

Chemical Resistance List

Resistance of liquid end materials against common chemicals at standard temperature 68°F (20°C). (May differ at other temperatures)

s	= saturated aqueous solution	n	= unknown resistance	resp. to aqueous solutions
+/0	= conditional resistance	=>	= refer to . . .	
+	= good resistance	A.C.	= any concentration	
0	= limited resistance	S	= saturated solution	
-	= no resistance	Conc.	= concentrated	
+(x%)	= good resistance to x% concentration	D	= weak solution	

* = With glued fittings, please check the resistance of the glue.

These classifications are the results of practical experience of the manufacturers of the raw materials. Since the resistance of the materials depends also on other factors (operating conditions, surface quality, etc.), this list cannot be more than a general information for which no responsibility is accepted. It should be particularly noted that, as a rule, the aggressiveness of a mixture is different from that of its individual components. In cases of doubt, suitable tests should be performed.

N.B. PTFE is resistant against most chemicals and solvents (excluding fluorine, metallic sodium and other alkali metals).

PVDF is resistant against most chemicals (excluding ketones, esters).

Chemical	Formula	Concentration	Acrylic	PVC	316 SS	PE	PP	Viton®	EPDM	PVDF	Teflon
Acetaldehyde	CH ₃ CHO	100%	-	-	+	+	0	-	+/0	+	+
Acetamide	CH ₃ CONH ₂	S	+	+	+	+	+	0	+	+	+
Acetic Acid	CH ₃ COOH	100%	-	+(50%)	+	+(70%)	+	-	0	+	+
Acetic Anhydride	(CH ₃ CO) ₂ O	100%	-	-	+	0	0	-	+/0	-	+
Acetone	CH ₃ COCH ₃	100%	-	-	+	+	+	-	-	0	+
Acetophenone	C ₆ H ₅ COCH ₃	100%	-	n	+	+	+	-	+	+	+
Acetyl Chloride	CH ₃ COCl	100%	-	+	0	-	-	+	-	-	+
Acetylacetone	C ₅ H ₈ O ₂	100%	-	-	+	+	+	-	+	-	+
Acetylene Dichloride=>	Dichloroethylene										
Acetylene Tetrachloride=>	Tetrachloroethane										
Acrylonitrile	CH ₂ =CH-CN	100%	-	-	+	+	+	-	-	+	+
Adipic Acid	C ₆ H ₁₀ O ₄	S	+	+	+	+	+	+	+	+	+
