



Chemical Compatibility Guide

The Leak Stops HereTM

XR-5[®], Urethane & Copolymer 2000[®]

CHEMICAL COMPATIBILITY GUIDE*

For Ultra-Containment Berms

According to EPA guidelines, spills must be cleaned up within 24 hours and any secondary containment areas must be inspected once a week. The chart below lists chemical compatibility of XR-5[®], Urethane, Copolymer 2000[®] and Polyethylene. The information has been developed from industry available data and offers compatibility based on exposure of one week or less.

The rating system is indicated as:

- A - Fluid has little or no effect at Room Temperature
- B - Fluid has minor to moderate effect at Room Temperature
- C - Fluid has severe effect at Room Temperature

Chemical	XR-5 [®]	Urethane	Copolymer 2000 [®]	Polyethylene
Kerosene	A	A	A	A
Diesel Fuel	A	A	A	A
Ohio Crude Oil	A	A	A	A
Hydraulic Fluid- Petroleum Based	A	A	A	A
Naptha	A	A	A	A
Conc. Ammonia Hydroxide	A	C	A	A
50% Acetic Acid	C	C	C	A
50% Phosphoric Acid	A	C	A	A
50% Hydrochloric Acid	A	C	A	A
50% Nitric	C	C	C	B
50% Sulfuric Acid	A	C	A	A
60% Sodium Hydroxide	A	C	A	A
Methyl Alcohol	A	A	A	A
JP-4 Jet Fuel	A	A	A	A
Salt Water 180°F	A	B	A	A
Phthalate Plasticizers	B	A	B	A
SAE-30 Oil	A	A	A	A
Raw Linseed Oil	A	A	A	A

The above ratings were arrived at by visual and physical examination of the membrane samples after their removal from the test chemical. When considering XR-5[®], Urethane, Copolymer 2000[®], or Polyethylene for specific applications, it is important to study the requirements such as permeability, service temperature, concentration, size to be contained, etc. Samples of XR-5[®], Urethane, Copolymer 2000[®], or Polyethylene should be tested close to actual service conditions and also your distributor should be consulted.

*IMPORTANT USER NOTICE FOR XR-5[®], URETHANE, COPOLYMER 2000[®] & POLYETHYLENE CHEMICAL COMPATIBILITY GUIDE

This listing is offered only as a guide and utilizes information which, to the best of UltraTech's knowledge, is accurate and reliable. Due to variables and conditions of application beyond the control of UltraTech, none of the data shown in this guide is to be construed as a guarantee, expressed or implied. UltraTech International, Inc. assumes no responsibility, obligation or liability in conjunction with the use or misuse of the information herein.

POLYURETHANE

CHEMICAL COMPATIBILITY GUIDE*

for

ULTRA-SPILLBERMS[®], PART# 2100, 2051, 2052

ULTRA-SPILLBERM[®] CONNECTOR, PART# 2101

ULTRA-SPILLBERM[®] CORNER, PART# 2102

ULTRA-SPILLBERM PLUS[®], PART# 2054

ULTRA-SPILLBERM-LOW PROFILE[®], PART# 2052

ULTRA-TABLETOP SPILLBERM[®], PART# 2051

ULTRA-DRAINSEAL[®], PART# 2124-7, 2127, 2130-3, 2134-7

ULTRA-DRAINPLUG[®], PART# 2113, 2114, 2115, 2116

Key:

Swelling:

Visually rated from 0-2;

0 = none

1 = slight

2 = significant

Degradation:

Visually rated from 0-2;

0 = none

1 = slight

2 = significant

Ratings:

NR (Not Recommended):

