

KEMFLEX CHEMICAL RESISTANCE CHART (UHMWPE)

Applies to N2700 Kemflex, N2718 Super Kemflex, N2836 Kemflex Steel Max, N2916 Kemflex SD EN 12115

The table below summarizes the results of various chemical resistance tests conducted on the material used for the hose tube—the component that comes into direct contact with chemicals. Testing was performed on 50mm (2") x 25mm (1") x 1mm (0.040") samples of the tube material, aged for 55 days in the specified chemical environments at two different temperatures: 68°F and 140°F. Please use this chart as a general guideline only. These results reflect the behavior of the tube material alone and do not represent testing of the complete hose assembly. Actual performance may vary depending on application-specific factors and additional environmental or mechanical stresses.

Symbols	
E	Excellent - Swelling is < 3%, or alternatively, weight loss is <0.5%. Break elongation not significantly impacted.
T	Tolerable - Swelling is 3 - 8%, or alternatively, weight loss is 0.5% - 5% and/or break elongation decreased by <50%.
X	Not Recommended - Swelling is > 8%, or alternatively, weight loss is > 5% and/or break elongation decreased by >50%.
D	Discoloration

+	Aqueous solutions in all concentrations
++	Under slight mechanical stress
+++	Or alternatively boiling point

Substance	68°F	140°F		Substance	68°F	140°F	
4-Methyl-2-pentanol	E	E→D		Calcium chloride, 10% +	E	E	
Acetaldehyde	E	T+		Camphor	E	T	
Acetic acid, 10%	E	E		Carbon disulfide	T	N/A	
Acetic acid, 100% (glacial)	E	E	D	Carbon tetrachloride	T++→X	X	
Acetic anhydride	E	T	D	Carbonic acid	E	E	
Acetone	E	E+++		Castor oil	E	E	
Acids, aromatic	E	E		Caustic potash	E	E	
Acrylic Acid	E	E & higher		Caustic soda	E	E	
Acrylonitrile	E	E		Chloral hydrate +	E	E	D
Allyl alcohol, 96%	E	E		Chlorine gas, dry	T	X	
Alum	E	E		Chlorine gas, moist	T	X	
Aluminum chloride +	E	E		Chlorine, liquid	X	X	
Ammonia +	E	E		Chloroacetic acid (mono)	E	E	
Ammonia, gaseous	E	E		Chlorobenzene	T	X	
Ammonia, liquid	E			Chloroethanol	E	E	D
Ammonium salts +	E	E		Chloroform	T++→X	X	
Amyl acetate	E	E		Chlorosulphonic acid	X	X	
Aniline	E	E		Chromic acid, 10%	E	E	
Anisole	T	T→X		Chromic acid, 80%	E	T	D
Antimony trichloride	E	E		Citric acid, 10% & conc.	E	E	
Aqua regia	X	X		Clophen A50 & A60	E	T→X	
Beer	E	E		Coconut oil	E	T	
Beeswax	E	T++→X		Common salt, aqueous, saturated	E	E	
Benzaldehyde	E	E→T		Copper salts +	E	E	
Benzene	T	T		Corn oil	E	T	
Benzenesulphonic acid	E	E		Creosote	E	E	D
Benzoic acid +	E	E		Cresol	E	E	D
Benzoyl chloride	T	T		Cyclohexane	E	E	
Benzyl alcohol	E	E		Cyclohexanol	E	E	
Borax +	E	E		Cyclohexanone	E	T	
Boric acid +	E	E		Dekalin [®]	E	T	
Brine (saturated)	E	E		Desiccator grease (Merck 4318)	E	T	
Bromine, liquid	X	X		Detergents, synthetic	E	E	
Bromochloromethane	X	X		Dibutyl ether	E→T	X	
Butanol	E	E		Dibutyl phthalate	E	T	
Butoxyl (Methoxy butyl acetate)	E	T		Dichloroacetic acid methyl ester	E	E	
Butyl acetate	E	T		Dichloroacetic acid, 50%	E	E	
Butylene glycol	E	E		Dichloroacetic acid, 100%	E	T	D
Butyric acid	E	T		o-Dichlorobenzene	T	X	
Calcium carbonate, 10%	E	E		p-Dichlorobenzene	T	X	
Calcium chloride, conc.	E	E		Dichloroethylene	X	X	
Calcium hypochlorite, bleach +	E	E		Diesel fuel oil	E	E	
Calcium nitrate, 50%	E	E		Diethyl ether	E→T	T+++	

