

Chemical Compatability Chart

Chemical Compatability for Material Contact of Standard PM/PI, CM/CI and PP Range of Fittings and LLDPE Range of Tubing.

This chart describes the compatability of the materials of construction of our standard PM/PI, CM/CI and PP Fittings and LLDPE Tubing when in contact solely with the listed chemical substance. It is intended as a guide only and is not an assurance of suitability for any specific application.

Customers are advised to determine suitability for their application. For further details please contact our Technical Support Department.

CHEMICAL	PM/PI RANGE	CM/CI RANGE	PP RANGE	LLDPE TUBING	CHEMICAL	PM/PI RANGE	CM/CI RANGE	PP RANGE	LLDPE TUBING
ACETALDEHYDE	UNSUITABLE	SATISFACTORY	NOT TESTED	NOT TESTED	CANE-SUGAR LIQUORS	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED
ACETATE SOLVENTS	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED	CARBON DIOXIDE - DRY	SATISFACTORY	SATISFACTORY	NOT TESTED	GOOD
ACETIC ACID 3%	SATISFACTORY	GOOD	GOOD	NOT TESTED	CARBON DIOXIDE - WET	SATISFACTORY	SATISFACTORY	NOT TESTED	GOOD
ACETIC ACID 20%	SATISFACTORY	NOT TESTED	NOT TESTED	NOT TESTED	CARBON TETRACHLORIDE	UNSUITABLE	UNSUITABLE	UNSUITABLE	UNSUITABLE
ACETIC ACID 50%	SATISFACTORY	NOT TESTED	NOT TESTED	NOT TESTED	CHLORINE - DRY	UNSUITABLE	UNSUITABLE	UNSUITABLE	POOR
ACETONE	UNSUITABLE	GOOD	GOOD	NOT TESTED	CHLORINE - WET	UNSUITABLE	UNSUITABLE	UNSUITABLE	NOT TESTED
ACETOPHENONE	UNSUITABLE	SATISFACTORY	NOT TESTED	NOT TESTED	CHLOROFORM	UNSUITABLE	UNSUITABLE	UNSUITABLE	UNSUITABLE
ACETYLENE	NOT FOR USE WITH THIS SUBSTANCE			GOOD	CHROMIC ACID 3%	UNSUITABLE	UNSUITABLE	UNSUITABLE	NOT TESTED
AIR	GOOD	GOOD	GOOD	GOOD	CITRIC ACID 10%	SATISFACTORY	SATISFACTORY	SATISFACTORY	NOT TESTED
ALCOHOLS 95%	NOT TESTED	GOOD	NOT TESTED	NOT TESTED	COKE OVEN GAS	UNSUITABLE	UNSUITABLE	UNSUITABLE	NOT TESTED
ALUMINUM CHLORIDE	UNSUITABLE	UNSUITABLE	NOT TESTED	NOT TESTED	COPPER SALTS	NOT TESTED	NOT TESTED	GOOD	NOT TESTED
ALUMINUM SULFATE	SATISFACTORY	SATISFACTORY	NOT TESTED	NOT TESTED	COPPER SULFATE 10%	GOOD	GOOD	NOT TESTED	GOOD
ALUMS	UNSUITABLE	UNSUITABLE	NOT TESTED	GOOD	COTTONSEED OIL	GOOD	GOOD	NOT TESTED	SATISFACTORY
AMMONIA - COLD GAS	GOOD	GOOD	GOOD	GOOD	CREOSOTE	SATISFACTORY	UNSUITABLE	UNSUITABLE	NOT TESTED
AMMONIA - LIQUID	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED	CYCLOHEXANOL	SATISFACTORY	SATISFACTORY	SATISFACTORY	NOT TESTED
AMMONIUM ACETATE	NOT TESTED	NOT TESTED	NOT TESTED	GOOD	CYCLOHEXANONE	UNSUITABLE	SATISFACTORY	SATISFACTORY	UNSUITABLE
AMMONIUM CARBONATE	UNSUITABLE	GOOD	GOOD	NOT TESTED	D.D.T.	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED
AMMONIUM CHLORIDE	UNSUITABLE	UNSUITABLE	GOOD	NOT TESTED	DETERGENT SOLUTION	GOOD	GOOD	GOOD	SATISFACTORY
AMMONIUM HYDROXIDE	UNSUITABLE	GOOD	NOT TESTED	NOT TESTED	DIBUTYL PHTHALATE	UNSUITABLE	SATISFACTORY	NOT TESTED	POOR
AMMONIUM NITRATE	SATISFACTORY	SATISFACTORY	GOOD	GOOD	DICHLOROETHYLENE	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED
AMMONIUM PHOSPHATE	NOT TESTED	NOT TESTED	NOT TESTED	GOOD	DIMETHYLFORMAMIDE	UNSUITABLE	SATISFACTORY	SATISFACTORY	NOT TESTED
AMMONIUM SULFATE 10% pH 5.8	GOOD	GOOD	GOOD	GOOD	DIXANE	UNSUITABLE	SATISFACTORY	NOT TESTED	SATISFACTORY
AMYL ACETATE	UNSUITABLE	NOT TESTED	NOT TESTED	POOR	ETHER (DAB 6)	NOT TESTED	NOT TESTED	NOT TESTED	UNSUITABLE
