 250	C	B to 300		C	C	C	C	C	C	C	B			A	A	A	C	
Cupric Sulfate <chem>CuSO4.5H2O</chem>	Sat'd.	100	180	73	140				250					A															
Cuprous Chloride <chem>CuCl</chem>	Sat'd.	70	180		140		140		350					A	C			C										C	
Cyclohexane <chem>C6H12</chem>		73	C	C	C	B to 248	C		300	C	250	C	B to 400		A	A	A	A	B	B	A			B	A	A	A		
Cyclohexanol <chem>C6H11OH</chem>		C	C	140	C	B to 104	73		250	C	B to 70	B to 70	B to 400						A	A				A	A	A	A		
Cyclohexanone <chem>C6H10O</chem>	Liquid	C	C	73	C	C	C	C	200	C	C	C	C		B	B	B	B	B	B	B	B		B	B	A			
Detergents (Heavy Duty)			C	180	140		B to 140								A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Dextrin (Starch Gum)	Sat'd.		180	140	140		140		200	176	B to 180	B to 200	212		A	A	A	A	B	B	B					A		A	
Dextrose <chem>C6H12O6</chem>			180	140	140		140		400	200	200	200	B to 400		A	A			A							A			
Diacetone Alcohol <chem>CH3COCH2C(CH3)2OH</chem>			C	120	C				350	B to 300	C	C	C		A	A	A	A	A	A	A	A	A	A	A	A	A	A	

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Chemical Resistance Chart

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		ABS	CPVC	PP	PVC	PVDF	PEX	PPSU	PTEE	EPDM	NITRILE (BUNA-N)	POLYCHLOROPRENE	FKM	GRAPHITE	BRONZE (85% CU)	SILICON BRONZE	ALUMINUM BRONZE	BRASS	GRAY IRON	DUCTILE IRON	CARBON STEEL	3% NI/IRON	NI PLATED DUCTILE	400 SERIES SS	316 SS	630 SS	COPPER
Dibutoxyethyl Phthalate C ₂₀ H ₃₀ O ₆			C		C									A	A	A	A	A	A	A	A		A		A		
Dibutyl Phthalate C ₆ H ₄ (COOC ₄ H ₉) ₂		C	C	73	C		73	350	B to 250	C	C	C		A	A	A	A	A	A	A					A		
Dibutyl Sebacate C ₄ H ₉ OCO(CH ₂) ₈ OCOC ₄ H ₉				73	73		73	350	C	C	C	C															
Dichlorobenzene C ₆ H ₄ Cl ₂		C	C	C	C		C		C	C	C	B							A	A			A		A		
Dichloroethylene C ₂ H ₄ Cl ₂			C	C	C		C	350	C	C	C	200				B				B						B	
Diesel Fuels			C	140	140	B to 212	73	350	C	B	C	C		A	A	A	A	A	A	A	A	A	A	A	A	A	A
Diethylamine C ₄ H ₁₀ NH		C	C		C	C	C	200	70	C	70	C	A	C	C	C	C	C	A	A	C			A	A	A	C
Diethyl Cellosolve C ₆ H ₁₄ O ₂																			A	A			A		A		
Diethyl Ether C ₄ H ₁₀ O		C	C	73	73		C	B to 73		C	C	C	A														
Diglycolic Acid O(CH ₂ COOH) ₂	Sat'd.		180	140	140		140	250	B to 300	200	B to 200	C															
Dimethylamine (CH ₃) ₂ NH				73	140	C	73		B to 140	C	C	C							C							A	
Dimethyl Formamide HCON(CH ₃) ₂		C	C	180	C		120	C	250	B to 122	C	C	C		B	B	B	B	B	B	B					A	
Diocetyl Phthalate C ₆ H ₄ (COOC ₈ H ₁₇) ₂		C	C	C	C		73	200	C	C	C	C		A	A	A	A	C	C	C							
Dioxane C ₄ H ₈ O ₂			C	C	C		140		B to 160	C	C	C	A	A	A	A	A	A	A	A						A	
Diphenyl Oxide (C ₆ H ₅) ₂ O	Sat'd.						73		C	C	C	B to 310		A	A	A	A	A									
Disodium Phosphate Na ₂ HPO ₄			180	140	140		140	400	B to 210	70	80	90	A	B	B	B	B	B	B	B						A	
Dow Therm A C ₁₂ H ₁₀ •C ₁₂ H ₁₀ O					C			212	C	C	C	B to 350	A	A	A	A	A	A	B	A	A		A	A	A	A	
Ether ROR		C	C	C	C		73		C	C	C	C		A	A	A			B	B	B	A	A	A	A	A	A
Ethyl Acetate CH ₃ COOCH ₂ CH ₃		C	C	C	C		73	C	200	B to 158	C	C	C		A	A	B		A	A	A				A	A	A
