

Chemical Resistance Chart

GSE is the world's leading supplier of high quality, polyethylene geomembranes and geonets. GSE polyethylene geomembranes and geonets are resistant to a great number and combinations of chemicals. Note that the effect of chemicals on any material is influenced by a number of variable factors such as temperature, concentration, exposed area and duration. Many tests have been performed that use geomembranes and geonets and certain specific chemical mixtures. Naturally, however, every mixture of chemicals cannot be tested for, and various criteria may be used to judge performance. Reported performance ratings may not apply to all applications of a given material in the same chemical. Therefore, these ratings are offered as a guide only.

Medium	Concentration	Resistance at:		Medium	Concentration	Resistance at:	
		20° C (68° F)	60° C (140° F)			20° C (68° F)	60° C (140° F)
A				Copper chloride	sat. sol.	S	S
Acetic acid	100%	S	L	Copper nitrate	sat. sol.	S	S
Acetic acid	10%	S	S	Copper sulfate	sat. sol.	S	S
Acetic acid anhydride	100%	S	L	Cresylic acid	sat. sol.	L	—
Acetone	100%	L	L	Cyclohexanol	100%	S	S
Adipic acid	sat. sol.	S	S	Cyclohexanone	100%	S	L
Allyl alcohol	96%	S	S	D			
Aluminum chloride	sat. sol.	S	S	Decahydronaphthalene	100%	S	L
Aluminum fluoride	sat. sol.	S	S	Dextrine	sol.	S	S
Aluminum sulfate	sat. sol.	S	S	Diethyl ether	100%	L	—
Alum	sol.	S	S	Diocetylphthalate	100%	S	L
Ammonia, aqueous	dil. sol.	S	S	Dioxane	100%	S	S
Ammonia, gaseous dry	100%	S	S	E			
Ammonia, liquid	100%	S	S	Ethanediol	100%	S	S
Ammonium chloride	sat. sol.	S	S	Ethanol	40%	S	L
Ammonium fluoride	sol.	S	S	Ethyl acetate	100%	S	U
Ammonium nitrate sat. sol.	S	S	S	Ethylene trichloride	100%	U	U
Ammonium sulfate	sat. sol.	S	S	F			
Ammonium sulfide	sol.	S	S	Ferric chloride	sat. sol.	S	S
Amyl acetate	100%	S	L	Ferric nitrate	sol.	S	S
Amyl alcohol	100%	S	L	Ferric sulfate	sat. sol.	S	S
B				Ferrous chloride	sat. sol.	S	S
Barium carbonate	sat. sol.	S	S	Ferrous sulfate	sat. sol.	S	S
Barium chloride	sat. sol.	S	S	Fluorine, gaseous	100%	U	U
Barium hydroxide	sat. sol.	S	S	Fluorosilicic acid	40%	S	S
Barium sulfate	sat. sol.	S	S	Formaldehyde	40%	S	S
Barium sulfide	sol.	S	S	Formic acid	50%	S	S
Benzaldehyde	100%	S	L	Formic acid	98-100%	S	S
Benzene	—	L	L	Furfuryl alcohol	100%	S	L
Benzoic acid	sat. sol.	S	S	G			
Beer	—	S	S	Gasoline	—	S	L
Borax (sodium tetraborate)	sat. sol.	S	S	Glacial acetic acid	96%	S	L
Boric acid	sat. sol.	S	S	Glucose	sat. sol.	S	S
Bromine, gaseous dry	100%	U	U	Glycerine	100%	S	S
Bromine, liquid	100%	U	U	Glycol	sol.	S	S
Butane, gaseous	100%	S	S	H			
1-Butanol	100%	S	S	Heptane	100%	S	U
Butyric acid	100%	S	L	Hydrobromic acid	50%	S	S
C				Hydrobromic acid	100%	S	S
Calcium carbonate	sat. sol.	S	S	Hydrochloric acid	10%	S	S
Calcium chlorate	sat. sol.	S	S	Hydrochloric acid	35%	S	S
Calcium chloride	sat. sol.	S	S	Hydrocyanic acid	10%	S	S
Calcium nitrate	sat. sol.	S	S	Hydrofluoric acid	4%	S	S
Calcium sulfate	sat. sol.	S	S	Hydrofluoric acid	60%	S	L
Calcium sulfide	dil. sol.	L	L	Hydrogen	100%	S	S
Carbon dioxide, gaseous dry	100%	S	S	Hydrogen peroxide	30%	S	L
Carbon disulfide	100%	L	U	Hydrogen peroxide	90%	S	U
Carbon monoxide	100%	S	S	Hydrogen sulfide, gaseous	100%	S	S
Chloroacetic acid	sol.	S	S	Lactic acid	100%	S	S
Carbon tetrachloride	100%	L	U	Lead acetate	sat. sol.	S	—
Chlorine, aqueous solution	sat. sol.	L	U	Magnesium carbonate	sat. sol.	S	S
Chlorine, gaseous dry	100%	L	U	Magnesium chloride	sat. sol.	S	S
Chloroform	100%	U	U	Magnesium hydroxide	sat. sol.	S	S
Chromic acid	20%	S	L	Magnesium nitrate	sat. sol.	S	S
Chromic acid	50%	S	L	Maleic acid	sat. sol.	S	S
Citric acid	sat. sol.	S	S	Mercuric chloride	sat. sol.	S	S
				Mercuric cyanide	sat. sol.	S	S
				Mercuric nitrate	sol.	S	S