Allyl Alcohol	CH ₂ CHCH ₂ OH	96%	-	0	+	+	+	-	+	+	+
Aluminum Acetate	Al(CH ₃ COO) ₃	S	+	+	+	+	+	+	+	+	+
Aluminum Bromide	AlBr ₃	S	+	+	n	+	+	+	+	+	+
Aluminum Chloride	AlCl ₃	S	+	+	-	+	+	+	+	+	+
Aluminum Fluoride	AlF ₃	10%	+	+	-	+	+	+	+	+	+
Aluminum Hydroxide	Al(OH) ₃	S	+	+	+	+	+	+	+	+	+
Aluminum Nitrate	Al(NO ₃) ₃	S	+	+	+	+	+	+	+	+	+
Aluminum Phosphate	AlPO ₄	S	+	+	+	+	+	+	+	+	+
Aluminum Sulfate	Al(SO ₄) ₃	S	+	+	+	+	+	+	+	+	+
Ammonium Acetate	CH ₃ COONH ₄	S	+	+/0	+	+	+	+	+	+	+
Ammonium Aluminum Sulfate	NH ₄ Al(SO ₄) ₂	S	+	+	+	+	+	+	+	+	+
Ammonium Bicarbonate	NH ₄ HCO ₃	S	+	+	+	+	+	+	+	+	+
Ammonium Carbonate	(NH ₄) ₂ CO ₃	40%	+	+	+	+	+	+	+	+	+
Ammonium Chloride	NH ₄ Cl	S	+	+	-	+	+	+	+	+	+
Ammonium Fluoride	NH ₄ F	S	+	0	0	+	+	+	+	+	+
Ammonium Hydrogen Carbonate	NH ₄ HCO ₃	A.C.	+	+	+	+	+	+	+	+	+
Ammonium Hydroxide	NH ₄ OH	S	+	+	+	+	+	-	+	+	+
Ammonium Nitrate	NH ₄ NO ₃	S	+	+	+	+	+	+	+	+	+
Ammonium Oxalate	(NH ₄) ₂ C ₂ O ₄	S	+	+	+	+	+	+	+	+	+
Ammonium Perchlorate	NH ₄ ClO ₄	10%	+	+	+	+	+	+	+	+	+
Ammonium Peroxodisulfate	(NH ₄) ₂ S ₂ O ₈	S	+	+	+(5%)	+	+	+	+	+	+
Ammonium Persulfate	(NH ₄) ₂ S ₂ O ₈	A.C.	+	+	+	+	+	+	+	+	+
Ammonium Phosphate	(NH ₄) ₃ PO ₄	A.C.	+	+	+(10%)	+	+	+	+	+	+
Ammonium Sulfate	(NH ₄) ₂ SO ₄	A.C.	+	+	+(10%)	+	+	+	+	+	+
Ammonium Sulfide	(NH ₄) ₂ S	S	+	+	n	+	+	+	+	+	+
Amyl Alcohol	C ₅ H ₁₁ OH	100%	+	+	+	+	+	-	+	+	+
Aniline	C ₆ H ₅ NH ₂	100%	-	-	+	+	+	-	+/0	+	+
Aniline Hydrochloride	C ₆ H ₅ NH ₂ HCl	S	n	+	-	+	+	+/0	+/0	+	+
Antimony Trichloride	SbCl ₃	S	+	+	-	+	+	+	+	+	+
Aqua Regia	3HCl+HNO ₃	100%	-	+	-	-	-	-	0	+	+
Arsenic Acid	H ₃ AsO ₄	S	+	+	+	+	+	+	+	+	+
Barium Carbonate	BaCO ₃	S	+	+	+	+	+	+	+	+	+
Barium Chloride	BaCl ₂	S	+	+	-	+	+	+	+	+	+
Barium Hydroxide	Ba(OH) ₂	S	+	+	+	+	+	+	+	+	+
Barium Nitrate	Ba(NO ₃) ₂	A.C.	+	+	+	+	+	+	+	+	+
Barium Sulfate	BaSO ₄	A.C.	+	+	+	+	+	+	+	+	+
Barium Sulfide	BaS	A.C.	+	+	+	+	+	+	+	+	+
Beer	-	100%	+	+	+	+	+	+	+	+	+

