

# HDPE GEOMEMBRANE

## Product Safety and MSDS



**NOTE:** This product is exempt from the requirement to provide a Safety Data Sheet and this SDS is provided on a voluntary basis to provide additional information to customers.

### IDENTIFICATION

**Supplier:** Industrial Plastics

**Product Name:** HDPE Geomembrane

**Product Composition:** 98+% HDPE (High Density Polyethylene)

### HAZARD IDENTIFICATION

Under normal use and handling, the product is not expected to create any physical or health hazards. Excessive heating may result in the generation of smoke or fumes containing toxic chemicals due to decomposition of the components. These fumes may be irritating to the respiratory tract and eyes.

### FIRST AID MEASURES

**Eye Contact:** It is unlikely that this product will enter the eyes in the supplied form.

**Skin Contact:** It is unlikely that this product will cause irritation to the skin in the supplied form. Wash affected skin area with soap and water.

**Inhalation:** It is unlikely that this product can be inhaled in the supplied form. If exposed to fumes from welding or burning remove to fresh air. Get medical attention if irritation or other symptoms develop.

**Ingestion:** It is unlikely that this product can be ingested in the supplied form.

### FIRE FIGHTING MEASURES

Will only burn in direct flame and with Temperatures in excess of 360°C.

**Extinguishing Media:** Dry chemical, foam, water or carbon dioxide.

**Special Fire Fighting Procedure:** In the event of a fire, wear a NIOSH (US) or CEN (EU) approved, positive pressure, self-contained breathing apparatus (SCBA) and full protective clothing. Evacuate all non-essential personnel from the danger area.

**Unusual Fire and Explosion Hazards:** If product is ground, dust may form an explosive atmosphere when dispersed in air.

**Hazardous Combustion Products:** When forced to burn, the major gaseous products of the combustion of plastic are carbon monoxide and carbon dioxide.

### ACCIDENTAL RELEASE MEASURES

**Emergency Procedure:** Product should be picked up with suitable lifting equipment. Wear appropriate PPE when handling the material.

Avoid generating dust when cutting the product. Ensure adequate ventilation when cutting, especially in confined areas. In case of insufficient ventilation wear suitable respiratory equipment.

**Environmental Precautions:** Avoid release to the environment. Do not allow off-cuts and waste material to enter drains, sewers or watercourses.

**Methods of cleaning up:** Take up mechanically and collect in suitable container for disposal.

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### PHYSICAL AND CHEMICAL PROPERTIES

**Stability:** Stable under recommended storage conditions.

**Conditions to Avoid:** Keep away from strong oxidizing agents.

**Hazardous Decomposition:** Not expected to occur.

**Hazardous Polymerization:** Not expected to occur.

### CHEMICAL RESISTANCE CHART

HDPE Geomembrane liners are resistant to a number of chemicals at various combinations and concentrations. 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. Over years of product use and testing many of these combinations have been tested.

Medium	Concentration	Resistance at:		Medium	Concentration	Resistance at:	
		20° C (68° F)	60° C (140° F)			20° C (68° F)	60° C (140° F)
Acetic acid	100%	S	L	Copper chloride	sat. sol.	S	S
Acetic acid	10%	S	S	Copper nitrate	sat. sol.	S	S
Acetic acid anhydride	100%	S	L	Copper sulfate	sat. sol.	S	S
Acetone	100%	L	L	Cresylic acid	sat. sol.	L	—
Adipic acid	sat. sol.	S	S	Cyclohexanol	100%	S	S
Allyl alcohol	96%	S	S	Cyclohexanone	100%	S	L
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	Diethylphthalate	100%	S	L
Ammonia, aqueous	dil. sol.	S	S	Dioxane	100%	S	S
Ammonia, gaseous dry	100%	S	S	Ethanediol	100%	S	S
S Ammonia, liquid	100%	S	S	Ethanol	40%	S	L
Ammonium chloride	sat. sol.	S	S	Ethyl acetate	100%	S	U
Ammonium fluoride	sol.	S	S	Ethylene trichloride	100%	U	U
Ammonium nitrate	sat. sol.	S	S	Ferric chloride	sat. sol.	S	S
Ammonium sulfate	sat. sol.	S	S	Ferric nitrate	sol.	S	S
Ammonium sulfide	sol.	S	S	Ferric sulfate	sat. sol.	S	S
Amyl acetate	100%	S	L	Ferrous chloride	sat. sol.	S	S
Amyl alcohol	100%	S	L	Ferrous sulfate	sat. sol.	S	S
Barium carbonate	sat. sol.	S	S	Fluorine, gaseous	100%	U	U
Barium chloride	sat. sol.	S	S	Fluorosilicic acid	40%	S	S
Barium hydroxide	sat. sol.	S	S	Formaldehyde	40%	S	S
Barium sulfate	sat. sol.	S	S	Formic acid	50%	S	S
Barium sulfide	sol.	S	S	Formic acid	98-100%	S	S
Benzaldehyde	100%	S	L	Furfuryl alcohol	100%	S	L
Benzene	—	L	L	Gasoline	—	S	L
Benzoic acid	sat. sol.	S	S	Glacial acetic acid	96%	S	L
Beer	—	S	S	Glucose	sat. sol.	S	S
Borax (sodium tetraborate)	sat. sol.	S	S	Glycerine	100%	S	S
Boric acid	sat. sol.	S	S	Glycol	sol.	S	S
Bromine, gaseous dry	100%	U	U	Heptane	100%	S	U
Bromine, liquid	100%	U	U	Hydrobromic acid	50%	S	S
Butane, gaseous	100%	S	S	Hydrobromic acid	100%	S	S
1-Butanol	100%	S	S	Hydrochloric acid	10%	S	S
Butyric acid	100%	S	L	Hydrochloric acid	35%	S	S
Calcium carbonate	sat. sol.	S	S	Hydrocyanic acid	10%	S	S
Calcium chlorate	sat. sol.	S	S	Hydrofluoric acid	4%	S	S
Calcium chloride	sat. sol.	S	S	Hydrofluoric acid	60%	S	L

