



CHEMICAL RESISTANCE

ADVANCED POLYURETHANES

CHEMICAL RESISTANCE POLYURETHANE ELASTOMERS

This is a general guide for the exposure of Polyurethane elastomers to a wide range of chemicals. It must be emphasized that this is a guide only, and all other requirements for satisfactory performance must be considered such as operational temperature ranges, aeration, length of time exposed, and other pertinent factors.

Concentrations of aqueous solutions, unless specified, are understood to be saturated. Temperatures, unless specified, are understood to be room temperature.

A-Little or no effect,

B-Minor to moderate effect.

C-Severe effect to complete destruction

T- Test before using. No data but most likely to be satisfactory.

X- No data but most likely to be unsatisfactory

Chemical

Acetaldehyde
 Acetic acid. 20%
 Acetic anhydride
 Acetone
 Acetyl Bromide
 Acetyl Chloride
 Acetylene
 Adipic Acid
 Aluminium chloride solutions
 Aluminium sulfate solutions
 Aluminium sulfide
 Ammonia, anhydrous
 Ammonium acetate
 Ammonium carbonate
 Ammonium hydroxide solutions
 Ammonium chloride solutions
 Ammonium sulfate solutions
 Ammonium sulfide
 Ammonium Thiocyanide
 Ammonium Nitrate
 Amyl acetate
 Amyl alcohol
 ASTM hydrocarbon test fluid
 ASTM oil No 1
 ASTM oil No 3

Effect

C
 B
 X
 C
 C
 C
 X
 A
 T
 T
 B
 T
 C
 B
 T
 C
 T
 T
 B
 B
 X
 C (50°C)
 X
 T
 A (70°C)
 B(70°C)

Chemical

Barium Chloride
 Barium sulfate
 Barium sulfide
 Benzaldehyde
 Benzene
 Benzoic Acid
 Benzoyl Chloride
 Borax solutions
 Boric acid solutions
 Bromine, anhydrous liquid
 Butane
 Butyl acetate
 Butyl Alcohol
 Butyraldehyde
 Calcium bisulfite solutions
 Calcium chloride solutions
 Calcium hydroxide solutions
 Calcium Hypochlorite, 5%
 Calcium nitrate
 Carbon bisulfide
 Carbon dioxide
 Carbon monoxide
 Carbon tetrachloride
 Castor oil
 Chlorine gas

Effect

A
 A
 A
 X
 C (70°C)
 B
 T
 A
 A
 X
 A
 C
 B
 T
 A
 T
 T
 A
 T
 A
 A
 C (50°C)
 A
 A
 C

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Chemical	Effect	Chemical	Effect
ASTM reference fuel A	A	Chlorine, wet	C
ASTM reference fuel B	B (50°C)	Chloroacetic acid	X
ASTM reference fuel C	C	Chlorobenzene	X
Barium hydroxide solutions	A	Chloroform	C
Barium carbonate	B	Chlorosulfonic acid	X
Copper cyanide	A	Ferric nitrate	B
Copper sulfate solutions	A	Ferrous chloride	B
Cottonseed oil	A	Ferrous sulfate	B
Creosote oil	T	Fluosilicic acid	T
Cupric Chloride	A	Formaldehyde, 37%	C
Cupric Nitrate	B	Formaldehyde, 40%	C
Cupric Sulphate	B	Formic acid	C
Cyclohexane	A	FREON-11	B
Cyclohexanone	C	FREON-11	B (55°C)
Dibutyl ether	B	FREON-12	A
Dibutyl phthalate	C(70°C)	FREON-12	A (55°C)
Diethyl sebacate	C	FREON-22	C
Dichlorobenzene	C	FREON-22	C (55°C)
Dimethyl acetamide	C	FREON-113	A
Dimethyl formamide	C	FREON-113	T (55°C)
Dioctyl phthalate	C	FREON-114	T
Ethyl acetate	C (50°C)	FREON-114	T (55°C)
Ethyl alcohol	C	Fuel oil	B
Ethyl Bromide	C	Furfural	C
Ethyl chloride	C	Gasoline	C

