

Chemical Resistance Tables

July 2023		Chemical Resistance Ratings	
Rev			
A	Fluid has little or no effect		
B	Fluid has minor to moderate effect		
C	Fluid has severe effect		
X	No Data - Likely severe effect		
T	No Data - Likely minor effect		

July 2023		Geomembrane Material Codes	
Rev			
HD	High Density Polyethylene (HDPE)		
PV	Polyvinyl Chloride (PVC)		
EL	Enviro Liner®		
OR	Oil Resistant RPE® (OR RPE®)		
PU	Polyurethane		
EI	Ethylene Interpolymer Alloy (EIA) (HAZGARD 5000HT)		

July 2023		Geomembrane Materials Chemical Resistance Ratings					
Material	%	HDPE	PVC	Enviro Liner	Oil Resistant RPE	Polyurethane	Ethylene Interpolymer Alloy (EIA) (HAZGARD 5000 HT)
Acetic Acid	5%	A	A	A	A	A	A
Acetic Acid	50%	A	X	A	B	X	C
Acetic Acid	Gla.	A	C	A	B	X	X
Acetic Anhydride		A	X	C	C	X	X
Acetone		A	C	B	A	C	X
Alkyl Alcohol			C	A		T	T
Alkyl Chloride			C			X	X
Aluminum Chloride		A	B	A	A	T	T
Aluminum Flouride		A	X	A	A	T	T
Aluminum Sulfate		A	A	A	A	T	T
Ammonium Carbonate		A	A	A	A	T	T
Ammonium Chloride		A	A	A	A	T	T
Ammonium Fluoride	20%	A	T	A	A	T	T
Ammonium Hydroxide	30%	A	25	A	A	T	A
Ammonium Nitrate		A	25	A	A	T	T
Ammonium Phosphate		A	T	A	A	T	T
Ammonium Sulphate		A	A	A	A	T	B
Ammonium Sulphide		A	22		A	T	T
Amyl Acetate		B	C	C	C	T	X
Amyl Alcohol		A	T	A	B	T	T
Amyl Chloride		B	T	A	C	T	X
Aniline		A	X	B	C	X	X
Animal Oil		T	B	A	A		A
Antimony Chloride		A	T		A	A	T
Aqua Regia		B	B	C	C	X	X
ASTM Fuel A		T	X		T	A	A
ASTM Fuel B		T	C		T	A	B

For up-to-date technical information, be sure to visit us online at www.LayfieldGeo.com

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Material	%	HDPE	PVC	Enviro Liner	Oil Resistant RPE	Polyurethane	Ethylene Interpolymer Alloy (EIA) (HAZGARD 5000 HT)
ASTM Fuel C		T	C		T	B	
ASTM Oil #1		T	T		T	T	T
ASTM Oil #2		T	X		T	T	A
ASTM Oil #3		T	X		T	T	T
Asphalt		A	C	A	A	T	T
Barium Carbonate		A	T	A	A	T	T
Barium Hydroxide		A	T	A	A	T	T
Barium Sulphate		A	T	A	A	T	T
Benzene	<1%	T	T	B	T	T	T
Benzene	25%	T	X	C	T	T	T
Benzene	100	B	X	C	C	T	C
Benzoic Acid		A	T	A	A	T	T
Borax Solutions		A	T	A	A	T	T
Boric Acid		A	T	A	A	T	T
Bromic Acid	10%	A	T		A	X	T
Bromine; Anhydrous		B	X	C	C	X	
Butyl Acetate		B	X	B	B	X	X
Butyl Phenol		A	X		A	X	X
Butyric Acid		A	T	C	C	X	X
Calcium Bisulphate		A	T	A	A	T	T
Calcium Carbonate		A	A	A	A	T	T
Calcium Chloride		A	A	A	A	T	T
Calcium Hydroxide		A	T	A	A	T	T
Calcium Hypochlorite		A	A	A	A	T	A
Calcium Nitrate	50%	A	T	A	A	T	T
Calcium Sulphate		A	2%	A	A	A	T
Carbon Disulfide		B	X	C	C	X	X
Carbon Tetrachloride		C	C	C	C	C	X
Carbonic Acid		A	T	A	A	T	T
Castor Oil		A	X	A	B	T	T
Chlorine Gas		C	X	X	C	X	T
Chloroacetic Acid		A	X	A	A	X	X
Chlorobenzene		B	C	C	C	X	X
Chloroform		C	C	C	C	X	X
Chlorosulfonic Acid		C	C	C	C	X	X
Chrome Alum		A	T		A	T	T
Chromic Acid	30%	A	T	A	B	X	B
Chromium Trioxide		A	T		A	X	
Citric Acid		A	A	A	B	T	T
Copper Chloride		A	T	A	A	T	T
Copper Nitrate		A	T	A	A	T	T
Copper Sulphate		A	T	A	A	T	T
Corn Oil		A	C	A	A	T	A
Cottonseed Oil		A	C	A	B	T	A
Crude Oil		T	C	B		T	T
Cyclohexane		C	X	C	C	T	
Cyclohexanol		A	X	C	A	T	
Cyclohexanol		A	X	C	A	T	
Cyclohexanone		C	C	C	C	X	X