Ethyl Acrylate CH ₂ =CHCOOC ₂ H ₅			C		C			350	C	C	C	C		A	A				A	A	A		A	A	A	A	A
Ethyl Alcohol (Ethanol) C ₂ H ₅ OH			C	140	140		140	73	300	200	B to 200	158	C	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Ethyl Benzene C ₆ H ₅ C ₂ H ₅				C	C			350	C	C	C	70		B	B				B	B	B		B		A		
Ethyl Chloride C ₂ H ₅ Cl	Dry		C	C	C		C	350	140	200	C	B to 400	A	A	A	B			A	A	A	A	A	A	A	A	A

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Chemical Resistance Chart

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		ABS	CPVC	PP	PVC	PVDF	PEX	PPSU	PTFE	EPDM	NITRILE (BUINA-N)	POLYCHLOROPRENE	FKM	GRAPHITE	BRONZE (85% CU)	SILICON BRONZE	ALUMINUM BRONZE	BRASS	GRAY IRON	DUCTILE IRON	CARBON STEEL	3% NI/IRON	NI PLATED DUCTILE	400 SERIES SS	316 SS	630 SS	COPPER		
Ethylene Bromide BrCH ₂ CH ₂ Br	Dry		C		C				350						A					A	A					A			
Ethylene Chloride (Vinyl Chloride) CH ₂ CHCl	Dry	C	C	C	C		C		350	C	C	C	200														A		
Ethylene Chlorohydrin ClCH ₂ CH ₂ OH			C	73	C				200	C	C	C	70	A								A							
Ethylene Diamine NH ₂ CH ₂ CH ₂ NH ₂		C		73	C		140			B to 300	80	B to 90	C		A	C		A	A	B					A	A	A		
Ethylene Dichloride C ₂ H ₄ Cl ₂	Dry	C	C	C	C		C		350	C	C	C	B to 400	A	A	A			A	A	A			A	A	A	A		
Ethylene Glycol OHCH ₂ CH ₂ OH		73	C	212	140	B to 212		B to 220	400	250	250	250	B to 250	A	A	A	A	A	A	A	A			A	A	A	A		
Ethylene Oxide CH ₂ CH ₂ O			C	C	C		73		400	C	C	C	C		A	A			B	A	A			A	A				
Ethyl Formate										C	C	C	B to 400		A	A			A	A				A	A				
Fatty Acids R-COOH		160	73	120	140		120		400	C	B to 250	C	250	A	C	C	C	C	C	C	C			C		A			
Ferric Chloride (Aqueous) FeCl ₃	Sat'd.	120	180	140	140	B to 212	140		400	B to 300	B to 200	160	176	A	C	C	C	C	C	C	C			C	C	C	C		
Ferric Hydroxide Fe(OH) ₃	Sat'd.	160	180	140	140		140		400	B to 210	B to 176	B to 200	B to 200						C	C				C		A	C		
Ferric Nitrate Fe(NO ₃) ₃ •9H ₂ O	Sat'd.	160	180	140	140	B to 212	140		400	B to 300	B to 176	B to 200	B to 400	A	C	C	C	C	C	C	C			C	B	A	A	C	
Ferric Sulfate Fe ₂ (SO ₄) ₃		160	180	140	140	B to 212	140		200	B to 280	B to 200	B to 200	176	A	C	C	C	C	C	C	C			C	B	A	A	C	
Ferrous Chloride FeCl ₂	Sat'd.	160	180	140	140	B to 212	140		400	210	B to 200	200	185	A	C	C	C	C	C	C	C			C	C	C	C	C	
Ferrous Hydroxide Fe(OH) ₂	Sat'd.	160	180	140	140		140		400	B to 200	B to 176	B to 200	212						C							A			
Ferrous Nitrate Fe(NO ₃) ₂		160	180	140	140		140		400	B to 210	B to 200	B to 200	212	A												A	A		
Ferrous Sulfate FeSO ₄		160	180	140	140	B to 212	140		400	B to 200	B to 200	B to 200	B to 200	A	C	C	B		C	C	C	C			C	A	A	A	B
Fish Oil			180	180	140		140		300	C	250	B to 70	B to 400		A	A	C		B	A	A			A	A	A	A	A	
Flue Gas															A	A			A	A	A			A	A	A	A		
Fluoroboric Acid HBF ₄		73	73	140	140		140		350	70	C	70	140		B	B			C	C				C		A	C		
Fluorine Gas F ₂	Dry, 100%		73	C	73		C		C		C		C	B to 300	B	B			C	C	A					A	A		