AMYL ALCOHOL	SATISFACTORY	SATISFACTORY	SATISFACTORY	SATISFACTORY	ETHYL ACETATE	UNSUITABLE	SATISFACTORY	SATISFACTORY	POOR
AMYL CHLORIDE	NOT TESTED	NOT TESTED	NOT TESTED	UNSUITABLE	ETHYL ALCOHOL (50%)	GOOD	GOOD	GOOD	GOOD
ANILINE	UNSUITABLE	SATISFACTORY	SATISFACTORY	NOT TESTED	ETHYL ALCOHOL (95%)	GOOD	GOOD	GOOD	GOOD
ASPHALT	SATISFACTORY	UNSUITABLE	UNSUITABLE	NOT TESTED	ETHYLENE GLYCOL	GOOD	GOOD	NOT TESTED	SATISFACTORY
AUTO REAR END LUBRICANT	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED	FERNOX INHIBITOR	REFER TO JOHN GUEST INC.			NOT TESTED
AUTOMATIC TRANSMISSION FLUID	SATISFACTORY	UNSUITABLE	UNSUITABLE	NOT TESTED	FERRIC CHLORIDE 10%	UNSUITABLE	UNSUITABLE	NOT TESTED	GOOD
BARIUM SALTS	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED	FERRIC SULFATE	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED
BEER	GOOD	GOOD	GOOD	GOOD	FEROUS CHLORIDE	UNSUITABLE	UNSUITABLE	NOT TESTED	GOOD
BEEF-SUGAR LIQUORS	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED	FEROUS SULFATE	SATISFACTORY	SATISFACTORY	NOT TESTED	GOOD
BENZALDEHYDE	UNSUITABLE	GOOD	GOOD	UNSUITABLE	FORMALDEHYDE 40%	UNSUITABLE	SATISFACTORY	SATISFACTORY	SATISFACTORY
BENZENE	UNSUITABLE	UNSUITABLE	UNSUITABLE	UNSUITABLE	FORMIC ACID 10%	UNSUITABLE	UNSUITABLE	GOOD	SATISFACTORY
BENZOIC ACID	UNSUITABLE	UNSUITABLE	UNSUITABLE	NOT TESTED	FREON	REFER TO JOHN GUEST INC.			NOT TESTED
BORAX	SATISFACTORY	GOOD	GOOD	GOOD	GELATIN	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED
BORIC ACID	GOOD	GOOD	GOOD	GOOD	GLUCOSE	GOOD	GOOD	GOOD	GOOD
BRAKE FLUID	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED	GLYCERIN	GOOD	GOOD	GOOD	NOT TESTED
BRANDY	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED	HEPTANE	NOT TESTED	NOT TESTED	NOT TESTED	UNSUITABLE
BROMINE WATER	UNSUITABLE	UNSUITABLE	UNSUITABLE	NOT TESTED	HYDRAULIC FLUID	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED
BUFFER SOLUTION pH 4.0	UNSUITABLE	UNSUITABLE	NOT TESTED	NOT TESTED	HYDRAULIC FLUID FIRE RESISTANT	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED
BUFFER SOLUTION pH 7.0	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED	HYDROBROMIDE ACID (HYDROBROMIC ACID)	UNSUITABLE	UNSUITABLE	GOOD	GOOD
BUFFER SOLUTION pH 10.0	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED	HYDROCHLORIC ACID 30%	UNSUITABLE	UNSUITABLE	SATISFACTORY	GOOD
BUTANE	NOT FOR USE WITH THIS SUBSTANCE			NOT TESTED	HYDROCHLORIC ACID 50%	UNSUITABLE	UNSUITABLE	NOT TESTED	GOOD
BUTTER	GOOD	GOOD	GOOD	SATISFACTORY	HYDROCYANIC ACID	NOT TESTED	NOT TESTED	NOT TESTED	GOOD
BUTYL ACETATE	UNSUITABLE	SATISFACTORY	SATISFACTORY	POOR	HYDROFLUORIC ACID - 40%	UNSUITABLE	UNSUITABLE	GOOD	GOOD
BUTYL RUBBER	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED	HYDROFLUORIC ACID - 50%	UNSUITABLE	UNSUITABLE	NOT TESTED	GOOD
CALCIUM ARSENATE	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED	HYDROFLUORIC ACID - DILUTE	UNSUITABLE	UNSUITABLE	GOOD	GOOD
CALCIUM BISULFITE	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED	HYDROGEN FLUORIDE	UNSUITABLE	UNSUITABLE	NOT TESTED	NOT TESTED
CALCIUM CHLORIDE	GOOD	GOOD	GOOD	NOT TESTED	HYDROGEN GAS	NOT FOR USE WITH THIS SUBSTANCE			GOOD
CALCIUM HYPOCHLORITE	UNSUITABLE	UNSUITABLE	GOOD	GOOD	HYDROGEN PEROXIDE 3%	NOT TESTED	UNSUITABLE	SATISFACTORY	NOT TESTED
CALCIUM SALTS	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED					

