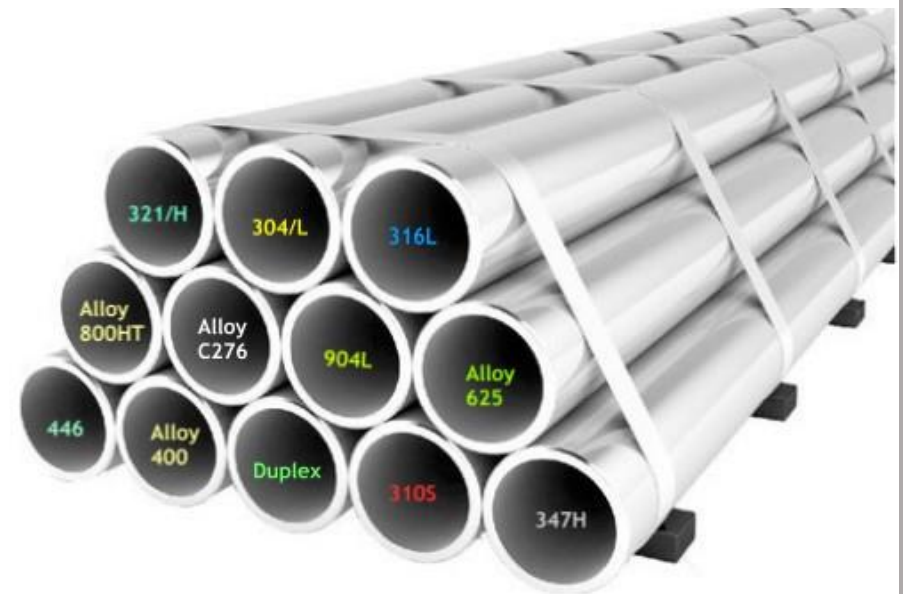


MONEL 400

Datasheet for Monel 400

- Pipes & Tubes
- Sheets & Plates
- Bars & Rods, Forgings
- Fittings & Flanges
- Nuts & Bolts
- Valves



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Datasheet for Monel 400

UNS N04400, DIN W.Nr. 2.4360 / 2.4361

What is Monel 400?

- Monel 400 (UNS N04400 or DIN W.Nr. 2.4360 / 2.4361) is a solid-solution nickel-copper alloy with high strength and excellent resistance in a range of media, including seawater, hydrofluoric acid, sulfuric acid and alkalies. The Alloy 400 is also very resistant to stress-corrosion cracking and pitting corrosion in most fresh and industrial waters.

Monel 400 Product Specification

Product	Monel 400
Equivalents	Alloy 400, UNS N04400, 2.4360
Items	Pipe, Tubes, Tubing, Fittings, Flanges, Valves, Fasteners, Sheet, Square Bar, Threaded Bar, Plate, Hexagon Bar, Fasteners and Fixings, Round Bar, Flat Bar, Rebar, Angle, Tube & Pipe, Wire
Size	1/4" - 60"
Pipe Type	Seamless, Welded, ERW, Fabricated, Custom Size Pipes
Specifications	ASTM, ASME, DIN, GOST, JIS
Certification	EN 10204 3.1
Fittings Type	Butt Weld, Screwed & Socket Weld, Flanges, Instrumentation
Other Fittings	Elbows, Tees, Reducers, Caps, Stub Ends, Flanges (ANSI, Table E, D and H), Nuts, Bolts, Screws, Threaded Bars

Equivalents of Monel 400

- **Monel 400® Equivalents:** UNS N04400/Alloy 400/Werkstoff 2.4360

Chemical Composition, Mechanical & Physical Properties of Alloy 400

Chemical Composition of Monel 400

Nickel	63.0 min.
Carbon	0.30 max.
Manganese	2.0 max.
Iron	2.50 max.
Sulfur	0.024 max.
Silicon	0.50 max.
Copper	28.0-34.0

Mechanical Properties of Monel 400

Tensile Strength, min.		Yield Strength, min.		Elongation, min	Hardness
Mpa	ksi	Mpa	ksi	%	HB
550	80	240	35	40	110-150

Physical Properties of Monel 400

Density		Melting Range		Curie Temperature		Electricity Resistivity
g/cm ³	lb/in ³	°F	°C	°F	°C	μΩ·m
8.8	0.318	2370-2460	1300-1350	70-120	21-49	547

Monel 400 (UNS N04400, 2.4360) Product Forms & Manufacturing Standards

Product Form	Standard
Alloy 400 Plate, Strip, Sheet	ASTM B127, DIN 17750
Alloy 400 Bar, Rod, Wire	ASTM B164, AMS 4675
Alloy 400 Seamless Pipe & Tube	ASTM B165, B829, B163
Alloy 400 Welded Pipe & Tube	ASTM B725, B730, B751, B775
Alloy 400 Welded Fittings	ASTM B366
Alloy 400 Forged Flanges and Fittings	ASTM B564
Alloy 400 Wire	DIN 17753, ISO 9724

Types of Nickel Alloys

ASTM/AISI	UNS No	EN	DIN	JIS
Incoloy 800	N08800	1.4558	X2NiCrAlTi3220	NCF2B
Incoloy 800H	N08810			
Incoloy 825	N08825	2.4858	NiCr21Mo	NCF825
Inconel 600	N06600	2.4816	LC-NiCr12Fe	NCF1B
Hastelloy B	N10001			N12MV
Hastelloy B2	N10665	2.4617	NiMo28	

Hastelloy C				
Hastelloy C276	N10276	2.4819	NiMo16Cr15W	NW 0276
Hastelloy C4	N06455	2.461		
Hastelloy C22	N06022	2.4602		
Inconel 625	N06625	2.4856	NiCr22Mo9Nb	
Inconel 718	N07718	2.4668		
Monel 400	N04400	2.436		NW 4400
Nickel 200	N02200	2.406		

- **Trademark Notice:** Some names are trade names and/or trademarks of specific manufacturers. We are not affiliated with any manufacturer(s). Orders will be filled to meet specifications from any available source(s). Names are listed solely for reference to help identify products consistent with listed specifications.