Significant degradation or swelling

FAIR: Slight swelling

GOOD: No swelling

Chemical	Chemical Class	Swelling (0-2)	Visible Degradation (0-2)	Rating
Acetone	Ketones	2	0	NR
Acetonitrile	Nitriles	1	0	FAIR
Aluminum Salts	Aluminum Compounds	0	0	GOOD
Barium Salts	Barium Compounds	0	0	GOOD
Benzyl Alcohol	Hydroxyl Compounds	1	1	FAIR
Boric Acid	Inorganic Acids	0	0	GOOD
Butanol	Hydroxyl Compounds	0	0	GOOD
Calcium Chlorite	Calcium Compounds	0	0	GOOD
Carbon Disulfide	Sulfur Compounds	1	0	FAIR
Cupric Chloride	Copper Compounds	0	0	GOOD
Cyclohexanone	Ketones	1	2	NR
Dichloromethane	Halogen Compounds	2	2	NR
Diethylamine	Aliphatic Amines	1	1	FAIR
Dimethylformamide	Aliphatic Amides	2	2	NR
Ethyl Acetate	Carboxylic Esters	1	0	FAIR
Formaldehyde	Aliphatic Aldehydes	0	0	GOOD
Gasoline	Aromatic Hydrocarbons	0	0	GOOD
Glycol Ether	Ethers	0	0	GOOD
Hexane	Aliphatic Hydrocarbons	0	0	GOOD
Hydrochloric Acid (37%)	Inorganic Acids	0	2	NR
Hydrogen Peroxide (30%)	Peroxides	1	0	FAIR
Hydrofluoric Acid (48%)	Inorganic Acids	0	2	NR
Jet Fuel (JP-5)	Aliphatic Hydrocarbons	0	0	GOOD
Kerosene	Hydrocarbons	0	0	GOOD
Metahanol	Aliphatic Hydroxylic Compounds	0	0	GOOD
Methyl Ethyl Ketone	Aliphatic Ketones	2	0	NR
Mineral Oil	Aliphatic and Alicyclic Hydrocarbons	0	0	GOOD
Naphtha	Hydrocarbons	0	0	GOOD
Nitrobenzene	Nitro Compounds	0	2	NR
Phenol	Aromatic Hydroxylic Compounds	0	2	NR
Propylene Glycol	Hydroxylic Compounds	0	0	GOOD
Sodium Hydroxide (50%)	Inorganic Bases	0	0	GOOD
Sulfuric Acid (98%)	Inorganic Acids	0	2	NR
Sulfuric Acid (50%)	Inorganic Acids	0	2	NR
Tetrachloroethylene	Halogen Compounds (Vinyl Halides)	0	0	GOOD
Tetrahydrofuran	Alicyclic Ethers	2	2	NR
Toluene	Aromatic Hydrocarbons	1	0	FAIR
1,1,1-Trichloroethane	Aliphatic Halogen Compounds	1	0	FAIR
Trichloroethylene	Halogen Compounds (Vinyl Halides)	1	0	FAIR
Triethylamine	Aliphatic Amines	0	0	GOOD
Turpentine	Hydrocarbons	0	0	GOOD
Water	Misc.	0	0	GOOD

*IMPORTANT USER NOTICE FOR BOTH THE POLYURETHANE & POLYETHYLENE CHEMICAL COMPATIBILITY GUIDES


The data contained herein is a compilation of existing published data from leading manufacturers of polyethylene and polyurethane and does not represent actual testing performed by UltraTech International, Inc.

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POLYETHYLENE

CHEMICAL COMPATIBILITY GUIDE*

for Ultra  Environmental Containment Products

This listing was prepared to provide guidance to the chemical compatibility of Ultra  Environmental Containment Products® which are manufactured and constructed of a molded polyethylene.

Polyethylene is susceptible to attack by some chemicals which may cause stress cracking, swelling, oxidation or may permeate the polyethylene. These reactions may reduce the physical properties of polyethylene.

When considering an UltraTech polyethylene product for use in secondary containment applications, it is important to note that most secondary containment products are designed to hold leaked chemicals for only hours, a day, at most a week. These secondary containment units would then be cleaned of any chemical. In these short term applications, a greater variety of chemicals may be used with the polyethylene since the exposure time of the chemical to the polyethylene is limited.

A = Suitable for long term storage at 100 degrees F or less.

B = Suitable for short term storage less than one year.

C = Do NOT store these chemicals in UltraTech containers.

