



Nimonic 90 Spring Wire High Temperature Spring Wire N07090

Our Product Introduction

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Basic Information

- Place of Origin: China
- Brand Name: Victory
- Certification: CE, ROHS, ISO 9001
- Model Number: Nimonic 90
- Minimum Order Quantity: 5 Kg
- Price: Negotiable
- Packaging Details: Spool package with Carton box, Coil package with polybag
- Delivery Time: 5-21 days
- Payment Terms: L/C, T/T, Western Union, MoneyGram
- Supply Ability: 300 tons per month

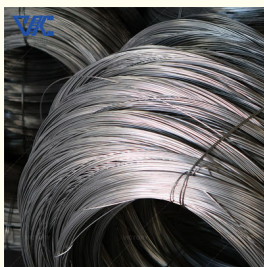


Product Specification

- Product Name: Nimonic 90
- Material: Nickel Chromium
- Nickel (Min): 53%
- Density: 8.18g/cm³
- Melting Point: 1370°C
- Expansion Coefficient: 12.7 $\mu\text{m/m } ^\circ\text{C}$ (20 – 100°C)
- Modulus Of Rigidity: 82.5 KN/mm²
- Tensile Strength: 830 MPa
- Yield Strength: 550 MPa
- Application: Aerospace, Petrochemical, Heat Treatment Industry
- Highlight: High Temperature Nimonic 90 Spring Wire, Nimonic 90 Spring Wire, High Temperature Spring Wire N07090



More Images



Product Description

Introduction:

Nimonic 90 wire is a high temperature alloy wire, also known as Nimonic 90. It is a nickel-based alloy wire with excellent high temperature strength, corrosion resistance and oxidation resistance.

The main components of Nimonic 90 wire include elements such as nickel (Ni), chromium (Cr), cobalt (Co), iron (Fe) and copper (Cu). It has high temperature stability and is able to maintain excellent mechanical properties and corrosion resistance in high temperature environments. In addition, it also has good antioxidant properties and can remain stable in high temperature oxidation environments.

Nimonic 90 wire is machinable and can be processed and formed by heat treatment, cold working and welding. Its high temperature strength, corrosion resistance and oxidation resistance make it an ideal material choice for high temperatures and extreme environments. Whether in the aerospace, energy or chemical industries, Nimonic 90 filaments demonstrate superior performance and reliability.

Parameter:

Chemical composition

Nickel (Ni) :53%~57%
Chromium (Cr) :18%~21%
Iron (Fe) : Maximum 1.5%

Physical and mechanical properties

1. Density: 8.20g/cm³
2. Melting point: 1400°C
3. Strength characteristics:
 - Yield strength (room temperature) : approximately 550 MPa (80 ksi)
 - Yield strength (high temperature) : approx. 270 MPa (39 ksi) to 550 MPa (80 ksi)
 - Tensile strength (room temperature) : approximately 830 MPa (120 ksi)
 - Tensile strength (high temperature) : approx. 270 MPa (39 ksi) to 550 MPa (80 ksi)
4. Extension performance:
 - Elongation at break (room temperature) : about 55%
 - Elongation at break (high temperature) : about 28% to 45%
5. Hardness characteristics:
 - Hardness (room temperature) : about 200HB

chemical composition (%)													
Brand	C	Si	Mn	S	P	Cr	Ni	Fe	Cu	Ti	Al	Co	Other
	Less Than												
Nimonic90	0.13	0.8	0.4	0.015	0.02	18 21	Rest	≤1.5	≤0.2	2~3	1~2	15~21	B≤0.02 Zr≤0.15
Nimonic91	0.1	1	1	0.015	0.02	27 30	Rest	≤1	≤0.5	1.9 2.7	0.9 1.5	19~21	Nb0.4 1.1 B0.002~0.01 Zr≤0.1

The minimum mechanical properties of the alloy at room temperature					
Brand	Heat Treatment	Tensile Strength(RmN/mm ²)	Yield Strength(Rp0.2N/mm ²)	Elongation(As %)	Brinell Hardness(HB)
Nimonic 90	Solid Solution	820	590	8	—
Nimonic 91	Solid Solution	780	550	7	—

Heat treatment of finished product					
Alloy Wire supply condition	type	temperature		Time (Hr)	cooling
		°C	°F		
anneal	Age hardening	750	1380	4	Air
Elastic tempering	Age hardening	650	1200	4	Air
Elastic tempering	Age hardening	600	1110	16	Air

Alloy property:

High temperature performance :Nimonic 90 has excellent high temperature strength and creep resistance, and maintains good mechanical properties at high temperatures.

Corrosion resistance: The alloy has excellent oxidation resistance and corrosion resistance, and can be used in harsh environments for a long time without corrosion.

Mechanical properties :Nimonic 90 has high tensile strength, hardness and toughness, as well as good machinability and weldability.

Advantage:

High temperature adaptability: GH2132 wire can work stably for a long time in extreme high temperature environments and has good high temperature resistance.

Balance of strength and toughness: It can maintain high strength and toughness under high temperature conditions and has good resistance to deformation.

Long life and reliability: Due to its excellent high temperature performance and oxidation resistance, GH2132 wire can extend the service life of equipment and improve system reliability.

Specific application areas:

Aerospace industry: For the manufacture of high-temperature components such as combustion chambers, nozzles, turbine blades and burners.

Power generation and energy industry: for the manufacture of combustion chambers, heat exchangers, gas turbine burners, etc. in high temperature environments.

Chemical industry: suitable for vessels, pipelines, reactors and catalyst architectures with high corrosion resistance requirements.

Nuclear industry: Used to manufacture fuel elements, control rods and structural components in nuclear reactors.



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Process performance :

1. The alloy is prone to internal cracks in the forging process, allowing heavy hammer strikes, and will not chamfered at low temperatures. The ingot filling temperature shall not be higher than 700°C, the final heating temperature shall be 1150°C±10°C, the opening forging temperature shall not be lower than 1060°C, and the final forging temperature shall not be lower than 950°C.

2. The average grain size of the alloy is closely related to the deformation degree of the forging and the final forging temperature.

3. In the solid solution state, the alloy can be inert gas tungsten arc welding and flash butt welding.



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