CHEMICAL	PM/PI RANGE	CM/CI RANGE	PP RANGE	LLDPE TUBING	CHEMICAL	PM/PI RANGE	CM/CI RANGE	PP RANGE	LLDPE TUBING
HYDROGEN SULFIDE	UNSUITABLE	SATISFACTORY	GOOD	NOT TESTED	SHELLAC	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED
IODINE (IN ALCOHOL SOLUTION)	UNSUITABLE	UNSUITABLE	NOT TESTED	NOT TESTED	SILVER NITRATE	SATISFACTORY	SATISFACTORY	NOT TESTED	GOOD
ISO-PROPANOL	SATISFACTORY	GOOD	NOT TESTED	GOOD	SOAP SOLUTION	GOOD	GOOD	GOOD	SATISFACTORY
KEROSENE	SATISFACTORY	UNSUITABLE	UNSUITABLE	UNSUITABLE	SODIUM BICARBONATE 10%	NOT TESTED	NOT TESTED	NOT TESTED	GOOD
LACTIC ACID 20%	SATISFACTORY	GOOD	GOOD	NOT TESTED	SODIUM BISULFATE	UNSUITABLE	UNSUITABLE	NOT TESTED	GOOD
LEAD ACETATE	SATISFACTORY	SATISFACTORY	NOT TESTED	GOOD	SODIUM BISULFITE	UNSUITABLE	UNSUITABLE	NOT TESTED	GOOD
LIME SULPHUR	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED	SODIUM BORATE	GOOD	GOOD	NOT TESTED	GOOD
LINSEED OIL	GOOD	GOOD	GOOD	POOR	SODIUM CARBONATE 10%	GOOD	GOOD	GOOD	GOOD
LUBRICATION OIL (WITH MOLYBDENUM)	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED	SODIUM CHLORATE	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED
MACHINE OIL	NOT TESTED	NOT TESTED	NOT TESTED	GOOD	SODIUM CHLORIDE 10%	GOOD	GOOD	GOOD	GOOD
MAGNESIUM CHLORIDE	SATISFACTORY	SATISFACTORY	NOT TESTED	GOOD	SODIUM CYANIDE	SATISFACTORY	SATISFACTORY	NOT TESTED	GOOD
MAGNESIUM HYDROXIDE	SATISFACTORY	GOOD	NOT TESTED	GOOD	SODIUM HYDROXIDE (CAUSTIC SODA SOLUTION)	SATISFACTORY	GOOD	GOOD	NOT TESTED
MAGNESIUM SULFATE	NOT TESTED	NOT TESTED	NOT TESTED	GOOD	SODIUM HYPOCHLORITE (12.5 ACTIVE CHLORINE)	UNSUITABLE	UNSUITABLE	SATISFACTORY	NOT TESTED
MALEIC ACID	UNSUITABLE	UNSUITABLE	UNSUITABLE	GOOD	SODIUM METAPHOSPHATE	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED
MANGANESE SALTS	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED	SODIUM NITRATE 10% pH 8.8	GOOD	GOOD	GOOD	GOOD
MAYONNAISE	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED	SODIUM PERBORATE	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED
MERCURIC CHLORIDE	UNSUITABLE	UNSUITABLE	NOT TESTED	GOOD	SODIUM PHOSPHATE	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED
MERCURY	GOOD	GOOD	GOOD	GOOD	SODIUM SILICATE	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED
METHANOL	NOT FOR USE WITH THIS SUBSTANCE			GOOD	SODIUM SULFATE	NOT TESTED	NOT TESTED	NOT TESTED	GOOD