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PVDF is resistant against most chemicals (excluding ketones, esters).

Chemical	Formula	Concentration	Acrylic	PVC	316 SS	PE	PP	Viton®	EPDM	PVDF	Teflon
Benzaldehyde	C ₆ H ₅ CHO	100%	-	-	+	0	+	+	+	+	+
Benzene	C ₆ H ₆	100%	-	-	+	0	0	0	-	+	+
Benzene Sulfonic Acid	C ₆ H ₅ SO ₃ H	10%	n	n	+	n	+	+	-	+	+
Benzoic Acid	C ₆ H ₅ COOH	S	+	+	+	+	+	+	+	+	+
Benzoyl Chloride	C ₆ H ₅ COCl	100%	-	n	0	0	0	+	+	n	+
Benzyl Alcohol	C ₆ H ₅ CH ₂ OH	100%	-	-	+	+	+	+	-	+	+
Benzyl Benzoate	C ₆ H ₅ COOC ₆ H ₅	100%	-	-	+	0	+	+	-	0	+
Benzyl Chloride	C ₆ H ₅ CH ₂ Cl	90%	-	n	+	0	0	+	-	+	+
Bleach=>	Sodium Hypochlorite										
Bleaching Powder	Ca(OCl) ₂	S	+	+	-	+	+	+	+	+	+
Borax	Na ₂ B ₄ O ₇	A.C.	+	+	+	+	+	+	+	+	+
Boric Acid	H ₃ BO ₃	S	+	+	+	+	+	+	+	+	+
Brine		S	+	+/0	+/0	+	+	+	+	+	+
Bromine	Br ₂	100%	-	-	-	-	-	-	-	+	+
Bromine Liquid	Br ₂	100%	-	-	-	-	-	-	-	+	+
Bromine Water	-	S	-	+	-	-	-	-	-	+	+
Bromo Benzene	C ₆ H ₅ Br	100%	n	n	+	0	0	0	-	+	+
Bromochloro Methane	CH ₂ BrCl	100%	-	-	+	0	-	n	+/0	+	+
Bromochlorotrifluoroethane	HCClBrCF ₃	100%	-	-	+	0	0	+	-	+	+
Butanediol	HOC ₄ H ₈ OH	10%	n	+	+	+	+	0	+	+	+
Butanetriol	C ₄ H ₁₀ O ₃	S	+	+	+	+	+	0	+	+	+
Butanol	C ₄ H ₉ OH	100%	-	+	+	+	+	0	+/0	+	+
Butyl Acetate	CH ₃ COOC ₄ H ₉	100%	-	-	+	-	0	-	+/0	+	+
Butyl Acrylate	C ₇ H ₁₃ O ₂	100%	-	-	+	+	+	-	-	+	+
Butyl Amine	C ₄ H ₉ NH ₂	100%	n	n	+	+	n	-	-	0	+
Butyl Benzoate	C ₆ H ₅ COOC ₄ H ₉	100%	-	-	+	0	0	+	+	n	+
Butyl Ether	(C ₄ H ₉) ₂ O	100%	-	-	+	+	+	-	0	+	+
Butyl Mercaptan	C ₄ H ₉ SH	100%	n	n	n	n	n	+	-	+	+
Butyl Oleate	C ₂₂ H ₄₂ O ₂	100%	n	n	+	n	n	+	+/0	+	+
Butyl Stearate	C ₂₂ H ₄₄ O ₂	100%	0	n	+	n	n	+	-	+	+
Butylaldehyde	C ₃ H ₇ CHO	100%	-	n	+	+	+	-	+/0	n	+
Butyric Acid	C ₃ H ₇ COOH	100%	+(5%)	+(20%)	+	+	+	+	+	+	+
Calcium Acetate	(CH ₃ COO) ₂ Ca	S	+	+	+	+	+	+	+	+	+
Calcium Bisulfite	Ca(HSO ₃) ₂	S	+	+	+	+	+	+	+	+	+
Calcium Carbonate	CaCO ₃	A.C.	+	+	+	+	+	+	+	+	+
Calcium Chloride	CaCl ₂	S	+	+	-	+	+	+	+	+	+
Calcium Cyanide	Ca(CN) ₂	S	+	+	n	+	+	+	+	+	+
Calcium Hydrogen Sulfite	CaHSO ₃	S	+	+	+	+	+	+	+	+	+
*Calcium Hydroxide	Ca(OH) ₂	S	+	+	+	+	+	+	+	+	+
Calcium Hypochlorite	Ca(OCl) ₂	S	+	+	-	+	0	0	+	+	+
Calcium Nitrate	Ca(NO ₃) ₂	S	+	+(50%)	+	+	+(50%)	+	+	+	+
Calcium Phosphate	Ca ₃ (PO ₄) ₂	S	+	+	+	+	+	+	+	+	+
Calcium Sulfate	CaSO ₄	S	+	+	+	+	+	+	+	+	+
Calcium Sulfide	CaS	S	+	+	n	+	+	+	+	+	+
Calcium Sulfite	CaSO ₃	S	+	+	+	+	+	+	+	+	+
Calcium Thiosulfate	CaS ₂ O ₃	S	+	+	-	+	+	+	+	+	+
Camphor	C ₁₀ H ₁₆ O	100%	-	-	+	-	+	0	-	+	+
Carbolic Acid (see Phenol)	C ₆ H ₅ OH	100%	-	0	+	0	+	+	-	+	+
Carbon Disulfide	CS ₂	100%	-	-	+	0	0	+	-	+	+
Carbon Tetrachloride	CCl ₄	100%	0	-	+	0	-	+	-	+	+
Carbonic Acid	H ₂ CO ₃	S	+	+	+	+	+	+	+	+	+

* Requires flushing.

