

Monmouth Rubber & Plastics Corp.

CHEMICAL RESISTANCE OF POLYMERS

Because of variations in compounding of the polymers used in hose, maximum temperature recommendations will vary with the type and concentration of the chemicals handled. This table is abstracted from the RMA Hose Handbook.

The code used to indicate the type of service to be expected from each polymer is as follows:

- **G** = Good service. Suitable for continuous use.
- **F** = Fair service. Usually suitable for continuous service and suitable for intermittent service.
- **C** = Conditional service. Suitable if exposure is limited or infrequent.
- **X** = Not recommended.
- **Blank (-)** = Insufficient information at time of publication.

Maximum temperature 100°F unless otherwise specified.

Chemical	Natural Rubber	SBR	Neoprene	Nitrile	Butyl	Hypalon®	EPDM	Viton®	XLPE
Acetic acid, dilute, 10%	F	C	C	C	G	C	G	X	G
Acetic acid, glacial	C	X	X	X	F	C	F	X	G
Acetic anhydride	C	C	F	F	F	G	X	G	G
Acetone	G	G	F	X	G	F	G	X	G
Acetylene	G	G	F	G	G	F	G	G	-
Air, 150°F	G	G	G	G	G	G	G	G	-
Aluminum chloride, 150°F	G	G	G	G	G	G	G	G	G
Aluminum fluoride 150°F	G	G	G	G	G	G	G	-	-
Aluminum sulfate 150°F	G	G	G	G	G	G	G	G	-
Alums 150°F	G	G	G	G	G	G	G	G	-
Ammonia gas	G	G	G	G	G	G	G	X	G
Ammonium chloride	G	G	G	G	G	G	G	G	-
Ammonium hydroxide	C	F	F	F	G	G	G	G	-
Ammonium nitrate	G	G	G	G	G	G	G	G	-
Ammonium phosphate, monobasic	G	G	G	G	G	G	G	G	-
Ammonium phosphate, dibasic	G	G	G	G	G	G	G	G	-
Ammonium phosphate, tribasic	G	G	G	G	G	G	G	G	-
Ammonium sulfate	G	G	G	G	G	G	G	G	-

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Amyl acetate	F	X	X	X	F	X	G	X	G
Amyl alcohol	G	G	G	G	G	G	G	G	G
Aniline, aniline oil	X	X	C	X	G	X	C	G	G
Aniline dyes	F	F	F	F	G	F	C	-	-
Animal fats	X	X	F	G	X	F	F	G	G
Animal oils	X	X	X	G	F	X	G	G	-
Asphalt	X	X	F	F	X	F	X	G	X
Barium chloride	G	G	G	G	G	G	G	G	-
Barium hydroxide	G	G	G	G	G	G	G	G	-
Barium sulfide	G	G	G	G	G	G	G	G	-
Beer	G	G	G	G	G	G	G	G	-
Beet sugar liquors	G	G	G	G	G	G	G	G	-
Benzene (benzol)	X	X	X	C	X	X	X	G	G
Benzine, petroleum ether	X	X	C	F	X	F	X	G	-
Benzine, petroleum naphtha	X	X	C	F	X	F	X	G	-
Black sulfate liquor	G	G	G	G	G	G	G	G	-
Blast furnace gas	C	C	G	C	C	C	C	G	-
Borax	G	G	G	G	G	G	G	G	-
Boric acid	G	G	G	G	G	G	G	G	-
Brine	G	G	G	G	G	G	G	G	-
Bromine	X	X	X	X	X	C	X	G	F
Butane	X	X	F	G	X	G	X	G	-
Butyl acetate	C	X	X	X	F	X	F	X	G
Butyl alcohol (butanol)	G	G	G	G	G	G	G	G	G
Calcium bisulfate	C	C	G	G	F	G	F	G	-
Calcium chloride	G	G	G	G	G	G	G	G	-
Calcium hydroxide	G	G	G	G	G	G	G	G	-
Calcium hypochlorite	X	X	X	X	G	F	G	F	-
Caliche liquors	G	G	G	G	G	G	G	G	-
Cane sugar liquors	G	G	G	G	G	G	G	G	-
Carbolic acid (phenol)	C	C	C	C	C	C	G	G	-
Carbon dioxide, wet or dry	G	G	G	G	G	G	G	G	-
Carbon disulfide	X	X	X	X	X	X	X	G	C
Carbon monoxide 150°F	C	C	C	C	C	F	C	G	-
Carbon tetrachloride	X	X	X	C	X	X	X	G	G
Castor oil	G	G	G	G	G	G	G	G	-
Cellusolve acetate	F	F	X	X	G	G	C	G	-
China wood oil (tung oil)	X	X	F	G	G	F	G	C	G

