Chemical Compatibility Chart (A – B)

Chemical \ Material	303 Stainless Steel	304 Stainless Steel (CF-8)	316 Stainless Steel (CF-8M)	410 Stainless Steel (CA-15)	440 Stainless Steel	Aluminium	Titanium	Hastelloy C	Cast Bronze	Brass	Cast Iron	Carbon Steel	PVC	Teflon	Noryl	Nylon	Polyethylene	Polypropylene	Ryton	Carbon	Ceramic	Viton ®	Buna N (Nitrile)	Silicon	Neoprene	Ethylene Propylene (EPDM)	Natural Rubber	Epoxy
Acetaldehyde	A	A	A	C	-	B	A	A	D	-	-	C	D	A	-	A	C	B	A	A	A	A	B	B	D	B	C	A
Acetamide	-	B	A	A	-	-	-	-	-	-	-	C	-	-	-	-	-	-	-	-	A	A	A	-	A	A	D	A
Acetate Solv.	A	B	A	-	B	B	-	-	A	C	B	A	B	A	-	A	B	D	-	A	A	D	D	-	D	-	-	A
Acetic Acid, Glacial	-	B	A	D	A	B	A	A	C	C	D	A	C	A	C	D	B	B	A	A	A	D	D	B	C	B	C	B
Acetic Acid 20%	-	-	A	A	-	-	A	A	-	C	-	-	B	A	A	D	-	A	A	-	A	D	C	-	C	-	-	B
Acetic Acid 80%	-	-	A	A	-	-	A	A	-	C	-	-	D	A	B	D	-	B	-	-	A	D	C	-	D	-	-	B
Acetic Acid	-	B	A	-	B	B	A	A	C	C	D	C	A	A	A	D	B	A	A	A	A	C	C	-	C	B	C	A
Acetic Anhydride	B	A	A	D	B	B	A	A	C	D	B	D	D	A	D	D	A	A	A	A	A	D	A	C	B	B	C	A
Acetone	A	A	A	A	B	A	A	A	A	A	A	A	D	A	D	A	C	B	A	A	A	D	D	B	C	A	D	B
Acetyl Chloride	-	C	A	-	-	-	-	-	D	-	-	-	-	A	-	-	-	-	A	-	-	-	-	-	-	-	A	A
Acetylene	A	A	A	-	A	A	-	-	B	-	A	A	B	-	-	A	-	D	A	A	A	A	A	C	B	A	C	A
Acrylonitrile	A	A	C	A	-	B	-	B	A	-	C	-	-	-	-	-	-	B	A	A	A	C	D	-	D	D	-	A
Aluminum Chloride 20%	-	D	C	-	D	B	A	A	D	-	D	A	A	-	A	A	B	A	A	A	A	A	A	-	A	A	A	A
Aluminum Chloride	C	D	C	D	-	D	C	A	C	-	D	B	A	A	A	D	-	A	A	A	A	A	A	C	A	-	-	A
Aluminum Flouride	-	D	C	D	D	-	D	B	-	-	-	A	A	A	A	D	B	A	-	A	-	A	A	C	A	-	C	A
Aluminun Hydroxide	-	A	A	C	A	A	-	-	A	-	D	A	A	A	A	A	-	A	-	A	A	A	A	-	A	-	A	A
Alum Potassium Sulfate (ALUM)10%	-	A	-	-	-	A	-	B	-	-	D	A	A	A	-	A	A	-	-	A	A	A	-	-	A	-	A	A
Alum Potassium Sulfate (ALUM) 100%	-	D	A	B	B	B	-	B	C	-	-	A	A	A	A	D	B	A	-	A	A	A	A	-	A	-	A	A
Aluminum Sulfate	-	C	C	D	A	A	A	A	C	C	D	A	A	A	A	A	B	A	A	A	A	A	A	-	A	A	A	A
Amines	A	A	A	-	-	A	B	A	B	-	A	B	C	A	B	A	-	-	-	A	A	D	D	C	B	B	C	A
Ammonia 10%	-	-	A	-	-	-	A	A	-	-	-	-	A	A	A	A	-	A	A	-	A	A	D	-	A	-	-	B
Ammonia Anhydrous	A	B	A	-	A	B	B	A	D	-	D	B	A	A	A	A	B	A	B	C	A	D	B	B	A	A	D	A
Ammonia, Liquids	-	A	A	A	A	D	-	B	D	-	A	A	A	A	A	-	D	A	-	A	A	D	B	B	A	A	D	A
Ammonia, Nitrate	-	A	A	-	A	C	-	-	D	-	-	A	B	-	A	-	-	A	-	A	A	-	A	-	C	-	-	A
Ammonium Bifluoride	-	C	A	D	-	D	-	B	-	-	-	-	A	-	A	-	-	A	-	-	A	A	A	-	A	-	-	A
Ammonium Carbonate	B	A	A	C	A	C	A	B	B	-	C	B	A	A	A	A	-	A	-	A	A	B	D	C	A	A	-	A
Ammonium Casenite	-	-	A	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-	-	-	-	-	-	-	A	-	-	A
Ammonium Chloride	C	A	C	D	A	C	A	A	D	C	D	D	A	A	A	A	B	A	A	A	A	A	A	C	A	A	A	A
Ammonium Hydroxide	A	A	A	B	A	C	A	A	D	D	A	C	A	A	A	A	B	A	A	A	A	B	B	B	A	A	C	A
Ammonium Nitrate	A	A	A	-	A	B	A	A	D	D	A	D	A	A	A	D	B	A	A	A	A	A	A	C	A	A	A	A
