# GENERAL CHEMICAL RESISTANCE LIST FOR RMI TANKS

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The resins used in the manufacturing of RMI tanks are highly resistant to the most aggressive chemicals. The following chart affords a reasonable guide to the performance of all RMI containers with most common chemicals.

As a rule, mechanical stress, elevated temperatures and extended exposures tend to compound the effects of the reagent. These factors must be considered whenever the use of chemical handling equipment is planned.

Under normal conditions, those chemicals rated “S” can be handled indefinitely. Chemical rated “M” will eventually have some effect. Chemicals rated “U” are generally not recommended for extended storage.

The temperature levels of 70ºF and 140ºF are used in this table because they cover the majority of tank applications. They are not intended to show upper operating limits. For applications involving higher operating temperatures or service with chemicals or conditions not specified here, contact Rotonics Manufacturing Inc.

CAUTION: Service with strong oxidizing agents, stress-cracking agents, chemical mixtures or at elevated temperatures may create conditions which cannot be defined by a chemical resistance guide. Preliminary testing is recommended for severe or unfamiliar applications.

This data is published from reports by leading chemical companies, and this data does not represent actual testing conducted by RMI. This report is offered as a guideline for your material selection. However, RMI is not responsible for the use or misuse of the information contained herein.

NOTE: Crosslinked and LLPE are subject to permeation by strong mineral acids, aromatic compound hydrocarbons and chlorinated hydrocarbons. Due to this possible permeation, a reduction of the tensile strength of the container might be 50% when 100% concentration of these chemical materials are stored for a sufficient length of time.

S - Satisfactory • U - Unsatisfactory • M - Marginal • N - Unknown

Some reagents are marked with an asterisk (*). Although cross-linked polyolefin is chemically resistant to these agents, excess temperatures and pressures can, under certain conditions, lead to stress cracking.

On reagents marked marginal, chemical attack will be recognized by a loss physical properties of the container.

