

Special Metals MONEL[®] Alloy 400

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

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.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Special-Metals-MONEL-Alloy-400.php

| Physical Properties | Metric | English | Comments |
|---------------------|-----------|--------------------------|----------|
| Density | 8.80 g/cc | 0.318 lb/in ³ | |

| Mechanical Properties | Metric | English | Comments |
|----------------------------|---------------------------------|-----------------------------------|-------------------------|
| Tensile Strength, Ultimate | 550 MPa | 79800 psi | Annealed |
| | 450 MPa @Temperature 425 Â°C | 65300 psi @Temperature 797 Â°F | Annealed prior to test |
| Tensile Strength, Yield | 240 MPa | 34800 psi | Annealed |
| | 170 MPa @Temperature 425 Â°C | 24700 psi @Temperature 797 Â°F | Annealed prior to test |
| Elongation at Break | 48 % | 48 % | Annealed prior to test. |
| | 50 % @Temperature 425 Â°C | 50 % @Temperature 797 Â°F | Annealed prior to test. |

| Thermal Properties | Metric | English | Comments |
|------------------------|-----------------------------|------------------------------------|----------|
| CTE, linear | 13.9 Âµm/m-Â°C | 7.72 Âµin/in-Â°F | |
| | @Temperature 20.0 - 100 Â°C | @Temperature 68.0 - 212 Â°F | |
| Specific Heat Capacity | 0.427 J/g-Â°C | 0.102 BTU/lb-Â°F | |
| Thermal Conductivity | 21.8 W/m-K | 151 BTU-in/hr-ft ² -Â°F | |
| Melting Point | 1300 - 1350 Â°C | 2370 - 2460 Â°F | |
| Solidus | 1300 Â°C | 2370 Â°F | |
| Liquidus | 1350 Â°C | 2460 Â°F | |

| Component Elements Properties | Metric | English | Comments |
|-------------------------------|------------|------------|------------------|
| Carbon, C | <= 0.30 % | <= 0.30 % | |
| Copper, Cu | 28 - 34 % | 28 - 34 % | |
| Iron, Fe | <= 2.5 % | <= 2.5 % | |
| Manganese, Mn | <= 2.0 % | <= 2.0 % | |
| Nickel, Ni | >= 63 % | >= 63 % | Including Cobalt |
| Silicon, Si | <= 0.50 % | <= 0.50 % | |
| Sulfur, S | <= 0.024 % | <= 0.024 % | |

| Electrical Properties | Metric | English | Comments |
|------------------------|------------------|------------------|----------|
| Electrical Resistivity | 0.0000547 ohm-cm | 0.0000547 ohm-cm | |
| Curie Temperature | 20.0 - 50.0 Â°C | 68.0 - 122 Â°F | |

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