

# Material Data Sheet



## Alloy 400

Chemical Composition	Cr	Ni	Mo	Cu	W	Al	Ti	C	Fe	Me	Mn	Si	P	S
% Values (minimum)	63.00			28.00				-	-		-	-	-	-
% Values (Maximum)				34.00				0.30	2.5		2.00	0.50		0.024

### APPLICATIONS

Chlorinated solvents  
Crude oil distillation towers  
Ethyl chloride purification  
HF alkylation  
HF reboilers  
Marine components  
Marine splash zone sheathing  
MEA reboilers  
Oil well recovery pumps  
Salt production  
Salt residual compounds  
Shafting  
Wire netting for insulation

### DESCRIPTION

Alloy 400 is a nickel-copper solid solution strengthened alloy. The alloy is characterized by moderate strength, good weld ability, good general corrosion resistance and toughness. It is useful at temperatures up to 1000°F (538°C). Alloy 400 has excellent resistance to rapidly flowing brackish or seawater where cavitation and erosion resistance is necessary. It is particularly resistant to hydrochloric and hydrofluoric acids when they are de-aerated. Alloy 400 is slightly magnetic at room temperature.

### CORROSION RESISTANCE

Alloy 400 is virtually immune to chloride ion stress corrosion cracking in typical environments. Generally, its corrosion resistance is very good in reducing environments, but poor in oxidizing conditions.

Alloy 400 is resistant to most alkalis, salts, waters (including saline or brackish), food products, organic substances and atmospheric conditions at normal and elevated temperatures.

This alloy is not useful in highly oxidizing acids, such as nitric and nitrous. It is resistant to sulphuric acid in concentrations to 80% and in hydrochloric solutions in concentrations to 20%.

Oxidizing impurities such as ferric chloride, ferric sulphate, chromates, nitrates, peroxides, and cupric salts, can cause attack in a medium which would otherwise be relatively mild for the alloy.