User testing may prove some of these chemicals are suitable for secondary containment applications with exposure time of one week or less.

ACETALDEHYDE (40%)	A	BROMINE, WATER	C	ELECTROLYTE	A	MAGNESIUM NITRATE	A	POTASSIUM HYDROXIDE	A
ACETAMIDE	A	BROMOBENZENE	C	ETHANOL	A	MAGNESIUM OXIDE	A	POTASSIUM NITRATE SAT'D	A
ACETIC ACID (50%)	A	BROMOFORM	C	ETHER	C	MAGNESIUM SULFATE	A	POTASSIUM PERBORATE SAT'D	A
ACETIC ACID ANHYDRIDE	B	BUTADIENE	A	ETHYL ACETATE (100%)	B	MALEIC ACID	A	POTASSIUM PERCHLORATE	A
ACETIC ETHER	B	BUTANEDIOL (100%)	A	ETHYL ALCOHOL	A	METHANOL	A	POTASSIUM PHOSPHATES	A
ACETONE	A	BUTANOL	A	ETHYL BUTYRATE	B	METHYL ACETATE	A	POTASSIUM SULFATE	A
ACETYLENE TETRABROMIDE	B	BUTYL ACETATE	A	ETHYL CHLORIDE	C	METHYL ALCOHOL (100%)	A	PROPANOL	A
ACRYLIC EMULSIONS	B	BUTYL ALCOHOL (100%)	A	ETHYL ETHER	C	METHYL AMINE (32%)	A	PROPARGYL ALCOHOL (7%)	A
ACRYLONITRILE	A	BUTYLENE	C	ETHYLENE CHLORIDE	C	METHYL BROMIDE	C	PROPIONIC ACID (50%)	A
ADIPIC ACID	A	BUTYLENE GLYCOL	A	ETHYLENE CHLOROXYDRIN	A	METHYL CHLORIDE	C	PROPYL ALCOHOL	A
ALIPHATIC HYDROCARBONS	A	BUTYLENE LIQUID	C	ETHYLENE DIAMINE	A	METHYLENE CHLORIDE	C	PROPYLENE DICHLORIDE (100%)	A
ALKALINE	A	BUTYL PHENOL	C	ETHYLENE DICHLORIDE	C	METHYL ETHYL KETONE	B	PROPYLENE GLYCOL	A
ALLYL ALCOHOL (96%)	A	BUTYRIC ACID	A	ETHYLENE GLYCOL	A	METHYL ISOBUTYL KETONE	B	PROPYLENE OXIDE	A
ALUMINUM CHLORIDE (20%)	A	CALCIUM CARBONATE	A	ETHYLENE OXIDE	C	METHYL ISOPROPYL KETONE	B	PYRIDINE	B
ALUMINUM FLURIDE	A	CALCIUM CHLORIDE	A	FATTY ACIDS	A	METHYL SULFATE	A	SELENIC ACID	A
ALUMINUM HYDROGEN SOLUTION (10%)	A	CALCIUM HYDROXIDE	A	FERRIC SULFATE	A	METHYL SULFURIC ACID (ALL CONC.)	A	SEWAGE	A
ALUMINUM HYDROXIDE	A	CALCIUM HYPOCHLORITE	A	FERROUS SALTS	A	MINERAL OILS	A	SILICIC ACID	A
ALUMS (ALL TYPES)	A	CALCIUM NITRATE (50%)	A	FERROUS SULFATE	A	MONOCHLOROACETIC ACID ETHYL ESTER	A	SILVER NITRATE	A
AMMONIA (AQUEOUS)	A	CALCIUM SULFATE	A	FLUOBORIC ACID	A	MONOCHLOROACETIC ACID	A	SODA ASH	A
AMMONIUM SALTS	A	CARBON BISULFIDE	C	FLUOSILICIC ACID (ALL CONC.)	A	METHYL ESTER	A	SODIUM ACETATE SAT'D	A
