

CHEMICAL COMPATIBILITY GUIDE - WET CHEMICALS

E = Excellent | G= Good | F = Fair | P = Poor

Ratings are based on ambient temperature, low pressure and 100% concentrations. Exposure conditions that differ from these may affect ratings. Seal material selection is dependent on more than just chemical compatibility. Seal geometries, hardware design and application conditions are also factors in material selection. The compatibility data presented are based on the material's polymer content only. If you need assistance, please contact your local Greene, Tweed representative when selecting the appropriate Greene, Tweed & Co. product for your specific application.

Environment	Chemical Formula	Chemraz											Fluoraz 888	Fluoro	
		513	520	550	570	571	592	655	653	639	E38	661		742	931
Acetic Acid (10%)	CH ₃ COOH	F	F	F	F	F	F	P	F	G	F	F/E	G	G	G
Acetic Acid, glacial	CH ₃ COOH	P	P	F	E	E	F	P	F	G	F	F	P	P	P
Acetone	CH ₃ COCH ₃	E	E	E	E	E	E	E	E	E	E	E	P	P	P
Ammonium Fluoride (40%)	NH ₄ F	P	P	E	E	E	F	F	E	G	F	F	G	G	G
Ammonium Hydroxide (conc.)	NH ₄ OH	F	F	E	E	E	G	F	E	E	E	E	F	F	F
Aqua Regia	HNO ₃ :HCl	F	F	G	E	E	F	F	G	G	F	F	G	P	P
Buffered Oxide Etchants (BOE)	NH ₄ F:HF	P	P	E	E	E	F	P	E	G	F	F	G	G	G
Butanol	C ₄ H ₁₀ O	E	E	E	E	E	E	E	E	E	E	E	G	G	G
Butyl Acetate	CH ₃ COO(CH ₂) ₃ CH ₃	E	E	E	E	E	E	E	E	E	E	E	P	P	P
Carbon Tetrachloride	CCl ₄	G	G	G	G	G	G	G	G	G	G	G	P	G	G
Cellusolve Acetate	CH ₃ COOCH ₂ CH ₂ OCH ₂ CH ₃	E	E	E	E	E	E	E	E	E	E	E	P	P	P
Chromic Acid	CrO ₃ :(H ₂ CrO ₄)	P	P	E	E	E	F	P	E	G	P	P	G	G	G
Cyclohexane	C ₆ H ₁₂	E	E	E	E	E	E	E	E	E	E	E	G	G	G
Cyclohexanone	C ₆ H ₁₀ O	G	G	G	E	E	G	G	G	G	G	G	P	P	P
Deionized Water	H ₂ O	P	P	E	E	E	F	P	E	G	F	F	F	F	F
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Dimethyl sulfoxide (DMSO)	(CH ₃) ₂ SO	E	E	E	E	E	E	E	E	E	E	E	P	P	P
Ethylene Glycol Mono Methyl Ether Acetate (EGMEEA)	CH ₃ CH ₂ OCH ₂ CH ₂ COOCH ₃	G	G	G	G	G	G	G	G	G	G	G	P	E	E
Ethylene Glycol Methyl Ether Acetate (EGMEEA)	CH ₃ COOCH ₂ CH ₂ OC ₂ H ₅	G	G	G	G	G	G	G	G	G	G	G	P	E	E
Ethanol	CH ₃ CH ₂ OH	E	E	E	E	E	E	E	E	E	E	E	G	G	G
Ethyl Acetate	CH ₃ COOC ₂ H ₅	E	E	E	E	E	E	E	E	E	E	E	F	P	P
Ethyl Lactate	CH ₃ CH ₂	E	E	E	E	E	E	E	E	E	E	E	F	P	P