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Chlorine, wet or dry	X	X	X	X	X	X	X	G	F
Chlorinated solvents	X	X	X	X	X	X	X	G	-
Chloroacetic acid	X	C	C	C	X	G	X	G	-
Chlorosulfonic acid	X	X	C	C	X	X	X	X	F
Chromic acid	X	X	X	X	C	G	F	-	-
Critic acid	G	G	G	F	G	G	G	G	-
Coke oven gas	C	C	C	C	C	G	X	C	-
Copper chloride 150°F	C	G	F	G	G	F	G	G	-
Copper sulfate 150°F	C	G	G	G	F	G	G	G	-
Corn oil	X	C	F	G	G	F	C	C	-
Cottonseed oil	X	C	F	G	G	F	C	G	G
Creosols (cresylic acid)	C	X	X	C	C	F	X	G	-
Creosote, coal tar	X	X	F	G	X	F	X	F	G
Creosote, wood	X	X	F	G	X	F	X	F	G
Ethers	C	C	C	C	C	F	X	X	G
Ethyl acetate	F	X	X	X	F	X	F	X	G
Ethyl alcohol (ethanol)	G	G	G	G	G	G	G	G	G
Ethyl cellulose	F	F	F	F	F	F	G	-	-
Ethyl chloride	G	F	F	X	G	F	G	F	F
Ethylene glycol	G	G	G	G	G	G	G	G	G
Ferric chloride 150°F	G	G	G	G	G	G	G	G	-
Ferric sulfate 150°F	G	G	G	G	G	G	G	G	-
Formaldehyde	G	G	C	G	G	G	G	G	-
Formic acid	G	G	C	F	G	G	G	X	F
Freon #12, liquid	X	X	G	F	F	F	G	-	-
Fuel oil	X	X	F	G	X	F	X	G	-
Furfural	X	C	C	X	G	F	C	X	G
Gasoline, unleaded	X	X	X	G	X	X	X	G	F
Gasoline, regular leaded	X	X	X	C	X	X	X	G	F
Gasoline, hi-test leaded	X	X	X	G	X	X	X	G	F
Gelatin	G	G	G	G	G	G	G	G	-
Glucose	G	G	G	G	G	G	G	G	-
Glue	F	F	G	G	F	G	G	G	-
Glycerine (glycerol)	G	G	G	G	G	G	G	G	G
Green sulfate liquor	G	G	G	G	G	G	G	G	-
Hydraulic fluids:	-	-	-	-	-	-	-	-	-
petroleum	X	X	G	G	X	F	X	-	-
phosphate ester alkyl	X	X	C	G	X	G	-	-	-
phosphate ester aryl	X	X	X	X	C	X	C	-	-

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phosphate ester blends	X	X	X	X	X	X	C	-	-
silicate ester	X	X	C	C	X	C	X	-	-
water-glycol	G	G	G	G	G	G	G	-	-
Hydrobromic acid	C	X	C	C	G	G	G	-	-
Hydrochloric acid	G	X	X	X	C	C	C	G	G
Hydrocyanic acid	F	F	C	F	C	G	C	G	-
Hydrofluoric acid	X	X	X	X	C	G	C	G	G
Hydrofluosilicic acid	G	F	F	F	G	G	-	-	-
Hydrogen gas	F	F	G	G	G	G	G	-	-
Hydrogen peroxide	X	X	C	C	C	C	C	G	-
Hydrogen sulfide, dry	C	C	F	X	G	G	G	-	-
Hydrogen sulfide, wet	C	C	F	C	G	G	G	G	-
Jet fuels	X	X	F	G	X	C	X	G	G
Kerosene	X	X	F	G	X	C	X	G	G
Lacquers	X	X	X	X	C	X	X	F	-
Lacquer solvents	X	X	X	X	C	X	X	X	F
Lactic acid	C	C	C	C	C	G	C	G	-
Linseed oil	C	X	F	G	G	G	G	G	G
Lubricating oils, crude	X	X	F	G	X	C	X	G	G
Lubricating oils, refined	X	X	F	G	X	C	X	G	-
Magnesium chloride 150°F	G	G	G	G	G	G	G	G	-
Magnesium hydroxide 150°F	G	F	F	F	G	G	G	G	-
Magnesium sulfate 150°F	G	G	G	G	G	G	G	G	-
Mercuric chloride	F	F	C	F	G	G	G	G	-
Mercury	G	G	G	G	G	G	G	G	-
Methyl alcohol	G	G	G	G	G	G	G	C	G
Methyl chloride	C	C	C	C	C	X	C	F	-
Methyl ethyl ketone	X	X	X	X	F	-	G	X	G
Methyl isopropyl ketone	X	X	X	X	F	C	C	X	G
Milk	C	C	F	F	G	G	G	G	-
Mineral oils	X	C	F	G	X	F	X	G	-
Natural gas	C	C	G	G	C	G	X	G	-
Nickel chloride 150°F	G	G	G	G	G	G	G	G	G
Nickel sulfate 150°F	G	G	G	G	G	G	G	G	-
Nitric acid, concentrated, 70%	X	X	X	X	C	C	X	C	F
Nitric acid, diluted, 10%	X	X	C	X	C	G	C	C	-
Nitric acid, crude	X	X	X	X	C	C	X	-	-