Fluorine Gas F ₂	Wet	C	73	C	73		C		C		C		C	C	C	C			C	C	C					A	A		



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		ABS	CPVC	PP	PVC	PVDF	PEX	PPSU	PTFE	EPDM	NITRILE (BUNA-N)	POLYCHLOROPRENE	FKM	GRAPHITE	BRONZE (85% CU)	SILICON BRONZE	ALUMINUM BRONZE	BRASS	GRAY IRON	DUCTILE IRON	CARBON STEEL	3% NI/IRON	NI PLATED DUCTILE	400 SERIES SS	316 SS	630 SS	COPPER	
Fluorosilicic Acid (Hydrofluosilicic Acid) H ₂ SiF ₆	50%		73	73	140	B to 212			300	B to 300	160	158	185							C	C		C	B	B	B	C	
Formaldehyde HCHO	Dilute	160	73	140	140	B to 176			300	212	140	150	C	A	A	A	B		C	C	B				A	A	A	
Formaldehyde HCHO	35%	160	C	140	140	B to 212	140	100	300	212	140	150	C	A	A	A	B		C		B				A	A	A	
Formaldehyde HCHO	50%		C		140		140		300	B to 140	C	B to 70	C	A	B	B	B		C		B				B	A	A	
Formic Acid HCOOH		C	C	140	73	B	140		300	210	C	B	B	A	C	C	B		C	C	C	B	C	C	A	A	A	
Freon ₁₁ CCl ₃ F	100%	C	73	C	140		73		300	C	B to 250	C	C	A	A	A	A		A	B	B	B			B	A	A	A
Freon ₁₂ CCl ₂ F ₂	100%		73	73	140		73		C	B	B	B	C	A	A	A	A		A	B	B	B			B	A	A	A
Freon ₂₁ CHCl ₂ F	100%			C	C		C		300	C	C	C	C	A	A	A	A		A	B	B	B			B	A	A	A
Freon ₂₂ CHClF ₂	100%		73	73	C		C		C	140	C	250	C	A	A	A	A		A	B	B	B			B	A	A	A
Freon ₁₁₃ C ₂ Cl ₂ F ₃	100%			C	140		73		300	C	B	B	C	A	A	A	A		A	B	B	B			B	A	A	A
Freon ₁₁₄ C ₂ Cl ₂ F ₄	100%			C	140		73		300	B	B	B	C	A	A	A	A		A	B	B	B			B	A	A	A
Fructose C ₆ H ₁₂ O ₆	Sat'd.	73	180	180	140		140		300											A	A				A	A	A	A
Furfural C ₄ H ₃ OCHO		C	C	C	C		C		300	B to 160	C	C	C		A	A	A		A	A	A	A			A	A	A	A
Gallic Acid C ₆ H ₂ (OH) ₃ CO ₂ H•H ₂ O			73		140		73		300	C	C	C	B to 400		B	B	C		C	C	C				C	A	A	A
Gasoline (Leaded)		C	C	C	B		73		200	C	190	C	250	A	A	A	A		A	A	A	A			A	A	A	A
Gasoline (Unleaded)		C	C	C	B		73		200	C		C	190	A	A	A	A		A	A	A	A			A	A	A	A
Gasohol		C	C	C	B		73		200					A	A	A	A		A	A	A	A			A	A	A	A
Gasoline (Sour)		C	C	C	B		C		200	C	250	C	B to 250	A	B	B			A	A	A				A	B	A	A
Gelatin			180	180	140		140		300	200	200	200	212		C	C	B		C	C	C				C	C	C	A
Glauber's Salt									200	B to 200	C	B to 200	B to 400		A	A			A	A	A				A	A	A	A
Glucose C ₆ H ₁₂ O ₆ •H ₂ O		120	180	212	140		140		400	B to 212	200	200	B to 400		A	A	A		A	A	A	A			A	A	A	A
Glue				140	140		140		400	B	B	B	B		A	A	A		A	A	A	A			A	A	A	A
Glycerin C ₃ H ₅ (OH) ₃		140	180	212	140		140	B to 320	400	B to 200	250	B to 180	250	A	A	A	A		A	A	A	A			A	A	A	A
Glycol Amine															C	C	C		A	A	A				A	A		
Glycolic Acid OHCH ₂ COOH	Sat'd.		180	73	140		140		200	140	B	140	C		B	B			C	C	C				C	A		

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Lead Acetate Pb(CH ₃ COO) ₂ •3H ₂ O	Sat'd.	180	180	140	B to 212	140		300	200	B to 140	B to 140	C		C	C				C	C	C		C			A		
Lead Chloride PbCl ₂		180	140	140		120		300	176	140	C	212	A															
Lead Nitrate Pb(NO ₃) ₂	Sat'd.	180	140	140		120		300	B to 300	B to 220	200	212	A								A						A	
Lead Sulfate PbSO ₄		180	140	140		120		300	B to 210	120	B to 180	212	A	B	B				C	C	C		C			B		
