

303 Stainless Steel Chemical Compatibility Chart

ver 21-Oct-2022

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Chemical

Acetaldehyde	A
Acetate Solvents	A
Acetic Acid, 80%	D
Acetic Acid, glacial	C
Acetic Anhydride	B
Acetone	A
Acetyl Chloride, dry	A
Acetylene	A
Acrylonitrile	B
Adipic Acid	B
Alcohol, Amyl	A
Alcohol, Benzyl	B
Alcohol, Butyl	A
Alcohol, Diacetone	A
Alcohol, Ethyl	A
Alcohol, Hexyl	A
Alcohol, Isobutyl	A
Alcohol, Isopropyl	B
Alcohol, Methyl, 10% (methanol)	A
Alcohol, Octyl	A
Alcohol, Propyl	A
Acrylonitrile	A
Aluminum Chloride	C
Aluminum Chloride, 20%	D
Aluminum Fluoride	D
Aluminum Hydroxide	B
Aluminum Nitrate	A
Aluminum Potassium Sulfate 10%	A
Aluminum Potassium Sulfate 100%	D
Amines	A
Ammonia, 10%	A
Ammonia, anhydrous	A
Ammonia Nitrate	A
Ammonium Bifluoride	D

Chemical

Ammonium Carbonate	B
Ammonium Chloride	C
Ammonium Hydroxide	A
Ammonium Nitrate	A
Ammonium Oxalate	A
Ammonium Persulfate	A
Ammonium Phosphate, Dibasic	B
Ammonium Phosphate, Tribasic	B
Ammonium Sulfate	C
Amyl Acetate	B
Amyl Alcohol	A
Amyl Chloride	C
Amyl Hydride (pentane, n-Pentane)	C
Aniline	B
Aniline Oils	B
Aniline Hydrochloride	D
Antimony Trichloride	D
Aqua Regia (80% HCl, 20% HNO ₃)	D
Arsenic Acid	B
Barium Carbonate	B
Barium Chloride	C
Barium Cyanide	C
Barium Hydroxide	B
Barium Sulfate	B
Barium Sulfide	B
Beer	A
Beet Sugar Liquids	A
Benzaldehyde	A
Benzene	B
Benzoic Acid	B
Benzol (benzole)	C
Benzonitrile	D
Benzyl Alcohol	B
Borax (sodium borate)	A

Key to General Chemical Resistance – All data is based on ambient or room temperature conditions, about 64°F (18°C) to 73°F (23°C)

A = Excellent

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Chemical

Boric Acid	B
Bromine	D
Bromine, wet	D
Butadiene	A
Butane	A
Butanol (butyl alcohol)	A
Butter	B
Buttermilk	C
Butyl Alcohol (butanol)	A
Butylene	A
Butyric Acid	B
Calcium Bisulfate	C
Calcium Carbonate	B
Calcium Chloride	C
Calcium Hydroxide	B
Calcium Hypochlorite	D
Calcium Sulfate	B
Calgon	A
Cane Juice	A
Carbon Bisulfide	B
Carbon Dioxide, dry	A
Carbon Dioxide, wet	A
Carbon Disulfide	C
Carbon Monoxide Gas	A
Carbon Tetrachloride, wet	B
Carbonated Water (carbonic acid)	B
Carbonic Acid (carbonated water)	B
Castor Oil	A
Catsup	A
Chloric Acid	D
Chlorine, dry	B
Chlorine Water	D
Chloroacetic Acid	D
Chlorobenzene, Mono	A
Chloroform	A
Chlorosulfonic Acid	D

Chemical

Chocolate Syrup	A
Chromic Acid 50%	C
Cinnamon Oil	A
Cider	A
Citric Oils (citrus oils, limonene)	A
Clorox® (bleach, sodium hypochlorite, 5.25%)	A
Coconut Oil	A
Cod Liver Oil	A
Coffee	A
Coffee Extracts, hot	A
Copper Chloride	C
Copper Fluoborate	D
Copper Nitrate	B
Copper Sulfate	B
Corn Oil	A
Cream	A
Cresols	C
Creosote Oil	B
Cresylic Acid	B
Cupric Acid	D
Cyanic Acid	A
Cyclohexane	C
Cyclohexanone	C
Detergents	C
Diacetone Alcohol	A
Diesel Fuel Oils (20, 30, 40, 50)	A
Diethylene Glycol	C
Diethylamine	A
Dimethyl Formamide	A
Dyes	A
Epsom Salts (magnesium sulfate)	B
Ethane Gas	A
Ethanolamine	A
Ether	A
Ethyl Alcohol (ethanol)	A
Ethyl Chloride	A

