

## INNOVATIVE MANUFACTURER

Single-use process components & assemblies with biopharma, life science, and cell therapies in mind. whkbiosystems.com

🖄 info@whkbiosystems.com

🛞 855-WHK-BIO1 (945-2461)

## W-TPE™ BIOPHARMACEUTICAL TUBING CHEMICAL RESISTANCE GUIDE

The extent to which extraction may occur, or the degree to which fluids may undergo any physical changes in properties or composition, as a result of coming into contact with the tubing **ARE NOT** reflected in the chart below. WHK BioSystems makes no representation or warranty with respect to the susceptibility of any fluid to become contaminated or undergo changes in properties or composition as a result of possible leaching of tubing ingredients by the substance being transmitted.

**KEY:** Excellent (E) | Good (G) | Fair (F) |

Not Recommended (N)

Environment, % Concentrate \* W = Water, A = Alcohol

Acetaldehyde	F	Benzyl Alcohol	N	Dibutyl Phthalate	F	Hydrofluoric Acid, 25% in W	E
Acetamide, 67% in W	G	Bleach Liquor, 22% in W	E	Diethylamine, 2.5% in W	E	Hydrofluoric Acid, 40-48% in W	E
Acetic Acid, 10% in W	E	Borax, 6% in W	Е	Diethylene Glycol	E	Hydrogen Gas	Е
Acetic Acid, 50-60% in W	E	Boric Acid, 4% in W	E	Dimethylformamide	E	Hydrogen Peroxide, 10% in W	E
Acetic Acid, Glacial, 100%	F	Bromine, Anhydrous Liquid	N	Dimethylsulfoxide (DMSO)	N	Hydrogen Peroxide, 3% in W	Е
Acetic Anhydride	E	Butadiene	E	Ethyl Acetate	E	Hydrogen Peroxide, 30% in W	E
Acetone	N	Butane	E	Ethyl Alcohol (Ethanol)	F	Hydrogen Peroxide, 90% in W	Е
Acetylene Gas	E	Butyl Acetate	N	Ethyl Benzoate	N	Hydrogen Sulfide	E
Acrylonitrile	N	Butyl Alcohol	E	Ethyl Chloride	E	Hydroquinone, 7% in W	G
Adipic Acid, 100% in A	F	Butyric Acid	E	Ethylene Chlorohydrin	E	Hypochlorous Acid, 25% in W	E
Air	E	Calcium Carbonate, 25% dilute acids	Е	Ethylene Dichloride	E	lodine, 50 ppm in W	Е
Alcohols General	F	Calcium Chloride, 30% in W	E	Ethylene Glycol	E	Isobutyl Alcohol	F
Allyl Alcohol	F	Calcium Hydroxide, 10% in glycerol	E	Ethylene Oxide	E	Isopropyl Alcohol	F
Alum, 5% in W	E	Calcium Hypochlorite, 20% in W	E	Fatty Acids	E	Ketones	N
Aluminum Chloride, 53% in W	E	Calcium Nitrate, 55% in W	E	Ferric Chloride, 43% in W	E	Lactic Acid, 3-10% in W	Е
Aluminum Hydroxide, 2% in W	E	Calcium Salts	E	Ferric Nitrate, 60% in W	E	Lactic Acid, 85% in W	E
Aluminum Salts	E	Calcium Sulfate, 1% in W	E	Ferric Sulfate, 5% in W	E	Lard, Animal Fat	F
Aluminum Sulfate, 50% in W	E	Carbon Dioxide, Wet/Dry	E	Ferrous Chloride, 40% in W	E	Lead Acetate, 35% in W	E
Amines	F	Carbon Disulfide	N	Ferrous Sulfate, 5% in W	E	Lead Salts	Е
Ammonia Gas	E	Carbon Monoxide	E	Fluoboric Acid, 48% in W	E	Lemon Oil	N
Ammonia, Anhydrous Liquid	E	Carbon Tetrachloride	N	Fluorine Gas	N	Limonene-D	Ν
Ammonium Acetate, 45% in W	E	Carbonic Acid	E	Fluosilicic Acid, 25% in W	E	Linoleic Acid	F
Ammonium Carbonate, 50% in W	E	Castor Oil	F	Formaldehyde, 37% in W	E	Linseed Oil	N
Ammonium Hydroxide, 5-10% in W	E	Cellosolve	N	Formic Acid, 25% in W	E	Magnesium Carbonate, 1% in W	E
Ammonium Hydroxide, 30% in W	E	Cellosolve Acetate	N	Formic Acid, 40-50% in W	E	Magnesium Chloride, 35% in W	Е
Ammonium Persulfate, 30% in W	E	Chlorine, Dry Gas	G	Formic Acid, 98% in W	E	Magnesium Hydroxide, 10% dilute acid	E
Ammonium Salts	E	Chlorine, Wet Gas	F	Gelatin	E	Magnesium Nitrate, 50% in W	Е
Ammonium Sulfate, 30% in W	E	Chloroacetic Acid, 20% in w	E	Glucose, 50% in W	E	Magnesium Sulfate, 25% in W	E
Antimony Salts	E	Chlorobenzene, Mono, Di, Tri	N	Glycerol, (Glycerin)	E	Maleic Acid, 30% in W	F
Aqua Regia	E	Chloroform	Ν	Glycolic Acid, 70% in W	G	Malic Acid, 36% in W	E
Aromatic Hydrocarbons	N	Chlorosulfonic Acid	Е	Heptane	N	Manganese Salts	Е
Arsenic Acid, 20% in W	F	Chromic Acid, 10-20% in W	Е	Hexane	N	Mercuric Chloride, 6% in W	E
Arsenic Salts	E	Chromic Acid, 50% in W	G	Hydrazine	N	Mercuric Cyanide, 8% in W	Е
Barium Carbonate, 1% in W	E	Citric Acid, 10-20% in W	Е	Hydrobromic Acid, 100% in W	E	Mercury	E
Barium Hydroxide, 5% in W	E	Cresol (m, o, or p)	N	Hydrobromic Acid, 20-50% in W	E	Mercury Salts	Е
Benzaldehyde	N	Cresylic Acid	Ν	Hydrochloric Acid, 10% in W	E	Methane Gas	E
Benzene	N	Cupric Chloride, 40% in W	Е	Hydrochloric Acid, 37% in W	E	Methyl Acetate	N
Benzenesulfonic Acid	E	Cupric Nitrate, 70% in W	Е	Hydrocyanic Acid	E	Methyl Alcohol (Methanol)	E
Benzoic Acid	Ν	Cupric Sulfate, 13% in W	Е	Hydrofluoric Acid, 10% in W	E	Methyl Bromide	N

