



ASM Aerospace Specification Metals Inc.



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Special Metals MONEL™ Alloy 400

Subcategory: Copper Alloy; Metal; Nickel Alloy; Superalloy

Key Words: AFNOR NU30; SAE AMS 4544, 4574, 4575, 4675, 4730, 4731, 7233; DIN 17743, 17750 - 17754, ASME SB-127, SB-163 - SB-165, SB-564, Boiler Code Sections III, IV, VIII, IX; AECMA Pr EN 2305, Monel Nickel-Copper Alloy, UNS N04400; BS 3072-3076 (NA 13); ASTM B 127, B 163 - B 165, B 564, Werkstoff Nr. 2.4360, 2.4361; VdTUV 263; MIL-T-1368, MIL-T-23520, MIL-N-24106; QQ-N-281; NACE MR-01-75

Component	Wt. %
C	Max 0.3
Cu	28 - 34
Fe	Max 2.5
Mn	Max 2
Ni	Min 63
S	Max 0.024
Si	Max 0.5

Material Notes:

Nickel content above includes cobalt. A nickel-copper alloy with high strength and excellent corrosion resistance in a range of media including sea water, hydrofluoric acid, sulfuric acid, and alkalis. Used for marine engineering, chemical and hydrocarbon processing equipment, valves, pumps, shafts, fittings, fasteners, and heat exchangers. Standard product forms are round, hexagon, flats, forging stock, pipe, tube, plate, sheet, strip, and wire.

Data provided by the manufacturer, Special Metals.

Physical Properties	Metric	English	Comments
Density	<u>8.8 g/cc</u>	0.318 lb/in ³	
Mechanical Properties			
Tensile Strength, Ultimate	<u>550 MPa</u>	79800 psi	Annealed
Tensile Strength, Ultimate at Elevated Temperature	<u>450 MPa</u>	65300 psi	Annealed prior to test; 425°C
Tensile Strength, Yield	<u>240 MPa</u>	34800 psi	Annealed

Tensile Strength, Yield at Elevated Temperature	<u>170 MPa</u>	24700 psi	Annealed prior to test; 425°C
Elongation at Break	<u>48 %</u>	48 %	Annealed prior to test.
Elongation at Break at Elevated Temperature	<u>50 %</u>	50 %	Annealed prior to test.; 425°C

Electrical Properties

Electrical Resistivity	<u>5.47e-005 ohm-cm</u>	5.47e-005 ohm-cm	
Curie Temperature	<u>35 °C</u>	95 °F	Range is 20-50°C

Thermal Properties

CTE, linear 20°C	<u>13.9 $\mu\text{m}/\text{m}\cdot\text{°C}$</u>	7.72 $\mu\text{in}/\text{in}\cdot\text{°F}$	20-100°C
Specific Heat Capacity	<u>0.427 J/g·°C</u>	0.102 BTU/lb·°F	
Thermal Conductivity	<u>21.8 W/m-K</u>	151 BTU-in/hr-ft ² ·°F	
Melting Point	1300 - 1350 °C	2370 - 2460 °F	
Solidus	<u>1300 °C</u>	2370 °F	
Liquidus	<u>1350 °C</u>	2460 °F	

Some of the values displayed above may have been converted from their original units and/or rounded in order to display the information in a consistent format. Users requiring more precise data for scientific or engineering calculations can click on the property value to see the original value as well as raw conversions to equivalent units. We advise that you only use the original value or one of its raw conversions in your calculations to minimize rounding error.