CHEMICAL COMPATIBILITY TABLE

INTERPRETATION OF TEST DATA										
	SWE	LLING	LOSS OF T	ENSILE STR.	DESCRIPTION OF CHEMICAL ATTACK					
		(In 30 days to 1	year of exposure)							
	Linear		Volumetric							
	(Plastics)	(Elastomers)	(Plastics) (Elastomers)							
Α	< 10%	<= 15%	< 15%	<=15%	Excellent, little or no swelling, softening or surface deterioration					
В	< 15%	<= 30%	< 30%	<= 30%	Good chemical resistance, minor swelling, softening or deterioration					
С	< 20%	<= 50%	< 50%	<= 60%	Limited chemical resistance, moderate attack, conditional service					
NR	> 20%	> 50%	> 50%	> 60%	Severe attack, not recommended for use					

Chemical Name	Formula	PP	HDPE	PVDF	PTFE/PFA	Acetal/POM	Polycarbonate	PPS	PEEK™
Acetic Acid	C ₂ H ₄ O ₂	A to 60° AB 50-100% to 70° AB to 80% to 80°	AB to 100% to 20° AB 60% to 80°	A to 50° A to 10% to 105° AB to 50%,65-95°	А	A to 5% to 20° BC 10% @ 20°	A to 50% to 20° B to 50% @ 50°	А	А
Acetic Anhydride (Acetyl Oxide)	(CH₃CO)₂O	AB to 50° NR @ 60°	B/NR 100% 20-80°	AB to 20° NR @ 50°	A	NR at 20°	NR at 20°	A to 90°	NO DATA
Acetone (Dimethyl Keytone)	CH₃COCH₃	A to 110°	C at 20°	A to 10% to 50° AB 50% to 25°	Α	A at 5% to 60° B at 20°	A to 20° NR 10-100% at 20°	A to 90°	A to 100°
Acetonitrile (Methyl Cyanide)	CH₃CN	AB to 25° NR @ 50°	A to 50°	A to 50° B @ 65° NR @ 80°	А	NR at 20°	NR at 20°	A to 90°	A to 20°
Aluminum Sulfate (Aluminum Salt)	Al ₂ O ₁₂ S ₃	A to 100% to 70° A to 10% to boiling AB 100% at 120°	A to 70°	A to 100% to 135° A 10% to boiling	А	A at 10% to 20° AB to 100% to 80°	A to 100% to 90°	A to 100% to boiling	A to 100°
Amines (General)		AB to 50°	NR	NR	A	NR at 20°	NR at 20°	A to 20°	A to 20°
Ammonia Gas (Anhydrous)	NH ₃	A to 100% to 100°	A to 60°	А	А	NR at 20°	NR at 20°	A to 90°	А
Ammonia (Aqueous) (Ammonium Hydrate)	NH ₃	A to 85°	BC to 30% to 50° NR to 30% at 60°	А	A	A/NR 10-30% to 50°	NR at 20-65°	A to 30% to 20° A to 10% to 90°	AB
Ammonium Acetate	C ₂ H ₇ NO ₂	A to 40° AB to 80°	A to 50°	A to 100% to 80°	А	A to 20°	A sat'd to 50°	NO DATA	NO DATA
Ammonium Fluoride	NH₄F	А	AC 25-100% to 50° A to 25% to 70°	А	A	NO DATA	NR at 20°	NR	NO DATA
Ammonium Hydroxide (Ammonia, Aqeous)	NH₄OH	A to 105°	AB to 100% to 60°	A to 90°	А	AB to 100% to 60°	BC 5% at 20° NR 10-100% 20° NR 5% at 50°	A to 90°	A to 100°
Ammonium Sulfate (Dolamin)	(NH ₄) ₂ SO ₄	A 10% to 40°	A to 100% to 20° AB to 100% 50-80°	А	A to 200°	B 100% 20-60° AB fertilizer to 20° AB to 5% to 20°	A to 100% to 90° NR 10-100% boiling	A to 90°	А
