

Metal/Coupling Corrosion Resistance Table

⚠️WARNING! The following data has been compiled from generally available sources and should not be relied upon without consulting and following the specific recommendations of the manufacturer regarding particular coupling materials.

Key: E = Excellent • G = Good • C = Conditional • Blank = No Data • X = Not Recommended

| Chemical Or Material Conveyed | Aluminum | Brass | Carbon Steel | Stainless Steel 202, 302, 304, 308 | Stainless Steel 316 | Stainless Steel 410, 416, 430 | Chemical Or Material Conveyed | Aluminum | Brass | Carbon Steel | Stainless Steel 202, 302, 304, 308 | Stainless Steel 316 | Stainless Steel 410, 416, 430 |
|-------------------------------|--------------------------|-------|--------------|------------------------------------|---------------------|-------------------------------|-------------------------------|----------|--------|--------------|------------------------------------|---------------------|-------------------------------|
| | Acetate, Solvents, Crude | C | C | | E | E | | G | Ethers | E | C | C | E |
| Acetate, Solvents, Pure | E | E | | E | E | E | Ethylene Glycol | | G | G | E | E | E |
| Acetic Acid | X | X | X | G | G | G | Ferric Chloride | X | X | X | X | X | X |
| Acetic Acid Vapors | C | X | X | G | G | X | Ferric Sulfate | X | X | X | E | E | C |
| Acetic Anhydride | G | X | X | G | G | X | Formaldehyde, 50% | G | G | C | E | E | C |
| Acetone | E | E | E | E | E | E | Formic Acid | X | G | X | E | E | E |
| Acetylene | E | X | E | E | E | E | Freon | E | E | C | E | E | E |
| Alcohols | E | G | E | E | E | E | Furfural | E | G | E | E | E | E |
| Aluminum Sulfate | X | X | X | C | G | X | Gasoline, Refined | E | E | E | E | E | E |
| Alums | C | C | X | C | G | X | Gasoline, Sour | C | C | E | E | E | C |
| Ammonia Gas | C | X | E | E | E | E | Gelatin | E | C | X | E | E | X |
| Ammonium Chloride | C | X | X | C | C | X | Glucose | E | E | E | E | E | E |
| Ammonium Hydroxide | G | X | X | E | E | C | Glue | E | E | E | E | E | E |
| Ammonium Nitrate | G | X | E | E | E | E | Glycerine or Glycerol | E | G | E | E | E | E |
| Ammonium Phosphate | | X | | E | E | E | Hydrochloric Acid, 37% | X | X | X | X | C | X |
| Ammonium Phosphate, Acid | | C | | G | E | C | Hydrocyanic Acid, 10% | E | X | X | E | E | X |
| Ammonium Phosphate, Neutral | C | C | X | E | E | E | Hydrofluoric Acid | X | X | X | X | X | X |
| Ammonium Sulfate | X | X | X | G | G | G | Hydrogen | E | E | E | E | E | E |
| Asphalt | E | E | E | E | E | E | Hydrogen Fluoride | | C | | X | E | X |
| Beer | E | E | X | E | E | E | Hydrogen Peroxide | E | X | C | G | E | E |
| Beet Sugar Liquors | E | G | C | E | E | G | Hydrogen Sulfide, Dry | C | C | C | G | C | C |
| Benzene, Benzol | E | E | E | E | E | E | Hydrogen Sulfide, Wet | X | X | X | G | E | X |
| Benzine | E | E | E | E | E | E | Lacquers, Lacquer Solvents | E | G | C | E | E | E |
| Biodiesel | E | X | G | E | E | E | Lactic Acid | C | X | X | C | G | E |
| Borax | | E | G | E | E | E | Lime, Sulfur | G | X | G | E | G | E |
| Boric Acid | E | C | C | G | E | C | Linseed Oil | E | E | E | E | E | E |
| Butane, Butylene | E | E | E | E | E | E | Magnesium Chloride | X | C | C | G | X | X |
| Butadiene | E | E | E | E | E | E | Magnesium Hydroxide | X | G | E | E | E | E |
| Calcium Bisulfate | | X | | G | E | X | Magnesium Sulfate | C | G | G | E | E | E |
| Calcium Hypochlorite | X | X | X | C | G | C | Mercuric Chloride | X | X | X | X | X | X |
| Cane Sugar Liquors | E | E | E | E | E | E | Mercury | X | X | E | E | E | E |
| Carbon Dioxide, Dry | E | E | E | E | E | E | Milk | X | C | X | E | E | G |
| Carbon Dioxide, Wet, (AQ) | E | E | G | E | E | E | Molasses | G | E | G | E | E | G |
| Carbon Disulfide | G | C | G | E | E | G | Natural Gas | E | G | E | E | E | E |
| Carbon Tetrachloride | C | E | E | E | E | E | Nickel Chloride | X | X | X | C | G | E |
| Chlorine, Dry | X | X | G | G | E | G | Nickel Sulfate | X | C | X | G | E | C |
| Chlorine, Wet | X | C | X | X | C | X | Nitric Acid | C | X | X | G | G | G |
| Chromic Acid | X | X | | G | G | C | Oleic Acid | E | C | X | G | E | G |
| Citric Acid | E | X | X | X | E | C | Oxalic Acid | X | X | X | G | E | C |
| Coke Oven Gas | G | C | E | E | E | E | Oxygen | E | E | E | E | E | E |
| Copper Sulfate | X | X | X | E | E | E | Palmitic Acid | E | E | C | G | E | C |
| Core Oils | | E | | E | E | E | Petroleum Oils, Sour | | C | | E | E | C |
| Cottonseed Oil | E | C | C | E | E | E | Petroleum Oils, Refined | E | E | E | E | E | E |
| Creosote | E | C | G | E | E | E | Phosphoric Acid, 25% | X | X | X | C | E | C |

