

GENERAL CHEMICAL RESISTANCE OF VARIOUS ELASTOMERS

The following pages are offered as a general guide and indication of the suitability of various elastomers in use today for service in these chemicals and fluids. The ratings are based, for the most part, on published literature of various polymer suppliers and rubber manufacturers but, in some cases, they are the considered opinion of experienced compounders. We cannot guarantee their accuracy nor assume responsibility for use thereof. Several factors must always be considered in using a rubber part in service

RATING SYSTEM EMPLOYED: A – Recommended – Little or minor effect.

B – Minor to moderate effect – Rubber parts probably still useful in many applications.

C – Moderate to severe effect – Rubber parts perhaps still useful in limited application.

U – Not recommended.

Blank – No data or insufficient evidence

It should be noted that it is not expected that a polymer unrated would perform better than those that are rated.

Fluid Resistance Key	SBR / BR	EPM / EPDM
Acetaldehyde	U	A
Acetamide	C	A
Acetic Acid, Glacial	C	A
Acetic Acid, 30%	B	A
Acetic Anhydride	B	B
Acetone	B	A
Acetophenone	U	A
Acetyl Chloride		
Acetylene	B	A
Acrylonitrile	C	U
Adipic Acid		
Alkazene		U
Alum-NH ₃ -Cr-K	A	A
Aluminum Acetate	B	A
Aluminum Chloride	A	A
Aluminum Fluoride	A	A
Aluminum Nitrate	A	A
Aluminum Phosphate	A	A
Aluminum Sulfate	B	A
Ammonia Anhydrous		A
Ammonia Gas (Cold)	A	A
Ammonia Gas (Hot)		B
Ammonium Carbonate	A	A
Ammonium Chloride	A	A
Ammonium Hydroxide	U	A
Ammonium Nitrate	A	A
Ammonium Nitrite	A	A
Ammonium Persulfate	U	A

Fluid Resistance Key	SBR / BR	EPM / EPDM
Ammonium Phosphate	A	A
Ammonium Sulfate	B	A
Amyl Acetate	C	A
Amyl Alcohol	B	A
Amyl Borate	U	U
Amyl Chloronaphthalene	U	U
Amyl Napthalene	U	U
Aniline	U	B
Aniline Dyes	B	B
Aniline Hydrochloride	C	B
Animal Fats	U	B
Ansul Ether	U	C
Aqua Regia	U	C
Arochlor(s)	U	C
Arsenic Acid	A	A
Arsenic Trichloride		
Askarel	U	U
Asphalt	U	U
Barium Chloride	A	A
Barium Hydroxide	A	A
Barium Sulfate	A	A
Barium Sulfide	B	A
Beer	A	A
Beet Sugar Liquors	A	A
Benzene	U	U
Benzenesulfonic Acid		
Benzaldehyde	U	A
Benzyl Alcohol		B
Benzyl Benzoate		B
Benzyl Chloride		
Benzoic Acid		
Blast Furnace Gas	U	
Bleach Solutions	U	A
Borax	B	A
Bordeaux Mixture	B	A
Boric Acid	A	A
Brine		A
Bromine – Anhydrous		
Bromine Trifluoride	U	U
Bromine Water		
Bromobenzene	U	U
Bunker Oil		
Butadiene	U	C
Butane	U	U
Butter	U	A

Fluid Resistance Key	SBR / BR	EPM / EPDM
Butyl Acetate		B
Butyl Acetyl Ricinoleate		A
Butyl Acrylate	U	U
Butyl Alcohol	A	B
Butyl Amine	U	U
Butyl Benzoate		A
Butyl Carbitol		A
Butyl Cellosolve		A
Butyl Oleate	U	B
Butyl Stearate	U	B
Butylene	U	U
Butyraldehyde	C	B
Calcium Acetate		A
Calcium Bisulfite	U	U
Calcium Chloride	A	A
Calcium Hydroxide	A	A
Calcium Hypochlorite	U	A
Calcium Nitrate	A	A
Calcium Sulfide	B	A
Cane Sugar Liquors	A	A
Carbamate	U	B
Carbitol	B	B
Carbolic Acid	U	B
Carbon Bisulfide		U
Carbon Dioxide	B	B
Carbonic Acid	B	A
Carbon Monoxide	B	A
Carbon Tetrachloride	U	U
Castor Oil	A	B
Cellosolve	U	B
Cellosolve Acetate	U	B
Cellulube		A
Chlorine (Dry)	U	
Chlorine (Wet)	U	C
Chlorine Dioxide		C
Chlorine Trifluoride	U	U
Chloroacetone		A
Chloroacetic Acid		B
Chlorobenzene	U	U
Chlorobromomethane	U	B
Chlorobutadiene	U	U
Chlorododecane	U	U

