Pressure Vessel Nickel Alloy Wire Monel K500 Wire with Excellent mechanical properties

Our Product Introduction

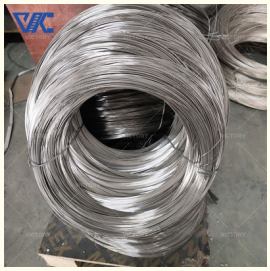
Basic Information

- Place of Origin: China
- Brand Name: Victory
- Certification: CE,ROHS,ISO 9001
- Model Number: Monel K500
- Minimum Order Quantity: 5 Kg
- Price: Negotiable
- Packaging Details: Special packaging requirements can also be accommodated. OEM is also acceptable.
- Delivery Time: 5-21 days
- Payment Terms: L/C, T/T, Western Union, MoneyGram
- Supply Ability: 300 tons per month

Product Specification

- Product Name: Monel K500 Wire
- Material: Nickel Base Alloy
- Nickel(Min): 63%
- Melting Point: 1288-1343 °C
- Application: Pressure Vessel
- Density: 8.05 G/cm3
- Thermal Conductivity: 17.2 Watts/meter-Kelvin
- Linear Expansion Coefficient: 13.9 X 10^-6 Degrees
- Yield Strength: 790 MPa
- Tensile Strength: 1100 MPa
- Elongation (≥ %): 20%
- Sureface: Bright,Oxided
- Highlight: **Monel Nickel Alloy Wire**, **Nickel Based Monel Wire**, **Corrosion Resistant Monel Wire**

More Images



Product Description

Our Product Introduction

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Introduction:

Monel K500 wire is an alloy material widely used in the field of pressure vessel manufacturing. As a nickel-copper alloy, Monel K500 wire has excellent performance and characteristics, so it is widely used in the manufacture and application of pressure vessels.

First, Monel K500 wire has excellent corrosion resistance. In the working environment of pressure vessels, they are often exposed to various corrosive media, such as acids, alkalis, salt water, etc. Monel K500 wire can resist the erosion of these corrosive media and is not prone to corrosion, oxidation or sulfurization reactions, maintaining its stable performance and extending its service life. Its high resistance to corrosive gases, liquids and chemicals makes it ideal for use in pressure vessel manufacturing.

Secondly, Monel K500 wire has excellent mechanical properties. Pressure vessels need to withstand internal and external pressure and stress during use, so materials need to have high strength and durability. Monel K500 wire has high strength and excellent plasticity, and can withstand the stress and pressure inside and outside the pressure vessel while maintaining its stable performance, ensuring the reliability and safety of the vessel.

In addition, Monel K500 wire also has good thermal stability and wear resistance. Under some high-temperature and high-pressure working conditions, pressure vessels require materials that can maintain stable performance without softening, deformation or failure. At the same time, Monel K500 wire has high wear resistance and can resist friction and wear, extending the service life of the container.

Parameter:

Chemical composition:

Nickel (Ni): about 63%
Copper (Cu): about 29.5%
Aluminum (Al): about 2.7%
Titanium (Ti): about 0.6%
Iron (Fe): about 2%
Manganese (Mn): about 1.5%
Silicon (Si): about 0.5%
Carbon (C): up to 0.25%

Physical properties:

Density: about 8.05g/cubic centimeter
Melting point: about 1288-1343 degrees Celsius
Thermal Conductivity: Approximately 17.2 Watts/meter-Kelvin
Linear expansion coefficient: approximately 13.9 x 10^-6 degrees Celsius^-1 (room temperature to 100 degrees Celsius)

Mechanical behavior:

Yield Strength (Tensile Strength): Minimum approximately 790 MPa (80,000 psi)
Tensile Strength: Minimum approximately 1100 MPa (110,000 psi)
Elongation: minimum value is about 20%

Item	Ni	Cu	Al	Ti	Fe	Mn	S	C	Si
Monel K500	≥63	27-33	2.3-3.15	0.35-0.85	≤2	≤1.5	≤0.01	≤0.25	≤0.5

