

Chromium - Nickel Stainless Steel

Grade 316 (1.4401)

Product Description/ Specification:

Stainless Steel type 316 also known as 1.4401 is a molybdenum bearing austenitic stainless steel which is highly resistant to general corrosion and pitting/crevice corrosion. This type of stainless steel is preferred for application in extremely corrosive environment. A lower carbon content version of this material is also available, as 316L (1.4404) which completely eliminates carbide precipitation due to welding.

The material is produced to the following specifications:-

Austenitic Stainless Steel ASTM A240 / ASTM A167 / EN10088-4

Chemical Composition:

| Chemical Name | Manganese | Phosphorous | Sulphur | Silicon | Chromium | Nickel | Molybdenum | Nitrogen |
|---------------|-----------|-------------|---------|---------|-------------|-------------|------------|----------|
| Weight % | 2.00 | 0.045 | 0.030 | 0.75 | 16.0 – 18.0 | 10.0 – 14.0 | 2.0 – 3.0 | 0.10 |

Mechanical Properties:

| Tensile Strength, min | | Yield Strength, min | | Elongation, min | Hardness, max | |
|-----------------------|-----|---------------------|-----|---------------------|---------------|------------|
| ksi | MPa | ksi | MPa | in 2 in. or 50 mm % | Brinell (HBW) | Rockwell B |
| 75 | 515 | 30 | 205 | 40 | 217 | 95 |

Physical Properties:

| Density (g/cm ³) | Melting Point °C | Thermal Expansion /k | Thermal Conductivity W/ | Electrical Resistivity Ω.m |
|------------------------------|------------------|-------------------------|-------------------------|----------------------------|
| 7.7 – 8.3 | 1325 – 1530 | 15.9 X 10 ⁻⁶ | 16.3 | 0.074 X 10 ⁻⁶ |

Safety:

There are no known health risks in handling stainless steel, although it is recommended that gloves should be worn in case of sharp edges. Good lifting practice techniques should always be followed when handling these products.

For more details on safety, please refer to material safety datasheet.