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Ethyl Sulfate	D
Ethylene Bromide	A
Ferric Chloride	D
Ferrous Chloride	D
Ferrous Sulfate	B
Fluorine	D
Formaldehyde	B
Formic Acid	C
Freon 11 Trichlorofluoromethane	A
Freon 22 Chlorodifluoromethane	A
Freon TF Trichlorotrifluoroethane	A
Fruit Juice	A
Fuel Oils (1, 2, 3, 5A, 5B, 6)	A
Furan Resin	C
Furfural	A
Gallic Acid	B
Gasoline, high aromatic	A
Gasoline, leaded	A
Gasoline, unleaded	A
Gelatin	A
Ginger Oil	D
Glucose	A
Glue (PVA, polyvinyl acetate)	B
Glycerine	A
Glycolic Acid	A
Gold Monocyanide	A
Grape Juice	A
Grease	A
Heptane	A
Hexane	A
Hexyl Alcohol	A
Honey	A
Hydraulic Oils, petroleum	A
Hydraulic Oils, synthetic	A
Hydrazine	A
Hydrobromic Acid, 20%	D

Chemical

Hydrobromic Acid, 50%	D
Hydrobromic Acid, 100%	D
Hydrobromic Acid	D
Hydrochloric Acid, anhydrous	C
Hydrochloric Acid, dry gas	D
Hydrocyanic Acid	A
Hydrofluoric Acid, 20%	D
Hydrofluoric Acid, 30%	D
Hydrofluoric Acid, 50%	D
Hydrofluoric Acid, 75%	D
Hydrofluoric Acid, 100%	D
Hydrogen Gas	A
Hydrogen Sulfide, dry	A
Ink	A
Iodine	D
Iodoform	B
Isobutyl Alcohol	A
Isooctane	C
Isopropyl Alcohol	B
Isopropyl Ether	A
Jet Fuels (JP3, JP4, JP5)	A
Kerosene	A
Ketones	A
Lacquer Thinners	C
Lacquers	A
Lactic Acid, over 60% to 100° F	A
Lactic Acid, to 60% to 100° F)	A
Lactic Acid	A
Lard	B
Latex	B
Lead Acetate	B
Lemon Oil (citrus oils, limonene)	A
Lime (calcium oxide)	A
Linseed Oil	A
Lithium Chloride	C
Lubricants	B

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Magnesium Bisulfate	C
Magnesium Chloride	B
Magnesium Hydroxide	A
Magnesium Oxide	A
Magnesium Sulfate (Epsom salts)	B
Maleic Acid	C
Maleic Anhydride	A
Malic Acid	B
Mash (brewing)	A
Mayonnaise	A
Mercuric Chloride, dilute solution	D
Mercuric Cyanide	A
Mercurous Nitrate	C
Mercury	A
Methane Gas (natural gas)	A
Methanol (methyl alcohol, wood alcohol)	A
Methyl Acetate	A
Methyl Acetone	A
Methyl Alcohol, 10% (methanol)	A
Methyl Alcohol (methanol)	A
Methyl Bromide	A
Methyl Butyl Ketone (MBK)	A
Methyl Chloride	A
Methyl Ethyl Ketone (MEK)	A
Methyl Isopropyl Ketone	A
Methylamine (methyl amine)	A
Methylene Chloride	A
Milk	A
Mineral Oil	A
Mineral Spirits	A
Molasses	A
Monochloroacetic Acid	C
Monoethanolamine	A
Motor Oils	B
Mustard	A
Naphtha	A

Chemical

Naphthalene	B
Natural Gas (methane gas)	A
Nickel Chloride	D
Nickel Sulfate	B
Nitric Acid, 5-10%	A
Nitric Acid, 10%	A
Nitric Acid, 20%	A
Nitric Acid, 50%	B
Nitric Acid, concentrated	C
Nitrobenzene	B
Nitromethane	A
Octyl Alcohol	A
Oil, Castor	A
Oil, Cinnamon	A
Oil, Citric (citrus oils, limonene)	A
Oil, Clove	A
Oil, Coconut	A
Oil, Cod Liver	A
Oil, Corn	A
Oil, Cottonseed	B
Oil, Creosote	B
Oil, Ginger	D
Oil, Lemon (citrus oils, limonene)	A
Oil, Linseed	A
Oil, Mineral	A
Oil, Olive	A
Oil, Orange (citrus oils, limonene)	A
Oil, Palm	A
Oil, Peanut	A
Oil, Peppermint	A
Oil, Pine	A
Oil, Rapeseed	A
Oil, Sesame Seed	A
Oil, Silicone	A
Oil, Soybean	A
Oils, Aniline	B

