



Monel 400

Nickel-Copper Alloy

Chemical Composition

Alloy	%	Ni	Cu	Fe	C	Mn	Si	S
Monel 400	Min.	63	28					
	Max.		34	2.5	0.3	2	0.5	0.024

Physical Properties

Density	8.83 g/cm ³
Melting point	1300-1390 °C

Minimum Mechanical Properties @ Room Temperature

Alloy state	Tensile strength Rm N/mm ²	Yield strength R P0.2 N/mm ²	Elongation A 5%
Monel 400	480	170	35

Characteristics

Monel 400 is an extremely combination property that use for largest amount and most widely corrosion resistance alloy. This alloy in the hydrofluoric acid and fluoride gas medium with excellent corrosion resistance, as well as to the hot concentrated alkali. At the same time, is also corrosion resistant to neutral solution, sea water, air, organic compounds. An important feature of this is generally do not generate a stress corrosion cracking, good cutting performance.

Metallurgical Structure

Monel 400 alloy is high-intensity single-phase solid solution.

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Corrosion Resistance

Monel 400 alloy in the fluoride gas, hydrochloric acid, sulfuric acid, hydrofluoric acid and their derivatives have a very good corrosion resistance property, and possess better corrosion resistance more than the copper alloy in the sea water. Acid medium: Monel 400 have corrosion resistance in less than 85% consistency of sulfuric acid. Monel 400 is an important material that resistant to hydrofluoric acid. Water corrosion: Monel 400 alloy in most corrosion cases of water, not only excellent corrosion resistance, but also less pitting, stress corrosion, the corrosion rate less than 0.025mm / a. High temperature corrosion: Monel 400 for the work of the highest temperature at about 600 °C in general in the air, in the high temperature steam, the corrosion rate less than 0.026mm / a. Ammonia: Monel 400 can be resistant to an hydrous ammonia and aminate conditions corrosion below 585 °C due to the high nickel.

Application Field

Monel 400 alloy is a multi-purpose material in many industrial applications:

1. Seamless water pipe in the power factory
2. Sea-water exchanger and evaporator
3. Sulfuric acid and hydrochloric acid environment
4. Crude distillation
5. Sea-water in the use of equipment and propeller shaft
6. Nuclear industry and used in the manufacture of uranium enrichment isotope separation equipment
7. Manufacturing hydrochloric acid equipment used in the production of pump and valve