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Chemical	Formula	Concentration	Acrylic	PVC	316 SS	PE	PP	Viton®	EPDM	PVDF	Teflon
Caustic Soda=>	Sodium Hydroxide										
Chloric Acid	HClO ₃	20%	+	+	-	+10%	-	0	0	+	+
Chlorine Dioxide Solution	ClO ₂ +H ₂ O	0.5%	0	+	-	0	0	0	-	+	+
Chloroacetic Acid	CH ₂ ClCOOH	A.C.	-	-	-	-	+	+	+	+	+
Chlorine Water	Cl ₂ +H ₂ O	S	+	+	-	0	0	+	+	+	+
Chlorobenzene	C ₆ H ₅ Cl	100%	-	-	+	0	+	+	-	+	+
Chloroethanol	ClCH ₂ CH ₂ OH	100%	-	-	+	+	+	-	0	0	+
Chloroethylbenzene	C ₆ H ₄ ClC ₂ H ₅	100%	-	-	+	0	0	0	-	n	+
Chlorophenol	C ₆ H ₄ OHCl	100%	n	n	+	+	+	n	-	+	+
Chlorotoluene	C ₇ H ₈ Cl	100%	-	-	+	n	n	+	-	+	+
Chloroacetone	ClCH ₂ COCH ₃	100%	-	-	+	n	n	-	+	n	+
Chlorobutadiene	C ₄ H ₆ Cl	100%	-	-	+	n	n	+	-	n	+
Chloroform	CHCl ₃	100%	-	-	+	-	0	+	-	+	+
Chlorohydrin	C ₂ H ₄ O ₂ Cl	100%	n	n	+	+	+	+	0	-	+
Chloroprene=>	Chlorobutadiene										
Chlorosulfonic Acid	SO ₂ (OH)Cl	100%	-	-	-	-	-	-	-	-	+
Chrome Sulfate	Cr ₂ (SO ₄) ₃	S	+	+	+	+	+	+	+	+	+
Chromic Acid	H ₂ CrO ₄	50%	-	+	+(10%)	+	0	+	-	+	+
Chromic Sulfuric Acid	K ₂ CrO ₄ +H ₂ SO ₄	S	-	+	n	-	-	n	n	+	+
Citric Acid	C ₆ H ₈ O ₇	S	+	+	+	+	+	+	+	+	+
Cobalt Chloride	CoCl ₂	S	+	+	-	+	+	+	+	+	+
Copper II Acetate	Cu(CH ₃ COO) ₂	S	+	+	+	+	+	+	+	+	+
Copper II Arsenite	Cu ₃ (AsO ₃) ₂	S	+	+	+	+	+	+	+	+	+
Copper II Carbonate	CuCO ₃	S	+	+	+	+	+	+	+	+	+
Copper II Chloride	CuCl ₂	S	+	+	+(1%)	+	+	+	+	+	+
Copper II Cyanide	Cu(CN) ₂	S	+	+	+	+	+	+	+	+	+
Copper II Fluoride	CuF ₂	S	+	+	+	+	+	+	+	+	+
Copper II Nitrate	Cu(NO ₃) ₂	S	+	+	+	+	+	+	+	+	+
Copper II Sulfate	CuSO ₄	S	+	+	+	+	+	+	+	+	+
Cresole	C ₆ H ₄ CH ₃ OH	100%	0	0	+	+	+	+	-	+	+
Crotonaldehyde	CH ₃ C ₂ H ₂ CHO	100%	n	-	+	+	+	-	+	+	+
Cyclohexane	C ₆ H ₁₂	100%	+	-	+	+	+	+	-	+	+
Cyclohexanol	C ₆ H ₁₁ OH	100%	0	+/0	+	+	+	+	-	+	+
Cyclohexanone	C ₆ H ₁₀ O	100%	-	-	+	+	+	-	+/0	+	+
Cyclohexyl Alcohol=>	Cyclohexanol										
Cyclohexylamine	C ₆ H ₁₃ N	100%	0	0	+	n	n	-	n	n	+
Decahydronaphthaline	C ₁₀ H ₁₈	100%	-	+/0	n	0	0	0	-	+	+
Decalin=>	Decahydronaphthaline										
Diisononyl Phthalate	C ₂₆ H ₄₂ O ₄	100%	-	-	+	+	+	n	n	+	+
Diacetone Alcohol	C ₆ H ₁₂ O ₂	100%	-	-	+	+	+	-	+	+	+
Diamine Ethylene	(CH ₂ NH ₂) ₂	100%	n	0	0	+	+	-	+	+	+
Dibromoethane	C ₂ H ₄ Br ₂	100%	-	-	+	-	n	+	-	+	+
Dibutyl Ether	C ₄ H ₉ OC ₄ H ₉	100%	0	-	+	0	0	-	0	+	+
Dibutyl Phthalate	C ₁₆ H ₂₂ O ₄	100%	-	-	+	0	+	+	+/0	+	+
Dibutylamine	(C ₄ H ₉) ₂ NH	100%	n	n	+	+	+	-	-	+	+
Dichloro Acetic Acid	Cl ₂ CHCOOH	100%	-	+	+	+	+	-	+	+	+
Dichloro Benzene	C ₆ H ₄ Cl ₂	100%	-	-	+	0	0	+	-	+	+
Dichloro Butane	C ₄ H ₈ Cl ₂	100%	-	-	+	0	0	+	-	+	+
Dichloro Butene	C ₄ H ₆ Cl ₂	100%	-	-	+	0	0	0	-	+	+
Dextrose	C ₆ H ₁₂ O ₆	A.C.	+	+	+	+	+	+	+	+	+
Dichloroethane	C ₂ H ₄ Cl ₂	100%	-	-	+	-	0	+	-	+	+
Dichloroethylene	C ₂ H ₂ Cl ₂	100%	-	-	+	-	0	0	-	+	+
Dichloroisopropyl Ether	(C ₃ H ₆ Cl) ₂ O	100%	-	-	+	0	0	0	0	n	+
Dicyclohexylamine	C ₁₂ H ₂₃ N	100%	0	0	+	+	+	-	+	n	+