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### CHEMICAL RESISTANCE CHART CONTINUED

Medium	Concentration	Resistance at:		Medium	Concentration	Resistance at:	
		20° C (68° F)	60° C (140° F)			20° C (68° F)	60° C (140° F)
Calcium nitrate	sat. sol.	S	S	Hydrogen	100%	S	S
Calcium sulfate	sat. sol.	S	S	Hydrogen peroxide	30%	S	L
Calcium sulfide	dil. sol.	L	L	Hydrogen peroxide	90%	S	U
Carbon dioxide, gaseous dry	100%	S	S	Hydrogen sulfide, gaseous	100%	S	S
Carbon disulfide	100%	L	U	Lactic acid	100%	S	S
Carbon monoxide	100%	S	S	Lead acetate	sat. sol.	S	—
Chloroacetic acid	sol.	S	S	Magnesium carbonate	sat. sol.	S	S
Carbon tetrachloride	100%	L	U	Magnesium chloride	sat. sol.	S	S
Chlorine, aqueous solution	sat. sol.	L	U	Magnesium hydroxide	sat. sol.	S	S
Chlorine, gaseous dry	100%	L	U	Magnesium nitrate	sat. sol.	S	S
Chloroform	100%	U	U	Maleic acid	sat. sol.	S	S
Chromic acid	20%	S	L	Mercuric chloride	sat. sol.	S	S
Chromic acid	50%	S	L	Mercuric cyanide	sat. sol.	S	S
Citric acid	—	—	—	Mercuric nitrate	sol.	S	S
Mercury	100%	S	S	Quinol (Hydroquinone)	sat. sol.	S	S S
Methanol	100%	S	S	Salicylic acid	sat. sol.	S	S
Methylene chloride	100%	L	—	Silver acetate	sat. sol.	S	S
Milk	—	S	S	Silver cyanide	sat. sol.	S	S
Molasses	—	S	S	Silver nitrate	sat. sol.	S	S
Nickel chloride	sat. sol.	S	S	Sodium benzoate	sat. sol.	S	S
Nickel nitrate	sat. sol.	S	S	Sodium bicarbonate	sat. sol.	S	S
Nickel sulfate	sat. sol.	S	S	Sodium biphosphate	sat. sol.	S	S
Nicotinic acid	dil. sol.	S	—	Sodium bisulfite	sol.	S	S
Nitric acid	25%	S	S	Sodium bromide	sat. sol.	S	S
Nitric acid	50%	S	U	Sodium carbonate	sat. sol.	S	S
Nitric acid	75%	U	U	Sodium chlorate	sat. sol.	S	S
Nitric acid	100%	U	U	Sodium chloride	sat. sol.	S	S
Oils and Grease	—	S	L	Sodium cyanide	sat. sol.	S	S
Oleic acid	100%	S	L	Sodium ferricyanide	sat. sol.	S	S
Orthophosphoric acid	50%	S	S	Sodium ferrocyanide	sat. sol.	S	S
Orthophosphoric acid	95%	S	L	Sodium fluoride	sat. sol.	S	S
Oxalic acid	sat. sol.	S	S	Sodium hydroxide	40%	S	S
Oxygen	100%	S	L	Sodium hydroxide	sat. sol.	S	S
Ozone	100%	L	U	Sodium hypochlorite	15% active chlorine	S	S
Petroleum (kerosene)	—	S	L	Sodium nitrate	sat. sol.	S	S
Phenol	sol.	S	S	Sodium nitrite	sat. sol.	S	S
Phosphorus trichloride	100%	S	L	Sodium orthophosphate	sat. sol.	S	S
Photographic developer	cust. conc.	S	S	Sodium sulfate	sat. sol.	S	S
Picric acid	sat. sol.	S	—	Sodium sulfide	sat. sol.	S	S
Potassium bicarbonate	sat. sol.	S	S	Sulfur dioxide, dry	100%	S	S
Potassium bisulfide	sol.	S	S	Sulfur trioxide	100%	U	U
Potassium bromate	sat. sol.	S	S	Sulfuric acid	10%	S	S
Potassium bromide	sat. sol.	S	S	Sulfuric acid	50%	S	S
Potassium carbonate	sat. sol.	S	S	Sulfuric acid	98%	S	U
Potassium chlorate	sat. sol.	S	S	Sulfuric acid	fuming	U	U
Potassium chloride	sat. sol.	S	S	Sulfurous acid	30%	S	S
Potassium chromate	sat. sol.	S	S	Tannic acid	sol.	S	S
Potassium cyanide	sol.	S	S	Tartaric acid	sol.	S	S
Potassium dichromate	sat. sol.	S	S	Thionyl chloride	100%	L	U
Potassium ferricyanide	sat. sol.	S	S	Toluene	100%	L	U
Potassium ferrocyanide	sat. sol.	S	S	Triethylamine	sol.	S	L

