

CORROSION RESISTANT STEELS - MARTENSITIC PRECIPITATION HARDENING (PH) STEELS

Application Segments

Engineering

Available Product Variants

Long Products

Product Description

BÖHLER N765 (UNS S46500) is a double vacuum-melted, stainless, maraging steel (PH-Grade) with a unique combination of high strength, toughness and corrosion resistance.

The products are typically used for heat-treated parts where resistance to stress corrosion cracking, high strength and toughness up to 427 °C (800 °F) with good ductility and transverse strength are required.

BÖHLER N765 material achieves a tensile strength of over 250 ksi (1722 MPa) when aged at 950 °F (H950 condition) and offers a superior combination of strength, toughness and stress corrosion cracking resistance compared to other high strength PH-steels such as 15-5PH or PH 13-8Mo.

Hardening temperatures from 950°F to 1050°F can be selected to achieve the desired combination of strength, toughness and stress corrosion cracking resistance.

The alloy not only meets the special and demanding requirements of the aerospace industry, but is also used in marine equipment, firearms, hand tools, oil and gas drilling and the medical industry, among others.

Process Melting

VIM + VAR

Applications

- > Civil and mechanical engineering
- > Fasteners, Bolts, Nuts
- > Mechanical Engineering
- > Medical
- > Shafts
- > Medical Industry

Technical data

| Material designation | | Standards | |
|----------------------|--------------|-----------|------|
| Custom 465 | Market grade | F899 | ASTM |
| S46500 | UNS | A564 | |

Chemical composition (wt. %)

| C | Si | Mn | P | S | Cr | Mo | Ni | Ti | N |
|-----------|-----------|-----------|------------|------------|----------------|--------------|----------------|--------------|-----------|
| max. 0.02 | max. 0.25 | max. 0.25 | max. 0.015 | max. 0.010 | 11.00 to 12.50 | 0.75 to 1.25 | 10.75 to 11.25 | 1.50 to 1.80 | max. 0.01 |

Refers to ASTM A564 S46500.

Delivery condition

Solution annealed

| | |
|---------------|---|
| Hardness (HB) | max. 331 Additionally subzero treated |
|---------------|---|

Round Bars and Wire Rod (if any)

| Diameter* mm | | |
|-----------------|---|-------|
| ROLLED | | |
| 5.00 | - | 13.50 |
| 12.50 | - | 65.00 |

* Diameter 5.00 - 13.50 mm available as Wire Rod.

Diameter 12.5 - 65 mm round bars.

Further information on MOQ, length and tolerance on request.

If other available product variants are listed in addition to long products, please note that these may differ in terms of melting process, technical data, delivery and surface condition as well as available product dimensions. For mandatory technical specifications, other requirements and dimensions, please contact our regional voestalpine BÖHLER sales companies. The data contained in this brochure is merely for general information and therefore shall not be binding on the company. We may be bound only through a contract explicitly stipulating such data as binding. Measurement data are laboratory values and can deviate from practical analyses. The manufacture of our products does not involve the use of substances detrimental to health or to the ozone layer.

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ONE STEP AHEAD.