Fluid Resistance Key	SBR / BR	EPM / EPDM
Chloroform	U	U
O-Chloronaphthalene	U	U
1-Chloro 1-Nitro Ethane	U	U
Chlorosulfonic Acid	U	U
Chlorotoluene	U	U
Chrome Plating Solutions	U	U
Chromic Acid	U	C
Citric Acid	A	A
Cobalt Chloride	A	A
Coconut Oil	U	A
Cod Liver Oil	U	A
Coke Oven Gas	U	
Copper Acetate		A
Copper Chloride	A	A
Copper Cyanide	A	A
Copper Sulfate	B	A
Corn Oil	U	C
Cottonseed Oil	U	A
Creosote	U	U
Cresol	U	U
Cresylic Acid	U	U
Cumene		
Cyclohexane	U	U
Cyclohexanol	U	U
Cyclohexanone		B
p-Cymene		
Decalin	U	
Decane	U	
Denatured Alcohol	A	A
Detergent Solutions	B	A
Developing Fluids	B	B
Diacetone		A
Diacetone Alcohol	U	A
Dibenzyl Ether	U	B
Dibenzyl Sebecate		B
Dibutyl Amine	U	U
Dibutyl Ether	U	C
Dibutyl Phthalate	U	A
Dibutyl Sebecate	U	B
O-Dichlorobenzene	U	U
Dichloro-Isopropyl Ether	U	C
Didaclohexylamine	U	
Diesel Oil	U	U
Diethylamine	B	B

Fluid Resistance Key	SBR / BR	EPM / EPDM
Diethyl Benzene	U	U
Diethyl Ether	U	U
Diethylene Glycol	A	A
Diethyl Sebecate		B
Diisobutylene		
Diisopropyl Benzene	U	U
Diisopropyl Ketone		A
Dimethyl Aniline	U	B
Dimethyl Formamide		
Dimethyl Phthalate	U	B
Dinitrotoluene	U	U
Diocetyl Phthalate		B
Diocetyl Sebecate	U	B
Dioxane		B
Dioxolane	U	B
Depentene		
Diphenyl		
Diphenyl Oxides		A
Dowtherm Oil	U	U
Dry Cleaning Fluids	U	U
Epichlorohydrin	U	B
Ethane	U	U
Ethanolamine	B	B
Ethyl Acetate	U	B
Ethyl Acetoacetate	C	B
Ethyl Acrylate		B
Ethyl Alcohol	A	A
Ethyl Benzene	U	U
Ethyl Benzoate		B
Ethyl Cellosolve		B
Ethyl Cellulose	B	B
Ethyl Chloride	B	A
Ethyl Chlorocarbonate	U	
Ethyl Chloroformate		
Ethyl Ether		C
Ethyl Formate	U	B
Ethyl Mercaptan	U	U
Ethyl Oxalate	A	A
Ethyl Pentochlorobenzene	U	U
Ethyl Silicate	B	A
Ethylene		
Ethylene Chloride		C
Ethylene Chlorohydrin	B	
Ethylene Diamine	B	A
Ethylene Dichloride	U	C

Fluid Resistance Key	SBR / BR	EPM / EPDM
Ethylene Glycol	A	A
Ethylene Oxide		C
Ethylene Trichloride		C
Fatty Acids	C	U
Ferric Chloride	A	A
Ferric Nitrate	A	A
Ferric Sulfate	A	A
Fish Oil		
Fluoroboric Acid	A	A
Fluorine (Liquid)		C
Fluorobenzene	U	U
Fluorocarbon Oils		A
Fluorolube	U	A
Fluorinated Cyclic Ethers		A
Fluosilicic Acid		
Formaldehyde		A
Formic Acid	A	A
Freon 11	U	U
Freon 12	A	B
Freon 13	A	A
Freon 21		U
Freon 22	A	A
Freon 31	B	A
Freon 32	A	A
Freon 112		U
Freon 113	B	U
Freon 114	A	A
Freon 115	A	A
Freon 142b	A	A
Freon 152a	A	A
Freon 218	A	A
Freon C316	A	A
Freon C318	A	A
Freon 13B1	A	A
Freon 114B2	C	U
Freon 502	A	
Freon TF	B	U
Freon T-WD602	B	B
Freon TMC	C	B
Freon T-P35	A	A
Freon TA	A	A
Freon TC	B	B
Freon MF	B	
Freon BF	U	
Fuel Oil	U	U