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Chemical	Effect	Chemical	Effect
Ethylene dichloride	C	Gelatin	A
Ethylene glycol	B	Glucose	A
Ethylene oxide	C	Giue	A
Ferric chloride solutions	T	Glycerin	A
Ferric chloride	B	n-Hexane	B (50°C)
Ferric nitrate	B	Heptane	A
Ferrous chloride	B	Hydraulic oils	B
Ferrous sulfate	B	Hydrochloric acid, 20%	B
Hydrochloric acid, 20%	B	Methylene chloride	C
Hydrochloric acid, 37%	C	Mineral oil	A
Hydrocyanic acid	T	Mixed acids	C
Hydrofluoric acid	C	Naphtha	B
Hydrogen	A	Naphthalene	8
Hydrogen peroxide (30%)	C	Nickel sulfete	A
Hydrogen sulfide	B	Nitric acid	C
Iodine solution	C	Nitrobenzene	C
Isooctane	B (70°C)	Oleic acid	B
Isopropyl alcohol	C	Oleurn, 20%	C
Isopropyl acetate	A	Oleum, 25%	C
Isopropyl ether	B	Oxalic acid, 5%	B
JP-4	C	Palmitic acid	A
JP-5	C	Perchloric acid	C
JP-6	X	Perchloroethyiene	C
Kerosene	C	Phenol	C
Lacquer solvents	X	Phosphoric acid, 20%	T

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Chemical	Effect	Chemical	Effect
Lactic acid	T	Phosphoric acid, 60%	C
Lead acetate	B	Pickling solution (20% nitric acid, Picric Acid	X
Linseed oil	B	Potassium dichromate solutions	T
Liquified Petroleum Gas	A	Potassium hydroxide solutions	A
Lubricating oils	B	Potassium chloride	A
Magnesium chloride solutions	A	Potassium cupro cyanide	A
Magnesium hydroxide solutions	A	Potassium cyanide	A
Malaic acid	C	Potassium Nitrate	A
Mercury	A	Potassium sulfate	A
Metnyl Alcohol	C	Propyl Alcohol	B
Methyl ethyl ketone	C (55°C)	Stannic chloride	T
Propylene glycol	B	Stannous chloride, 15%	T
SAE No 10 oil	A (70°C)	Steanc acid	A
Sea water	A	Steam	C
SKYDROL 500	C (50°C)	Styrene	B
Soap solutions	A	Sulfur, molten	C
Sodium acetate	A	Sulfur dioxide. liquid	C
Sodium bicarbonate	B	Sulfur trioxide	C
Sodium bisulfate	B	Sulfuric acid	C
Sodium borate	B	Tannic acid, 10%	A
Sodium carbonate	B	Tartaric acid	A
Sodium chlorate	B	Tin salts	B
Sodium cyanide	B	Titanium salts	C
Sodium dichromate	B	Toluene	C (50°C)
Sodium ferrocyanide	B		

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Chemical	Effect	Chemical	Effect
Sodium fluoride	B	Tributyl phosphate	C
Sodium hydrosulfite	B	Trichloroacetic Acid	C
Sodium hydroxide (10%)	B	Trichloroethylene	C
Sodium hydroxide (50%)	C	Tricresyl phosphate	B
Sodium hypochlorite, 20%	C	Triethanolamine	T
Sodium nitrate	B	Tosodium phosphate solutions	A
Sodium phosphate	A	Tung oil	B
Sodium peroxide solutions	T	Turpentine	C
Sodium thiosulfate	A	Urea	B
Sodium silicate	A	Water	A
Sodium sulfate	B	Xylene	C
Sodium sulfide	B	Zinc sulfate	B
Sodium hypochlorite 5%	C	Zinc chloride solutions	C
Soybean oil	B		

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