| REAGENT | 70ºF (21ºC) | 140ºF (60ºC) | REAGENT | 70ºF (21ºC) | 140ºF (60ºC) | REAGENT | 70ºF (21ºC) | 140ºF (60ºC) |
|---|---|---|---|---|---|---|---|---|
| Acetic Acid* 1-10% | S | S | Benzene Sulfonic Acid | S | S | Chloroform | M | U |
| Acetic Acid* 10-60% | S | M | Bismuth Carbonate Sat’d | S | S | Chlorosulfonic Acid 100% | M | U |
| Acetic Acid* 80-100% | S | M | Bleach Lye 10% | S | S | Chrome Alum Sat’d | S | S |
| Acetone | S | M | Black Liquor | S | S | Chromic Acid 20% | S | S |
| Acrylic Emulsions* | S | S | Borax Cold Sat’d | S | S | Chromic Acid Up to 50% | S | S |
| Aluminum Chloride--Dilute | S | S | Boric Acid Dilute | S | S | Chromic Acid & Sulfuric Acid | S | M |
| Aluminum Chloride Conc. | S | S | Boric Acid Conc. | S | S | Cider* | S | S |
| Aluminum Floride Conc. | S | S | Bromic Acid 10% | S | S | Citric Acid* Sat’d | S | S |
| Aluminum Sulfate Conc. | S | S | Bromine Liquid 100% | M | U | Coconut Oil Alcohols* | S | S |
| Alums (All Types) Conc. | S | S | Butanediol* 10% | S | S | Cola Concentrates | S | S |
| Ammonia 100% Dry Gas | S | S | Butanediol* 60% | S | S | Copper Chloride Sat’d | S | S |
| Ammonium Carbonate | S | S | Butanediol* 100% | S | S | Copper Cyanide Sat’d | S | S |
| Ammonium Chloride Sat’d | S | S | Butyl Alcohol* 100% | S | S | Copper Fluoride 2% | S | S |
| Ammonium Fluoride 20% | S | S | Calcium Bisulfide | S | S | Copper Nitrate Sat’d | S | S |
| Ammonium Hydroxide 0.888 S.O. | S | S | Calcium Carbonate Sat’d | S | S | Copper Sulfate Dilute | S | S |
| Ammonium Metaphosephate Sat’d | S | S | Calcium Chlorate Sat’d | S | S | Copper Sulfate Sat’d | S | S |
| Ammonium Nitrate Sat’d | S | S | Calcium Chloride Sat’d | S | S | Cottonseed Oil* | S | S |
| Ammonium Persulfate Sat’d | S | S | Calcium Hydroxide | S | S | Cuprous Chloride Sat’d | S | S |
| Ammonium Sulfate Sat’d | S | S | Calcium Hypochlorite Bi’ ch Sol. | S | S | Cychohexanol* | S | S |
| Ammonium Sulfide Sat’d | S | S | Calcium Nitrate 50% | S | S | Cyclohexanone | M | U |
| Ammonium Thiocyanate Sat’d | S | S | Calcium Sulfate | S | S | Detergents Synthetic* | S | S |
| Amyl Acetate | S | M | Comphor Oil | M | U | Developers, Photographic | S | S |
| Amyle Alcohol* 100% | S | S | Carbon Dioxide 100% Dry | S | S | Dextrin Sat’d | S | S |
| Amyl Chloride 100% | N | U | Carbon Dioxide 100% Wet | S | S | Dextrose Sat’d | S | S |
| Aniline 100% | S | N | Carbon Dioxide Cold Sat’d | S | S | Dibutylphthalate | S | M |
| Antimony Chloride | S | S | Carbon Disulphide | N | U | Disodium Phosphate | S | S |
| Aqia Regoa | M | U | Carbon Monoxide | S | S | Diazo Salts | S | S |
| Barium Carbonate Sat’d | S | S | Carbon Tetrachloride | M | U | Diethlene Glycol* | S | S |
| Barium Chloride | S | S | Carbonic Acid | S | S | Digylcolic Acid* | S | S |
| Barium Hydroxide | S | S | Caster Oil* Conc. | S | S | Dimethylamine | M | U |
| Barium Sulfate Sat’d | S | S | Chlorine Dry Gas 100% | S | M | Emulsions, Photographic* | S | S |
| Barium Sulfide Sat’d | S | S | Chlorine Moist Gas | M | U | Ethyl Acetate 100% | S | M |
| Beer | S | S | Chlorine Liquid | M | U | Ethyl Alcohol* 100% | S | S |
| Benzine | S | M | Chlorobenzene | M | U | Ethyl Alcohol* 35% | S | S |