What are the Properties of Monel 400 or Alloy 400?

- Monel 400 has wide applications in marine industries, as well as heat-exchangers. However, Monel 400 often required strengthening because of its low-annealed strength. Tempering is often required to improve hardness and elasticity.
- Monel 400 can be readily joined by welding processes including shielded metal arc welding (SMAW), gas tungsten arc welding (GTAW) and gas metal arc welding (GMAW). Corresponding fillers or electrodes shall be selected. Generally, Monel 400 products should be annealed at a temperature of 1470°F (full annealing) and pickling is often required to produce bright and clean surfaces on the alloy.
- Monel products have a great deal to offer. They are the great choice for many critically significant industries. It could also be easily welded, soldered, and brazed due to:
 - High corrosion-resistance to acids and alkalis. Like many nickel alloys, it is also highly resistant to corrosion. This metal is used in acidic and alkaline environments due to its resistance to substances such as sea water and other caustic solutions. Monel 400 is additionally poor in the area of oxidation resistance; however, it is excellent under stress and corrosion in a variety of salt water, fresh water, brackish water and hydrochloric environments. It is also all but immune to chlorine. Monel 400 offers the same corrosion resistance as nickel, but often is chosen because of its reduced cost and much higher ability to withstand pressures and temperatures.
 - Very high mechanical strength
 - Good ductility

- Relatively low cost
- Availability in different forms such as hot and cold-rolled sheets, plates, rods, bars, and tubes. Since Alloy 400 is softer than most steels, it can be hot formed or cold formed into almost any shape following with machining process.

What are the Applications of Monel 400 Alloy?

Monel 400 typically finds application in marine engineering, chemical and hydro-carbon processings, heat exchangers, valves and pumps. Monel 400 alloy is used in various applications as below:

- Off-Shore Oil Drilling Companies
- Power Generation
- Petrochemicals
- Gas Processing
- Specialty Chemicals
- Pharmaceuticals
- Pharmaceutical Equipment
- Chemical Equipment
- Sea Water Equipment
- Heat Exchangers
- Condensers
- Pulp and Paper Industry

Manufacturing Monel 400 Products

Monel 400 Alloy Sheet	Monel 400 Alloy Plate Cuttings/Profiles	Monel 400 Alloy Nuts, Bolts and Fasteners
Monel 400 Alloy Plate	Monel 400 Alloy Foil, Coil	Monel 400 Alloy Wire
Monel 400 Alloy Blocks/Slabs	Monel 400 Alloy Strip	Monel 400 Alloy Ingot
Monel 400 Alloy Rod/Bar	Monel 400 Alloy Pipes and Tubes	Monel 400 Alloy Forgings and Castings
Monel 400 Alloy Flanges	Monel 400 Alloy Forged Fittings	Monel 400 Alloy Buttweld Fittings

About Metallica Metals – The Steel Pipes Factory

- Established in 1975, the Metallica Metals Group (The Steel Pipes Factory) has its operations spread across major cities in India. We are a pioneer in the stainless steel pipes, nickel alloy products, titanium products, carbon steel pipes and alloy steel pipes manufacturing and processing industry. Our products including pipe fittings, flanges, pipes, sheet plates and valves are exported to over 70 countries across the world, while in India we have supplied to even the remote areas. With over 250 tons of sale in stainless steel and carbon steel pipes every day, Metallica has emerged as a prominent vendor for many buyers in India and Overseas
- More than 3000 tons ready from stock and new production ready in just a few weeks.
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Our Key Products

STAINLESS STEEL & NICKEL ALLOYS

Pure Nickel Alloys
Monel Alloys (Ni-Cu Alloys)
Inconel (Ni-Cr-Mo) Alloys
Incoloy Alloys (Ni-Cr-Fe)
Hastelloy Alloys
Stainless Steel 304/304L
Stainless Steel 309S/309H
Stainless Steel 310/310S
Stainless Steel 316/316L
Stainless Steel 316Ti
Stainless Steel 317/317L
Stainless Steel 321/321H
Stainless Steel 347/347H
Stainless Steel 904L
Duplex Steels (UNS S32205, UNS S31803)
Super Duplex Steels (UNS S32760 / UNS S32750)
Stainless Steel 254 SMO (UNS S31254 / 1.4547)

INSTRUMENTATION TUBES & FITTINGS

Instrumentation Tube
Hydraulic Tubing
Seamless Tubing
Instrumentation Tube Fittings
Double Compression Tube Fittings
Precision Pipe Fittings
Needle & Gauge Valves
Manifold Valves

PRODUCTS

Steel Sheet & Plate
Steel Coil & Strip
Steel Pipes
Steel Tubes
Electropolish Tube
Heat Exchanger Tubes
Steel Bars/Rods & Wire
Fasteners (Nut, Bolt, Washer)
Steel Angle Bars
Hex Steel Bars
Round Steel Bars & Rod
Flat Steel Bars
Forgings, Rings & Forged Blocks
Stainless Steel Pipe
Stainless Steel Seamless Pipe
Stainless Steel Welded Pipe
Stainless Steel Tubes
Stainless Steel Furnace Tubes

Stainless Steel Seamless Tubing
Stainless Steel Heat Exchanger Tubes
Large Diameter Pipe

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