Aqua Regia (NitroHydrochloric Acid)	HCL-HNO ₃	C at 20 - 40°	NR	A to 40° AB to 80° B a 100°	А	NR at 20°	NR at 20°	NR	NR
Benzene (Mineral Naphtha) (Benzol)	C ₆ H ₆	AB to 10% to 20° AB dilute to 60°	A at 10% to 20° C/NR at 100% at 20° NR at 50°	A to 100% to 50° AB at 100% at 50-60° B at 100% at 60-70°	A to 260°	A to 60°	NR at 20°	A to 40°	A to 100°
Butyl Acetate (N-Butyl Acetate)	C ₆ H ₁₂ O ₂	NR	AC at 20° BC at 50°	A to 20° AB at 25-40° C at 40-50°	A to 260°	AB to 20°	NR at 20°	A to 90°	A to 20°
Calcium Carbonate (Aglime)	CCaO ₃	A to 120°	A to 70°	A to 125° AB to 60°	A to 260°	A to 10% to 65° AB to 80°	C at 20-65°	A to 65°	A to 20°
Ceric Ammonium Nitrate (CAN)	CeH ₈ N ₈ O ₁₈	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA

Chemical Name	Formula	PP	HDPE	PVDF	PTFE/PFA	Acetal/POM	Polycarbonate	PPS	PEEK™
Chlorine (Anhydrous) (Dichlorine, Chlorinated water)	CL ₂	NR	A to 2% to 60° NR	A to 100% to 90° AB at 100% to 110° NR	А	NR at 10-100% at 20°	NR at 20°	NR	A to 10% to 20° NR Conc. @ 20°
Citric Acid	C ₆ H ₈ O ₇	А	A to 100% to 70° AB to 100% at 80°	А	Α	AB at 15% at 60-65° B at 15-100% at 20° C at 100% at 60-65°	A to 100% to 20° B at 10-15% at 50° C at 15% at 65°	A to 105°	A to 100°
Copper Sulfate (Cupric Sulfate)	CuO ₄ S	А	A to 50% to 65° AB at 50-100% to 80°	А	А	AB to 100% to 60°	A to 100% to 20°	A to 105°	A to 100°
Corn Oil	No Formula	А	А	А	А	AB	А	A to 40°	A to 20°
Corn Syrup	No Formula	А				AB	А		
Cotton Seed Oil	No Formula	А				AB	А		
Cyclohexanone (Cyclohexyl ketone)	C ₆ H ₁₀ O	AB to 20° B at 20-40° NR at 50°	NR	AB to 50°	A to 260°	A to 20° AB to 60°	NR at 20°	A to 90°	A to 20°
Dichloroacetic Acid (DCA)	CL₂CHCO₂H	AB to 100% to 50°	BC at 20°	AB to 50% to 100° AB 100% to 50°	А	NO DATA	NO DATA	NO DATA	NO DATA
Dichloromethane (Methylene Dichloride)	CH ₂ CL ₂	B/NR @ 20° C/NR @ 30-50°	NR	AB to 40° B 100% 40 - 50°	А	A to 20°	NR at 20°	A 100% to 20° A/NR 40% @ 40°	NR
Dimethyl Acetamide (DMAC)	C₄H ₉ NO	AB to 50°F	A to 50°	NR	Α	NO DATA	NR at 20°	NO DATA	NO DATA
DI water	H ₂ O	А	A to 60°	А	А	NO DATA	NO DATA	A to 90°	А
Ethyl Alcohol (Ethanol/Grain Alcohol)) (Denatured Alcohol)	C₂H₅OH	A to 100% to 80°	A to 100% to 70°	A to 100% to 80° AB to 100% to 135°	А	A at 96-100% to 20° B at 100% at 50-80°	A to 90% to 20° AB at 96-100% to 20° B at 40-100% at 50°	А	A to 100°
