



# Stainless Steel Chemical Resistance Chart

● Recommended

● Recommended with Restrictions

● Not Recommended

Fluids	SS GRADE	
	AISI 316L	AISI 321
Acetic acid all concentrations, 20°C	●	●
Acetic acid all concentrations, boiling	●	●
Acetic anhydride	●	●
Acetone	●	●
Acetyl chloride	●	●
Acetylene	●	●
Air	●	●
Aluminium acetate	●	●
Aluminium chloride, 10%, quiescent	●	●
Aluminium chloride, 25%, quiescent	●	●
Aluminium hydroxide	●	●
Aluminium sulfate all concentrations, 20°C	●	●
Aluminium sulfate, boiling	●	●
Ammonia, anhydrous	●	●
Ammonia, anhydrous hot gas	●	●
Ammonia, liquor	●	●
Ammonium bromide	●	●
Ammonium carbonate, 1% - 5%	●	●
Ammonium chloride, 1% - 10%	●	●
Ammonium chloride, higher concentrations	●	●
Ammonium bicarbonate, hot	●	●
Ammonium hydroxide all concentrations	●	●
Ammonium monophosphate	●	●
Ammonium nitrate, boiling	●	●
Ammonium oxalate, 5%	●	●
Ammonium perchlorate 10%, boiling	●	●
Ammonium persulfate, 5%	●	●
Ammonium phosphate, 5%	●	●
Ammonium sulfate, 1% - 5%	●	●
Ammonium sulfate, 10%	●	●
Ammonium sulfite, 20°C, boiling	●	●
Amyl acetate, amyl chloride	●	●

Fluids	SS GRADE	
	AISI 316L	AISI 321
Aniline	●	●
Argon, liquid	●	●
Barium carbonate	●	●
Barium hydroxide	●	●
Barium nitrate	●	●
Barium sulfate	●	●
Barium sulfide	●	●
Benzene, 20°C or hot	●	●
Benzoic acid	●	●
Boric acid,	●	●
Borax, 5%	●	●
Butane	●	●
Butyl acetate	●	●
Butyric acid	●	●
Calcium carbonate	●	●
Calcium chlorate	●	●
Calcium chloride	●	●
Calcium hypochlorite, 2%	●	●
Calcium hydroxide, 10% - 20%	●	●
Calcium sulfate, saturated	●	●
Carbonated water	●	●
Carbonic acid, saturated solution	●	●
Carbon dioxide	●	●
Carbon disulfide	●	●
Carbon tetrachloride	●	●
Carbon tetrachloride, commercial + 1% water	●	●
Cellulose	●	●
Chloroacetic acid	●	●
Chlorine gas	●	●
Chlorinated water, saturated	●	●
Chloroform	●	●
Chromium plating bath	●	●

Fluids	SS GRADE	
	AISI 316L	AISI 321
Chloroethane	●	●
Citric acid, still	●	●
Citric acid, boiling	●	●
Copper acetate	●	●
Copper carbonate	●	●
Copper cyanide	●	●
Copper nitrate	●	●
Copper sulfate	●	●
Creosote	●	●
Cyanogen gas	●	●
Cichloroethane	●	●
Diethyl ether	●	●
Ethylene glycol	●	●
Ethanol, 20°C and boiling	●	●
Ethyl acetate concentrated solution	●	●
Ethylene chloride	●	●
Fluorine, gas, moist	●	●
Formaldehyde, 40%	●	●
Formic acid	●	●
Furfural	●	●
Gglue solution (acid)	●	●
Glycerine	●	●
Hydrochloric acid	●	●
Hydrocyanic acid	●	●
Hydrofluoric acid	●	●
Hydrogen peroxide	●	●
Hydrogen sulfide, dry	●	●
Hydrogen sulfide, wet	●	●
Iodoform	●	●
Iron 2 chloride	●	●
Iron 3 chloride, 1%, 20°C	●	●
Iron 3 chloride, 1%, boiling	●	●
Iron 3 hydroxide	●	●
Iron 3 nitrate	●	●
Iron 2 sulfate	●	●
Kerosene	●	●