AMMONIUM ACETATE	A	CARBON DISULFIDE	C	FORMALDEHYDE (40%)	A	MOWILITH D	A	SODIUM BENZOATE	A
AMMONIUM BIFLUORIDE	A	CARBONIC ACID (A.Q. CO2)	A	FORMAMIDE	A	NAPHTHA	B	SODIUM BISULFATE (10%)	A
AMMONIUM CARBONATE (50%)	A	CARBON MONOXIDE	A	FORMIC ACID (ALL CONC.)	A	NAPHTHALENE	B	SODIUM BISULFITE	A
AMMONIUM CHLORIDE	A	CARBON TETRACHLORIDE	C	FUEL OIL	A	NICOTINE DILUTE	A	SODIUM BROMATE	B
AMMONIUM HYDROGEN FLUORIDE (50%)	A	CAUSTIC (AQUEOUS)	A	FURFURAL (100%)	A	NICOTINIC ACID	A	SODIUM CHLORIDE	A
AMMONIUM HYDROXIDE	A	CAUSTIC POTASH SOL. (50%)	A	FURFURYL ALCOHOL	C	NITRIC ACID <50%	A	SODIUM CHLORITE	A
AMMONIUM METAPHOSPHATE SAT'D	A	CAUSTIC SODA SOL. (10%)	A	GALLIC ACID SAT'D	A	NITROBENZENE	B	SODIUM CHROMATE	A
AMMONIUM NITRATE SAT'D	A	CHLORAL HYDRATE	A	GASOLINE	A	NITROTOUENE	B	SODIUM DISULFITE	A
AMMONIUM PERSULFATE SAT'D	A	CHLOROETHANOL	A	GLUCONIC ACID (ALL CONC.)	A	OCTYL CRESOL	A	SODIUM DITHIONITE (10%)	A
AMMONIUM PHOSPHATE	A	CHLORIC ACID (10%)	A	GLYCERINE	A	OLEIC ACID (ALL CONC.)	A	SODIUM FLUORIDE SAT'D	A
AMMONIUM SULFATE SAT'D	A	CHLOROACETIC ACID	A	GLYCOLIC ACID (ALL CONC.)	A	OLEUM CONC.	C	SODIUM HYDROXIDE CONC.	A
AMMONIUM SULFIDE SAT'D	A	CHLOROBENZENE	C	HEPTANE	A	PALMITIC ACID	C	SODIUM HYPOCHLORITE	A
AMMONIUM THIOCYANATE SAT'D	A	CHLOROMETHANE	C	HEXANE	A	PARAFFIN EMULSIONS	A	SODIUM NITRATE	A
AMYL ACETATE	A	CHLORSULFONIC ACID (100%)	C	HYDRAZINE HYDRATE	A	PERCHLORIC ACID (50%)	A	SODIUM OXALATE	A
AMYL ALCOHOL (100%)	A	CHROME ALUM SAT'D	A	HYDROSULFITE (10%)	A	PETROLEUM	B	SODIUM PERSULFATE	A
AMYL CHLORIDE	C	CHROMIC ACID (50%)	B	HYDROXYLAMINE SULFATE	A	PETROLEUM ETHER	B	SODIUM PHOSPHATE	A
ANILINE (100%)	B	COPPER CYANIDE	A	HYDROZINE HYDROCHLORIDE	A	PHENYLHYDRAZINE	C	SODIUM SULFONATES	A
ANILINE HYDROCHLORIDE	B	CRESYLIC ACID	A	HYDROIODIC ACID (ALL CONC.)	A	PHOSPHORIC ACID (ALL CONC.)	A	STEARIC ACID (ALL CONC.)	A
ANTI-FREEZE	A	CROTONIC ALDEHYDE	A	HYDROBROMIC ACID (50%)	A	PHOSPHOROUS CHLORIDES	B	SUCCINIC ACID	A
ANTIMONY SALTS	A	CUPROUS CHLORIDE SAT'D	A	HYDROCYANIC ACID SAT'D	A	PHOSPHOROUS PENTOXIDE	A	SULFURIC ACID (98%)	B