Ammonium Oxalate	-	A	A	-	A	-	-	A	-	-	-	A	-	-	-	-	-	-	-	A	-	-	A	-	A	-	-	A
Ammonium Persulfate	-	A	A	B	A	C	A	A	A	-	D	A	A	A	A	D	-	A	-	A	A	C	A	-	A	A	A	A
Ammonium Phosphate, Dibasic	B	A	A	-	A	B	A	A	C	-	-	D	A	A	A	A	B	A	-	A	A	A	A	B	A	A	A	A
Ammonium Phosphate, Monobasic	-	A	A	A	A	B	A	A	D	-	-	A	A	A	A	A	B	A	-	A	A	A	A	B	A	A	A	A
Ammonium Phosphate, Tribasic	B	A	A	-	A	B	A	A	C	-	C	D	A	A	A	A	B	A	-	A	A	A	A	B	A	A	A	A
Ammonium Sulfate	C	A	B	C	A	B	A	A	B	C	C	C	A	A	A	D	B	A	A	A	A	D	A	B	A	A	A	A
Ammonium Thio-Sulfate	-	-	A	-	-	A	-	-	D	A	-	-	-	-	-	-	-	-	-	A	A	-	A	-	A	-	-	A
Amyl Acetate	B	A	A	A	C	B	A	A	C	-	-	C	D	A	D	B	D	D	A	A	A	D	D	D	D	A	D	A
Amyl Alcohol	-	A	A	A	-	B	A	A	A	-	-	A	A	A	C	A	B	A	-	A	A	B	B	D	A	A	C	A
Amyl Chloride	-	C	B	A	-	D	-	A	A	-	-	A	D	A	D	C	D	D	-	A	A	A	D	-	D	D	D	A
Aniline	B	A	A	A	A	C	C	B	C	-	-	C	D	A	D	C	C	B	A	A	A	D	D	C	D	B	D	A
Anti-Freeze	-	A	A	-	-	A	-	A	B	B	B	C	A	A	A	A	B	A	A	A	A	A	A	C	A	A	A	A
Antimony Plating 55ºC	-	-	A	-	-	-	A	A	-	-	-	-	A	A	A	D	-	A	-	-	A	A	A	D	A	-	-	B
Antimony Trichloride	-	D	D	D	-	D	-	A	-	-	-	-	A	A	-	D	A	-	-	-	A	-	-	-	C	-	A	A
Aqua Regia (80% HCl, 20% HNO)	-	D	D	-	-	D	A	D	D	-	-	-	D	A	D	D	D	C	-	-	D	C	D	C	D	D	D	D
Arochlor 1248	-	-	-	-	-	-	-	-	-	-	-	A	-	-	D	-	-	-	-	A	-	A	D	-	D	B	D	A
Aromatic Hydrocarbons	-	-	A	-	-	A	-	-	A	-	A	A	D	-	D	-	C	-	-	A	-	A	D	-	D	D	D	A
Arsenic Acid	B	A	A	B	-	D	-	-	D	B	D	D	A	A	A	A	B	A	-	A	A	A	A	-	A	-	C	A
Arsenic Plating 45ºC	-	-	A	-	-	-	A	A	-	-	-	-	A	A	A	A	-	A	-	-	C	A	A	D	A	-	-	B
Asphalt	-	B	A	A	-	C	-	-	A	-	C	-	A	-	-	A	-	A	A	-	A	B	C	B	C	B	D	A
Barium Carbonate	B	A	A	A	A	B	A	A	B	-	B	B	A	A	A	A	B	A	-	A	A	A	A	-	A	-	A	A
Barium Chloride	C	A	A	B	A	D	A	A	B	-	C	C	A	A	A	B	B	A	A	A	A	A	A	B	A	A	A	A
Barium Cyanide	-	-	A	-	-	-	-	-	C	-	-	A	-	-	-	-	B	-	-	A	-	A	C	-	A	A	-	A
Barium Hydroxide	B	C	A	A	A	D	B	B	B	-	C	C	A	A	A	A	B	A	A	A	A	A	A	C	A	A	A	A
Barium Nitrate	-	A	A	-	-	A	-	-	D	-	A	A	B	-	A	-	-	-	-	A	A	A	A	-	A	A	-	B
Barium Sulfate	B	A	A	A	A	D	A	A	C	-	C	C	A	A	A	A	B	A	A	A	B	A	A	D	A	A	-	B
Barium Sulfide	B	A	A	A	-	D	-	-	C	-	C	C	A	A	A	A	B	A	-	A	A	A	A	C	A	A	A	A
Beer	A	A	A	A	-	A	A	A	A	B	D	D	A	A	A	D	B	D	-	A	A	A	D	C	A	A	A	A
Beet Sugar Liquids	A	A	A	-	-	A	-	-	A	B	A	-	A	A	A	A	-	A	-	A	A	A	A	-	B	A	A	A
Benzaldehyde	A	A	A	A	-	B	A	A	A	-	B	A	D	A	D	C	D	D	A	A	A	D	D	B	D	A	D	A
Benzene	B	A	A	A	A	B	A	B	B	A	B	C	D	A	D	A	D	D	A	A	A	A	D	-	D	D	D	A
Benzoic Acid	B	A	A	A	A	B	A	A	B	-	D	-	A	A	A	D	B	D	-	A	B	A	D	-	D	D	D	A
Benzol	-	A	A	-	-	B	A	A	B	A	-	-	D	A	D	A	-	A	-	A	A	D	D	-	D	-	-	A
Benzyl Alcohol	-	A	A	A	-	B	A	A	A	C	-	-	D	-	A	A	D	A	-	A	A	A	D	-	B	B	D	A
Borax (Sodium Borate)	-	A	A	A	A	C	-	A	A	B	A	C	A	A	A	A	B	A	A	A	A	A	B	C	A	A	C	A
Boric Acid	B	A	A	B	A	B	A	A	B	C	D	-	A	A	A	A	B	A	-	A	A	A	A	-	A	A	A	A