Lemon Oil			C	C				B to 73	300	C	70	C	70						C	C			C		B	A	A	
Lime Sulfur			73	73	73	120			B to 300	B to 220	B to 180	B to 420		C	C	C	C	C	A	A	A		A			A		
Linoleic Acid		180	180	140				300	C	C	C	C		C	C	C	C	C	C	C	C		C	C	B	B	C	
Linseed Oil		73	C	140	140	B to 248	B to 73	300	C	200	B to 180	250		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Lithium Bromide LiBr				140	140	140	B to 212	300					A															
Lithium Chloride LiCl			140	140		120			160	160	160	160	A	B	B	B			B	B	C		B			A		
Lithium Hydroxide LiOH			140			120			160	C	70	C		C	C	C	C	A	A			A		A				
Lubricating Oil (ASTM #1)		180	C	140	B to 248	73		350	C	180	150	70		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Lubricating Oil (ASTM #2)		180	C	140		73		350	C	B to 180	C	70-300		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Lubricating Oil (ASTM #3)		180	C	140		73		350	C	180	C	350		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Ludox														C	C	C	C	A	A	A		A			A			
Magnesium Carbonate MgCO ₃		120	180	212	140	B to 212	140	225	B to 300	140	B to 180	212		B	B				B	B	B		B		A	A	A	
Magnesium Chloride MgCl ₂	Sat'd.	120	180	140	140	B to 140	140	400	230	176	B to 200	185	A	A	A	B	B	C	C	C		C	C	C	C	C	C	A
Magnesium Citrate MgHC ₆ H ₅ O ₇ •5H ₂ O		180		140		140		300	176	140		212																
Magnesium Oxide MgO		160												A	A					A			A					
Magnesium Sulfate MgSO ₄ •7H ₂ O		160	180	212	140	B to 212	140	300	194	B to 230	B to 200	B to 390	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Maleic Acid HOOCCH=CHCOOH	Sat'd.	160	180	140	140	B to 140	140	250		C	C	140	A	C	C	B	C	C	C	C		C		C	B	A	B	B
Manganese Sulfate MnSO ₄ •4H ₂ O			180	180	140		140	300	176		B to 200	B to 200	212	A	A	A	A		C	C	B		C			A		
Mercuric Chloride HgCl ₂			180	180	140		140	300	B to 210	B to 200	160	B to 300	A	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C



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CHEMICALS AND FORMULA	CONCENTRATION	PLASTICS MAX TEMPERATURE (°F)							SEAL MATERIALS MAX TEMPERATURE (°F)							METAL													
		ABS	CPVC	PP	PVC	PVDF	PEX	PPSU	PTFE	EPDM	NITRILE (BUNA-N)	POLYCHLOROPRENE	FKM	GRAPHITE	BRONZE (85% CU)	SILICON BRONZE	ALUMINUM BRONZE	BRASS	GRAY IRON	DUCTILE IRON	CARBON STEEL	3% NI/IRON	NI PLATED DUCTILE	400 SERIES SS	316 SS	630 SS	COPPER		
Mercuric Cyanide Hg(CN) ₂	Sat'd.		180	140	140	B to 212	140		300	B to 210	B to 160	B to 70	C		C	C	C	C	C	C	C	C	C	C		A		C	
Mercuric Sulfate HgSO ₄	Sat'd.		180	140	140		140		300	70	70	B to 70	C	A	C	C	C	C										C	
Mercurous Nitrate HgNO ₃ •2H ₂ O	Sat'd.		180	140	140		140		300	100	B to 90	90	C	A	C	C	C	C	C	C	C	C	C	C	A	A	A	C	
Mercury Hg			180	140	140	B to 248	140		300	210	140	140	185	A	C	C	C	C	A	A	A	A	A	A	A	A	A	A	C