(Continued on the following page)

Metal/Coupling Corrosion Resistance Table (Continued)

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| Chemical Or Material Conveyed | Material | | | | | | Chemical Or Material Conveyed | Material | | | | | |
|-------------------------------|----------|-------|--------------|------------------------------------|---------------------|-------------------------------|-------------------------------|----------|-------|--------------|------------------------------------|---------------------|-------------------------------|
| | Aluminum | Brass | Carbon Steel | Stainless Steel 202, 302, 304, 308 | Stainless Steel 316 | Stainless Steel 410, 416, 430 | | Aluminum | Brass | Carbon Steel | Stainless Steel 202, 302, 304, 308 | Stainless Steel 316 | Stainless Steel 410, 416, 430 |
| Phosphoric Acid, 25%-50% | X | X | X | X | G | C | Stearic Acid | C | C | X | G | E | G |
| Phosphoric Acid, 50%-85% | X | X | X | X | G | C | Sulfate Liquors | | X | X | E | E | E |
| Picric Acid | C | X | X | C | E | C | Sulfur | C | X | X | G | E | C |
| Potassium Chloride | X | E | C | G | C | C | Sulfur Chloride | X | X | X | X | X | X |
| Potassium Hydroxide | X | X | X | E | E | E | Sulfur Dioxide, Dry | E | E | G | E | E | E |
| Potassium Sulfate | E | C | G | E | E | E | Sulfur Dioxide, Wet | C | X | | G | E | X |
| Propane | E | E | E | E | E | E | Sulfuric Acid, 1%-50% | C | X | X | X | G | X |
| Rosin | | | X | E | E | E | Sulfuric Acid, 50%-70% | X | X | X | X | C | X |
| Shellac | G | G | | E | E | E | Sulfuric Acid, 70%-90% | X | X | X | X | X | X |
| Sludge Acid | | X | | X | C | X | Sulfuric Acid, 90%-98% | X | X | X | X | X | X |
| Soda Ash | X | C | E | E | E | E | Sulfurous Acid | X | X | X | C | G | C |
| Sodium Bicarbonate | X | C | X | E | E | E | Tannic Acid | X | C | X | E | E | C |
| Sodium Bisulfate | C | X | X | E | E | C | Tar | E | G | E | E | E | G |
| Sodium Chloride | E | E | C | G | C | E | Toluene, Toluol | E | E | E | E | E | E |
| Sodium Cyanide | X | X | G | E | E | E | Trichlorethylene | E | E | C | E | E | E |
| Sodium Hydroxide | X | X | X | G | G | G | Turpentine | E | E | E | E | E | E |
| Sodium Hypochlorite | X | X | X | X | X | X | Varnish | | C | X | E | E | C |
| Sodium Metaphosphate | E | X | X | E | E | G | Vegetable Oils | E | G | E | E | E | E |
| Sodium Nitrate | E | C | E | E | E | E | Vinegar | X | X | X | G | E | E |
| Sodium Perborate | E | C | C | E | E | E | Water, Acid | X | X | X | E | E | G |
| Sodium Peroxide | E | X | X | E | E | E | Water, Fresh | C | E | E | E | E | E |
| Sodium Phosphate, Acid | | G | G | G | E | E | Water, Salt | X | X | X | G | G | C |
| Sodium Phosphate, Alkaline | | C | C | E | E | E | Whiskey | | G | X | E | E | C |
| Sodium Phosphate, Neutral | | G | C | E | E | E | Wines | | G | X | E | E | C |
| Sodium Silicate | X | C | E | E | E | E | Xylene, Xylol | E | E | G | E | E | E |
| Sodium Sulfate | C | G | E | E | E | E | Zinc Chloride | X | X | X | C | C | X |
| Sodium Sulfide | | X | X | E | E | E | Zinc Sulfate | C | C | X | G | E | E |
| Sodium Thiosulfate | G | X | X | E | E | E | | | | | | | |