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Geomembrane Materials Chemical Resistance Ratings

Material	%	HDPE	PVC	Enviro Liner	Oil Resistant RPE	Polyurethane	Ethylene Interpolymer Alloy (EIA) (HAZGARD 5000 HT)
Dextrin		A	T	A	A	T	T
Dibutyl Phthalate		B	X	B	B	X	C
Diesel Fuel		A	C	B	A	A	A
Diethyl Ether		B	X	C	B	X	X
Diethyl Keytone		B	X	B	B	X	X
Diethyl Sebacate			X			X	X
Dimethylamine		C	C	C	C	X	X
Diocetyl Phthalate		A	X		A	X	C
Disodium Phosphate		A	T		A	T	T
Epichlorohydrin		A	X		A		
Ethyl Acetate		B	C	B	B		C
Ethyl Alcohol		A	A	A	A		A
Ethyl Bromide		A	X		B		X
Ethyl Chloride		C	X	C	C		X
Ethylene Dichloride		B	X	C	B	X	X
Ethylene Glycol		A	A	A	A	T	A
Ethylene Oxide		A	X	B	A	X	X
Ferric Chloride		A	T	A	A	T	T
Ferric Nitrate		A	T	A	A	T	T
Ferrous Chloride		A	T	A	A	T	T
Ferrous Sulfate		A	T	A	A	T	T
Fluosilicic Acid		A	A	A	A	X	T
Formaldehyde	40%	A	C	A	A	B	
Formic Acid		A	C	A	A	X	
Furfural		B	X	C	B	X	X
Gallic Acid		A	T	A	B	X	
Gasoline	<25 BXT	B	C	B- C	B	A	A
Gasoline	>25 BXT	B	C		B	A	
Glucose		A	T	A	A	T	T
Glycerine		A	X	A	A	T	A
Hexane		B	C	B	B	A	T
Hydraulic Fluid		A	C	B	A	X	A
Hydrazine		A	X	C	A	X	X
Hydrobromic Acid		A	T	A	A	X	T
Hydrochloric Acid	20%	A	A	A	A	X	A
Hydrochloric Acid	37%	A	A	A	A	X	A
Hydrocyanic Acid		A	T	A	A	T	T
Hydrofluoric Acid	20%	A	T	A	A	X	T
Hydrofluoric Acid	75%	A	T	A	A	X	T
Hydrofluosilicic Acid	30%	A	A		A		T
Hydrogen Peroxide	3%	A	A	A	A	A	A
Hydrogen Peroxide	10%	A	A	A	A	T	T
Hydrogen Sulfide		A	A	A	A	T	T
Hydroquinone		A	T	A	A		
Iso Octane		A	X		A	A	T
Iso Octane		A	X		A	A	T
Isopropyl Alcohol	10%	A	T	A	A	A	A
JP-4 Jet Fuel		A	X		A	A	A

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Geomembrane Materials Chemical Resistance Ratings