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Diethylamine	(C ₂ H ₅) ₂ NH	100%	-	-	+	0	+	-	+	+	+
Diethylene Glycol	C ₄ H ₁₀ O ₃	100%	+	+	+	+	+	+	+	+	+
Diethyleneglydoethyl Ether	C ₈ H ₁₈ O ₃	100%	n	n	+	+	+	n	+/0	+	+
Diethyl Ether	(C ₂ H ₅) ₂ O	100%	-	-	+	0	0	-	-	+	+
Diglycolic Acid	C ₄ H ₆ O ₅	30%	+	+	+	+	+	+	n	+	+
Dihexyl Phthalate	C ₂₀ H ₂₆ O ₄	100%	-	-	+	+	+	-	n	+	+
Diisobutylketone	C ₈ H ₁₆ O	100%	-	-	+	+	+	-	+	+	+
Diisopropylketone	C ₇ H ₁₄ O	100%	-	-	+	+	+	-	+	+	+
Dimethyl Carbonate	(CH ₃ O) ₂ CO	100%	n	n	+	-	+	+	-	+	+
Dimethyl Phthalate	C ₁₀ H ₁₀ O ₄	100%	-	-	+	+	+	-	+/0	+	+
Dimethylformamide	HCON(CH ₃) ₂	100%	-	-	+	+	+	-	+	-	+
Dimethylhydrazine	H ₂ NN(CH ₃) ₂	100%	n	n	+	+	+	-	+	+	+
Diethyl Phthalate	C ₈ H ₁₀ (COOC ₂ H ₅) ₂	100%	-	-	+	+	+	-	+/0	+	+
Dioxane	C ₆ H ₈ O ₂	100%	-	-	+	+	0	-	+/0	0	+
Dimethyl Formic Amide	HCON(CH ₃) ₂	100%	-	-	-	0	+	0	0	-	+
Disodium Hydrogen Phosphate	Na ₂ HPO ₄	S	+	+	+	+	+	+	+	+	+
Disulfur Dichloride	S ₂ Cl ₂	100%	+	+	+	+	+	+	-	+	+
DMF=>	Dimethylformamide										
Engine Oils		100%	n	+/0	+	+	+	+	-	+	+
Ethanol	C ₂ H ₅ OH	100%	-	+	+	+	+	-	+	+	+
Ethanol Amine	HOC ₂ H ₄ NH ₂	100%	0	n	+	+	+	-	+/0	+	+
Ethyl Acetate	CH ₃ COOC ₂ H ₅	100%	-	-	+	+	+	-	+/0	-	+
Ethyl Acrylate	C ₂ H ₃ COOC ₂ H ₅	100%	-	-	+	+	+	-	+/0	0	+
Ethyl Benzene	C ₆ H ₅ C ₂ H ₅	100%	-	-	+	0	0	0	-	+	+
Ethyl Benzoate	C ₆ H ₅ COOC ₂ H ₅	100%	n	-	+	+	+	+	-	0	+
Ethyl Bromide	C ₂ H ₅ Br	100%	n	n	n	+	+	+	-	+	+
Ethyl Chloride	C ₂ H ₅ Cl	100%	-	-	+	-	-	+	-	+	+
Ethyl Chloroacetate	ClCH ₂ COOC ₂ H ₅	100%	-	0	+	+	+	+	-	+	+
Ethyl Chlorocarbonate	ClCO ₂ C ₂ H ₅	100%	n	n	n	n	+	+	-	n	+
Ethylacetylacetate	C ₆ H ₁₀ O ₃	100%	n	-	+	+	+	+	-	+	+
Ethylacrylic Acid	C ₄ H ₇ COOH	100%	n	n	+	+	+	n	+/0	+	+
Ethylene Dibromide	C ₂ H ₄ Br ₂	100%	-	-	+	-	0	+	-	+	+
Ethylene Dichloride	C ₂ H ₄ Cl ₂	100%	-	-	+	-	0	+	-	+	+
Ethylene Glycol	C ₂ H ₄ (OH) ₂	100%	+	+	+	+	+	+	+	+	+
Ethylenglycol Ethylether	HOC ₂ H ₄ OC ₂ H ₅	100%	n	n	+	+	+	n	+/0	+	+
Ethylhexanol	C ₈ H ₁₆ O	100%	n	+/0	+	+	+	+	+	+	+
Fatty Acids	-	100%	0	0	+	+	+	+	0	+	+
Ferric Chloride	FeCl ₃	S	+	+	-	+	+	+	+	+	+
Ferric Nitrate	Fe(NO ₃) ₃	S	+	+	+	+	+	+	+	+	+
Ferric Phosphate	FePO ₄	S	+	+	+	+	+	+	+	+	+
Ferric Sulfate	Fe ₂ (SO ₄) ₃	S	+	+	0	+	+	+	+	+	+
Ferrous Chloride	FeCl ₂	S	+	+	-	+	+	+	+	+	+
Ferrous Sulfate	FeSO ₄	S	+	+	+	+	+	+	+	+	+
Fluoro Benzene	C ₆ H ₅ F	100%	-	-	+	0	+	0	-	+	+
Fluoroboric Acid	HF ₄	35%	+	+	0	+	+	+	+	+	+
Formaldehyde	CH ₂ O	40%	+	+	+	+	+	-	+/0	+	+
Formamide	HCONH ₂	100%	+	-	+	+	+	+	+	+	+
Formic Acid	HCOOH	S	-	+/0	+	+	+	-	-	+	+
Freon 12,13,22,114,115	-	100%	-	+	-	-	-	-	-	0	+
Furan	C ₄ H ₄ O	100%	-	-	+	+	+	-	n	-	+
Furane Aldehyde	C ₅ H ₅ O ₂	100%	n	n	n	n	n	-	+/0	0	+
Furfuryl Alcohol	OC ₄ H ₃ CH ₂ OH	100%	-	-	+	+	+	n	+/0	0	+