If concentration is not indicated, assume the maximum % solubility in water or 100%. Please note, room temperature liquid concentrations provided in % volume, solids given in % weight.

User is responsible for determining suitability and safety of all products for intended use. Information as supplied in this document is intended to provide guidance only. WHK BioSystems disclaims all liability regarding this products fitness for use. WHK BioSystems has also relied on raw material suppliers for a portion of the information and compliance statements contained in this document.





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Methyl Chloride	N	Paraffins	Ν	Silicone Oils	E	Sulfur Dioxide, Gas Dry	E
Methyl Ethyl Ketone (MEK)	N	Perchloric Acid, 67% in W	E	Silver Nitrate, 55% in W	E	Sulfur Dioxide, Gas Wet	E
Methylene Chloride	N	Perchloroethylene	F	Soap Solutions	E	Sulfur Trioxide, Wet	E
Milk	E	Phosphoric Acid, <10% in W	E	Sodium Acetate, 55% in W	E	Sulfuric Acid, 10% in W	E
Mineral Oil	F	Phenol, 5-10% in W	Ν	Sodium Benzoate, 22% in W	E	Sulfuric Acid, 30% in W	E
Monoethanolamine	E	Phenol, 91% in W	Ν	Sodium Bicarbonate, 7% in W	E	Sulfuric Acid, 95-98% in W	E
Naphthalene	N	Phosphoric Acid, 25% in W	E	Sodium Carbonate, 7% in W	E	Sulfurous Acid	E
Nickel Chloride, 40% in W	E	Phosphoric Acid, 85% in W	G	Sodium Chlorate, 45% in W	E	Tannic Acid, 75% in W	E
Nickel Nitrate, 75% in W	E	Phosphorous Trichloride Acid	G	Sodium Chloride, 20% in W	E	Tartaric Acid, 56% in W	E
Nickel Salts	E	Photographic Solutions	G	Sodium Cyanide, 30% in W	E	Tetrahydrofuran	N
Nickel Sulfate, 25% in W	E	Phthalic Acid, 9% in A	Ν	Sodium Fluoride, 3% in W	E	Thionyl Chloride	E
Nitric Acid, 10% in W	E	Picric Acid, 1% in W	Ν	Sodium Hydroxide, 10-15% in W	E	Tin Salts	E
Nitric Acid, 35% in W	E	Plating Solutions	G	Sodium Hydroxide, 2-5% in W	E	Titanium Salts	E
Nitric Acid, 68-71% in W	E	Potassium Carbonate, 55% in W	Е	Sodium Hydroxide, 30-40% in W	E	Toluene	N
Nitrous Acid, 10% in W	E	Potassium Cyanide, 33% in W	E	Sodium Hypochlorite, 12.2% in W	E	Trichloroacetic Acid, 90% in W	E
Nitrous Oxide	E	Potassium Dichromate, 5% in W	Е	Sodium Hypochlorite, 5.5% in W	E	Tricresyl Phosphate	G
Oils, Animal	F	Potassium Hydroxide, <10% in W	E	Sodium Nitrate, 3.5% in W	E	Triethanolamine	N
Oils, Hydrocarbon	N	Potassium Hypochlorite, 70% in W	G	Sodium Salts	E	TrisodiXm Phosphate	E
Oils, Vegetable	F	Potassium Iodide, 56% in W	E	Sodium Sulfate, 5% in W	E	Urea, 20% in W	E
Oleic Acid	F	Potassium Permanganate, 6% in W	E	Sodium Sulfide, 45% in W	E	Uric Acid	E
Oleum, 25% in W	G	Potassium Salts	E	Sodium Sulfite, 10% in W	E	Vinegar	E
Ortho Dichlorobenzene	N	Propyl Alcohol (Propanol)	F	Stannic Chloride, 50% in W	E	Vinyl Acetate	N
Oxalic Acid, 12% in W	E	Propylene Glycol	E	Stannous Chloride, 45% in W	E	Water, Deionized	E
Oxygen	E	Propylene Oxide	Е	Stearic Acid, 5% in A	E	Water, Distilled	E
Ozone, 300pphm	E	Pyridine	Е	Styrene Monomer	N	Zinc Chloride, 80% in W	E
Palmitic Acid, 100% in Ether	N	Salicylic Acid, 1% in W	Е	Sulfur Chloride	E	Zinc Salts	E
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