Ethylene Glycol (Glycol Alcohol)	HOCH₂-CH₂OH	А	A to 70°	А	А	A to 100% to 50° AB to 60° B at 80°	A to 70° B to 90°	A to 90°	A to 100°
Ethyl Acetate (Acetic Ether)	C ₄ H ₈ O ₂	A to 80°	BC at 100% at 20° C at 100% at 50° NR at 100% at 60°	A to 20° B at 40 - 50° NR @ 70°	А	A to 10% to 90° AB at 100% to 20° BC at 100% at 60°	NR at 85-100% at 20°	A 100% to 40°	A to 20°
Ether (Ethyl Ether) (Diethyl Oxide)	C ₄ H ₁₀ O	NR	NR at 100% at 60°	AB to 30° B @ 40° NR @ 60°	А	A to 20° AB at 60°	NR at 20°	A to 90°	A to 100°
Formic Acid (Formylic Acid)	CH₂O₂	A to 100% to 20° A to 40% to 40° C 100% @ 60°	A to 100% to 40° AB at 50-100% at 60° BC at 100% at 80°	A to 100% to 100°	А	NR at 3-100% at 20°	A to 50% to 20° AB at 50-100% to 20° B at 3-50% at 50°	A to 100% to 20° A to 40% to 90° NR @ 37% @ 65°	AB to 10% to 20° BC 100% @ 20°
Gasoline (Petrol)		NR at 20°	NR	A to 135° AB to 140°	A to 260°	A to 20°	C at 20°	A to 80°	A to 100°
Glycerin (Glycerol)	C₃H ₈ O₃	A to 100% to 105°	A to 70° A to 65° AB to 80°	A to 100% to 135° AB at 100% at 140°	A to 230°	A to 60°	A to 50°	A to 90°	A to 100% to 20°
Hexane (Dipropyl) (N-Hexane)	C ₆ H ₁₄	BC @ 20-40° C @ 40-60° NR @ 60°	NR	А	А	A to 20°	A to 70° NR at 25-50°	A to 90°	A to 20°
HMDS (1,1,1,3,3,3-Hexamethyldisilazane) Bis(trimethylsilyl)amine	C ₆ H ₁₉ NSi ₂	NO DATA	NO DATA	NO DATA	А	NO DATA	NO DATA	NO DATA	NO DATA
Hydrobromic Acid (Hydrogen Bromide)	HBr	A 20% to 105° A to 50% to 65° B Conc. to 85°	A to 20% to 70° A to 50% to 60° AB 50-100% at 20-65°	A dilute to 120° A to 37% to 20° A 38-100 to 135°	А	NR	NR at 30-100% at 20°	A to 37% to 40° A to 20°	NR

Chemical Name	Formula	PP	HDPE	PVDF	PTFE/PFA	Acetal/POM	Polycarbonate	PPS	PEEK™
Hydrochloric Acid	HCL	A to 100% to 20°	A to 100% to 60°	A to 38% to 90°	А	A to 10% to 20°	A to 10% to 90°	A to 10% to 90°	A to 100°
(Muriatic Acid)		A to 36% to 65°	A to 40% to 70°	A to 50% to 80°		NR at 30-100% at 20°	AB at 20% at 20-90°		
(**************************************		A to 10% to 85°	AB to 40% to 65°	AB 40-70% to 20°					
Hydrofluoric Acid	HF	A to 50% to 60°	A to 60% to 60°	A to 100% to 100°	Α	NR at 20°	A to 10% to 80°	A to 50% to 60°	NR 4-100% @ 20°
,		A to 40% to 90°	A to 40% to 80°				AB at 20% to 20°	A to 35% to 90°	
		A to 30% to 105°	A to 30% to 70°				BC at 35% at 20°	NR > 50%	
Hydrogen Peroxide	H,O,	A to 80% to 20°	A to 30% to 60°	A to 90°	А	NR at 4-100% at 20°	A to 100% to 50°	A to 10 to 90°	A to 100°