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Oils, Citric (citrus oils, limonene)	A
Oils, Diesel Fuel (20, 30, 40, 50)	A
Oils, Fuel (1, 2, 3, 5A, 5B, 6)	A
Oils, Hydraulic (petroleum)	A
Oils, Hydraulic (synthetic)	A
Oils, Motor	B
Oils, Rosins	A
Oils, Tanning	A
Oils, Transformer	A
Oils, Turbine	A
Oleic Acid	B
Oleum	B
Olive Oil	A
Orange Oil (citrus oils, limonene)	A
Oxalic Acid, cold	C
Oxalic Acid	C
Paraffin	A
Palm Oil	A
Peanut Oil	A
Pentane (n-Pentane, amyl hydride)	C
Peppermint Oil	A
Perchloroethylene, dry	B
Petrolatum	A
Petroleum	C
Phenol, 10% (carbolic acid)	B
Phenol (carbolic acid)	B
Phosphoric Acid, >40%	D
Phosphoric Acid, S40%	D
Phosphoric Acid, crude	D
Phthalic Anhydride	B
Picric Acid	B
Plating Solutions, Antimony Plating 130°F	A
Plating Solutions, Arsenic Plating 110°F	A
Plating Solutions (Cadmium): Fluoborate Bath 100°F	A
Potassium Bromide	A
Potassium Carbonate	B

Chemical

Potassium Chlorate	B
Potassium Chloride	C
Potassium Cyanide Solutions	B
Potassium Dichromate	B
Potassium Ferrocyanide	B
Potassium Hydroxide, 50%	A
Potassium Iodide	C
Potassium Nitrate	B
Potassium Permanganate	B
Potassium Sulfate	B
Potassium Sulfide	A
Propane, liquified	A
Propyl Alcohol	A
Propylene Glycol	B
Pyridine	A
Pyrogallic Acid	B
Rapeseed Oil	A
Resins and Rosins	A
Rum	A
Rust Inhibitors	A
Salad Dressings	A
Sea Water	A
Sesame Seed Oil	A
Shellac, bleached	A
Shellac, orange	A
Silicone Oil	A
Silver Bromide	D
Silver Nitrate	B
Soap Solutions	A
Soda Ash (sodium carbonate)	B
Sodium Acetate	B
Sodium Aluminate	B
Sodium Bicarbonate	B
Sodium Bisulfate	D
Sodium Borate (Borax)	B
Sodium Carbonate (soda ash)	B

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Sodium Chlorate	B
Sodium Chloride	B
Sodium Chromate	A
Sodium Cyanide	B
Sodium Fluoride	D
Sodium Hypochlorite	D
Sodium Hyposulfate	A
Sodium Metaphosphate	A
Sodium Metaphosphate	A
Sodium Metasilicate	A
Sodium Nitrate	B
Sodium Perborate	B
Sodium Peroxide	B
Sodium Silicate	B
Sodium Sulfate	B
Sodium Sulfide	B
Sodium Tetraborate	B
Sodium Thiosulphate, Hypo	B
Soy Sauce	A
Soybean Oil	A
Stannic Chloride	D
Stannous Chloride	D
Starch (amylum)	B
Stearic Acid	B
Stoddard Solvent	A
Styrene	A
Sugar Liquids	A
Sulfur Chloride	D
Sulfur Dioxide	D
Sulfur Dioxide, dry	A
Sulfur Trioxide, dry	A
Sulfuric Acid, <10%	D
Sulfuric Acid, 10-75%	D

Chemical

Sulfuric Acid, hot concentrated	D
Sulfurous Acid	C
Tallow	A
Tannic Acid	B
Tanning Liquors	B
Tanning Oils	A
Tartaric Acid	B
Toluene (Toluol)	A
Tomato Juice	A
Transformer Oils	A
Trichloroacetic Acid	D
Trichlorethylene	B
Trichloropropane	A
Turbine Oils	A
Turpentine	B
Urine	A
Varnish	A
Vegetable Juices	A
Vinegar	A
Water, deionized (demineralized water)	B
Water, distilled	A
Water, fresh	A
Weed Killers	A
Whey	A
Whiskey and Wines	A
White Liquor, pulp mill	A
White Water, paper mill	A
Wood Alcohol (methanol, methyl alcohol)	A
Xylene	A
Zinc Chloride	D
Zinc Hydrosulfate	B
Zinc Hydrosulfite	A
Zinc Sulfate	B

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