Methane CH ₄		C	73	73	140		140		300	C	B	B to 140	B		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Methanol (Methyl Alcohol) CH ₃ OH			C	180	140		B to 140		300	B to 176	B to 160	160	C	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Methyl Acetate CH ₃ CO ₂ CH ₃		C	C	140	C		C		300	160	C	C	C		B	B			B	B	B		B	B	A				
Methyl Acetone														C	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Methyl Amine CH ₃ NH ₂			C	C	C				300						C	C			A	A	B		A		A				
Methyl Bromide CH ₃ Br			C	C	C		C		300	C	C	C	185		C	C	B		C	C	B					B			
Methyl Cellosolve HOCH ₂ CH ₂ OC ₂ H ₅			C	73	C		C			C	C	C	C		A	A	B		B	B	B				A	A	A		
Methyl Chloride CH ₃ Cl	Dry	C	C	C	C		C		250	C	C	C	C		A	A	C	C	A	A	A	A	A	A	A	A	A	A	A
Methyl Chloroform CH ₃ CCl ₃		C	C	C	C		C		200	C	C	C	C						A	A			A		A				
Methyl Ethyl Ketone (MEK) CH ₃ COC ₂ H ₅		C	C	73	C			C	200	B to 200	C	C	C	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Methyl Formate										B to 120	C	C	C		A	A	A		A	A	C		A	A	A	A			
Methyl Isobutyl Ketone (CH ₃) ₂ CHCH ₂ COCH ₃		C	C	73	C		73		200	B to 130	C	C	C	A					A							A	A		
Methyl Isopropyl Ketone CH ₃ COCH(CH ₃) ₂			C		C		73		150	C	C	C	C																
Methyl Methacrylate CH ₂ =C(CH ₃)COOCH ₃			C		73		140		150	C	C	C	C								C								
Methylene Bromide CH ₂ Br ₂			C	C	C		C		250	C	C	C	C																
Methylene Chloride CH ₂ Cl ₂			C	C	C	C	C	C	250	C	C	C	C		B	B	B		B	B	B					A	A		
Methylene Chlorobromide CH ₂ ClBr			C		C														A	A						A			
Methylene Iodine CH ₂ I ₂			C	C	C		C		200			C	70																
Methylsulfuric Acid CH ₃ HSO ₄			180	140	140					70	C	70	C																
Milk		160	180	212	140	B to 212	140		400	250	250	250	250		B	B	B	B	C	C	C		C	C	A	A	A		

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CHEMICALS AND FORMULA	CONCENTRATION	PLASTICS MAX TEMPERATURE (°F)							SEAL MATERIALS MAX TEMPERATURE (°F)							METAL												
		ABS	CPVC	PP	PVC	PVDF	PEX	PPSU	PTFE	EPDM	NITRILE (BUNA-N)	POLYCHLOROPRENE	FKM	GRAPHITE	BRONZE (85% CU)	SILICON BRONZE	ALUMINUM BRONZE	BRASS	GRAY IRON	DUCTILE IRON	CARBON STEEL	3% NI/IRON	NI PLATED DUCTILE	400 SERIES SS	316 SS	630 SS	COPPER	
Mineral Oil		73	180	C	140	B to 212		B to 73	300	C	250	B to 200	B to 400		A	A	A	A	A	A	A	A	A	A	A	A	A	A
Molasses			180	140	140		140		300	B to 212	200	200	212		A	A	A	A	A	A	A		A	A	A	A	A	
Monochloroacetic Acid CH ₂ ClCOOH	50%			140	140		140		200		C	70	C	A	C	C	C	C	C	C	C		C	C	C	C	C	
Monochlorobenzene C ₆ H ₅ Cl			C	73	C		C		200	C	C	C	C	A	A	A			A	A	A	A	A	A	A	A	A	
Monoethanolamine HOCH ₂ CH ₂ NH ₂					C				100	120	C	C	C	A			C		B	B	B		B		A			
Morpholine C ₄ H ₈ ONH				140			140		200	C	C	C	B to 70		B	B			B	B	B		B	B	B	B	B	
Motor Oil			180	C	140		B to 140		350	C	190	B to 70	190	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Muriatic Acid	37%								250						C	C	C	C	C	C	C	C	C	C	C	B	C	
Naphtha			73	73	140	B to 122			200	C	B to 250	C	B to 400		A	A	B		A	A	A	A	A	A	A	A	A	
Naphthalene C ₁₀ H ₈			C	73	C		73		250	C	C	C	176		A	A	B		A	A	A	A		A	A	A	A	
