Chemical Corrosion and Material Choice Guidance Chart

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Chemical Medium	1) Carbon Steel	2) Stainless Steel	3) Duplex, Hastelloy, Alloy 20, Inconel, Nickel, Monel, Titanium etc.
Acetic acid, crude			316 stainless steel
Acetic acid, pure			Monel
Acetic anhydrate		Yes	
Acetone	Yes		
Aluminum chloride			High Density PE
Aluminum sulfate		Yes	
Alums		Yes	
Ammonia(gas)	Yes		
Ammonium chloride			High Density PE
Ammonium hydroxide	Yes		
Ammonium phosphate (monobasic)		Yes	
Ammonium phosphate (dibasic)		Yes	
Ammonium phosphate (tribasic)	Yes		
Ammonium sulfate		Yes	
Aniline	Yes		
Benzene, benzol	Yes		
Boric acid		Yes	
Bromine			Stainless steel lined with Monel, Kynar or Teflon
Calcium chloride			Nickel or Monel
Calcium hydroxide	Yes		
Calcium hypochlorite		Yes	
Caron tetrachloride		Yes	
Carbonic acid		Yes	
Chloroaccetic acid			Stainless steel with PE lining
Chlorine, dry		Yes	
Chlorine, wet			Tantalum or Hastelloy
Chlorinc, acid			Hastelloy
Critic acid		Yes	
Cooper sulfate		Yes	
Ethanol	Yes		
Ethylene glycol	Yes		
Fatty acid		Yes	
Ferric chloride			Stainless steel with epoxy coating
Ferric sulfate			Stainless Steel with PP Coating
Ferrous sulfate		Yes	
Formaldehyde		Yes	
Formic acid		Yes	316 Stainless steel
Glycerol	Yes		
Hydrocarbon (aliphatic)	Yes		
Hydrochloric acid			Stainless steel with epoxy coating
Hydrogen peroxide			Low carbon stainless steel with PE coating
Lactic acid		Yes	
Magnesium chloride			Nickel or Monel
Magnesium sulfate	Yes		
Metanol	Yes		
Nitric acid			Stainless steel with PP coating
Oleic acid		Yes	
Oxalic acid			Monel
Phenol (carbolic acid)		Yes	
Phosphoric acid		Yes	

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Chemical Medium	1) Carbon Steel	2) Stainless Steel	3) Duplex, Hastelloy, Alloy 20, Inconel, Nickel, Monel, Titanium etc.
Potassium hydroxide		Yes	
Sodium bisulfate		Yes	
Sodium carbonate	Yes		
Sodium chloride	Yes		
Sodium hydroxide	Yes		
Sodium hypochlorite		Yes	
Sodium nitrate	Yes		
Sodium sulfate	Yes		
Sodium sulfide	Yes		
Sodium sulfite	Yes		
Sodium thiosulfate		Yes	
Stearic acid		Yes	
Sulfur	_	_	_
Sulfur dioxide			Steel with Teflon coating
Sulfuric acid (95% +)			Hastelloy
Sulfuric acid (75%~95%)	Yes		
Sulfuric acid (10%~75%)			Hastelloy
Sulfuric acid (<10%)			Hastelloy
Sulfurous acid		Yes	
Trichloroethylene		Yes	
Zine chloride			Nickel or Monel
Zine sulfate	Yes		

Notes:

1) This table is presented to give an indication of what materials might be suitable for a specific chemical compounds. It is not a definitive or exhaustive list.

2) As other factors such as **medium** concentration, **atmospheric conditions**, **temperature** or **pressure** can have an effect on the correct choice of material, please always check with SchuF Fetterolf or your in-house safety expert for final confirmation.

3) If yes is found in the first column "Carbon Steel", this indicates that carbon steel can be used but does not exclude the use of other materials listed in columns 2 and 3.

4) Please note that this chart does not indicate the specific category of a particular material. For stainless steel for example this can range from 304 to 316 as standard and to 414 for special applications.

5) This chart is intended for use by SchuF Fetterolf staff and representatives only. SchuF Fetterolf will bear no responsibility to 3rd parties who use the chart.

For your notes and comments:

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