Substance	68°F	140°F		Substance	68°F	140°F	
Diisobutyl ketone	E	T→X		Hydrocyanic acid	E	E	
Dimethyl formamide	E	E→T		Hydrofluoric acid, 10%	E	E	
Dimethyl sulphoxide	E	E		Hydrofluoric acid, 40%	E	T	
Dimethylamine	E	T		Hydrofluoric acid, 70%	E	T	
Dioxane	E	E		Hydrogen peroxide, 30%	E	E	
Drilling acid "Hoechst"(water soluble)	T	T		Hydrogen peroxide, 90%	E	T	
Emulsifiers	E	E		Hydrogen sulphide	E	E	
Epichlorohydrin	E	E		Hydrosulphite, 10% aqueous	E	E	
Esters, aliphatic	E	E→T		Iodine tincture, DAB 6	E	T	D
Ethanol, 96%	E	E		Isooctane	E	T	
Ether	E→T	T+++		Isopropanol	E	E	
Ethyl acetate	E	T		Isopropyl ether	E→T	T	
Ethylene chloride (Di-chloroethane)	T	T		Jams	E	E	
Ethylene glycol	E	E		Kerosine	E	T	
Ethylenediaminetetraacetic acid	E	E		Ketones	E	E→T	
Euron B®	T	T		Lactic acid	E	E	
Euron G®	E	E		Linseed oil	E	E	
Fatty acids (>C6)	E	E→T		Magnesium chloride +	E	E	
Ferric chloride +	E	E		Maleic acid	E	T	
Fluorine	X	X		Malic acid, 50%	E	E	
Fluosilicic acid +	E	E		Menthol	E	T	
Formaldehyde, 40% aqueous	E	E		Mercuric chloride (corrosive sublimate)	E	E	
Formic acid	E	E		Mercury	E	E	
Frigen®	T	X		Methanol	E	E	
Fruit juices	E	E		Methoxybutanol	E	T	
Fruit pulp	E	E		Methyl ethyl ketone	E	E	
Furfuryl alcohol	E	E	D	Methyl glycol	E	E	
Gasoline	E	T		Methylcyclohexane	T	T→X	
Gelatine	E	E		Methylene Chloride	T	T+++	
Glycerine	E	E		Milk	E	E	
Glycol, concentrated	E	E		Mineral oils	E	E→T	
Glycolic acid butyl ester	E	E		Molasses	E	E	
Glycolic acid, 55%	E	E		Monochloroacetic acid	E	E	
Glycolic acid, 70%	E	E		Monochloroacetic acid ethyl ester	E	E	
Grisiron 8302®	T	T		Monochloroacetic acid methyl ester	E	E	
Grisiron 8702®	E	E		Morpholine	E	E	
Halothane	T	T→X		Motor oils, heavy-duty oils	E	E→T	
Heating oil	E	T		Naphtha	E	T	
Hydraulic fluid	E	T		Naphthalene	E	T	
Hydrazine hydrate	E	E		Nickel salts +	E	E	
Hydrobromic acid, 50%	E	E		Nitric acid, 25%	E	E	
Hydrochloric acid, all conc.	E	E		Nitric acid, 50%	T	X	D
Hydrochloric acid gas, dry & moist	E	E		Nitrobenzene	E	T	

