GORE-TEX LIQUID CHEMICAL SPLASH GARMENTS

CHEMICAL PENETRATION DATA

UPDATE OCTOBER 2023

GORE-TEX Liquid Chemical Splash Garments manufactured by our certified manufacturing partners are engineered to the highest manufacturing standards and provide the only breathable liquid chemical protection that is certified to the NFPA 1990 Standard. The features and benefits include durable and fully sealed protection from liquid chemical penetration (NFPA 1990/1992 certified liquid chemical splash protection), breathable, minimize risk of incidental liquid chemical splash exposures. Durable and light weight solution that can be combined with high visibility requirements (ANSI 107 / CSA Z96) to improve industrial workers safety.

The following is an excerpt from the GORE-TEX Liquid Chemical Splash Fabric Application Guide and details chemical penetration test data for a selection of chemical challenges. Testing is based upon ASTM F903-18 Standard Test Method for Resistance of Materials Used in Protective Clothing to Penetration by Liquids and is conducted as specified in the current edition of NFPA 1992 Standard on Liquid Splash Protective Clothing which also includes both material and seams.

Ensembles and Clothing for Hazardous Materials Emergencies:

The Chemical Penetration Data is color coded, as described below, to assist in determining the proper application for protective clothing made with GORE-TEX Liquid Chemical Splash Fabric.

GREEN – CHEMICALS PRINTED IN GREEN

GORE-TEX Liquid Chemical Splash Fabric passes the penetration performance requirements for these chemicals. Chemical listed in green, represent liquid splash hazards as defined by NFPA 1992 Standards.

YELLOW – CHEMICALS PRINTED IN YELLOW

These chemicals represent both potential vapor and liquid splash hazards. GORE-TEX Liquid Chemical Splash Fabric passes the penetration test for chemicals printed in yellow. Significant amounts of chemical vapor may permeate this fabric. Use GORE-TEX Liquid Chemical Splash Fabric for these chemicals only in controlled situations if vapor exposure is acceptable. Consult a trained professional in industrial safety or hygiene when making this determination. Failure to comply with this warning may result in serious injury or death.

RED – CHEMICALS PRINTED IN RED

Do Not Use. GORE-TEX Liquid Chemical Splash Fabric fails the penetration test for these chemicals.

The chemicals listed below are specific to GORE-TEX Liquid Chemical Splash Garments. When flammable protection is required, see chemical list for Multi Hazard GORE-TEX PYRAD® Garments

GORE-TEX CHEMICAL SPLASH FABRIC | CHEMICAL PENETRATION DATA

CHEMICAL	CONCENTRATION	CAS #	PENETRATION RESULT
Acetic Acid, Glacial	reagent grade	64-19-7	PASS
Acetone*	reagent grade	67-64-1	PASS
Acetonitrile*	reagent grade	75-05-8	PASS
Acrylic Acid	99%	79-10-7	PASS
Acrylonitrile	reagent grade	107-13-1	PASS
Adiponitrile	98%	111-69-1	PASS
Aluminum Ammonium Sulphate	12.2%	7784-26-1	PASS
Anhydrous Ammonia (Liquid at -34 C)	99.9%	7664-41-7	PASS
Ammonium Hydroxide	30%	1336-21-6	PASS
Ammonium Phosphate (Monobasic)	Satd. Soln.	7722-76-1	PASS
Aniline	reagent grade	62-53-3	PASS
Bromine	99.5%	7726-95-6	FAIL
Butyl Acetate +	> 95%	123-86-4	PASS
T-Butylamine	99%	109-73-9	PASS
Calcium Hydroxide	Satd. Soln.	1305-62-0	PASS
Calcium Hypochlorite	Satd. Soln.	7778-54-3	PASS
Carbon disulfide*	99%	75-15-0	PASS
Chloroacetic Acid	Satd. Soln.	79-11-8	PASS
Chlorosulfonic Acid	reagent grade	7790-94-5	PASS
Chromic Acid	100%	6-7-12-9	PASS
Citric Acid	50%	77-92-9	PASS
Cresol	100%	108-39-4	PASS
Cyclohexanol	reagent grade	108-93-0	PASS
Cyclohexylamine	reagent grade	108-91-8	PASS
Dichloromethane*	reagent grade	75-09-2	PASS
Diesel Fuel	reagent grade	68334-30-5	PASS
Diethyl Sulfate	98%	64-67-5	PASS
Diethylamine*	reagent grade	109-89-7	PASS
Dimethylacetamide	reagent grade	127-19-5	PASS
Dimethylformamide*+	reagent grade	68-12-2	PASS
Ethanol	99.50%	64-17-5	PASS
Ethyl Acetate*	reagent grade	141-78-6	PASS
Ethylene Glycol	reagent grade	107-21-1	PASS
Ferric Nitrate	50%	7782-61-8	PASS
Ferric Sulfate	50%	10028-22-5	PASS
Fire-Resistant Hydraulic Fluid	reagent grade		PASS
Formaldehyde	37%	50-00-0	PASS
Formaldehyde	50%	50-00-0	PASS
Formic Acid	100%	64-18-6	PASS
Fuel H + (42.5% toluene, 42.5% isooctane and 15% denatured ethanol v/v)	mixture		PASS
Furfural (60% concentration diluted with 40% nitromethane)	mixture		PASS
Gasoline	reagent grade	8006-61-9	PASS
Heptanoic Acid	99%	111-14-8	PASS

GORE-TEX CHEMICAL SPLASH FABRIC | CHEMICAL PENETRATION DATA
(continued)

