

Monel 400 (UNS N04400/W. Nr. 2. 4360)

Monel 400 的化学成分:

Chemical composition of Monel 400

合金 Alloy	%	镍 Ni	铜 Cu	铁 Fe	碳 C	锰 Mn	硅 Si	硫 S
Monel400	最小 Min	63	28					
	最大 Max		34	2.5	0.3	2	0.5	0.024

Monel 400 的物理性能:

Physical properties of Monel 400:

密度 Density	8.83 g/cm3
熔点 Melting point	1300-1390 °C

Monel 400 在常温下合金的机械性能的最小值:

Minimum mechanical properties of Monel 400 alloy at room temperature:

合金 Alloy	抗拉强度 Tensile Strength Rm N/mm2	屈服强度 Yield strength Rp0.2N/mm2	伸长率 Elongation A5 %
Monel400	480	170	35

此合金具有以下特性:

This alloy has the following properties:

Monel400 是一种用量最大、用途最广、综合性能极佳的耐蚀合金。此合金在氢氟酸和氟气介质中具有优异的耐蚀性，对热浓碱液也有优良的耐蚀性。同时还耐中性溶液、水、海水、大气、有机化合物等的腐蚀。该合金的一个重要特征是一般不产生应力腐蚀裂纹，切削性能良好。

Monel400 is a kind of corrosion resistant alloy with the largest amount, the most widely used and excellent comprehensive performance. The alloy has excellent corrosion resistance in hydrofluoric acid and fluorine gas medium, and also has excellent corrosion resistance to hot

concentrated lye. At the same time also resistant to neutral solution, water, seawater, atmosphere, organic compounds and other corrosion. An important feature of the alloy is that it does not produce stress corrosion cracks and has good machinability.

Monel 400 的金相结构:

Metallographic structure of the Monel 400:

Monel400 合金的组织为高强度的单相固溶体。

The structure of Monel400 alloy is a high strength single phase solid solution.

Monel 400 的耐腐蚀性:

Corrosion resistance of Monel 400:

Monel400 合金在氟气、盐酸、硫酸、氢氟酸以及它们的派生物中有极优秀的耐蚀性。同时在海水中比铜基合金更具耐蚀性。酸介质: Monel400 在浓度小于 85%的硫酸中都是耐蚀的。Monel400 是可耐氢氟酸中为数极少的重要材料之一。水腐蚀: Monel400 合金在多数水腐蚀情况下, 不仅耐蚀性极佳, 而且孔蚀、应力腐蚀等也很少发现, 腐蚀速度小于 0.025mm/a。高温腐蚀: Monel400 在空气中连续工作的最高温度一般在 600℃左右, 在高温蒸汽中, 腐蚀速度小于 0.026mm/a。氨: 由于 Monel400 合金镍含量高, 故可耐 585℃以下无水氨和氨化条件下的腐蚀。

Monel400 alloy has excellent corrosion resistance in fluorine gas, hydrochloric acid, sulfuric acid, hydrofluoric acid and their derivatives. It also has better corrosion resistance in seawater than copper - based alloys. Acid medium: Monel400 is corrosion resistant in sulfuric acid concentrations less than 85%. Monel400 is one of the few important materials that can resist hydrofluoric acid. Water corrosion: Monel400 alloy in most cases of water corrosion, not only excellent corrosion resistance, and pore corrosion, stress corrosion and so on are rarely found, corrosion rate is less than 0.025mm/a. High temperature corrosion: the highest temperature of Monel400 continuous working in the air is generally about 600℃, in high temperature steam, corrosion speed is less than 0.026mm/a. Ammonia: Due to the high nickel content of Monel400 alloy, it can resist the corrosion of anhydrous ammonia and ammoniation conditions below 585℃.

Monel 400 应用范围应用领域有:

Application areas of Monel 400 are:

Monel400 合金是一种多用途的材料, 在许多工业领域都能应用:

Monel400 alloy is a versatile material with many industrial applications:

1. 动力工厂中的无缝输水管、蒸汽管。

Seamless water pipes and steam pipes in power plants.

2. 海水交换器和蒸发器。

Seawater exchangers and evaporators.

3. 硫酸和盐酸环境。

Sulfuric and hydrochloric acid environments.

4. 原油蒸馏。

Crude distillation.

5. 在海水使用设备的泵轴和螺旋桨。

The pump shaft and propeller are used in seawater equipment.

6. 核工业用于制造铀提炼和同位素分离的设备。

The nuclear industry uses equipment for uranium extraction and isotope separation.

7. 制造生产盐酸设备使用的泵和阀。

Manufacture pumps and valves used in hydrochloric acid production equipment.