CHEMICAL COMPATIBILITY CHART

Hose Material Code:
PV = Vinyl, PU = Polyurethane, PY= Low Density Polyethylene
HPY = High Density Polyethylene, N = Flexible Nylon II
UN = Unplasticized Nylon II, PP = Polypropylene

Compatibility Code:
G = Good. Little or no swelling, tensile, or surface change
L = Marginal. Noticeable effects but not necessarily indicating lack of serviceability. Further testing recommended in specific application.
P = Poor or unsatisfactory. Not recommended without extensive testing.
NT = Not tested or not rated.

Ratings based on immersion tests at 73^0 F and should not be extrapolated to higher temperatures without appropriate caution.

Chemical	PV	PU	PY	HPY	N	UN	PP
ACIDS & BASES:							
Acetic, 50%	G	P	P	G	L	L	G
Boric	G	G	G	G	G	G	G
Carbolic (Phenol)	P	P	G	G	P	P	G
Fatty	G	G	P	G	G	G	G
Formic, 90%	G	P	G	G	P	P	G
Hydrochloric, 10%	G	G	G	G	L	L	G
Hydrochloric, 25%	G	L	G	G	P	P	G
Hydroccyanic, 50%	G	L	G	G	NT	NT	G
Hydrofluoric, 50%	L	P	G	G	P	P	G
Maleic	G	P	G	G	G	G	G
Nitric, 10%	G	P	G	G	L	L	G
Nitric, 30%	G	P	G	G	P	P	L
Oleic	L	G	L	G	G	G	G
Phosphoric, 25%	G	L	G	G	G	G	G
Sulfuric, 30%	G	L	G	G	L	L	G
Sulfuric, 70%	L	P	P	G	P	P	G
Sulfuric, 98%	P	P	P	L	P	P	G
Sulfurous, 30%	G	P	G	G	L	L	G
Tannic	G	P	G	G	G	G	G
Ammonium Hydroxide, 25%	P	G	L	G	G	G	G
Potassium Hydroxide, 25%	L	G	G	G	G	G	G
Sodium Hydroxide, 50%	G	G	G	G	G	G	G
SOLVENTS:							
Acetone	P	P	G	G	G	G	L
Benzene	P	L	P	L	G	G	P
Carbon Tetrachloride	P	L	L	L	L	L	P
Chloroform	P	P	P	P	L	L	P
Cyclohexanone	P	P	P	G	G	G	L
Dimethylformamide	P	P	L	G	NT	NT	G
Dioxane	NT	NT	P	G	G	G	L
Ethyl acetate	P	L	G	G	G	G	L
Ethyl Alcohol**	L	G	G	G	L	G	G
Ethyl ether	L	L	G	G	G	G	L
Ethylene glycol	G	G	G	G	G	G	G
Formaldehyde	G	G	G	G	G	G	G
Freon - 12	L	L	G	G	G	G	L
Methyl alcohol	L	G	G	G	L	G	G
Methylene chloride	P	P	L	L	G	G	L
Methyl ethyl ketone	P	P	G	G	G	G	L
Napthas***	P	G	P	G	G	G	L
Toluene	P	G	P	L	G	G	L
Trichlorethylene	P	P	P	G	L	L	P
Turpentine	G	G	P	G	G	G	L
Xylene	P	G	P	L	G	G	L
HYDRAULIC FLUIDS:							
Diester base grease	NT	G	P	NT	G	G	L
Petroleum base grease	G	G	L	NT	G	G	L
Phosphate ester	L	P	P	NT	G	G	G
Polyol ester	P	NT	P	NT	G	G	G
Water-glycol	G	G	G	NT	G	G	G
SAE motor oils	G	G	G	G	G	G	G
Machine oil	G	G	L	G	G	G	L
MIL-L7808 H	G	G	L	G	G	G	G
Brake fluid	NT	NT	NT	NT	NT	NT	NT