METHYL CHLORIDE	UNSUITABLE	UNSUITABLE	UNSUITABLE	POOR	SODIUM SULFITE	NOT TESTED	NOT TESTED	NOT TESTED	GOOD
MILK	SATISFACTORY	SATISFACTORY	GOOD	GOOD	SODIUM THIOSULFATE	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED
MOTOR OIL	NOT TESTED	NOT TESTED	NOT TESTED	DEPENDS ON TYPE	STEARIC ACID	SATISFACTORY	SATISFACTORY	SATISFACTORY	SATISFACTORY
NATURAL GAS	NOT FOR USE WITH THIS SUBSTANCE			NOT TESTED	SUCINIC ACID	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED
NICKEL SALTS	NOT TESTED	NOT TESTED	GOOD	NOT TESTED	SULFATE LIQUORS	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED
NITRIC ACID - CONCENTRATED	UNSUITABLE	UNSUITABLE	UNSUITABLE	UNSUITABLE	SULFUR	UNSUITABLE	SATISFACTORY	GOOD	GOOD
NITRIC ACID 10%	UNSUITABLE	UNSUITABLE	SATISFACTORY	GOOD	SULFUR CHLORIDE	UNSUITABLE	UNSUITABLE	UNSUITABLE	NOT TESTED
NITROBENZENE	UNSUITABLE	NOT TESTED	NOT TESTED	UNSUITABLE	SULFUR DIOXIDE GAS	UNSUITABLE	UNSUITABLE	GOOD	GOOD
NITROGEN OXIDES	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED	SULFURIC ACID - CONCENTRATED	UNSUITABLE	UNSUITABLE	UNSUITABLE	POOR
NITROUS OXIDES	UNSUITABLE	UNSUITABLE	NOT TESTED	NOT TESTED	SULFURIC ACID - 3%	NOT TESTED	GOOD	GOOD	NOT TESTED
OLEIC ACID	SATISFACTORY	NOT TESTED	NOT TESTED	POOR	SULFURIC ACID - 10%	NOT TESTED	SATISFACTORY	GOOD	GOOD
OLIVE OIL	GOOD	SATISFACTORY	SATISFACTORY	GOOD	SULFUROUS ACID	UNSUITABLE	UNSUITABLE	NOT TESTED	GOOD
OXALIC ACID	SATISFACTORY	SATISFACTORY	GOOD	SATISFACTORY	TANNIC ACID	SATISFACTORY	SATISFACTORY	NOT TESTED	SATISFACTORY
OXYGEN	SATISFACTORY	SATISFACTORY	NOT TESTED	GOOD	TAR	SATISFACTORY	UNSUITABLE	UNSUITABLE	NOT TESTED
PALMITIC ACID	SATISFACTORY	SATISFACTORY	NOT TESTED	NOT TESTED	TARTARIC ACID	UNSUITABLE	UNSUITABLE	SATISFACTORY	NOT TESTED
PERCHLORIC ACID	UNSUITABLE	UNSUITABLE	NOT TESTED	SATISFACTORY	TETRAHYDROFURAN	UNSUITABLE	NOT TESTED	NOT TESTED	UNSUITABLE
PETROL	SATISFACTORY	UNSUITABLE	NOT TESTED	NOT TESTED	TETRALIN	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED
PETROLEUM - REFINED	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED	THIOPHENE	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED
PETROLEUM OILS	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED	TOLUENE	UNSUITABLE	UNSUITABLE	UNSUITABLE	UNSUITABLE
PHENOL	UNSUITABLE	NOT TESTED	NOT TESTED	NOT TESTED	TOMATOES	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED
PHOSPHORIC ACID - CONCENTRATED	UNSUITABLE	GOOD	GOOD	NOT TESTED	TRICHLOROETHANE	UNSUITABLE	UNSUITABLE	UNSUITABLE	UNSUITABLE
PHOSPHORIC ACID 20 - 25%	UNSUITABLE	UNSUITABLE	NOT TESTED	NOT TESTED	TURPENTINE	SATISFACTORY	UNSUITABLE	UNSUITABLE	UNSUITABLE
PICRIC ACID - AQUEOUS	UNSUITABLE	UNSUITABLE	NOT TESTED	NOT TESTED	UREA	NOT TESTED	NOT TESTED	NOT TESTED	GOOD
PICRIC ACID - MOLTEN	UNSUITABLE	UNSUITABLE	NOT TESTED	NOT TESTED	VARNISH	SATISFACTORY	UNSUITABLE	UNSUITABLE	NOT TESTED
POTABLE WATER	GOOD	GOOD	GOOD	NOT TESTED	VEGETABLE OIL	SATISFACTORY	SATISFACTORY	SATISFACTORY	NOT TESTED
POTASSIUM HYDROXIDE - 50%	SATISFACTORY	GOOD	GOOD	GOOD	VINEGAR	SATISFACTORY	SATISFACTORY	GOOD	GOOD
POTASSIUM SALTS	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED	XYLENE	UNSUITABLE	UNSUITABLE	UNSUITABLE	UNSUITABLE
PROPANE	NOT FOR USE WITH THIS SUBSTANCE			UNSUITABLE	ZINC ACETATE	SATISFACTORY	SATISFACTORY	NOT TESTED	NOT TESTED
PYRIDINE	UNSUITABLE	UNSUITABLE	SATISFACTORY	SATISFACTORY	ZINC CHLORIDE	UNSUITABLE	UNSUITABLE	NOT TESTED	GOOD
ROSIN, LIGHT	NOT TESTED	NOT TESTED	NOT TESTED	NOT TESTED	ZINC SALTS	NOT TESTED	NOT TESTED	GOOD	GOOD
SALT WATER	GOOD	GOOD	GOOD	NOT TESTED					

GOOD - Weight increase of less than 5%, or weight loss of less than 3%, and/or a change of the tensile properties of less than 25%.

SATISFACTORY - Weight increase 5% to 10% or weight loss 3% to 5% and/or change of the tensile properties of 25% 40%.

NOT TESTED - This combination has not been tested or reliable data is not available.

POOR - This combination is not tested but may be suitable for very short term exposure (minutes).

UNSUITABLE - Unsuitable for exposure to this material.

Materials used in the construction of the fittings and tubing.

PI/PM Range : Body- Acetal, Seals & O-rings - Nitrile, Collets - Acetal & Stainless Steel

CM/CI Range : Body- Acetal, Seals & O-rings - EPDM, Collets - Acetal & Stainless Steel

PP Range : Body- Polypropylene, Seals & O-rings - EPDM, Collets - Polypropylene & Stainless Steel

NOTE : Ratings used in tables were generally assessed over a period of 30 days by our material suppliers and relate to chemicals being at a temperature of 20°C (68°F).

Any change in temperature or pressure may change the "Rating" on the chemical compatibility. It is the responsibility of the customer to ensure suitability. John Guest U.S.A. Inc. is not responsible for the correctness or interpretations of this chart.