Chemical Resistance List

Resistance of liquid end materials against common chemicals **at standard temperature 68°F (20°C)**. (May differ at other temperatures)

s	= saturated aqueous solution	n	= unknown resistance
+/o	= conditional resistance	=>	= refer to . . .
+	= good resistance	A.C.	= any concentration
o	= limited resistance	S	= saturated solution
-	= no resistance	Conc.	= concentrated
+(x%)	= good resistance to x% concentration	D	= weak solution
*	= With glued fittings please check the resistance of the glue		

] resp. to aqueous solutions

N.B. PTFE is resistant against most chemicals and solvents (excluding fluorine, metallic sodium and other alkali metals).

PVDF is resistant against most chemicals (excluding ketones, esters).

Chemical	Formula	Concentration	Acrylic	PVC	316 SS	PE	PP	Viton®	EPDM	PVDF	Teflon
Gallic Acid	C ₆ H ₂ (OH) ₃ COOH	5%	+	+	+	+	+	+	+/0	+	+
Gasoline	-	100%	-	-	+	+	+	+	-	+	+
Glucose	C ₆ H ₁₂ O ₆	S	+	+	+	+	+	+	+	+	+
Glycerol Triacetate	C ₃ H ₅ (CH ₃ COO) ₃	100%	n	n	+	+	+	-	+	+	+
Glycerol	C ₃ H ₅ (OH) ₃	100%	+	+	+	+	+	+	+	+	+
Glycine	NH ₂ CH ₂ COOH	10%	+	+	+	+	+	+	+	+	+
Glycol	C ₂ H ₄ (OH) ₂	100%	+	+	+	+	+	+	+	+	+
Glycolic Acid	CH ₂ OH COOH	70%	+	+(37%)	-	+	+	+	+	+	+
Heptane	C ₇ H ₁₆	100%	+	+	+	+	+	+	-	+	+
Hexanal	C ₇ H ₁₄ CHO	100%	n	n	+	+	+	-	+/0	+	+
Hexane	C ₆ H ₁₄	100%	+	+	+	+	+	+	-	+	+
Hexanol	C ₆ H ₁₃ OH	100%	-	-	+	+	+	n	+	+	+
Hexene	C ₆ H ₁₂	100%	n	+	+	+	+	+	-	+	+
Hydrazine Hydrate	N ₂ H ₄ *H ₂ O	S	+	+	+	+	+	n	+	+	+
Hydrazine	N ₂ H ₄	Conc.	0	0	+	+	+	+	+	+	+
Hydrobromic Acid	HBr	50%	+	+	-	+	+	-	+	+	+
Hydrochloric Acid	HCl	38%	+(32%)	+	-	+	+	-	+	+	+
Hydrofluoric Acid	HF	80%	-	+(40%)*	-	+(40%)	+(40%)	+	0	+	+
Hydrofluosilicic Acid	H ₂ SiF ₆	30%	+	+	0	+	+	+	+	+	+
Hydrogen Cyanide	HCN	S	+	+	+	+	+	+	+	+	+
Hydrogen Peroxide	H ₂ O ₂	90%	+(40%)	+(40%)	+	+	+(30%)	+(30%)	+(30%)	+	+
Hydroiodic Acid	HI	S	+	+	-	+	+	-	n	+	+
Hydroquinone	C ₆ H ₄ (OH) ₂	S	+	+	+	+	+	+	-	+	+
Hydrogen Sulfide	H ₂ S	S	+	+	0	+	+	+	+	+	+
Hydroxylamine Sulfate	(NH ₂ OH) ₂ *H ₂ SO ₄	10%	+	+	+	+	+	+	+	+	+
Hypochlorous Acid	HOCl	S	+	+	-	0	0	+	+/0	+	+
Iodine	I ₂	S	0	-	-	0	+	+	+/0	+	+
Isobutyl Alcohol	C ₄ H ₉ CH(OH)CH ₃	100%	-	+	+	+	+	+	+	+	+
Isopropyl Chloride	CH ₃ CHClCH ₃	80%	-	-	+	0	0	+	-	+	+
Isopropyl Acetate	CH ₃ COOCH(CH ₃) ₂	100%	-	-	+	+	+	-	+/0	+	+
Isopropyl Alcohol	(CH ₃) ₂ CHOH	100%	0	+/0	+	+	+	+	+	+	+
Isopropyl Benzene	C ₆ H ₅ CH(CH ₃) ₂	100%	-	-	+	0	0	+	-	+	+
Isopropyl Ether	C ₆ H ₁₄ O	100%	-	-	+	0	0	-	-	+	+
Isopropanol=>	Isopropyl Alcohol										
Lactic Acid	C ₃ H ₆ O ₃	100%	-	+	+/0	+	+	+	+(10%)	+	+
Lead II Acetate	Pb(CH ₃ COO) ₂	S	+	+	+	+	+	+	+	+	+
Lead Nitrate	Pb(NO ₃) ₂	50%	+	+	+	+	+	+	+	+	+
Lead Sulfate	PbSO ₄	S	+	+	+	+	+	+	+	+	+
Lead Tetraethyl	Pb(C ₂ H ₅) ₄	100%	0	+	+	+	+	+	-	+	+
Lime Milk=>	Calcium Hydroxide										
*Lime Slurry	Ca(OH) ₂	S	+	+	+	+	+	+	+	+	+
Lithium Bromide	LiBr	S	+	+	+	+	+	+	+	+	+
Lithium Chloride	LiCl	S	+	+	+	+	+	+	+	+	+
Magnesium Carbonate	MgCO ₃	S	+	+	+	+	+	+	+	+	+
Magnesium Chloride	MgCl ₂	S	+	+	0	+	+	+	+	+	+
*Magnesium Hydroxide	Mg(OH) ₂	S	+	+	+	+	+	+	+	+	+
Magnesium Nitrate	Mg(NO ₃) ₂	S	+	+	+	+	+	+	+	+	+
Magnesium Sulfate	MgSO ₄	S	+	+	+	+	+	+	+	+	+
Maleic Acid	C ₄ H ₄ O ₄	S	+	+	+	+	+	+	+	+	+
Malic Acid	C ₄ H ₆ O ₅	S	+	+	+	+	+	+	+	+	+
Manganese II Chloride	MnCl ₂	S	+	+	+	+	+	+	+	+	+