Chemical Resistance Legend

A ▶ No Effect – Excellent
B ▶ Minor Effect – Acceptable
C ▶ Moderate Effect – Questionable
D ▶ Severe Effect – Not Recommended
– ▶ No Information

Note

These recommendations are based upon information from material suppliers and careful examination of available published information. However, since the resistance of metals, plastics and elastomers can be affected by concentration, temperature, presence of other chemicals and other factors, this chart should be considered as general guide. The customer must determine the suitability of the material used in various solutions.

All recommendations assume ambient temperature unless otherwise stated.

Chemical Compatibility Chart (A – B)

Material / Chemical	303 Stainless Steel	304 Stainless Steel (CF-8)	316 Stainless Steel (CF-8M)	410 Stainless Steel (CA-15)	440 Stainless Steel	Aluminium	Titanium	Hastelloy C	Cast Bronze	Brass	Cast Iron	Carbon Steel	PVC	Teflon	Noryl	Nylon	Polyethylene	Polypropylene	Ryton	Carbon	Ceramic	Viton ®	Buna N (Nitrile)	Silicon	Neoprene	Ethylene Propylene (EPDM)	Natural Rubber	Epoxy
Brass Plating																												
Regular Brass Bath 40ºC	-	-	A	-	-	-	A	A	-	-	-	-	A	A	A	A	-	A	-	-	C	A	A	D	A	-	-	B
High Speed Brass Bath 45ºC	-	-	A	-	-	-	A	A	-	-	-	-	A	A	A	A	-	A	-	-	D	A	A	D	A	-	-	B
Brewery Slop	-	-	A	-	-	-	-	-	A	-	A	-	-	-	-	-	-	-	-	A	A	A	A	-	A	-	-	A
Bromine (Wet)	D	D	D	D	D	D	A	A	C	-	D	D	B	A	D	D	D	D	D	D	A	A	D	D	D	D	D	C
Bronze Plating																												
Copper-Cadmium Bronze Bath R.T.	-	-	A	-	-	-	A	A	-	-	-	-	A	A	A	A	-	A	-	-	C	A	A	D	A	-	-	B
Copper-Tin Bronze Bath 70ºC	-	-	A	-	-	-	A	A	-	-	-	-	D	A	A	A	-	A	-	-	D	A	A	D	B	-	-	C
Copper-Zinc Bronze Bath 40ºC	-	-	A	-	-	-	A	A	-	-	-	-	A	A	A	A	-	A	-	-	C	A	A	-	A	-	-	B
Butadiene	A	A	A	A	-	A	-	-	C	A	C	C	A	A	-	A	-	-	B	A	A	A	A	-	B	A	-	A
Butanes	A	A	A	A	-	A	-	-	A	A	C	C	A	A	D	A	C	D	A	A	A	A	A	D	B	D	D	A
Butanol	-	A	A	-	-	A	-	A	A	-	-	-	-	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Butter	B	B	A	-	-	A	-	-	D	-	D	-	-	-	B	-	-	-	-	A	A	A	A	-	B	A	D	A
Buttermilk	C	A	A	-	A	A	-	-	D	-	D	-	-	A	A	A	-	-	-	A	A	A	A	-	A	-	D	A
Butylene	-	-	A	-	-	A	-	-	A	A	A	A	B	A	-	-	-	-	A	A	A	A	B	-	-	D	D	A
Butyl Acetate	-	-	C	A	-	A	-	A	A	-	-	A	D	A	D	-	C	D	A	A	A	D	B	D	D	B	D	A
Butyl Alcohol	A	A	A	A	-	B	B	A	B	C	C	C	A	A	A	A	B	B	A	A	A	A	A	D	A	A	A	A
Butyric Acid	B	B	A	C	A	B	A	A	C	-	D	-	B	A	A	D	-	A	-	A	D	D	D	-	D	B	-	A

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