

CORROSION RESISTANT STEELS - MARTENSITIC PRECIPITATION HARDENING (PH) STEELS

Application Segments

Aerospace

Engineering

Available Product Variants

Long Products*

Semi-Finished Products / Billet

Plates

* Presented data refer exclusively to long products. Please observe the detailed explanations at the end of the data sheet (pdf).

Product Description

BÖHLER N701 AMS is a premium, aerospace-quality corrosion-resistant steel available in bars, wire, and forgings with diameters/thicknesses up to 203 mm in the solution-annealed condition, as well as pre-forging stock of any size.

It is a martensitic, precipitation-hardenable chromium-nickel-copper steel with high strength and toughness. Further strength increases can be achieved through cold working and subsequent precipitation hardening.

These products are typically used for parts requiring corrosion resistance and high strength up to 316 °C and must exhibit good transverse toughness and strength in large dimensions. However, their use is not limited to such applications.

Certain processing methods and operating conditions can make these products susceptible to stress corrosion cracking.

Process Melting

Airmelted + VAR

Applications

> Other Aerospace Components

> Structural parts (Aerospace)

> Components

Technical data

| Material designation | | Standards | |
|----------------------|--------------|-----------|------|
| 15-5 PH | Market grade | A564 | ASTM |
| 1.4545 | SEL | 5659 | AMS |
| X5CrNiCu15-5 | EN | | |
| S15500 | UNS | | |

Chemical composition (wt. %)

| C | Si | Mn | P | S | Cr | Mo | Ni | Cu | Nb |
|-----------|-----------|-----------|------------|------------|----------------|-----------|--------------|--------------|-------------|
| max. 0.07 | max. 1.00 | max. 1.00 | max. 0.030 | max. 0.015 | 14.00 to 15.50 | max. 0.50 | 3.50 to 5.50 | 2.50 to 4.50 | 5xC to 0.45 |

Related to AMS 5659 type 1

Delivery condition

Solution annealed

| | |
|------------------------|---|
| Hardness (HB) | max. 363 bars, hot or cold finished, forgings |
| Tensile Strength (MPa) | max. 1,207 for wire products |

Round Bars and Wire Rod (if any)

| Diameter mm | | | MOQ ex mill kg | | | Length m | | | Tolerance |
|----------------|---|--------|-------------------|--|--|-------------|---|------|-----------|
| ROLLED | | | | | | | | | |
| 5.01 | - | 12.49 | 1,100 | | | 3.00 | - | 4.00 | IT h/k 11 |
| 12.50 | - | 55.00 | 1,200 | | | 3.00 | - | 4.00 | IT h/k 11 |
| 55.01 | - | 120.00 | 2,300 | | | 3.00 | - | 4.00 | IT h/k 11 |
| 120.01 | - | 140.00 | 2,300 | | | 3.00 | - | 5.00 | IT h/k 14 |
| FORGED | | | | | | | | | |
| 140.01 | - | 203.20 | 2,350 | | | 2.00 | - | 5.00 | IT h/k 14 |
| 203.21 | - | 304.80 | 3,500 | | | 2.00 | - | 5.00 | IT h/k 14 |

Flat Bars

| Width mm | | | Thickness mm | | | MOQ ex mill kg | | | Length m | | | Tolerance |
|---------------|---|--------|-----------------|---|--------|-------------------|--|--|-------------|---|------|-----------|
| ROLLED | | | | | | | | | | | | |
| 15.00 | - | 121.00 | 8.00 | - | 86.00 | 1,300 | | | 3.00 | - | 4.00 | LN 1017 |
| 120.00 | - | 150.00 | 25.00 | - | 85.00 | 2,550 | | | 3.00 | - | 4.00 | LN 1017 |
| 150.00 | - | 275.00 | 20.00 | - | 100.00 | 2,550 | | | 3.00 | - | 4.00 | LN 1017 |
| 275.00 | - | 330.00 | 25.00 | - | 80.00 | 2,550 | | | 3.00 | - | 4.00 | LN 1017 |

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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