| REAGENT | 70°F (21°C) | 140°F (60°C) |
|---|---|---|
| Ethyl Butyrate | M | U |
| Ethyl Chloride | M | U |
| Ethyle Ether | M | U |
| Ethylene Chloride | N | U |
| Ethylene Chlorohydrin | U | U |
| Ethylene Dichloride | M | U |
| Ethlene Glycol* | S | S |
| Ferric Chloride Sat'd | S | S |
| Ferric Nitrate Sat'd | S | S |
| Ferric Sulphate | S | S |
| Ferrous Chloride Sat'd | S | S |
| Ferrous Sulphate | S | S |
| Fish Solubles* | S | S |
| Fluoboric Acid | S | S |
| Flourine | S | M |
| Flousilicic Acid 32% | S | S |
| Flousilicic Acid Conc. | S | S |
| Formaldehyde* 40% | S | N |
| Formic Acid* 1-20% | S | S |
| Formic Acid* 20-50% | S | S |
| Formic Acid* 100% | S | S |
| Fructose Sat'd | S | S |
| Fruit Pulp | S | S |
| Fuel Oil | S | U |
| Furfural 100% | M | U |
| Furfuryl Alcohol | M | U |
| Gallic Acid* 30% | S | S |
| Gasoline* | S | U |
| Gin | S | U |
| Glucose | S | U |
| Glycerine* | S | S |
| Glycol* | S | S |
| Glycolic Acid* Sat'd | S | S |
| Grape Sugar Sat'd Aq. | S | S |
| Hexanol Tert.* | S | S |
| Hydrobromic Acid 50% | S | S |
| Hydrocyanic Acid Sat'd | S | S |
| Hydrochloric Acid 10% | S | S |
| Hydrochloric Acid 30% | S | S |
| Hydrochloric Acid 35% | S | S |
| Hydrochloric Acid Conc. | S | S |
| Hydrofluoric Acid 40% | S | S |
| Hydrofluoric Acid 60% | S | S |
| Hydrofluoric Acid 75% | S | S |
| Hydrogen 100% | S | S |
| Hydrogen Bromide 10% | S | S |
| Hydrogen Chloride Gas Dry | S | S |
| Hydrogen Peroxide 30% | S | S |
| Hydrogen Peroxide 90% | S | M |
| Hydrogen Phosphide 100% | S | S |
| Hydroquinone | S | S |
| Hydogen Sulfide | S | S |
| Hypochlorus Acid Conc. | S | S |
| Inks* | S | S |
| Lodine (Alc. Sol.) Conc. | S | U |
| Lactic Acid* 10% | S | S |
| Lactic Acid* 90% | S | S |
| Latex* | S | S |
| Lead Acetate Sat'd | S | S |
| Lube Oil | S | M |
| Magnesium Carbonate Sat'd | S | S |
| Magnesium Chloride Sat'd | S | S |
| Magnesium Hydroxide Sat'd | S | S |
| Magnesuim Nitrate Sat'd | S | S |
| Magnesium Sulphate Sat'd | S | S |
| Mercuric Chloride Sat'd | S | S |
| Mercuric Cyanide Sat'd | S | S |
| Mercurous Nitrate Sat'd | S | S |
| Mercury | S | S |
| Methyl Alcohol* 100% | S | S |
| Methyl Bromide | M | U |
| Methyl Chloride | M | U |
| Methyl Ethyl Ketone 100% | S | U |
| Methyl Sulfuric Acid* | S | S |
| Methylene Chloride 100% | M | U |
| Milk | S | S |
| Mineral Oils | S | M |
| Molasses Comm. | S | S |
| Nickel Chloride Sat'd | S | S |
| Nickel Nitrate Conc. | S | S |
| Nickel Sulfate At'd | S | S |
| Nicotine* Dilute | S | S |
| Nicotine Acid* | S | S |
| Nitric Acid 0-30% | S | S |
| Nitric Acid 30-50% | S | M |
| Nitric Acid 70% | S | M |
| Nitric Acid 95-98% | U | U |
| Nitrobensene 100% | U | U |
| Octyl Cresol | S | U |
| Oils and Fats | S | U |
| Oleic Acid Conc. | S | U |
| Oleum Conc. | U | U |
| Orange Extract | S | S |
| Oxalic Acid* Dilute | S | S |
| Oxalic Acid* Sat'd | S | S |
| Ozone 100% | S | U |
| Perchloric Acid 10% | S | S |
| Petroleum Ether | M | U |
| Phenol 90% | S | U |
| Phosphoric Acid Up 30% | S | S |
| Phosphoric Acid Over 30% | S | S |
| Phosphoric Acid 90% | S | S |
| Phosphorous (Yellow) 100% | S | N |
| Phosphorus Pentoxide 100% | S | N |
| Photographic Solutions | S | S |
| Pickling Baths | | |
| Sulfuric Acid* | S | S |
| Hydrochloric Acid* | S | S |
| Sulfuric-Nitric* | S | U |
| Plating Solutions | | |