*Requires flushing.

Chemical Resistance List

Resistance of liquid end materials against common chemicals at standard temperature 68°F (20°C). (May differ at other temperatures)

s	= saturated aqueous solution	n	= unknown resistance	resp. to aqueous solutions
+/o	= conditional resistance	=>	= refer to . . .	
+	= good resistance	A.C.	= any concentration	
o	= limited resistance	S	= saturated solution	
-	= no resistance	Conc.	= concentrated	
+(x%)	= good resistance to x% concentration	D	= weak solution	

* = With glued fittings, please check the resistance of the glue.

N.B. PTFE is resistant against most chemicals and solvents (excluding fluorine, metallic sodium and other alkali metals).

PVDF is resistant against most chemicals (excluding ketones, esters).

Chemical	Formula	Concentration	Acrylic	PVC	316 SS	PE	PP	Viton®	EPDM	PVDF	Teflon
Sodium Borate	NaBO ₂	S	+	+	+	+	+	+	+	+	+
Sodium Bromate	NaBrO ₃	S	+	+	+	+	+	+	+	+	+
Sodium Bromide	NaBr	S	+	+	+	+	+	+	+	+	+
Sodium Carbonate	Na ₂ CO ₃	S	+	+	+/0	+	+	+	+	+	+
Sodium Chlorate	NaClO ₃	S	+	+	+	+	+	+	+	+	+
Sodium Chloride	NaCl	S	+	+	-	+	+	+	+	+	+
Sodium Chlorite	NaClO ₂	24%	+	+	+(10%)	+	+	+	+	+	+
Sodium Chromate	Na ₂ CrO ₄	S	+	+	+	+	+	+	+	+	+
Sodium Cyanide	NaCN	S	+	+	+	+	+	+	+	+	+
Sodium Dichromate	NaCr ₂ O ₇	S	+	+	+	+	+	+	+	+	+
Sodium Dithionite	Na ₂ S ₂ O ₄	S	+	+10%	+	+10%	+10%	n	n	+	+
Sodium Fluoride	NaF	S	+	+	+(10%)	+	+	+	+	+	+
Sodium Hydrogen Sulfate	NaHSO ₄	S	+	+	+	+	+	+	+	+	+
Sodium Hydrogen Sulfide	NaHSO ₃	S	+	+	+	+	+	+	+	+	+
Sodium Hydroxide	NaOH	50%	+	+	+	+	+	-	+	+	+
Sodium Hypochlorite	NaOCl	12%	+	+	-	+	0	0	+	+	+
Sodium Iodide	NaI	S	+	+	+	+	+	+	+	+	+
Sodium Metaphosphate	(NaPO ₃) _n	S	+	+	+	+	+	+	+	+	+
Sodium Nitrate	NaNO ₃	S	+	+	+	+	+	+	+	+	+
Sodium Nitrite	NaNO ₂	S	+	+	+	+	+	+	+	+	+