(Hydrogen Dioxide)	11202	A to 5% to 70°	AB at 30-90% to 50°	A to 30% to 100°	^	NK at 4-100 /0 at 20	A to 100 % to 50	AB to 30% to 40°	A to 100
(Hydrogen bloxide)		NR 30% > 50°	AB at 30-100% to 20°	A to 30 /0 to 100				NR 50-100% @ 20°	
Iodine	-	A to 100% @ 25°	A to 6.5% to 20°	A to 100% to 75°	Δ.	A to 20°	NR	NR 50-100% @ 20-	BC @ 20°
Todine	I ₂	_	A to 6.5% to 20°		A		INK	INK	BC @ 20°
		AB to 100% @ 80°		C 100% @ 100°		C/NR at 100% at 20°			
Termond Alaskal	(CIL) CIL OII	A to 1000	A t- 700	A t- CEO		A t- 200	A 4- F00	A t- 000	A +- 200
Isopropyl Alcohol	(CH ₃) ₂ CH-OH	A to 105°	A to 70°	A to 65°	А	A to 20°	A to 50°	A to 90°	A to 20°
(IPA)				AB to 70°					
(Isopropanol)		B C 200	B C 200	41. 4250	4 . 500	ND 0 200	0.000 500	NO DATA	110 0171
LIMONENE/DL-LIMONENE	C ₁₀ H ₁₆	B @ 20°	B @ 20°	A to 125°	A to 50°	NR @ 20°	C @ 20 - 50°	NO DATA	NO DATA
(Orange Oil)		C @ 50°	C @ 50°						
									
Methyl Alcohol	CH ₃ OH	A to 20°	A to 100% to 50°	A to 65°	A	A to 60°	AB at 50% to 20°	A to 65°	A to 100°
(Methanol)		BC 100 @ 80°	AB at 100% at 60°	AB 100-125°		B at 80°	B at 20°		
(Wood Alcohol)			B/NR at 100% at 80°				C at 50°		
Methylene Chloride	CH ₂ CL ₂	NR	NR	AB to 40°	Α	A to 20°	NR at 20°	A 100% to 20°	A to 20°
Methyl Ethyl Keytone	C ₄ H ₈ O	A to 100% to 20°	NR	NR	A to 260°	A to 20°	NR at 100% at 20°	A to 100% to 20°	A to 100°
(MEK)		AB at 100% at 50°				AB at 20-80°			
MINNCARE® Cold Sterilant	H ₂ O ₂	A	A	AB	A	NO DATA	A	Α	Α
(Hydr. Peroxide, Peracetic	C ₂ H ₄ O ₃								
acid, Acetic acid)	C ₂ H ₄ O ₂								
N-Methyl 2-Pyrrolidone	NMP	Α	NO DATA	C/NR @ 20°	Α	NO DATA	NO DATA	A to 20°	Α
	CH ₃ N(CH ₂) ₃ CO								
Nitric Acid	HNO ₃	A to 50% to 40°	A to 30% to 60°	A to 98% to 20°	A	NR	A to 20% to 20°	A to 30% to 40°	A to 30% to 20°
(Hydrogen Nitrate)		A to 30% to 80°	A to 40% to 20°	A to 90% to 60°			AB at 20-50% to 20°	AB to 40% to 25°	A to 10% to 100°
		A to 10% to 100°	AB at 50% to 20°	A to 30% to 100°			B to 10% at 50°	NR 50-100% @ 20°	NR 50% @ 20°
Oxalic Acid	C ₂ H ₂ O ₄	A to 100% to 60°	A to 100% to 70°	A to 100% to 50°	Α	C at 5% at 20-65°	A to 10% to 20°	Α	Α
(Ethanedioic Acid)		A to 50% to 80°	AB to 100% to 80°	A to 60% to 100°		C at 10% at 20°	B at 20°		
			NR at 100% at 100°	B @ 100% @ 70°					
Ozone	O ₃	NR	AB weak conc. At 20°	Α	A	NR	AB 10 ppm in H ₂ O at 20°	NO DATA	A to 100°