Fluid Resistance Key	SBR / BR	EPM / EPDM
Fumaric Acid	A	
Furan, Furfuran	U	C
Fufural	C	B
Gallic Acid	B	B
Gasoline	U	U
Gelatin	A	A
Glauber's Salt	U	B
Glucose	A	A
Glue	A	A
Glycerin	A	A
Glycols	A	A
Green Sulfate Liquor	B	A
Halowax Oil	U	U
n-Hexaldehyde	U	A
Hexane	U	U
n-Hexene-1	U	U
Hexyl Alcohol	A	C
Hydrazine		A
Hydraulic Oil (Petroleum)	U	U
Hydrobromic Acid	C	A
Hydrochloric Acid (Hot) 37%	U	C
Hydrochloric Acid (Cold) 37%	B	A
Hydrocyanic Acid	B	A
Hydrofluoric Acid (Conc.) Hot	U	U
Hydrofluoric Acid (Conc.) Cold	U	B
Hydrofluoric Acid – Anhydrous	U	B
Hydrofluosilicic Acid	B	A
Hydrogen Gas	B	A
Hydrogen Peroxide (90%)	U	C
Hydrogen Sulfide (Wet) (Cold)	U	A
Hydrogen Sulfide (Wet) (Hot)	U	A
Hydroquinone	B	
Hypochlorous Acid	B	B
Iodine Pentafluoride	U	U
Iodoform		A
Isobutyl Alcohol	B	A
Isooctane	U	U
Isophorone		A

Fluid Resistance Key	SBR / BR	EPM / EPDM
Isopropyl Acetate		A
Isopropyl Alcohol	B	A
Isopropyl Chloride	U	U
Isopropyl Ether	U	U
Kerosene	U	U
Lacquers	U	U
Lacquer Solvents	U	U
Lactic Acid	A	A
Lard	U	U
Lavender Oil	U	U
Lead Acetate		A
Lead Nitrate	A	A
Lead Sulfamate	B	A
Lime Bleach	A	A
Lime Sulfur	U	A
Lindol		A
Linoleic Acid		U
Linseed Oil	U	B
Liquefied Petroleum Gas	U	U
Lubricating Oils (Petrol)	U	U
Lye	B	A
Magnesium Chloride	A	A
Magnesium Hydroxide	B	A
Magnesium Sulfate	B	A
Maleic Acid	B	C
Maleic Anhydride	B	C
Malic Acid	B	U
Mercuric Chloride	A	A
Mercury	A	A
Mesityl Oxide	U	B
Methane	U	U
Methyl Acetate	U	B
Methyl Acrylate	U	B
Methylacrylic Acid	U	B
Methyl Alcohol	A	A
Methyl Bromide		
Methyl Butyl Ketone	U	A
Methyl Cellosolve	U	B
Methyl Chloride	U	C
Methyl Cyclopentane	U	U
Methylene Chloride	U	U
Methyl Ethyl Ketone	U	A
Methyl Formate	U	B
Methyl Isobutyl Ketone	U	C

Fluid Resistance Key	SBR / BR	EPM / EPDM
Methyl Methacrylate	U	U
Methyl Oleate	U	B
Methyl Salicylate		B
Milk	A	A
Mineral Oil	U	U
Monochlorobenzene	U	U
Monomethyl Aniline	U	
Monoethanolamine	B	B
Monomethylether	B	A
Monovinyl Acetylene	B	A
Mustard Gas		A
Naptha	U	U
Napthalene	U	U
Napthenic Acid	U	U
Natural Gas	C	U
Neatsfoot Oil	U	B
Neville Acid	U	B
Nickel Acetate		A
Nickel Chloride	A	A
Nickel Sulfate	B	A
Niter Cake	A	A
Nitric Acid – Conc.	U	C
Nitric Acid – Dilute	U	B
Nitric Acid – Red Fuming	U	U
Nitrobenzene	U	U
Nitrobenzine		U
Nitroethane	B	B
Nitromethane	B	B
Nitrogen	A	A
Nitrogen Tetroxide	U	C
Octadecane	U	U
n-Octane	U	U
Octachlorotoluene	U	U
Octyl Alcohol	B	A
Oleic Acid	C	B
Oleum Spirits		
Olive Oil	U	B
o-Dichlorobenzene		
Oxalic Acid	B	A
Oxygen – Cold	B	A
Oxygen – 200-400F	U	U
Ozone	U	A
Paint Thinner, Duco	U	U
Palmitic Acid	B	B