Item	Density	Melting point	Tensile Strength	Yield Strength	Elongation
Monel K500	8.05 g/cm3	1288-1343℃	1100	790	20%

Monel K500	Bar/Rod	Forging	Pipe	Sheet/Strip	Welding Wire
Standard	ASTM B864	AMS4676	ASTM B865	ASTM B564	ErNiCu-7

Shape	Size(mm)
Wire	0.15-7.5
Rod/Bar	8.0-200
Strip	(0.5-2.5)*(5-180)
Plate	custom made

Advantage:

Monel K500 alloy wire is a high-strength, corrosion-resistant alloy material composed of elements such as nickel and copper. It is widely used in the field of pressure vessel manufacturing mainly due to the following characteristics and advantages:

Corrosion resistance: Monel K500 alloy wire exhibits excellent corrosion resistance and can maintain stable performance in

various corrosive media. This makes it an ideal material for manufacturing corrosion-resistant pressure vessels capable of long-term operation in corrosive environments.
High strength performance: Monel K500 alloy wire has excellent high strength performance and can withstand high pressure and mechanical loads. This makes it suitable for manufacturing high-pressure vessels, maintaining the structural integrity and safety of the vessel.
Resistance to thermal stress corrosion: Monel K500 alloy wire can maintain stable performance under high temperature and high stress conditions and is not prone to thermal stress corrosion damage. This makes it suitable for manufacturing pressure vessels that operate in high temperature and high pressure environments.
Impact resistance: Monel K500 alloy wire has good impact resistance and can maintain stable performance despite being impacted or vibrated. This makes it an important application in the manufacture of pressure vessels that need to withstand external shock or vibration.

Application:

In the field of pressure vessel manufacturing, the specific applications of Monel K500 alloy wire include but are not limited to the following aspects:
Chemical pressure vessels: used to manufacture high-pressure vessels in the chemical industry, such as reactors, storage tanks, and separators.
Oil and Gas Storage Containers: Used to manufacture storage and transportation containers in the oil and gas industry, such as storage tanks and pipelines.
Nuclear industry pressure vessels: used to manufacture pressure vessels in the nuclear industry, such as coolant containers and fuel storage containers in nuclear reactors.

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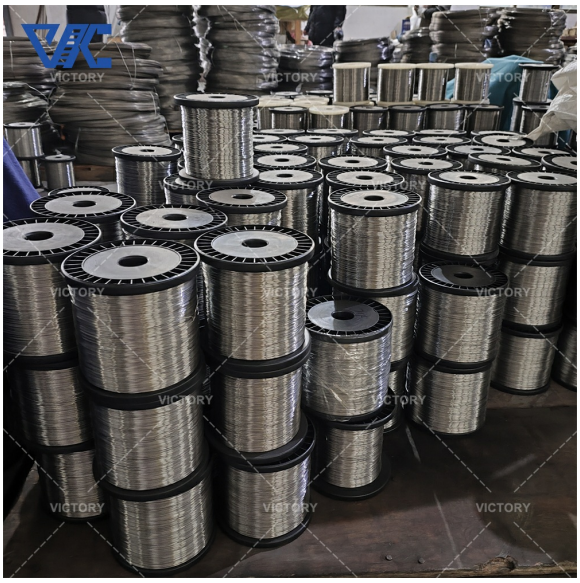

Q&A:

Q: What are the common applications of Monel K500 wire?
A: Monel K500 wire finds applications in industries such as oil and gas, aerospace, and marine. It is used for applications including pump shafts, valve components, springs, fasteners, and electrical connectors in corrosive and high-stress environments.

Q: Why is Monel K500 wire preferred in the aerospace industry?
A: Monel K500 wire is preferred in the aerospace industry due to its high strength, excellent fatigue resistance, and resistance to corrosion and erosion. It is used in critical aerospace components such as engine parts, landing gear components, and fasteners for reliable performance in demanding conditions.

Changzhou Victory Technology Co., Ltd

+8619906119641 victory@dlx-alloy.com victory-alloy.com

NO.32 West Taihu Road, Xinbei District, Changzhou, Jiangsu