(trioxygen)			C sat'd in H2O at 20°				NR 1-100% at 20°		
, , , ,			NR at 2-100% at 40°						
Phosphoric Acid	H ₃ PO ₄	A to 85°	A to 100% to 60°	Α	Α	C at 0.3-10% at 20°	A to 100% to 20°	Α	A to 100°
		A to 75% to 105°	A to 75% to 70°	A 85% to 110°		NR at 10-100% at 20°	A to 25% to 70°		
			AB to 90% at 80°				B at 85% at 50°		
Propylene Glycol	C ₃ H ₈ O ₂	AB to 70°	A to 60°	A to 135°	A to 260°	A to 20°	BC at 20°	A to 20°	NO DATA
(PG-12)			AB at 80°	AB at 140°			C/NR at 50°		
, ,									
PGMEA	C ₆ H ₁₂ O ₃	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA
(Propylene Glycol Monomethyl									
,	1								
PGME	C ₄ H ₁₀ O ₂	A to 60°	NO DATA	AB	Α	NO DATA	NO DATA	Α	В
(Propylene Glycol Monomet		AB to 65°							
(Dowtherm 209 / Dowar									
Potassium Carbonate	CK ₂ O ₃	A to 105°	A to 70°	A to 100% to 135°	A to 100% to 260°	A at 60-100% to 80°	A at 5% to 20°	A to 100% to 90°	A at 60-100% to 20°
(Carbonic Acid)			AB at 80°	AB to 100% at 140°			NR at 20°		
(Potash)									
Potassium Hydroxide	кон	Α	A to 100% to 70°	*A to 25% to 60°	Α	B to 100% to 80°	C at 1% at 20°	A to 90°	A to 100°
(Caustic Potash)		A 70% to 85°	AB to 100% at 80°	A to 10% to 140°			NR at 1% at 50°	A to 50% to 130°	
(55.55.5.5.5.7)				A 60-100% to 100°			NR at 5-100% at 20°		
Potassium Permanganate	KMN0 ₄	A to 100% to 20°	A to 100 % to 70°	Α	Α	A to 10% to 60°	A to 100% to 90°	A to 90°	A to 20°
		A to 25% to 60°	A to 10% to 80°	,		NR conc100% at 20°			
		A to 10% to 80°	AB at 20% to 80°			301101 200 70 01 20			
Pyridine	C ₅ H ₅ N	A to 100% to 25°	BC at 20°	NR	A	AB to 20°	NR at 20°	A to 90°	A to 100°
ryilulle	CSIISIA	A to 100 /0 to 23	DC at 20	INIX	^	AD 10 20	IVIN OL ZU	A 10 30	A 10 100

Chemical Name	Formula	PP	HDPE	PVDF	PTFE/PFA	Acetal/POM	Polycarbonate	PPS	PEEK™
(Azine)		AB 100% 50-80° NR 100% @ 50°	C at 60°						
Sodium Bicarbonate (Baking Soda)	CHNaO₃	A to 105°	A to 70° AB at 80°	A to 100% to 135° AB to 100% at 140°	A to 100% to 260°	A to 30°	A to 100% to 90°	A to 100% to 150°	A to 120°
Sodium Carbonate (Soda Ash)	CNa ₂ O ₃	A to 100% to 105°	A to 100% to 70° AB to 100% at 80°	A to 100% to 135° AB to 100% at 140°	A to 100% to 260°	A to 100% to 60° A to 20% to 80°	A to 100% to 90°	A to 100% to 150°	A to 100% to 100°