CHEMICAL	CONCENTRATION	CAS #	PENETRATION RESULT
Hexamethylenediamine	98%	124--09-4	PASS
Hexane*	reagent grade	110-54-3	PASS
Hydrochloric Acid	37%	7647-01-0	PASS
Hydrochloric acid	49%	7647-01-0	FAIL
Hydrofluoric Acid	10%	7664-39-3	PASS
Hydrofluoric Acid	49%	7664-39-3	FAIL
Hydrofluosilicic Acid	25%	16961-83-4	PASS
Hydrogen Peroxide	30%	7722-84-1	PASS
Hydriodic Acid	47%	10034-85-2	PASS
Isoamylene	99%	513-35-9	PASS
Isooctane	reagent grade	540-84-1	PASS
Isopar	mixture		PASS
Isopropyl Alcohol +	> 91%	67-63-0	PASS
JP4 Jet Fuel	reagent grade	50815-00-4	PASS
Mercuric Sulphide	reagent grade	1334-48-5	PASS
Mercury	reagent grade	7439-97-6	PASS
Mercury (II) Sulphide	reagent grade	1344-48-5	PASS
Methanol*	reagent grade	67-53-1	PASS
Methylamine	reagent grade	74-89-5	FAIL
Methyl Ethyl Ketone (MEK)	reagent grade	78-93-3	PASS
Methyl Formate	reagent grade	107-31-3	PASS
Methyl Hydrazine	reagent grade	60-34-4	FAIL
Methyl Isoamyl Ketone	98%	110-12-3	PASS
Methyl Isobutyl Ketone + (MIK)	>95%	108-10-1	PASS
Methyl Methacrylate	reagent grade	80-62-6	FAIL
Methyl Propyl Ketone	90%	107-87-9	PASS
Motor Oil	SAE 30 wt.		PASS
N-Butanol	> 99%	71-36-3	PASS
N-Butylamine	reagent grade	109-73-9	FAIL
Nitric Acid	35%	7679-37-2	PASS
Nitric Acid	50%	7679-37-2	FAIL
Nitric Acid	70%	7679-37-2	FAIL
Nitrobenzene*+	reagent grade	98-95-3	PASS
Nitromethane (40% concentration diluted with 60% methanol)	mixture		PASS
O-Cresol (liquid at +30 C)	98%	95-48-7	PASS
Oleum	18-24 % SO3	8014-95-7	FAIL
Oxalic Acid	8%	144-62-7	PASS
1% PCB / 99% Mineral Oil	mixture		PASS
4% PCB / 6% Trichlorobenzene / 90% Mineral Oil	mixture		PASS
50% PCB / 50% Mineral Oil	mixture		PASS
Phenol	90%	108-95-2	PASS
Phosphoric Acid	80%	7664-38-2	PASS
Picric Acid	reagent grade	88-89-1	PASS
Potassium Fluoride	40%	7789-23-3	PASS

GORE-TEX CHEMICAL SPLASH FABRIC | CHEMICAL PENETRATION DATA
(continued)

CHEMICAL	CONCENTRATION	CAS #	PENETRATION RESULT
Potassium Hydroxide	53%	1310-58-3	PASS
n-Propyl Acetate	99%	109-60-4	PASS
Silicon (IV) Chloride	reagent grade	10026-04-7	PASS
Sodium Aluminate	30%	1302-42-7	PASS
Sodium Bisulfate (42% concentration, 58% water)	mixture	7681-38-1	PASS
Sodium Bisulfite (40% concentration, 60% water)	mixture	7361-90-5	PASS
Sodium Chlorate (Saturated Solution)	Satd. Soln.	7775-09-9	PASS
Sodium Chlorite (Saturated Solution)	Satd. Soln.	7775-09-9	PASS
Sodium Hydroxide*+	50%	1310-73-2	PASS
Sodium Hypochlorite +	10%	7681-52-9	PASS
Sodium Hypochlorite	13%	7681-52-9	PASS
Sodium Hypochlorite	20%	7681-52-9	PASS
Sodium Methylate	reagent grade	124-41-4	PASS
Sodium Silicate	50%	134409-8	PASS
Styrene	99%	100-42-5	FAIL
Sulfuric Acid	10%	7664-93-9	PASS
Sulfuric Acid*+	93.1%	7664-93-9	PASS
Sulfuric Acid	96%	7664-93-9	PASS
Sulfuric Acid	98%	7664-93-9	PASS
Sulfuric Acid	99.5%	7664-93-9	PASS
Sulphur Chloride	reagent grade	10545-99-0	FAIL
Tetrachloroethylene*+ (perchloroethylene)	> 95%	127-18-4	PASS
Tetrahydrofuran*	reagent grade	109-99-9	PASS
Toluene*	reagent grade	108-88-3	PASS
Trichloroethylene	reagent grade	79-01-3	PASS
Trisodium Nitrilotriacetate	40%	5064-31-3	PASS
Urea	54%	57-13-6	PASS
Urea	Satd. Soln.	57-13-7	PASS
Xylene, Mixed Isomers	reagent grade	1330-20-7	PASS

*Liquid chemical listed in ASTM F1001, Standard for Test Chemicals to Evaluate Protective Clothing Materials.
+Chemical listed in NFPA 1992 battery of chemicals.

GORE-TEX Liquid Chemical Splash protective garments should be used only for those situations where you do not need vapor protection or where vapor exposure is determined to be acceptable by an industrial safety or health professional. Garments manufactured with GORE-TEX Liquid Chemical Splash Fabric Technology are vapor-permeable, they should not be used for protection against hazardous vapor exposures, or for exposures to carcinogens or other health threatening materials.

Don’t see your required chemical listed? Please visit us here for more information.