Natural Gas		73		73	140		140		300	C	250	140	250		A	A	A	A	A	A	A	A		A	A	A	A	
Nickel Ammonium Sulfate									250	70	70	70	B to 70		C	C	C	C	C	C	C					A		
Nickel Chloride NiCl ₂	Sat'd.	160	180	180	140	B to 212	140		406	176	176	B to 200	B to 400	A	C	C	B		C	C	C					A		
Nickel Nitrate Ni(NO ₃) ₂ •6H ₂ O	Sat'd.	160	180	180	140	B to 248	140		400	212	B to 200	B to 200	248	A	C	C			C	C	C					A	A	
Nickel Sulfate NiSO ₄	Sat'd.	160	180	180	140	B to 212	140		400	176	176	160	B to 400	A	C	C	B		C	C	C						A	
Nicotine C ₁₀ H ₁₄ N ₂			180		140		140				C	C	C													B	A	
Nicotinic Acid C ₅ H ₄ NCOOH			180		140	B to 212	140			B to 140	70	B to 200			B	B			C	C	C					B	B	
Nitric Acid HNO ₃	<10%	C	180	180	140	B to 212			250	B to 104	C	C	B to 185	A	C	C	C	C	C	C	C	C	C	C	C	B	A	
Nitric Acid HNO ₃	30%	C	B to 130	140	140	B to 212			250		C	C	B to 185	C	C	C	C	C	C	C	C	C	C	C		B	A	
Nitric Acid HNO ₃	40%	C	B to 120	73	140				250	C	C	C	70	C	C	C	C	C	C	C	C	C	C	C		B	A	
Nitric Acid HNO ₃	50%	C	110	C	100				250	C	C	C	70	C	C	C	C	C	C	C	C	C	C	C		B	A	
Nitric Acid HNO ₃	70%	C	100	C	73				250	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		C	A	
Nitric Acid	Fuming								70	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	A	
Nitrobenzene C ₆ H ₅ NO ₂		C	C	C	C	B to 122	C		400	C	C	C	C	A	B	B			A	A	A						A	



Chemical Resistance Chart

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		ABS	CPVC	PP	PVC	PVDF	PEX	PPSU	PTFE	EPDM	NITRILE (BUNA-N)	POLYCHLOROPRENE	FKM	GRAPHITE	BRONZE (85% CU)	SILICON BRONZE	ALUMINUM BRONZE	BRASS	GRAY IRON	DUCTILE IRON	CARBON STEEL	3% NI/IRON	NI PLATED DUCTILE	400 SERIES SS	316 SS	630 SS	COPPER	
Polysulfide Liquor								300						C	C	C	C	B	B				B		B		C	
Polyvinyl Acetate								350	B to 280	80	C	C		B	B	B		A	A	C			A	B	B	B		
Potassium Alum			180	140		140		400	176	B to 180	B to 200	212																
Potassium Aluminum Sulphate			180	140		140		400	176	B to 180	B to 200	212		B		C				C				B	A		B	
Potassium Bicarbonate KHCO ₃	Sat'd.		180	140	140	B to 212	140	400	200	200	200	212								A					A			
Potassium Bichromate K ₂ Cr ₂ O ₇	Sat'd.		180	140	140	B to 212		400	140	140	104	212	A		A		B			B				B	A			
Potassium Bisulfate KHSO ₄			180	212	140	B to 212	140	400	B	140	70	212	A	B	B	B			C	C	C	C	C		A			
Potassium Bromate KBrO ₃			180	212	140	B to 212	140	400	212	B to 70	B to 140	212							C	A	A		A		A			
Potassium Bromide KBr			180	212	140	B to 248	140	400	212	200	200	B to 212	A	B	B	B			C	C	C				A			
Potassium Carbonate (Potash) K ₂ CO ₃		73	180	180	140	C	140	400	B	200	200	B to 212	A	B	B	B	B	A	A	A	A	A	A	A	A	A	A	B
Potassium Chlorate (Aqueous) KClO ₃		160	180	212	140	C	140	400	B to 200	70	B to 200	B	C	B	B				A	A	A	A			A	A	A	B
Potassium Chloride KCl		160	180	212	140	B to 212	140	400	B	200	200	212			B	A	A	B	B	B	B	B	C	B	B	B	A	
Potassium Chromate K ₂ CrO ₄			180	212	140		140	400	176	B to 140	140	B to 212	C	A	A	B			B	B	B		B		A	A		