Medium	Concentration	Resistance at:		Medium	Concentration	Resistance at:	
		20° C (68° F)	60° C (140° F)			20° C (68° F)	60° C (140° F)
Mercury	100%	S	S	Silver acetate	sat. sol.	S	S
Methanol	100%	S	S	Silver cyanide	sat. sol.	S	S
Methylene chloride	100%	L	—	Silver nitrate	sat. sol.	S	S
Milk	—	S	S	Sodium benzoate	sat. sol.	S	S
Molasses	—	S	S	Sodium bicarbonate	sat. sol.	S	S
N				Sodium biphosphate	sat. sol.	S	S
Nickel chloride	sat. sol.	S	S	Sodium bisulfite	sol.	S	S
Nickel nitrate	sat. sol.	S	S	Sodium bromide	sat. sol.	S	S
Nickel sulfate	sat. sol.	S	S	Sodium carbonate	sat. sol.	S	S
Nicotinic acid	dil. sol.	S	—	Sodium chlorate	sat. sol.	S	S
Nitric acid	25%	S	S	Sodium chloride	sat. sol.	S	S
Nitric acid	50%	S	U	Sodium cyanide	sat. sol.	S	S
Nitric acid	75%	U	U	Sodium ferricyanide	sat. sol.	S	S
Nitric acid	100%	U	U	Sodium ferrocyanide	sat. sol.	S	S
O				Sodium fluoride	sat. sol.	S	S
Oils and Grease	—	S	L	Sodium hydroxide	40%	S	S
Oleic acid	100%	S	L	Sodium hydroxide	sat. sol.	S	S
Orthophosphoric acid	50%	S	S	Sodium hypochlorite	15% active chlorine	S	S
Orthophosphoric acid	95%	S	L	Sodium nitrate	sat. sol.	S	S
Oxalic acid	sat. sol.	S	S	Sodium nitrite	sat. sol.	S	S
Oxygen	100%	S	L	Sodium orthophosphate	sat. sol.	S	S
Ozone	100%	L	U	Sodium sulfate	sat. sol.	S	S
P				Sodium sulfide	sat. sol.	S	S
Petroleum (kerosene)	—	S	L	Sulfur dioxide, dry	100%	S	S
Phenol	sol.	S	S	Sulfur trioxide	100%	U	U
Phosphorus trichloride	100%	S	L	Sulfuric acid	10%	S	S
Photographic developer	cust. conc.	S	S	Sulfuric acid	50%	S	S
Picric acid	sat. sol.	S	—	Sulfuric acid	98%	S	U
Potassium bicarbonate	sat. sol.	S	S	Sulfuric acid	fuming	U	U
Potassium bisulfide	sol.	S	S	Sulfurous acid	30%	S	S
Potassium bromate	sat. sol.	S	S	T			
Potassium bromide	sat. sol.	S	S	Tannic acid	sol.	S	S
Potassium carbonate	sat. sol.	S	S	Tartaric acid	sol.	S	S
Potassium chlorate	sat. sol.	S	S	Thionyl chloride	100%	L	U
Potassium chloride	sat. sol.	S	S	Toluene	100%	L	U
Potassium chromate	sat. sol.	S	S	Triethylamine	sol.	S	L
Potassium cyanide	sol.	S	S	U			
Potassium dichromate	sat. sol.	S	S	Urea	sol.	S	S
Potassium ferricyanide	sat. sol.	S	S	Urine	—	S	S
Potassium ferrocyanide	sat. sol.	S	S	W			
Potassium fluoride	sat. sol.	S	S	Water	—	S	S
Potassium hydroxide	10%	S	S	Wine vinegar	—	S	S
Potassium hydroxide	sol.	S	S	Wines and liquors	—	S	S
Potassium hypochlorite	sol.	S	L	X			
Potassium nitrate	sat. sol.	S	S	Xylenes	100%	L	U
Potassium orthophosphate	sat. sol.	S	S	Y			
Potassium perchlorate	sat. sol.	S	S	Yeast	sol.	S	S
Potassium permanganate	20%	S	S	Z			
Potassium persulfate	sat. sol.	S	S	Zinc chloride	sat. sol.	S	S
Potassium sulfate	sat. sol.	S	S	Zinc (II) chloride	sat. sol.	S	S
Potassium sulfite	sol.	S	S	Zinc (IV) chloride	sat. sol.	S	S
Propionic acid	50%	S	S	Zinc oxide	sat. sol.	S	S
Propionic acid	100%	S	L	Zinc sulfate	sat. sol.	S	S
Pyridine	100%	S	L				
Q							
Quinol (Hydroquinone)	sat. sol.	S	S				
S							
Salicylic acid	sat. sol.	S	S				

Notes:

(S) Satisfactory: Liner material is resistant to the given reagent at the given concentration and temperature. No mechanical or chemical degradation is observed.

(L) Limited Application Possible: Liner material may reflect some attack. Factors such as concentration, pressure and temperature directly affect liner performance against the given media. Application, however, is possible under less severe conditions, e.g. lower concentration, secondary containment, additional liner protections, etc.

(U) Unsatisfactory: Liner material is not resistant to the given reagent at the given concentration and temperature. Mechanical and/or chemical degradation is observed.

(-) Not tested

sat. sol. = Saturated aqueous solution, prepared at 20°C (68°F)

sol. = aqueous solution with concentration above 10% but below saturation level

dil. sol. = diluted aqueous solution with concentration below 10%

cust. conc. = customary service concentration

GSE is a leading manufacturer and marketer of geosynthetic lining products and services. We've built a reputation of reliability through our dedication to providing consistency of product, price and protection to our global customers.

Our commitment to innovation, our focus on quality and our industry expertise allow us the flexibility to collaborate with our clients to develop a custom, purpose-fit solution.



[DURABILITY RUNS DEEP] For more information on this product and others, please visit us at GSEworld.com, call 800.435.2008 or contact your local sales office.

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