Sodium Oxalate	Na ₂ C ₂ O ₄	S	+	+	+	+	+	+	+	+	+
Sodium Perborate	NaBO ₂ +*H ₂ O ₂	S	+	+/0	+	+	+	+	+	+	+
Sodium Perchlorate	NaClO ₄	S	+	+	+(10%)	+	+	+	+	+	+
Sodium Peroxide	Na ₂ O ₂	S	+	+	+	-	+	+	+	+	+
Sodium Persulfate	Na ₂ S ₂ O ₈	S	n	+	+	+	+	+	+	+	+
Sodium Pyrosulfite	Na ₂ S ₂ O ₅	S	+	+	+	+	+	n	n	+	+
Sodium Salicylate	C ₆ H ₄ (OH)COONa	S	+	+/0	+	+	+	+	+	+	+
Sodium Silicate	Na ₂ SiO ₃	S	+	+	+	+	+	+	+	+	+
Sodium Sulfate	Na ₂ SO ₄	S	+	+	+	+	+	+	+	+	+
Sodium Sulfide	Na ₂ S	S	+	+	+	+	+	+	+	+	+
Sodium Sulfite	Na ₂ SO ₃	S	+	+	+(50%)	+	+	+	+	+	+
Sodium Tetraborate	Na ₂ B ₄ O ₇ *10H ₂ O	S	+	+	+	+	+	+	+	+	+
Sodium Thiosulfate	Na ₂ S ₂ O ₃	S	+	+	+(25%)	+	+	+	+	+	+
Sodium Tripolyphosphate	Na ₅ P ₃ O ₁₀	S	+	+	+	+	+	+/0	+	+	+
Stannic Chloride	SnCl ₄	100%	+	+	-	+	+	+	+	+	+
Stannous Chloride	SnCl ₂	S	+	+	-	+	+	+	+	+	+
Starch	(C ₆ H ₁₀ O ₅) _n	S	+	+	+	+	+	+	+	+	+
Stearic Acid	C ₁₇ H ₃₅ COOH	100%	+	+	+	+	+	+	-	+	+
Styrene	C ₆ H ₅ CHCH ₂	100%	-	-	+	0	0	0	-	+	+
Succinic Acid	C ₄ H ₆ O ₄	S	+	+	+	+	+	+	+	+	+
Sugar Syrup		S	+	+	+	+	+	+	+	+	+
Sulfuric Acid	H ₂ SO ₄	98%	+30%	+50%	+20%	+50%	+85%	+	+	+	+
Sulfurous Acid	H ₂ SO ₃	A.C.	+	+	+(10%)	+	+	+	+	+	+
Sulfuryl Chloride	SO ₂ Cl ₂	100%	-	-	n	-	-	+	0	n	+
Tannic Acid	C ₇₆ H ₅₂ O ₄₆	50%	+	+	+	+	+	+	+	+	+
Tartaric Acid	C ₄ H ₆ O ₆	S	+(50%)	+	+	+	+	+	+/0	+	+
Tetrachloroethane	C ₂ H ₂ Cl ₄	100%	-	-	+	0	0	0	-	+	+
Tetrachloroethene	C ₂ Cl ₄	100%	-	-	+	0	0	0	-	+	+
Tetrahydrofuran	C ₄ H ₈ O	100%	-	-	+	0	0	-	-	-	+
Tetrahydro Naphthalene	C ₆ H ₄ C ₄ H ₈	100%	-	-	+	0	-	+	-	+	+
Thionyl Chloride	SOCl ₂	100%	-	-	n	-	-	+	+	-	+
Thiophene	C ₄ H ₄ S	100%	n	-	+	0	0	-	-	n	+
Tin II Chloride	SnCl ₂	S	+	0	-	+	+	+	+	+	+
Tin II Sulfate	SnSO ₄	S	+	+	+	+	+	+	+	+	+
Tin IV Chloride	SnCl ₄	S	n	+	-	+	+	+	+	+	+

