

MP35N[®] alloy

UNS R30035
 W. Nr 2.4999

Applicable Specifications

Strip and Foil | ASTM F688, NACE MR0175/ISO 15156, NACE MR0103

Description: MP35N[®] is a non-magnetic Cobalt-Nickel-Chromium-Molybdenum alloy having an excellent combination of very high strength, excellent corrosion resistance and high fatigue strength. MP35N[®] is highly resistant to sulfide stress corrosion cracking and provides excellent performance in the most demanding sour well environments. In seawater MP35N[®] is virtually immune to crevice and stress corrosion and pitting even at the highest strength levels and can operate at cryogenic temperatures up to 850°F (454°C).

Applications include: Seals, springs, medical devices & implants

Industries supplied include: Oil & Gas Extraction, Medical & Dental, Aerospace, Defense and Space Exploration

Nominal Composition

| | Co | Ni | Cr | Mo | C | Fe | Mn | P | S | Si | Ti |
|-----|-----|----|----|------|-------|-----|------|-------|------|------|-----|
| min | bal | 33 | 19 | 9 | - | - | - | - | - | - | - |
| max | - | 37 | 21 | 10.5 | 0.025 | 1.0 | 0.15 | 0.015 | 0.01 | 0.15 | 1.0 |

Physical Properties

| | At 70°F | At 20°C |
|---------------------------|----------------------------------|---------------------------|
| Density | 0.304 lb/in ³ | 8.42 g/cm ³ |
| Modulus of Elasticity (E) | 33.8 x 10 ³ ksi | 233 GPa |
| Modulus of Rigidity (G) | 12.1 x 10 ³ ksi | 83.4 GPa |
| Coefficient of Expansion | 8.2 microinches/in-°F (70-600°F) | 14.8 x μm/m-°C (20-300°C) |
| Electrical Resistivity | 40.6 μohm-in | 103 μohm-cm |
| Thermal Conductivity | 78 Btu-in/ft ² hr-°F | 11.2 W/m-K |

Typical Mechanical Properties

| Condition | Heat Treatment | Tensile Strength | Suggested Operating Conditions |
|----------------------|----------------------------|---------------------------|-----------------------------------|
| Annealed | 1900-2150°F (1040-1175°C) | 115-135 ksi (790-930 MPa) | -300°F to 800°F (-184°C to 427°C) |
| Spring Temper | (Stress relieve as needed) | 200 ksi min (1380 MPa) | -300°F to 800°F (-184°C to 427°C) |
| Spring Temper + Aged | 1000-1200°F | 275 ksi min (1900 MPa) | -300°F to 800°F (-184°C to 427°C) |

MP35N[®] is a registered trademark of SPS Technologies.

Elgiloy Specialty Metals - Strip Products

1565 Fleetwood Dr.
 Elgin, IL 60123 USA

Phone: 1-888-843-2350

www.elgiloy.com

LIMITATION OF LIABILITY AND DISCLAIMER OF WARRANTY:

The content in these data sheets is provided primarily by third-party melting mills and is provided for reference only. It is not intended for engineering or design.

Applications may be discussed, however, Elgiloy Specialty Metals does not recommend or endorse any material for any particular end use or application.

The data included in this data sheet are typical values and may vary.

Elgiloy Specialty Metals makes no representations or warranties, express or implied, as to the accuracy, completeness, condition, suitability, performance, fitness for a particular purpose, or merchantability of any information contained in any data sheet.

In no event will Elgiloy Specialty Metals be liable for any damages whatsoever arising from the use of the information included in the data sheets.