BIBUS METALS

# Technical datasheet

## Alloy MP35N / W-Nr. 2.4999

A nickel-cobalt alloy with significant additions of chromium and molybdenum resulting in an alloy with ultra-high strength and toughness combined with excellent corrosion resistance.

## Available products

| Product form | Size range from | Size range to |
|---|---|---|
| Bar | 12.7 mm (0.50") diameter | 38.1 mm (1.5") diameter |

## Chemical composition (%)

| Ni | Cr | Mo | Ti | Fe | Mn | Si | C | Co |
|---|---|---|---|---|---|---|---|---|
| 33.0-37.0 | 19.0-21.0 | 9.0-10.5 | 1.0 max | 1.0 max | 0.15 max | 0.15 max | 0.02 max | Balance |

## Major specifications

UNS R30035
NACE MR0175 / ISO 15156-3

## Physical properties

| | |
|---|---|
| Density | 8.43 g/cm$^3$ |
| Melting range | 1300-1345°C |

## Mechanical properties – typical room temperature properties

| Solution annealed condition | | Aged (4 hours @ 704°C, according NACE MR 0175) | |
|---|---|---|---|
| Yield strength | 890 MPa | Yield strength | 1448 MPa |
| Tensile strength | 380 MPa | Tensile strength | 1517 MPa |
| Elongation | 65 % | Elongation | 10 % |
| | | Hardness | 51 HRC max |

## Key attributes

MP35N can be used in the annealed condition or in the aged condition to achieve peak strength.

MP35N alloy has excellent resistance to sulfidation, high-temperature oxidation, hydrogen embrittlement, saline environments, and most mineral acids. It maintains exceptional strength while resisting stress corrosion cracking even in severe environments that damage conventional alloys. The alloy is also highly resistant to localized corrosion such as pitting and crevice corrosion. In seawater, MP35N is virtually immune to general, crevice, and stress corrosion at all strength levels.

## Applications

High strength fasteners
Medical applications
Aerospace components
Pump shaft
High strength marine components
Springs

All information is subject to change without notice. The properties correspond to the material in the heading. They may vary for other specifications. Please contact us for more details.