Chemical	PV	PU	PY	HPY	N	UN	PP
FUELS:							
Butane **	G	G	L	G	G	G	L
Diesel Fuel	L	G	L	G	G	G	L
Gasoline (Regular)	L	G	P	G	G	G	L
Kerosene	L	G	P	G	G	G	G
Methane (natural gas)**	G	G	L	G	G	G	G
Propane**	G	G	L	G	G	G	L
OTHER:							
Acetylene	NT	G	G	G	G	G	G
Ammonia Gas	P	G	G	G	G	G	G
Ammonium Salts	G	G	G	G	G	G	G
Amyl acetate	P	P	L	G	G	G	P
Aniline	P	P	L	G	L	L	G
Animal Oils	G	G	P	G	G	G	G
Bleach, 7%	G	P	G	G	L	L	L
Bromine	L	G	P	P	P	P	P
Butandiol	G	G	G	G	G	G	G
Calcium Salts incl chloride	G	G	G	G	G	G	G
Chlorine Gas, Dry	G	G	P	P	P	P	P
Dibutyl Phthalate	NT	P	L	G	G	G	L
Glucose	G	G	G	G	G	G	G
Glycerine	G	G	G	G	G	G	G
Hydrogen Peroxide, 10%	G	G	G	G	G	G	G
Hydrogen Peroxide, 25%	L	G	G	G	P	P	G
Hydrogen Sulfide	G	P	G	G	L	L	G
Isocyanates	NT	G	G	G	G	G	NT
Lead Salts****	G	G	G	G	G	G	G
Magnesium Salts	G	G	G	G	G	G	G
Mercury	G	G	G	G	G	G	G
Milk**	G	G	G	G	G	G	G
Mineral Oil	G	G	L	G	G	G	L
Nitrous Oxide**	G	G	L	NT	G	G	G
Oxygen**	G	G	G	G	G	G	G
Ozone, ambient	G	G	L	G	G	G	L
Paint(oil base)	L	G	L	G	G	G	G
Polyglycols	G	G	G	G	G	G	G
Potassium salts	G	G	G	G	G	G	G
Pydraul	P	P	P	NT	G	G	NT
Pyridine	P	L	G	G	L	L	G
Salt Water	G	G	G	G	G	G	G
Silver Nitrate	G	G	G	G	G	G	G
Skydrol	P	P	P	NT	G	G	NT
Soap solution (conc)	G	G	L	G	G	G	G
Sodium salts	G	G	G	G	G	G	G
Sodium thiosulphate	G	G	G	G	G	G	G
Styrene	P	G	P	P	G	G	NT
Trisodium phosphate	G	G	NT	G	G	G	G
Ucon oil	G	G	G	G	G	G	NT
Urea	G	G	G	G	G	G	G
Vegetable oils**	G	G	G	G	G	G	G
Water at 73^0F	G	G	G	G	G	G	G
Water at 140^0F	L	G	G	G	G	G	G
Water at 170^0F	P	L	NT	P	L	G	G
Whiskey, wine	NT	G	G	G	G	G	G
Zinc chloride	G	G	G	G	G	G	G

*This chart is intended as a guide to chemical compatibility. Final selection also depends upon pressure, fluid and ambient temperatures and other variables that affect tubing service. Therefore, no guarantee is expressed or implied.
**These ratings do not necessarily imply compliance with specialized codes such as NSF, FDA, AGA or UL.
***Napthas include heptane, hexane, mineral spirits, rubber solvent and Stoddard solvent
****Metallic salts exclude some halogenated metals, expecially hypochlorites.

PROPERTIES OF MATERIALS

NYLON

NYLON FITTINGS ARE GENERALLY ACCEPTABLE FOR WORKING PRESSURES UP TO 150 PSI AT NORMAL ROOM TEMPERATURES. AT VERY LOW PRESSURES, TEMPERATURES CAN APPROACH 175 F WITH NO DEGRADATION OF THE FITTING'S STRENGTH.