| Brass* | S | S |
| Cadmium* | S | S |
| Chromium* | N | N |
| Copper | S | S |
| Gold* | S | S |
| Indium* | S | S |
| Lead* | S | S |
| Nickel* | S | S |
| Rhodium* | S | S |
| Silver* | S | S |
| Tin* | S | S |
| Zinc* | S | S |
| Potassium Bicarbonate Sat'd | S | S |
| Potassium Borate 1% | S | S |
| Potassium Bromate 10% | S | S |
| Potassium Bromide Sat'd | S | S |
| Potassium Carbonate | S | S |
| Potassium Chlorate Sat'd | S | S |
| Potassium Chloride Sat'd | S | S |
| Potassium Chromate 40% | S | S |
| Potassium Cyanide Sat'd | S | S |
| Potassium Dichromate 40% | S | S |
| Potassium Ferri/ | S | S |
| Ferro Cyanide Sat'd | S | S |
| Potassium Fluoride | S | S |
| Potassium Hydroxide 20% | S | S |
| Potassium Hydroxide Conc. | S | S |
| Potassium Nitrate Sat'd | S | S |
| Potassium Perborate Sat'd | S | S |
| Potassium Perchlorate 10% | S | S |
| Potassium Sulfate Conc. | S | S |
| Potassium Sulfide Conc. | S | S |
| Potassium Sulfite Conc. | S | S |
| Potassium Persulphate Sat'd | S | S |
| Propargyl Alcohol* | S | S |
| Propyl Alcohol* | S | S |
| Propylene Dichloride 100% | M | U |
| Propylene Glycol* | S | S |
| Rayon Coagulating Bath* | S | S |
| Sea Water | S | S |
| Selenic Acid | S | S |
| Shortening* | S | S |
| Silicic Acid | S | S |
| Silver Nitrate Sol. | S | S |
| Soap Solution* Any Conc'n | S | S |
| Sodium Acetate Sat'd | S | S |
| Sodium Benzoate 35% | S | S |
| Sodium Bicarbonate Sat'd | S | S |
| Sodium Bisulfate Sat'd | S | S |
| Sodium Bisulfite Sat'd | S | S |
| Sodium Borate | S | S |
| Sodium Bromide Dilute Sol. | S | S |
| Sodium Carbonate Con. | S | S |
| Sodium Carbonate | S | S |
| Sodium Chlorate Sat'd | S | S |
| Sodium Chloride Sat'd | S | S |
| Sodium Cyanide | S | S |
| Sodium Dichromate Sat'd | S | S |
| Sodium Ferricyanide | S | S |
| Sodium Ferrocyanide Sat'd | S | S |
| Sodium Fluoride Sat'd | S | S |
| Sodium Hydroxide Conc. | S | S |
| Sodium Hypochlorite | M | M |
| Sodium Nitrate | S | S |
| Sodium Sulfate | S | S |
| Sodium Sulfide 25% | S | S |
| Sodium Sulfide Sat'd Sol. | S | S |
| Sodium Sulfite Sat'd | S | S |
| Stannous Chloride Sat'd Sol. | S | S |
| Stannic Chloride Sat'd | S | S |
| Starch Solution* Sat'd | S | S |
| Stearic Acid* 100% | S | S |
| Sulfuric Acid 0-50% | S | S |
| Sulfuric Acid 70% | S | M |
| Sulfuric Acid 80% | S | U |
| Sulfuric Acid 96% | M | U |
| Sulfuric Acid 98% | M | U |
| Sulfuric Acid, Fuming | U | U |
| Sulfurous Acid | S | S |
| Tallow | S | M |
| Tannic Acid* 10% | S | S |
| Tanning Extracts* Comm. | S | S |
| Tartaric Acid Sat'd | N | N |
| Tetrahydrofurane | N | U |
| Titanium Tetrachloride Sat'd | N | U |
| Toluene-Under 50% | S | S |
| Toluene-Over 50% | M | U |
| Toluene Sulfonic Acid | S | S |
| Transformer Oil | S | M |
| Trisodium Phosphate Sat'd | S | S |
| Trichloroethylene | M | U |
| Urea* Up to 30% | S | S |
| Urine | S | S |
| Vinegar Comm. | S | S |
| Vanilla Extract* | S | S |
| Wetting Agents* | S | S |
| Whiskey* | S | N |
| Wines | S | S |
| Xylene | M | U |
| Yeast | S | S |
| Zinc Choride Sat'd | S | S |
| Zinc Sulfate Sat'd | S | S |

NOTE: Sodium Hypochlorite has marginal compatibility and will be stored at user's discretion and responsibility only. RMI does not warranty tanks used to store Sodium Hypochlorite.

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