Manufacturer Supply Special Precision Nickel Alloy Super Permalloy Wire

Our Product Introduction

Basic Information

- Place of Origin: China
- Brand Name: Victory
- Model Number: Permalloy 80
- Minimum Order Quantity: 50
- Price: $25-$40
- Packaging Details: Standard Export Wooden Cases Ex.Gross Weight Under 20kg=Carton Box/Gross Weight over 20 kg=Plywood Box Or as per Request
- Delivery Time: 5-21 days
- Payment Terms: L/C, T/T, Western Union, MoneyGram
- Supply Ability: 200 tons per month

Product Specification

- Material: NiFe
- Certificate: ISO9001
- Shape: Wire, Strip, Foil, Sheet
- Resistivity: 0.56
- Density: 8.75g/cm3
- Size: Customized
- Standard: GB/ASTM/AISI/ASME
- Condition: Bright, Annealed, Soft
- Application: Industrial Magnet
- Curie Point: 400℃
- HCR: 30
- Feature: High Initial Permeability
- Highlight: **soft magnetic alloy NiFe**, **ASME soft magnetic alloy**, **ASTM nife**

Our Product Introduction

Product Description

High Permeability Soft Magnetic Alloy

1J77 is a type of magnetic alloy that is composed of approximately 80% nickel and 20% iron. It was invented in 1914 by physicist Gustav Elmen at Bell Telephone Laboratories, and is known for its exceptional magnetic permeability. This property makes it highly useful in electrical and electronic equipment as a magnetic core material, as well as in magnetic shielding to block magnetic fields.

Compared to ordinary steel, commercial permalloy alloys have a relative permeability of around 100,000. In addition to its high permeability, 1J77 also possesses other desirable magnetic properties such as low coercivity, near-zero magnetostriction, and significant anisotropic magnetoresistance. Its low magnetostriction is especially critical in industrial applications, as it allows the alloy to be used in thin films without experiencing variable stresses that would otherwise negatively impact its magnetic properties.

However, one disadvantage of 1J77 is that it is not very ductile or workable, which limits its use in applications that require complex shapes. In such cases, other high-permeability alloys such as mu metal are used instead. Despite this limitation, 1J77 is still widely used in various industries including radio-electronics, precision instruments, remote control systems, and automatic control systems.

Overall, 1J77 is a highly versatile and valuable magnetic alloy that has played a crucial role in the development of modern technology. Its unique properties make it an essential component in many electronic devices and systems, and its continued use is expected to drive further advancements in the field of electrical engineering.

Applications

High sensitivity and small power transformers, magnetic amplifiers, relays, chokes, magnetic heads for magnetic recording devices, magnetic shields, various tape wound cores, cut cores, and laminated cores used in weak magnetic fields.

Material	C	P	S	Mn	Si	Ni	Cr	Co	Mo	Cu
	Max									
Permalloy80	0.03	0.020	0.020	0.3-0.6	0.15-0.30	79.0-81.0	-	-	4.8-5.2	≤0.2

rial	Shape	Class	Thickness or Diameter mm	Magnetic permeability in 0.08A/m magnetic field intensity μ0.4(mH/m)	Maximum permeability μm(mH/m)	Coercivity(under saturation magnetic induction)Hc/A·m-1
				not less than		no greater than
Permalloy80	Cold rolled strip	I	0.03-0.04	18000(22.5)	80000(100)	3.6
			0.05-0.09	28000(35)	110000(137.5)	2.4
			0.10-0.19	30000(37.5)	150000(187.5)	1.6
			0.20-0.34	40000(50)	180000(225)	1.2
			0.35-1.00	50000(62.5)	250000(312.5)	0.8
			1.10-2.50	40000(50)	150000(187.5)	1.2
		II	0.03-0.04	30000(37.5)	110000(137.5)	2.4
			0.05-0.09	40000(50)	140000(175)	1.6
			0.10-0.19	50000(62.5)	180000(225)	1.2
			0.20-0.34	60000(75)	200000(250)	1.0
			0.35	55040(68.8)	260000(325)	0.7
	Hot rolled tape		4.5-20	30000(37.5)	100000(125)	1.6
	Hot forged bar		20-100	30000(37.5)	100000(125)	1.6

Material	Shape	Class	Thickness or Diameter mm	Magnetic permeability in 0.08A/m magnetic field intensity μ0.4(mH/m)	Maximum permeability μm(mH/m)	Coercivity(under saturation magnetic induction)Hc/A·m-1	Saturation magnetic induction Bs/T
				not less than		no greater than	

Permalloy 80	Cold rolled strip	I	0.03-0.04	18000(22.5)	80000(100)	3.6	0.70
			0.05-0.09	28000(35)	110000(137.5)	2.4	0.70
			0.10-0.19	30000(37.5)	150000(187.5)	1.6	0.70
			0.20-0.34	40000(50)	180000(225)	1.2	0.70
			0.35-1.00	50000(62.5)	250000(312.5)	0.8	0.70
			1.10-2.50	40000(50)	150000(187.5)	1.2	0.70
		Ⅱ	0.03-0.04	30000(37.5)	110000(137.5)	2.4	0.70
			0.05-0.09	40000(50)	140000(175)	1.6	0.70
			0.10-0.19	50000(62.5)	180000(225)	1.2	0.70
			0.20-0.34	60000(75)	200000(250)	1.0	0.70
			0.35	55040(68.8)	260000(325)	0.7	0.70
	Hot rolled tape		4.5-20	30000(37.5)	100000(125)	1.6	0.70
	Hot forged bar		20-100	30000(37.5)	100000(125)	1.6	0.70






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