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Nitrobenzene	X	X	X	X	X	X	F	G	-
Oleic acid	X	F	C	F	F	X	F	G	-
Oleum spirits	X	C	C	C	F	C	-	-	-
Oxalic acid	F	C	F	F	G	G	G	G	-
Oxygen	F	C	G	C	G	G	G	-	-
Palmitic acid	X	F	G	G	F	F	F	G	-
Perchloroethylene	X	X	X	C	X	X	X	G	G
Petroleum, crude 200°F	X	X	F	G	X	C	X	G	-
Petroleum oils 200°F	X	X	F	C	C	G	C	G	-
Phosphoric acid, crude	G	C	C	C	C	G	C	G	-
Phosphoric acid, pure, 45%	G	C	C	C	C	C	G	G	-
Picric acid, molten	C	C	C	C	G	G	-	-	-
Picric acid, water solution	G	C	F	F	G	G	-	-	-
Potassium chloride	G	G	G	G	G	G	G	G	-
Potassium cyanide	G	G	G	G	G	G	G	G	-
Potassium hydroxide	F	F	C	C	G	G	G	G	-
Potassium sulfate	G	G	G	G	G	G	G	G	-
Propane	X	X	F	G	X	F	X	G	-
Sea water	G	G	G	G	G	G	F	G	G
Sewage	C	C	F	G	C	G	C	G	-
Soap solutions	G	G	F	G	G	G	G	G	-
Soda ash (sodium carbonate)	G	G	G	G	G	G	G	G	-
Sodium bicarbonate (baking soda)	G	G	G	G	G	G	G	G	-
Sodium bisulfate	G	G	G	G	G	G	G	G	-
Sodium chloride	G	G	G	G	G	G	G	G	-
Sodium cyanide	G	G	G	G	G	G	G	G	-
Sodium hydroxide (caustic soda)	F	F	C	C	G	C	G	G	G
Sodium hypochlorite	X	X	X	X	G	F	G	G	-
Sodium metaphosphate	G	G	C	G	G	F	G	G	-
Sodium nitrate	C	C	C	C	G	G	G	G	-
Sodium perborate	C	C	C	C	G	G	G	G	-
Sodium peroxide	C	C	C	C	G	G	G	G	-
Sodium phosphate, monobasic	G	F	C	F	G	G	G	G	-
Sodium phosphate, dibasic	G	F	C	F	G	G	G	G	-

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Sodium phosphate, tribasic	G	F	C	F	G	G	G	G	-
Sodium silicate	G	G	G	G	G	G	G	G	-
Sodium sulfate	G	G	G	G	G	G	G	G	-
Sodium sulfide	G	G	G	G	G	G	G	G	-
Sodium thiosulfate (hypo)	G	G	G	G	G	G	G	G	-
Soybean oil	X	C	F	G	G	G	G	G	G
Stannic chloride	G	G	G	G	F	G	F	G	-
Steam 450°F	C	C	C	C	C	C	F	X	-
Stearic acid	X	X	C	F	F	C	F	G	-
Sulfur	F	F	G	F	G	G	G	C	-
Sulfur chloride	X	X	C	C	X	G	X	G	-
Sulfur dioxide, dry	C	C	C	C	C	G	C	-	-
Sulfur trioxide, dry	X	C	C	C	C	F	C	-	-
Sulfuric acid, 10%	G	G	G	G	G	G	G	G	G
Sulfuric acid, 11-75%	C	C	C	C	F	G	C	G	-
Sulfuric acid, 76-95%	X	X	X	X	C	G	X	G	G
Sulfuric acid, fuming	X	X	X	X	X	X	X	G	X
Sulfurous acid	C	C	C	C	C	G	C	G	-
Tannic acid	G	C	G	C	G	G	G	G	-
Tar	X	X	C	C	X	C	X	X	-
Tartaric acid	G	C	C	C	F	G	F	G	-
Toluene (toluol)	X	X	X	C	X	X	X	G	G
Trichloroethylene	X	X	X	X	X	X	X	G	G
Turpentine	X	X	X	F	X	X	X	G	G
Vegetable oil, non-edible	X	X	F	F	G	G	-	-	-
Vinegar	C	C	C	C	G	G	G	T	-
Water, acid mine	G	G	C	G	G	G	G	G	G
Water, distilled	G	G	C	G	G	G	G	G	-
Water, fresh	G	G	C	G	G	G	G	G	-
Water, sea	G	G	G	G	G	G	F	G	G
Whiskey and wines	G	G	G	C	G	G	G	G	-
Xylene (xylol)	X	X	X	C	X	X	X	G	G
Zinc	C	C	C	C	G	G	G	G	-
Zinc sulfate	G	G	G	G	G	G	G	G	-

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