ANTIMONY TRICHLORIDE (90%)	A	CYCLOHEXANE	A	HYDROCHLORIC ACID (ALL CONC.)	A	PHOTOGRAPHIC SOLUTIONS	A	SULFURIC ACID, FUMING	C
AQUA REGIA	C	CYCLOHEXANOL	A	HYDROFLUORIC ACID (ALL CONC.)	A	PHOTHALIC ACID (ALL CONC.)	A	SULFURIC ACID, FUMING	A
AQUEOUS ALKALIES (NaOH)	A	DEXTRIN SAT'D	A	HYDROFLUORISILICIC ACID (ALL CONC.)	A	PICKLING BATHS	A	SULFURYL CHLORIDE	C
ARSENIC ACID	A	DEXTROSE SAT'D	A	HYDROGEN BROMIDE (10%)	A	PICRIC ACID (1%)	A	TARTARIC ACID SAT'D	A
BARIUM SALTS	A	DIBUTYL ETHER	C	HYDROGEN PEROXIDE (90%)	A	PLATING SOLUTIONS	A	TETRACHLOROETHANE	C
BARIUM CARBONATE	A	DIBUTYL SEBACATE	B	HYDROGEN PHOSPHIDE (100%)	A	POTASSIUM/ALUMINUM SULFATES (50%)	A	TETRACHLOROETHYLENE	C
BARIUM CHLORIDE	A	DICHLOROACETIC ACID	B	HYDROQUINONE	A	POTASSIUM BICHROMATE	A	TETRAHYDROFURANE	C
BARIUM CYANIDE	A	DICHLOROBENZENE, LIQUID	C	HYPOCHLOROUS ACID	A	POTASSIUM BORATE (10%)	A	TETRAHYDRONAPHTHALENE	C
BARIUM HYDROXIDE	A	DICHLORETHYLENE	C	ISO-OCTANE	B	POTASSIUM BROMIDE	A	THIONYL CHLORIDE	C
BARIUM NITRATE	A	DIESEL FUEL	B	ISOPROPYL ACETATE	A	POTASSIUM CHLORATE	A	TITANIUM SALTS	B
BARIUM SULFATE	A	DIESEL OIL	B	ISOPROPYL ALCOHOL	B	POTASSIUM CHLORIDE	A	TOLUENE	B
BATTERY FLUID, ACID	B	DIETHYL CARBONATE	A	JET FUEL	B	POTASSIUM CHROMATE	A	TOLUENE SULFONIC ACID (ALL CONC.)	B
BENZALDEHYDE	A	DIETHYLENE GLYCOL	A	KEROSENE	B	POTASSIUM CYANIDE	A	TRANSFORMER OIL	A
BENZENE	B	DIETHANOLAMINE	B	LACTIC ACID (ALL CONC.)	A	POTASSIUM DICHROMATE (40%)	A	TRIBUTYLPHOSPHATE	A
BENZENE SULFONIC ACID	B	DIGYCOLIC ACID (30%)	A	LEAD ACETATE SAT'D	A	POTASSIUM FERRI/ FERRO CYANIDE SAT'D	A	TRICHLOROACETIC ACID	B
BENZOIC ACID	A	DI-ISOBUTYL KETONE	B	MAGNESIUM SALTS	A	POTASSIUM FLUORIDE	A	TRICHLOROETHANE	C
BENZYL ALCOHOL	A	DIMETHYLAMINE	B	MAGNESIUM CARBONATE	A			TRICHLOROETHYLENE	C
BENZYL CHLOROFORMATE	A	DIMETHYL PORMAMIDE	B	MAGNESIUM HYDROXIDE	A			TRICRESYL PHOSPHATE	A
BORAX COLD SAT'D	A	DINONYL PHTHALATE	C					TRITHANOLAMINE	A
BORIC ACID DILUTE	A	DIOCTYL PHTHALATE	C					TRIETHYL PHOSPHATE	C
BORIC ACID CONC.	A	DIOXANE	A					TRISODIUM PHOSPHATE SAT'D	A
BROMINE, LIQUID	C	DIPHENYL OXIDE	C					TRICHLOROETHYLENE	C