Fluids	SS GRADE	
	AISI 316L	AISI 321
Lactic acid, 1%	●	●
Lactic acid, 5% and more, 20°C	●	●
Lactic acid, 5% and more, boiling	●	●
Lead diacetate, 5%	●	●
Linseed oil	●	●
Magnesium chloride quiescent, 20°C	●	●
Magnesium chloride quiescent, hot	●	●
Magnesium sulfate	●	●
Mercury	●	●
Methane, liquid	●	●
Methanol, boiling	●	●
Naphtha	●	●
Naphthalene sulphonic acid	●	●
Nickel chloride solution	●	●
Nickel sulfate	●	●
Nitre cake	●	●
nitric acid 5%, 50%, 70%, boiling	●	●
nitric acid, 65%, 20°C	●	●
nitric acid, 65%, boiling	●	●
nitric acid, concentrated, 20°C	●	●
Nitric acid, concentrated, boiling	●	●
Nitrogen, liquid	●	●
Oil, crude	●	●
Oil, vegetable, mineral	●	●
Oleic acid	●	●
Oxalic acid, 20°C	●	●
Oxalic acid, boiling	●	●
Oxygen, liquid	●	●
Paraffin, hot	●	●
Petrol	●	●
Petroleum ether	●	●
Phenol	●	●
Phosphoric acid, 1%, 5%	●	●
Phosphoric acid, 10%, quiescent	●	●
Phosphoric acid, 80%	●	●
Potassium bromide	●	●



Fluids	SS GRADE	
	AISI 316L	AISI 321
Potassium carbonate	●	●
Potassium chlorate	●	●
Potassium chloride	●	●
Potassium chromium sulfate, 5%	●	●
Potassium cyanide	●	●
Potassium bichromate	●	●
Potassium ferricyanide	●	●
Potassium oxalate	●	●
Potassium hydroxide, 5%, 27%	●	●
Potassium hypochlorite	●	●
Potassium nitrate	●	●
Potassium permanganate, 5%	●	●
Potassium sulfate	●	●
Potassium sulphite	●	●
Propane	●	●
Sea water	●	●
Silver bromide	●	●
Silver nitrate	●	●
Sodium acetate	●	●
Sodium carbonate, 5%, 50%	●	●
Sodium chloride, saturated, 20°C	●	●
Sodium chloride saturated, boiling	●	●
Sodium cyanide	●	●
Sodium fluoride, 5%, solution	●	●
Sodium bicarbonate	●	●
Sodium bisulfate, solution	●	●
Sodium bisulfate saturated solution	●	●
Sodium hydroxide	●	●
Sodium hypochlorite	●	●
Sodium nitrate	●	●
Sodium perchlorate, 10%	●	●
Sodium phosphate	●	●
Sodium sulfate	●	●
Sodium sulfite	●	●
Sodium thiosulphate	●	●
Sodium thiosulphite	●	●

Fluids	SS GRADE	
	AISI 316L	AISI 321
Steam	●	●
Stearic acid	●	●
Sulfur, moist	●	●
Sulfur, molten	●	●
Sulfur chloride, dry	●	●
Sulfur dioxide gas, moist	●	●
Sulfur dioxide gas, dry	●	●
Sulfuric acid, 5%, 10%	●	●
Sulfuric acid, 50%	●	●
Sulfuric acid, concentrated, 20°C	●	●
Sulfuric acid concentrated, boiling	●	●
Sulphurous acid	●	●
Tannic acid	●	●
Tartaric acid, 20°C	●	●
Tartaric acid, boiling	●	●
Tin 2 chloride saturated	●	●
Tin 4 chloride solution	●	●
Trichloroacetic acid	●	●
Trichloroethylene, dry	●	●
Trichloroethylene, moist	●	●
Vinegar	●	●
Water, potable	●	●
Yeast	●	●
Zinc chloride, 5%, still	●	●
Zinc cyanide, moist	●	●
Zinc nitrate, solution	●	●
Zinc sulfate	●	●

The following data is based on tests and believed to be reliable; however the tabulation should be used as a guide ONLY, since it does not take into consideration all variables, such as elevated temperatures, fluid contamination, concentration, etc. that may be encountered in actual use. All critical applications should be tested.

Note: All data based on 20 °C/70 °F unless otherwise noted.