Substance	68°F	140°F		Substance	68°F	140°F	
o-Nitrotoluene	E	T		Pseudocumene	T	T	
Nitrous gases	E	E		Pyridine	E	T	
Oils, ethereal	T	T		Sea Water	E	E	
Oils, linseed & olive	E	E		Silicic acid	E	E	
Oils, lubricating	E	E		Silicone oil	E	E	
Oils, lubricating, detergent	E	E		Silver nitrate	E	E	
Oils, penetrating	N/A	N/A		Sodium benzoate	E	E	
Oleic acid, 10%	E	E		Sodium borate	E	E	
Oleic acid, conc.	E	T		Sodium carbonate, 10% +	E	E	
Oleum	T	T		Sodium chloride, 10%	E	E	
Oxalic acid, 50%	E	E		Sodium chlorite bleach	T	X	
Oxygen, liquid (not rec. as seals - flammable)	X	X		Sodium chlorite, 50%	E	E	
Ozone	T	X		Sodium dodecylbenzene-sulphonate	E	E	
Paraffin, liquid	E	E		Sodium hydroxide, 30% aqueous	E	E	
Perchloric acid, 20%	E	E		Sodium hydroxide, 60% aqueous	E	E	
Perchloric acid, 50%	E	T		Sodium hypochlorite, all conc.	E	E	
Perchloric acid, 70%	E	T	D	Sodium nitrate +	E	E	
Petrol	E	E→T		Sodium peroxide, 10%	E	N/A	
Petrol/benzene mixture (BV-Aral)	E	T		Sodium peroxide, saturated	T	N/A	
Petroleum ether	E	T		Sodium silicate +	E	E	
Phenol	E	E	D	Sodium sulfide +	E	E	
Phenyl sulphonate	E	E		Sodium thiosulphate	E	E	
Phosphates +	E	E		Spermaceti	E	T	
Phosphoric acid, 10%	E	E		Spindle oil	E→T	T	
Phosphoric acid, 25%	E	E		Starch	E	E	
Phosphoric acid, 50%	E	E		Stearic acid	E	T	
Phosphoric acid, 95%	E	E	D	Succinic acid, 50%	E	E	
Phosphorus oxychloride	E	T		Sugar syrup	E	E	
Phosphorus pentoxide	E	E		Sulphates +	E	E	
Phosphorus trichloride	E	T		Sulphur	E	E	
Photographic developers	E	E		Sulphur dioxide, dry	E	E	
Phthalic acid, 50%	E	E		Sulphur dioxide, moist	E	E	
Polyglycols	E	E		Sulphur trioxide	X	X	
Polysolvan O® (Glycolic acid cutyl ester)	E	E		Sulphuric acid, 10%	E	E	
Potassium bichromate, 40%	E	E		Sulphuric acid, 50%	E	E	
Potassium chloride +	E	E		Sulphuric acid, 75%	E	T	
Potassium cyanide, aqueous, saturated	E	E		Sulphuric acid, 98%	E	X	D
Potassium hydroxide, 30%, aqueous	E	E		Sulphurous acid	E	E	
Potassium nitrate, aqueous, saturated	E	E		Sulphururil chloride	X	N/A	
Potassium permanganate	E	E	D	Synthetic detergents	E	E	
Propionic acid, 50%	E	E		Tallow	E	E	
Propionic acid, 100%	E	T		Tannic acid, 10%	E	E	
Propylene glycol	E	E		Tartaric acid	E	E	

Substance	68°F	140°F		Substance	68°F	140°F	
Tetrabromoethane	T++→X	X		Tricresyl phosphate	E	E	
Tetrachloroethane	E++→T	X		Triethanolamine	E	E	D
Tetrahydrofurane	E++→X	X		Turpentine oil	E→T	T	
Tetralin [®]	E	T		Tutogen [®] "U"	E	E	
Thionyl chloride	X	N/A		Tween [®] 20 & 80	E	T	
Thiophene	T	T		Urea, 33%	E	E	
Toluene	T	X		Vaseline [®]	E++→T	T	
Transformer oil	E	T		Water, distilled	E	E	
Tri-B-chloroethyl phosphate	E	E		Water, sea	E	E	
Tributyl phosphate	E	E		White spirit	E→T	T	
Trichloroacetic acid, 50%	E	E		p-Xylene	T	X	
Trichloroacetic acid, 100%	E	T→X		Yeast	E	E	
Trichloroethylene	E++→X	X		Zinc Chloride +	E	E	