Fluid Resistance Key	SBR / BR	EPM / EPDM
Peanut Oil	U	C
Perchloric Acid		B
Perchloroethylene	U	U
Petroleum – Below 250	U	U
Petroleum – Above 250	U	U
Phenol		B
Phenylbenzene	U	U
Phenyl Ethyl Ether	U	U
Phenyl Hydrazine	B	C
Phorone		B
Phosphoric Acid 20%	C	A
Phosphoric Acid 45%	U	B
Phosphorous Trichloride	U	A
Pickling Solution		C
Picric Acid	B	B
Pinene	U	U
Pine Oil	U	U
Piperidine	U	U
Plating Solution – Chrome	U	A
Plating Solution – Others		A
Polyvinyl Acetate Emulsion		A
Potassium Acetate		A
Potassium Chloride	A	A
Potassium Cupro Cyanide	A	A
Potassium Cyanide	A	A
Potassium Dichromate	B	A
Potassium Hydroxide	B	A
Potassium Nitrate	A	A
Potassium Sulfate	B	A
Producer Gas	U	U
Propane	U	U
Propyl Acetate	U	B
n-Propyl Acetate	U	A
Propyl Alcohol	A	A
Propyl Nitrate		B
Propylene	U	U
Propylene Oxide		B
Pyranol	U	U
Pydrauls	U	B
Pyridine	U	B
Pyroligeneous Acid		B
Pyrrrole	C	C
Radiation	B	B
Rapesseed Oil	U	A

Fluid Resistance Key	SBR / BR	EPM / EPDM
Red Oil	U	U
Sal Ammoniac	A	A
Salicylic Acid	B	A
Salt Water	A	A
Silicate Esters	U	U
Silicone Greases	A	A
Silicone Oils	A	A
Silver Nitrate	A	A
Skydrol 500	U	A
Skydrol 7000	U	A
Soap Solutions	B	A
Soda Ash	A	A
Sodium Acetate	C	A
Sodium Bicarbonate	A	A
Sodium Bisulfite	B	A
Sodium Borate	A	A
Sodium Chloride	A	A
Sodium Cyanide	A	A
Sodium Hydroxide	A	A
Sodium Hypochlorite	C	B
Sodium Metaphosphate	A	A
Sodium Nitrate	B	A
Sodium Perborate	B	A
Sodium Peroxide	B	A
Sodium Phosphate	A	A
Sodium Silicate	A	A
Sodium Sulfate	B	A
Sodium Thiosulfate	B	A
Soybean Oil	U	C
Stannic(ous) Chloride	A	B
Steam Under 300° F	U	A
Steam Over 300° F	U	B
Stearic Acid	B	B
Stoddard Solvent	U	U
Styrene	U	U
Sucrose Solution	A	A
Sulfite Liquors	B	B
Sulfur	U	A
Sulfur Chloride	U	U
Sulfur Dioxide	C	A
Sulfur Hexafluoride	A	A
Sulfur Trioxide	U	B
Sulfuric Acid (Dilute)	C	B
Sulfuric Acid -Concentrated	U	B

Fluid Resistance Key	SBR / BR	EPM / EPDM
Sulfuric Acid (20% Oleum)	U	U
Sulfurous Acid	B	B
Tannic Acid	B	A
Tar, Bituminous	U	U
Tartaric Acid	B	B
Terpincol	U	C
Tertiary Butyl Alcohol	B	B
Tertiary Butyl Catechol	C	B
Tertiary Butyl Mercaptan	U	U
Tetrabromomethane	U	U
Tetrabutyl Titanate	B	A
Tetrachloroethylene	U	U
Tetraethyl Lead	U	U
Tetrahydrofuran	U	B
Tetralin	U	U
Thionyl Chloride	U	U
Titanium Tetrachloride	U	U
Toluene	U	U
Toluene Disocyanate	C	A
Transformer Oil	U	U
Transmission Fluid Type A	U	U
Triocetin	C	A
Tributoxy Ethyl Phosphate	B	A
Tributyl Phosphate	U	A
Tributyl Mercaptan	U	U
Trichloroethane	U	U
Trichloroacetic Acid	B	B
Trichloroethylene	U	U
Tricresyl Phosphate	U	A
Triethanol Amine	B	B
Triethyl Aluminum		
Triethyl Borane		
Trinitrotoluene	U	U
Trioctyl Phosphate	U	A
Trioryl Phosphate	U	A
Tung Oil	U	U
Turbine Oil	U	U
Turpentine	U	U
Unsymmetrical Dimethyl Hydrazine (ODMH)		A
Varnish	U	U
Vegetable Oils	U	A
Versilube	A	A
Vinegar	B	A
Vinyl Chloride		B

Fluid Resistance Key	SBR / BR	EPM / EPDM
Wagner 21B Fluid	A	A
Water	A	A
Whiskey, Wines	A	A
White Pine Oil	U	U
White Oil	U	U
Wood Oil	U	U
Xylene	U	U
Xylidenes	U	U
Zeolites	A	A
Zinc Acetate	C	A
Zinc Chloride	A	A
Zinc Sulfate	B	A

Chemical resistance data is provided as a guide only. Information is based primarily on immersion of unstressed strips in chemicals and to a lesser degree on field experience. Unibell Handbook of PVC Pipe, Design and Construction, Uni-Bell PVC Pipe Assoc.