Potassium Cyanide KCN			180	180	140	B to 212	140	400	B	200	200	200		C	C	C	C	B	B	B	B			A	A	A	C	
Potassium Dichromate K ₂ Cr ₂ O ₇	Sat'd.		180	180	140		140	400	212	140	120	212	C	B	B	C		B	B	C				A	A	A		
Potassium Ferricyanide K ₃ Fe(CN) ₆			180	180	140	B to 248	140	400	70	C	70	B to 212		C	C			B	B	C					A			
Potassium Ferrocyanide K ₄ Fe(CN) ₆ •3H ₂ O			180	180	140	B to 248	140	400	140	C	70	140		B	B	C	C	C	C	C	C				B	A		C
Potassium Fluoride KF			180	180	140	B to 212	140	400	200	B to 180	70	212	A													A		
Potassium Hydroxide KOH	25%	160	180	212	140		B to 140	248	300	320	B to 80	B to 212	80	A	C	C	C		B	B	B	B			A	A	A	
Potassium Hypochlorite KClO		160	180		140		120	400	70	C	B to 70	C		C	C						C					A		
Potassium Iodide KI			180	73	73	B to 212	140	400	70		70	B	A	B	B						B	B				A		
Potassium Nitrate KNO ₃		160	180	140	140		140	400	B	B to 200	B to 200	212	C	A	A	B	B	B	B	B	B	B			A	A	A	A

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Chemical Resistance Chart

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		ABS	CPVC	PP	PVC	PVDF	PEX	PPSU	PTFE	EPDM	NITRILE (BUNA-N)	POLYCHLOROPRENE	FKM	GRAPHITE	BRONZE (85% CU)	SILICON BRONZE	ALUMINIUM BRONZE	BRASS	GRAY IRON	DUCTILE IRON	CARBON STEEL	3% NI/IRON	NI PLATED DUCTILE	400 SERIES SS	316 SS	630 SS	COPPER	
Salicylic Acid C ₆ H ₄ (OH)(COOH)				140	140	B to 212	140		300	300	C		300		B	B			C	C	C		C		A			
Selenic Acid H ₂ SeO ₄			180		140		140			70	C	70	C															
Silicic Acid SiO ₂ •nH ₂ O			180	140	140	B to 212	140		400	176	176	70	212															
Silicone Oil			180	212	73		73		350	140	212	212	400	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Silver Chloride AgCl		160	180	140	140					70	C	70	90	A	C	C	C	C	C	C	C		C	C	C	C	C	
Silver Cyanide AgCN			180	180	140	B to 212	140		350	70	C	70	140		C	C	C	C	C	C	C		C		A to 100		C	
Silver Nitrate AgNO ₃		160	180	180	140		B to 140		350	300	C	B to 200	185	A	C	C	C	C	C	C	C		C	B	A		C	
Silver Sulfate Ag ₂ SO ₄		160	180	140	140		140		350	176	140	70	212	A														
Soaps		73	180	140	140		B to 140		400						B	B	A		B	B	B		B	A	A	A		
Sodium Acetate CH ₃ COONa	Sat'd.		180	212	140	B to 212	140		400	212	C	C	B		A	A	B		B	B	C		B	B	A			
Sodium Aluminate Na ₂ Al ₂ O ₄	Sat'd.				140				300	B to 200	B to 180	140	B to 200		C	C	B		B	B	A		B		A			
Sodium Benzoate C ₆ H ₅ COONa			180	140	140		140		300	140	B to 140	B to 70	B to 140															
Sodium Bicarbonate NaHCO ₃		73	180	212	140	B to 212	140		400	212	B to 200	B to 200	212		A	A	B	B	A	A	C		A	A	A	A	A	
Sodium Bichromate	Sat'd.								400	176	140	B to 70	B to 212	C	C	C								A	A	A		
Sodium Bisulfate NaHSO ₄		73	180	140	140		140			B to 200	B to 200	B to 200	212		C	C	C	C	C	C	C		C	B	A		C	
Sodium Bisulfite NaHSO ₃			180	140	140		140		400	176	160	B to 200	212		B	B			C	C	C		C		A			