Sodium Hydroxide (Caustic Soda)	NaOH	A to 50° A to 70% to 105°	A to 100% to 60° A to 70% to 70° AB to 100% at 80°	A to 50% to 20° A to 20% to 40° A to 15% to 80°	А	A to 60% to 80° AB at 60-80% to 80° BC at 80-100% at 20°	A to 20% to 50° A to 15% to 90° C at 25% at 20-50°	A to 100% to 20° A to 50% to 60° A to 20% to 90°	A to 100% to 20° A to 54% to 200°
Sodium Hypochlorite (Bleach)	CLNaO	A to 100% to 20° A to 5% to 50° NR @ 50°	A to 100% to 70° AB to 100% at 80°	A to 17% AB to 100%	А	NR at 10-100% at 20°	A to 10% to 20° AB to 100% to 20° C at 15% at 50-65°	BC 5% to 90°	AB to 100%
Soybean Oil	No Formula	А	А	А	А	А	А	А	А
STERIS [®] CIP 100 (Potassium Hydroxide & Tetrasodium EDTA)	Alkaline Cleaner KOH & C ₁₀ H ₁₂ N ₂ Na ₄ O ₈	А	NO DATA	A to 60°	А	NO DATA	NO DATA	A	A to 100°
STERIS [®] CIP 200 (Phosphoric Acid & Citric Acid)	Acid Cleaner H ₃ PO ₄ C ₆ H ₈ O ₇	А	А	А	А	С	В	A to 105°	А
Sulfuric Acid (Air-free) (Better when aerated)	H₂SO₄	*A to 10% to 100° A to 50% to 80° A to 90% to 40°	A to 75% to 20° A to 60% to 60° A to 50% to 70°	A to 90% to 100° A to 96% to 80° A to 98% to 50°	A A to 90% (Boiling)	A to 3% to 20° NR at 10-100% at 20° NR at 30% at 20°	A to 50% to 20° A to 10% to 80° AB 20-30% at 50-90°	A 10-75% to 20° AB to 98% to 105°	A to 40% to 100° NR > 40%
Tetrahydrofuran (Tetramethylene Oxide)	C₄H ₈ O	BC @ 20° C/NR @ 40-50° NR @ 60°	NR at 20°	C 10-100% @ 20° NR @ 50°	А	A to 20°	NR at 20°	A 100% to 60° C 100% @ 90°	A to 20°
Tetramethyl Ammonium Hydroxide (TMAH)	C ₄ H ₁₃ NO	A to 65°	NO DATA	A to 100% to 90° A to 50% to 100°	A to 100% to 260°	NO DATA	NO DATA	NO DATA	NO DATA
Thionyl Chloride (Sulfinyl Chloride) (Sulforous Chloride)	CL₂OS	B/NR 10 - 100%@20°	NR	NR	А	AC at 20°	NR at 20°	NO DATA	A to 20°
Toluene (Toluol)	C ₇ H ₈	NR	AB to 20° C/NR at 20° NR at 60°	A to 60° AB @ 80° BC 80-100°	А	A to 20° AB at 60° C at 80°	NR at 20°	A to 40°	A to 20°
Trichloroacetic Acid (TCA)	C ₂ HCL ₃ O ₂	A to 60° AB @ 65°	A to 10% to 60° AC at 20-65°	A to 20° A to 65% to 100° AB 40-50°	А	NR at 20°	A to 20% to 20° C/NR 100% at 20° NR at 100% at 50°	A to 90°	A to 20° (Fluoroware)
Trichloroethylene (Ethylene Trichloride) (Triad)	C₂HCL₃	NR	B at 20° C at 50° NR at 100°	A to 85° (blackens)	А	AB at 20-80°	NR at 20°	AC 20-40° NR @ 90°	A to 100°
Xylene (Xylol)	C ₈ H ₁₀	NR	NR at 20°	A to 80°	A	A to 60° AB at 80°	NR at 20°	A to 90°	A to 20°

NOTES:

PEEK™ is a trademark of Victrex USA

^{*} PVDF may discolor after prolonged exposure in Potassium Hydroxide.

* Polypropylene may discolor after prolonged exposure in Sulfuric Acid.