



THERMOWELLS

A guide to thermowell material selection based on process media corrosion.

Corrodent	Temp °C	Temp. °F	Conc. %	Recommended Material
Acetic Acid	100	212	All	Monel
Acetic Anhydride	149	300		Nickel
Acetone	100	212	All	304 SS
Acetylene	204	400		304 SS
Alcohols	100	212	All	304 SS
Alum (K or Na)	149	300	All	Hast. C
Aluminum Chloride	100	212	All	Hast. B
Aluminum sulphate	100	212	All	316 SS
Ammonia, Dry	100	212	All	304 SS, 316 SS
Ammonium Hydroxide	100	212	All	304 SS, 316 SS
(Ammonia, Aqua)	100	212	All	304 SS, 316 SS
Ammonium Chloride	149	300	50%	Monel
Ammonium Nitrate	149	300	All	304 SS
Ammonium sulphate	100	212	All	316 SS
Amyl Acetate	149	300	All	304 SS
Aniline	24	75		Monel
Asphalt	121	250		304 SS
Atmosphere	121	250		304 SS
Beer	21	70		304 SS
Benzene (Benzol)	100	212		Steel
Benzoic Acid	100	212	All	316 SS
Bleaching Powder	21	70	15%	Monel
Borax	100	212	All	Brass
Bordeaux Mixture	93	200		304 SS
Boric Acid	204	400	All	316 SS
Bromine	52	125	Dry	Monel
Butane	204	400	All	Steel
Butyric Acid	100	212		Hast. C
Calcium Bisulphite	24	75	All	Hast. C
Calcium Chloride	100	212	All	Hast. C
Calcium Hydroxide	149	300	20%	Hast. C
Carbon Dioxide, Dry	427	800	All	Brass
Carbon Disulphide	93	200		304 SS
Carbon Tetrachloride	52	125	All	Monel
Carbonated Beverages	100	212		304 SS
Carbonated Water	100	212	All	304 SS
Chloracetic Acid	100	212	All	Monel
Chlorine, Dry	38	100		Monel
Chlorine, Moist	38	100	All	Monel
Chloroform, Dry	100	212		Monel
Chromic Acid	149	300	All	Hast. C
Cider	149	300	All	304 SS
Citric Acid	100	212	All	Hast. C
Copper (10) Chloride	100	212	All	Hast. C
Copper (10) Nitrate	149	300	All	316 SS
Copper (10) sulphate	149	300	All	316 SS
Copper Plating (Acid)	24	75		304 SS
Copper Plating (Cyanide)	82	180		304 SS
Corn Oil	93	200		304 SS
Creosote	93	200	All	304 SS
Crude Oil	149	300		Monel
Ethyl Acetate	149	300	All	304 SS
Ethyl Chloride, Dry	260	500		Steel
Ethylene Glycol	100	212	All	304 SS
Ethylene Oxide	24	75		Steel
Fatty Acids	260	500	All	316 SS
Ferric Chloride	24	75	All	Hast. C
Ferric sulphate	149	300	All	304 SS
Formaldehyde	100	212	40%	316 SS
Formic Acid	149	300	All	316 SS
Fluorine, Anhydrous	38	100		304 SS
Freon	149	300		Steel
Furfural	232	450		316 SS
Gasoline	149	300		Steel
Glucose	149	300		304 SS
Glue ph 6-8	149	300	All	304 SS
Glycerine	100	212	All	Brass

Corrodent	Temp °C	Temp. °F	Conc. %	Recommended Material
Hydrobromic Acid	100	212	All	Hast. C
Hydrochloric Acid (37%)	107	225	All	Hast. B
Hydrocyanic Acid	100	212	All	304 SS
Hydrofluogillic Acid	100	212	40%	Monel
Hydrofluoric Acid	100	212	60%	Monel
Hydrogen Chloride, Dry	260	500		304 SS
Hydrogen Fluoride, Dry	79	175		Steel
Hydrogen Peroxide	52	125	10-100%	304 SS
Kerosene	149	300	All	Steel
Lacquers & Thinners	149	300	All	304 SS
Lactic Acid	149	300	All	316 SS
Lime	100	212	All	316 SS
Linseed Oil	24	75		Steel
Magnesium Chloride	100	212	50%	Nickel
Magnesium (Hydr)oxide	24	75	All	304 SS
Magnesium sulphate	100	212	40%	304 SS
Mercuric Chloride	24	75	10%	Hast. C
Mercury	371	700	100%	Steel
Methyl Chloride, Dry	24	75		Steel
Methylene Chloride	100	212	All	304 SS
Milk, fresh or sour	82	180		304 SS
Molasses	149	300		304 SS
Natural Gas	21	70		304 SS
Nitric Acid	24	75	All	304 SS
Nitric Acid	43	110	All	316 SS
Oxygen	24	75	All	Steel
Oleic Acid	260	500	All	316 SS
Oxalic Acid	100	212	All	Monel
Palmitic Acid	260	500	All	316 SS
Phosphoric Acid	100	212	All	316 SS
Phenol	100	212	All	316 SS
Photographic Bleaching	38	100	All	304 SS
Potassium Compounds			See Sodium Compounds	
Propane	149	300		Steel
Rosin	371	700	100%	316 SS
Mercury	371	700	100%	Steel
Salt or Brine			See Sodium Chloride	
Sea Water	24	75		Monel
Soap & Detergents	100	212	All	304 SS
Sodium Bicarbonate	100	212	20%	316 SS
Sodium Bisulphate	100	212	20%	304 SS
Sodium Bisulphite	100	212	20%	304 SS
Sodium Carbinat	100	212	40%	316 SS
Sodium Chloride	149	300	30%	Monel
Sodium Chromate	100	212	All	316 SS
Sodium Cyanide	100	212	All	304 SS
Sodium Hydroxide	100	212	30%	316 SS
Sodium Hypochlorite	24	75	10%	Hast. C
Sodium Nitrate	100	212	40%	304 SS
Sodium Nitrite	24	75	20%	316 SS
Sodium Phosphate	100	212	10%	Steel
Sodium Silicate	100	212	10%	Steel
Sodium sulphate	100	212	30%	316 SS
Sodium sulphide	100	212	10%	316 SS
Sodium sulphite	100	212	30%	304 SS
Sodium Thiosulphate	100	212	All	304 SS
Steam	100	212		304 SS
sulphur	260	500		304 SS
sulphur Chloride	24	75	Dry	316 SS
sulphur Dioxide	260	500	Dry	316 SS
sulphur Trioxide	260	500	Dry	316 SS
sulphuric Acid	100	212	10%	316 SS
sulphuric Acid	100	212	10-90%	Hast. B
sulphuric Acid	100	212	90-100%	Hast. B
sulphuric Acid, Fuming	79	175		Carp. 20
sulphurous Acid	24	75	20%	316 SS
Titanium Tetrachloride	24	75	All	316 SS
Tannic Acid	24	75	40%	Hast. B
Toluene	24	75		Steel
Trichloroacetic Acid	24	75	All	Hast. B
Trichlorethylene	149	300	Dry	Monel
Turpentine	24	75		316 SS
Varnish	66	150		Steel
Zinc Chloride	100	212	All	Hast. B
Zinc sulphate	100	212	All	316 SS

This information is given as a guide only. Final material selection should be made by the user based on their knowledge of the application.