NYLON HAS GOOD RESISTANCE TO A FAIRLY BROAD RANGE OF CHEMICALS INCLUDING MOST AGRICULTURAL CHEMICALS, AMMONIUM COMPOUNDS, DETERGENTS, DIESEL FUEL, ETHANOL, GASOLINE, HEXANE, MAGNESIUM SULFATE, MOST SODIUM COMPOUNDS, TRICHLOROETHYLENE, AND ZINC SULFATE.

NYLON FITTINGS SHOULD NOT BE USED WITH ACID BASED FERTILIZERS, BROMINE, CHLORINE, FLOURINE, HYDROCHLORIC ACID, SULFURIC ACID OR XYLENE.

NOT TO BE USED WITH COMPRESSED GASES

POLYPROPYLENE

POLYPROPYLENE FITTINGS ARE GENERALLY ACCEPTABLE FOR WORKING PRESSURES UP TO 150 PSI AT NORMAL ROOM TEMPERATURES. AT HIGHER TEMPERATURES THE RECOMMENDED WORKING PRESSURE DECREASES. FOR EXAMPLE, AT 140 F THE MAXIMUM RECOMMENDED WORKING PRESSURE IS 90 PSI.

POLYPROPYLENE HAS GOOD RESISTANCE TO MOST AGRICULTURAL CHEMICALS, ACID-BASED FERTILIZERS, AMMONIUM COMPOUNDS, CALCIUM CARBONATE, DDT, ETHANOL, HYDROCHLORIC ACID, MAGNESIUM SULFATE, OXALIC ACID, PROPIONIC ACID, PHOSPHORIC ACID, AND SODIUM COMPOUNDS.

POLYPROPYLENE SHOULD NOT BE USED WITH AROMATIC HYDROCARBONS, CARBON TETRA-CHLORIDE, GASOLINE, HEXANE, KEROSENE, NITRIC ACID, SODIUM HYPOCHLORITE, TOLUENE, TRICHLOROETHYLENE OR XYLENE.

NOT TO BE USED WITH COMPRESSED GASES.

A & M INDUSTRIES DOES NOT WARRANT THE SUITABILITY OF ANY MATERIAL FOR ANY SPECIFIC CHEMICAL OR PURPOSE. IF YOU WOULD LIKE A MATERIAL SAFETY DATA SHEET (MSDS), PLEASE CALL.

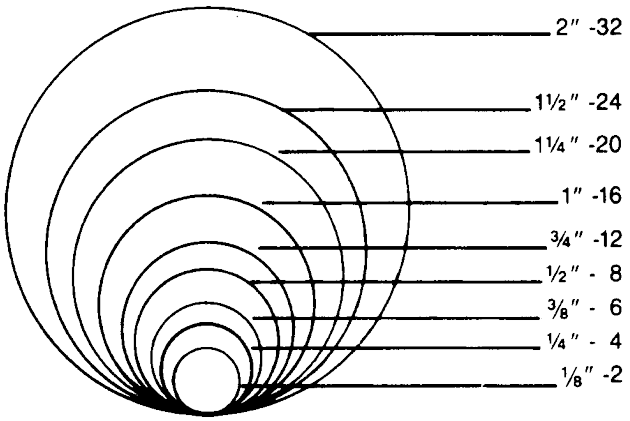
ABBREVIATIONS

MPT - MALE PIPE THREAD
FPT - FEMALE PIPE THREAD
MGHT - MALE GARDEN HOSE THREAD
FGHT - FEMALE GARDEN HOSE THREAD
P - POLYETHYLENE
PP - POLYPROPYLENE

SIZE CODING

1/8" = 2	3/4" = 12
3/16" = 3	1" = 16
1/4" = 4	1 1/4" = 20
5/16" = 5	1 1/2" = 24
3/8" = 6	2" = 32
1/2" = 8	3" = 48
5/8" = 10	4" = 64

MALE PIPE (NPTF) THREAD SIZE
ACTUAL SIZE



PLEASE NOTE: Line Art is for illustrative purposes only. Actual part may differ. Please call for a dimensional drawing.