Sodium Borate (Borax) Na ₂ B ₄ O ₇ •10H ₂ O	Sat'd.	160	180	180	140		140		300	B to 300	B to 220	B to 200	210	A	A	A			B	B			B	A	A	A		
Sodium Bromide NaBr	Sat'd.	120	180	140	140		140		300	140	C	70	B to 180	A	B	B			C	C	C		C		A			
Sodium Carbonate Na ₂ CO ₃		73	180	212	140	C	140	B to 73	400	176	B to 200	B to 200	212		A	A	B	B	A	A	A	A	A	A	A	A	A	C
Sodium Chlorate NaClO ₃	Sat'd.		180	140	73	C	140		350	B to 200	B to 200	B to 200	B to 200		A	A	C		B	B	B		B	B	A	A		
Sodium Chloride NaCl		120	180	212	140		140		350	B to 212	160	120	212		B	A	A	A	B	B	B	B	B	C	A	B	B	A
Sodium Chlorite NaClO ₂	25%		180	73	C		140		200	70	C		B to 140	C														

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Sodium Chromate Na ₂ CrO ₄ •4H ₂ O		120	180	140		B to 176	140			140	140	70	140	C	A	A			B	B	B		B	A	A	A			
Sodium Cyanide NaCN			180	180	140	B to 212	140		350	176	B to 230	140	176	200	275	C	C	C	C	A	A	A	A		A	A	C		
Sodium Dichromate Na ₂ Cr ₂ O ₇ •2H ₂ O	20%		180	180	140		140		300	176	140	C	B to 212	C	C	C	C		B	B	B					A			
Sodium Ferricyanide Na ₃ Fe(CN) ₆ •2H ₂ O	Sat'd.		180	140	140		140		350	300	70	70	140		C	C			C	C						A			
Sodium Ferrocyanide Na ₃ Fe(CN) ₆ •10H ₂ O	Sat'd.		180	140	140		140		350	140	80	70	140													A			
Sodium Fluoride NaF		120	180	180	140	B to 212	140		350	140	100	140	140	A	A	A	B		C	C	C					A			
Sodium Hydroxide NaOH	< 5%					B to 68																							
Sodium Hydroxide NaOH	<10%								400	B to 200	212	B to 200	B to 140	A	A		A			A	A		B	A	A	A			
Sodium Hydroxide NaOH	30%	120	180	212	140	C	B to 140		350	B to 130	212	B to 200	80	A	A		B			B	B		B	A	A	A			
Sodium Hydroxide NaOH	50%	120	180	212	140		B to 140	194	350	B to 130	212	B to 200	B to 70	A	B	C	C	C	B	B	B	B	B	B	A	A	A	B	
Sodium Hydroxide NaOH	70%	120	180	212	140		B to 140		350	B to 130	B to 70	B to 200	B to 70	A	C	C	C	C	B	B	B	B	B	B	A	A	A	B	
Sodium Hypochlorite NaOCl•5H ₂ O		120	180	73	73		140	B to 190	350	C	C	C	70		C	C	C	C	C	C	C	C	C	C	C	C	C	C	
Sodium Metaphosphate (NaPO ₃) _n			180	120	140					300	220	150	B to 400	A	C	C	C		C	C	C					A			
Sodium Nitrate NaNO ₃	Sat'd.	160	180	180	140	B to 212	140		400	200	B to 171	B to 200	212	A	A	A	B	B	A	A	A	A	A	A	A	A	A	B	
Sodium Nitrite NaNO ₂		160	180	73	140	B to 212	140		400	176	171	B to 140	212		A	A			B	B	B					A			
Sodium Perborate NaBO ₃ •4H ₂ O		120	180	73	140		73		350	140	C	B	140	A	C	C			B	B	B					A	A	A	
Sodium Perchlorate NaClO ₄			180	212	140		140		350	70	C	70	C																
Sodium Peroxide Na ₂ O ₂	10%		180		140		140		250	300	C	C	400	C	C	C	C	C	C	C	C					A	A	A	B
Sodium Phosphate NaH ₂ PO ₄	Acid	120	180	212	140	B to 140	140		400					A	B	B	B	B	B	B	B	B	A	B	A	A	A	B	
Sodium Phosphate NaH ₂ PO ₄	Alkaline		120	180	212		140		400					A	B	B	B	B	B	B	B	B	A	B	A	A	A	B	
Sodium Phosphate NaH ₂ PO ₄	Neutral		120	180	212				400					A	B	B	B	B	B	B	B	B	A	B	A	A	A	B	
Sodium Silicate			180	140	140		140			B to 200	140	B to 200	212		C	C	B		A	A	A					A	A	A	