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		20° C (68° F)	60° C (140° F)			20° C (68° F)	60° C (140° F)
Potassium fluoride	sat. sol.	S	S	Urea	sol.	S	S
Potassium hydroxide	10%	S	S	Urine	—	S	S
Potassium hydroxide	sol.	S	S	Water	—	S	S
Potassium hypochlorite	sol.	S	S	Wine vinegar	—	S	S
Potassium nitrate	sat. sol.	S	S	Wines and liquors	—	S	S
Potassium orthophosphate	sat. sol.	S	S	Xylenes	100%	L	U
Potassium perchlorate	sat. sol.	S	S	Yeast	sol.	S	S
Potassium sulfate	sat. sol.	S	S	Zinc chloride	sat. sol.	S	S
Potassium sulfite	sol.	S	S	Zinc (II) chloride	sat. sol.	S	S
Propionic acid	50%	S	S	Zinc (IV) chloride	sat. sol.	S	S
Propionic acid	100%	S	L	Zinc oxide	sat. sol.	S	S
Pyridine	100%	S	L Q	Zinc sulfate	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

#### TOXICOLOGICAL INFORMATION

**Primary Route(s) of Exposure:** Eye and skin contact.

**Eye Contact:** Solid particles may cause transient irritation from mechanical abrasion.

**Skin Contact:** Not expected to cause skin irritation. Molten material may cause thermal burns.

**Inhalation:** Not a likely route of exposure. Process fumes may cause irritation.

**Ingestion:** May cause a choking hazard if swallowed.

**Carcinogenicity:** The components of this product are not classified as carcinogenic by OSHA, NTP or IARC.

**Medical Conditions Aggravated by Overexposure:** Exposure may aggravate disorders of the eyes, skin, gastrointestinal tract and respiratory system.

**NOTE:** This product is not intended for use in food handling or processing and is not made from food grade material.

#### ECOLOGICAL INFORMATION

**Ecotoxicity:** No data are available on the adverse effects of this material on the environment.

**Disposal Considerations:** Recycle when possible. Disposal is conducted through landfill or authorised waste dump in accordance with Local, State and National Regulations. Waste generators must determine whether a discarded chemical is classified as a hazardous waste.

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### OTHER INFORMATION

The information provided in this Material Safety Data Sheet has been based upon the current level of information available, for the purpose of specifying the requirements regarding environment, health and safety in conjunction with the product. They are not to be interpreted as a warranty for specific product characteristics. Industrial Plastics takes no responsibility for inappropriate use, processing and handling by purchasers and users of the product.

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