	OCOOC ₂ H ₅															
Ethylene Glycol	CH ₂ OHCH ₂ OH	E	E	E	E	E	E	E	E	E	E	E	G	G	G	
Freon TF	CCl ₂ FCClF ₂	P	P	P	P	P	P	P	P	G	P	P	P	G	G	
Glycerol	C ₃ H ₅ (OH) ₃	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Heptane	CH ₃ (CH ₂) ₅ CH ₃	E	E	E	E	E	E	E	E	E	E	E	G	G	G	
Hexamethyl- disilazane (HMDS)	(CH ₃) ₃ SiNHSi(CH ₃) ₃	E	E	E	E	E	E	E	E	E	E	E	F	P	P	
Hexane	CH ₃ (CH ₂) ₄ CH ₃	E	E	E	E	E	E	E	E	E	E	E	F	G	G	
Hydrochloric Acid (conc.)	HCl	P	P	E	E	E	F	P	E	G	F	F	F	G	G	
Hydrofluoric Acid (49%)	HF	P	P	E	E	E	F	P	E	G	F	F	F	G	G	
Hydrofluoric Acid (dilute)	HF	P	P	E	E	E	F	P	E	G	F	F	F	G	G	
Hydrogen Peroxide (30%)	H ₂ O ₂	E	E	G	E	E	E	F	G	E	E	E	G	G	G	
Isobutanol	C ₄ H ₁₀ O	E	E	E	E	E	E	E	E	E	E	E	G	G	G	
Isopropanol (IPA)	CH ₃ CHOHCH ₃	E	E	E	E	E	E	E	E	E	E	E	G	G	G	
Methanol	CH ₃ OH	E	E	E	E	E	E	E	E	E	E	E	F	F	F	
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Methyl Ethyl Ketone (MEK)	CH ₃ COCH ₂ CH ₃	E	E	E	E	E	E	E	E	E	E	E	P	P	P	
Methyl Isobutyl Ketone (MIBK)	(CH ₃) ₂ CHCH ₂ COCH ₃	E	E	E	E	E	E	E	E	E	E	E	P	P	P	
Methylene Chloride	CH ₂ Cl ₂	E	E	E	E	E	E	E	E	E	E	E	P	G	G	
Mixed Acid Etch (HNO ₃ <20%)	--	P	P	E	E	E	F	P	E	G	F	F	G	F	F	
Monoethanol- amine (MEA)	HOCH ₂ CH ₂ NH ₂	G	G	G	G	G	G	G	G	G	G	G	P	P	P	
Nitric Acid (conc.)	HNO ₃	P	P	E	E	E	F	P	E	G	F	F	G	G	G	
N-Methyl Pyrrolidone (nMP)	CH ₃ OCH ₂ OCH ₂ CH ₂ OH	E	E	E	E	E	E	E	E	E	E	E	G	P	P	
Neutral Oxide Etchants (NOE)	Ethylene Glycol/nNH ₄ F: H ₂ O: Surfactant	P	P	E	E	E	F	P	E	G	F	--	--	G	G	
Ozonated Deionized Water	O ₃ :H ₂ O	P	P	G	E	E	F	P	G	G	F	F	G	G	G	
Propylene Glycol Mono Methyl Ether Acetate (PGMEA)	--	E	E	E	E	E	E	E	E	E	E	E	F	P	P	
Pentane	CH ₃ (CH ₂) ₃ CH ₃	E	E	E	E	E	E	E	E	E	E	E	F	G	G	
P-Etch	HNO ₃ :HF:DI H ₂ O (3:5:92)	P	P	G	E	E	F	P	G	G	F	F	G	G	G	

Petroleum Ether	--	E	E	E	E	E	E	E	E	E	E	E	G	G	G
Phosphoric Acid (conc.)	H ₃ PO ₄	P	P	E	E	E	F	P	E	G	F	F	G	G	G
Piranha	H ₂ SO ₄ :H ₂ O ₂	P	P	E	E	E	F	P	E	G	F	F	G	G	G
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Potassium Hydroxide (conc.)	KOH	P	P	E	E	E	F	P	E	G	F	F	E	F	F
Propylene Glycol	CH ₃ CHOHCH ₂ OH	E	E	E	E	E	E	E	E	E	E	E	E	G	G
RCA Etch	H ₃ PO ₄ :CH ₃ CO ₂ H:HNO ₃ :DI H ₂ O(75:15:5:5)	P	P	E	E	E	F	P	E	G	F	F	G	G	G
SC1	NH ₄ OH:H ₂ O ₂ :H ₂ O	P	P	E	E	E	F	P	E	G	F	F	G	G	G
SC2	HCl:H ₂ O ₂ :DI H ₂ O	P	P	E	E	E	F	P	E	G	F	F	G	G	G
Silicone Oils	--	E	E	E	E	E	E	E	E	E	E	E	E	G	G
Sodium Hydroxide (conc.)	NaOH	P	P	E	E	E	F	P	E	G	F	F	E	F	F
Sulfuric Acid (conc.)	H ₂ SO ₄	P	P	E	E	E	F	P	E	G	F	F	G	G	G
Tetrachloroethylene (Perchloroethylene)	C ₂ Cl ₄	E	E	E	E	E	E	E	E	E	E	E	F	E	E
Tetramethyl Ammonium Hydroxide (TMAH) 5%	(CH ₃) ₄ NOH	F	F	G	E	E	F	F	F	G	F	F	E	F	F
Tetramethylcyclotetra-siloxane (TMCTS)	(HSi(CH ₃)O) ₄	E	E	E	E	E	E	E	E	E	E	E	G	G	G
Toluene	C ₆ H ₅ CH ₃	E	E	E	E	E	E	E	E	E	E	E	P	G	G
Trichloroethane	C ₂ H ₃ Cl ₃	E	E	E	E	E	E	E	E	E	E	E	P	G	G
Trichloroethylene	CHCl:CCl ₂	E	E	E	E	E	E	E	E	E	E	E	P	G	G
Trichlorofluoromethane (F-11)	Cl ₃ SiC ₆ H ₅	G	G	G	G	G	G	G	G	G	G	G	P	G	G
Trichlorosilane	SiHCl ₃	E	E	E	E	E	E	E	E	E	E	E	P	G	G
Trichlorotrifluoroethane (F-113)	CCl ₂ FCFCF ₂	G	G	G	G	G	G	G	G	E	G	G	P	G	G
Xylene	C ₆ H ₄ (CH ₃) ₂	E	E	E	E	E	E	E	E	E	E	E	P	G	G

Statements and recommendations are based on our experience and knowledge of typical applications of this product and shall not constitute a guarantee of performance nor a modification or alteration of our standard warranty which shall be applicable to such products.

Prior to actual use it is recommended that compatibility tests be run to determine suitability in a specific application. This is critical where failure could result in injury or damage. A regular program of inspection and replacement should be implemented. Greene, Tweed technical personnel are available to help with a recommendation.