

Corrosion Rating of Cast Copper Alloys in Various Media

Ratings: A, recommended; B, acceptable; C, not recommended

Corrosive medium	Copper	Tin Bronze	Leaded Tin Bronze	High- Lead Tin Bronze	Leaded Red Brass	Leaded Semi Red Brass	Leaded Yellow Brass	Leaded High-Strength Yellow Brass	High-Strength Yellow Brass	Aluminum Bronze	Leaded Nickel Brass	Leaded Nickel Bronze	Silicon Bronze	Silicon Brass
Acetate solvents	B	A	A	A	A	A	B	A	A	A	A	A	A	B
20%	A	C	B	C	B	C	C	C	C	A	C	A	A	B
Glacial	A	A	A	C	A	C	C	C	C	A	B	B	A	A
Acetylene (a)	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Aluminum chloride	C	C	C	C	C	C	C	C	C	B	C	C	C	C
Ammonia, moist gas	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Ammonium chloride	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Ammonium nitrate	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Aniline and aniline dyes	C	C	C	C	C	C	C	C	C	B	C	C	C	C
Barium chloride	A	A	A	A	A	C	C	C	C	A	A	A	A	C
Beer (b)	A	A	B	B	B	C	C	C	A	A	C	A	A	B
Benzene	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Boric acid	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Calcium bisulfite	A	A	B	B	B	C	C	C	C	A	B	A	A	B
Calcium chloride, alkaline	C	C	C	C	C	C	C	C	C	A	C	A	C	B
Calcium hypochlorite	C	C	B	B	B	C	C	C	C	B	C	C	C	C
Carbonated beverages (b)	A	C	C	C	C	C	C	C	C	A	C	C	A	C
Carbon dioxide, moist (b)	B	B	B	C	B	C	C	C	C	A	C	A	A	B
Carbon tetrachloride, moist	B	B	B	B	B	B	B	B	B	B	B	A	A	A
Chlorine, moist	C	C	B	B	B	C	C	C	C	C	C	C	C	C
Citric, acid	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Cottonseed oil (b)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Ethers	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Ferric chloride, sulfate	C	C	C	C	C	C	C	C	C	C	C	C	C	C

Corrosion Ratings (continued)

Ratings: A, recommended; B, acceptable; C, not recommended

Corrosive medium	Copper	Tin Bronze	Leaded Tin Bronze	High- Lead Tin Bronze	Leaded Red Brass	Leaded Semi Red Brass	Leaded Yellow Brass	Leaded High-Strength Yellow Brass	High-Strength Yellow Brass	Aluminum Bronze	Leaded Nickel Brass	Leaded Nickel Bronze	Silicon Bronze	Silicon Brass
Formaldehyde	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Formic acid	A	A	A	A	A	B	B	B	B	A	B	B	B	C
Freon	A	A	A	A	A	A	A	A	A	A	A	A	A	B
Fuel oil	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Furfural	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Gasoline	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Gelatin (b)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Glucose	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Glue	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Glycerin	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Hydrochloric or muriatic	C	C	C	C	C	C	C	C	C	B	C	C	C	C
Hydrofluoric acid	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Hydrofluosilicic acid	B	B	B	B	B	C	C	C	C	B	C	C	B	C
Hydrogen	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Hydrogen peroxide	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Hydrogen sulfide, dry	C	C	C	C	C	C	C	C	C	B	C	C	B	C
Hydrogen sulfide, moist	C	C	C	C	C	C	C	C	C	B	C	C	C	C
Lacquers	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Lacquer thinners	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Lactic acid	A	A	A	A	A	C	C	C	C	A	C	C	A	C
Linseed oil	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Liquors														
Black	B	B	B	B	B	C	C	C	C	B	C	C	B	B
Green	C	C	C	C	C	C	C	C	C	B	C	C	C	B

White	C	C	C	C	C	C	C	C	C	A	C	C	C	B
Magnesium chloride	A	A	A	A	A	C	C	C	C	A	C	C	A	B
Magnesium hydroxide	B	B	B	B	B	B	B	B	B	A	B	B	B	B
Magnesium sulfate	A	A	A	A	B	C	C	C	C	A	C	B	A	B
Mercury and mercury salts	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Milk (b)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Molasses (b)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Natural gas	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Nickel chloride	A	A	A	A	A	C	C	C	C	B	C	C	A	C
Nickel sulfate	A	A	A	A	A	C	C	C	C	A	C	C	A	C
Nitric acid	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Oleic acid	A	A	B	B	B	C	C	C	C	A	C	A	A	B
Oxalic acid	A	A	B	B	B	C	C	C	C	A	C	A	A	B
Phosphoric acid	A	A	A	A	A	C	C	C	C	A	C	A	A	A
Picric acid	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Potassium chloride	A	A	A	A	A	C	C	C	C	A	C	C	A	C
Potassium cyanide	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Potassium hydroxide	C	C	C	C	C	C	C	C	C	A	C	C	C	C
Potassium sulfate	A	A	A	A	A	C	C	C	C	A	C	C	A	C
Propane gas	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Sea water	A	A	A	A	A	C	C	C	C	A	C	C	B	B
Soap solutions	A	A	A	A	B	C	C	C	C	A	C	C	A	C
Sodium bicarbonate	A	A	A	A	A	A	A	A	A	A	A	A	A	B
Sodium bisulfate	C	C	C	C	C	C	C	C	C	A	C	C	C	C
Sodium carbonate	C	A	A	A	A	C	C	C	C	A	C	C	C	A
Sodium chloride	A	A	A	A	A	B	C	C	C	A	C	C	A	C