Material	%	HDPE	PVC	Enviro Liner	Oil Resistant RPE	Polyurethane	Ethylene Interpolymer Alloy (EIA) (HAZGARD 5000 HT)
Jet A		A	X	B	A	T	T
Jet B		A	X		A	T	T
Kerosene		B	A	B	B	A	A
Lactic Acid		A	B	A	A	X	T
Lead Acetate		A	T	A	A	T	T
Linseed Oil		A	X	B	A	T	A
Lubricating Oil		A	C	B	A	T	T
Magnesium Carbonate		A	A	A	A	T	T
Magnesium Chloride		A	T	A	A	T	T
Magnesium Hydroxide		A	T	A	A	T	A
Magnesium Nitrate		A	T	A	A	T	T
Magnesium Sulphate		A	T	A	A	T	T
Malic Acid		A	T		A	T	T
Mercuric Chloride		A	T		A	T	T
Methyl Alcohol		A	T	A	T		A
Methyl Ethyl Keytone		C	C	C	C	C	C
Mineral Oil		A	B	B	B	A	T
Mineral Spirits		A	X	B	A	T	T
Naptha		B	B	B	B	X	T
Napthalene		A	C	C	B	X	X
Nitric Acid	10%	A	B	A	A	X	A
Nitric Acid	50%	A	B	A	A	X	C
Nitric Acid	70%	A	X	B	B	X	X
Nitro Benzene		C	C	C	C	X	X
Oleic Acid		B	T		B	T	T
Oleum	25%	C	X		C	X	
Oxalic Acid		A	A	A	A	T	
Palmatic Acid		A	T		A	T	T
Perchloroethylene	<1%	T	T	B	T	T	T
Perchloroethylene	100	C	X	C	C	C	C
Phenol		A	X	C	A	C	B
Phenol Formaldahyde			C			X	T
Phosphoric Acid	50%	A	A	A	A	C	B
Phosphoric Acid	75%	A	A	A	A	X	X
Phosphorous Yellow			X			X	T
Phosphorous Pentoxide		A	T		A	X	X
Photographic Solutions		A		A	A	T	T
Phthalate Plasticizer		A	X		A	C	C
Pickling Solutions		A		A	A	X	X
Potassium Bicarbonate		A	A	A	A	T	T
Potassium Carbonate		A	A	A	A	T	T
Potassium Chromate	40%	A	T	A	A	T	T
Potassium Cyanide		A	T	A	A	T	T
Potassium Dichromate		40	T	A	A	T	T
Potassium Hydroxide		A	25	A	A	T	T
Potassium Nitrate		A	A	A	A	T	T
Potassium Perchlorate	10%	A	T	A	A	T	T
Potassium Permaganate		20	T	A	A	T	T
Potassium Sulfate		A	T	A	A	A	T

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Material	%	HDPE	PVC	Enviro Liner	Oil Resistant RPE	Polyurethane	Ethylene Interpolymer Alloy (EIA) (HAZGARD 5000 HT)
Pyradine		A	X	A	A	X	X
Salt Water		A	A	A	A	A	A
Silicone Grease		A	T	A	A		T
Silver Nitrate		A	X	A	A	T	T
Skydrol Hydraulic Fluid			X	C		C	C
Soap Solutions		B	A	A	B	A	A
Sodium Acetate		A	T	A	A	A	T
Sodium Bicarbonate		A	A	A	A	A	T
Sodium Bisulphite		A	T	A	A	T	T
Sodium Borate		A	T	A	A	T	T
Sodium Carbonate		A	A	A	A	T	T
Sodium Chlorate		A	T	A	A	T	T
Sodium Chloride		A	A	A	A	A	T
Sodium Dichromate	20%	100	T	A	A	T	T
Sodium Ferrocyanide		A	T	A	A	T	T
Sodium Fluoride		A	T	A	A	T	T
Sodium Hydroxide	25%	A	A	A	A	T	A
Sodium Hydroxide	60%	A	X	A	A		A
Sodium Hypochlorite		A	12	A	A	A	A
Sodium Nitrate		A	T	A	A	T	T
Sodium Sulphate		A	A	A	A	T	T
Soybean Oil		A	X		A	T	A
Stannous Chloride		A	T	A	A	T	X
Stearic Acid		A	T	A	B	A	A
Styrene		C	X		C	X	X
Sulphuric Acid	10%	A	A	A	A	X	A
Sulphuric Acid	40%	A	B	A	A	X	
Sulphuric Acid	98%	B	C	B	B	X	C
Tannic Acid		10	T	A	A	X	T
Tataric Acid		A	T	A	A	T	T
Tetrahydrofuran		B	C	C	C	X	X
Toluene	<1%	T	T	B	T	T	T
Toluene	25%	T	X	C	T	T	T
Toluene	100	B	X	C	B	C	C
Transformer Oil		A	C	B	A	T	T
Triethanolamine		A	X		A	B	X
Trisodium Phosphate		A	T	A	A	T	T
Tung Oil			X				T
Turpentine		B	T	C	B	B	T
Urea		A	30	A	A	T	T
Vegetable Oil		A	C	B	A	A	A
Water		A	A	A	A	A	A
Xylene	<1%	T	T	B	T	T	T
Xylene	25%	T	X	C	T	T	T
Xylene	100	C	X	C	C	X	C
Zinc Chloride		A	A	A	A	T	T
Zinc Sulphate		A	T	A	A	T	T