

# FERRITIC AND MARTENSITIC STEELS, INCL. PRECIPITATION HARDENING STEELS

## Application Segments

Oil & Gas/CPI

## Available Product Variants

Long Products\*

Semi-Finished Products / Billet

Plates

Open Die Forgings

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

## Product Description

BÖHLER N701 covers a corrosion-resistant steel in the form of bars, wire, forgings in the solution heat treated condition.

It is a martensitic precipitation hardenable chromium-nickel-copper steel possessing high strength and toughness. Further strength increments can be obtained by cold forming, followed by a precipitation hardening treatment.

These products have been used typically for parts requiring corrosion resistance and high strength up to 600 °F (316 °C), but usage is not limited to such applications. Improved corrosion resistance compared to the 13% or 17% chromium steels. Remelting processes are used to improve steel purity and homogeneity.

Certain processing procedures and service conditions may cause these products to become subject to stress-corrosion cracking.

Typical applications are reactor construction, highly stressed pump parts, springs, ship shafts, plastic injection, compression molds and medical instruments.

## Process Melting

Airmelted + VAR

## Applications

- > Civil and mechanical engineering
- > PIM and screws for processing of GF-reinforced plastics
- > Pumps and High Pressure Components
- > Injection Molding
- > Medical
- > Shafts
- > Fasteners, Bolts, Nuts
- > General Components for Mechanical Engineering
- > Mechanical Engineering
- > Other Components
- > Food processing Industry

## Technical data

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

## Chemical composition (wt. %)

| C         | Si        | Mn        | P          | S          | Cr             | Ni           | Cu           | Nb           |
|-----------|-----------|-----------|------------|------------|----------------|--------------|--------------|--------------|
| max. 0.07 | max. 1.00 | max. 1.00 | max. 0.040 | max. 0.030 | 14.00 to 15.50 | 3.50 to 5.50 | 2.50 to 4.50 | 0.15 to 0.45 |

Related to ASTM A564

## Delivery condition

| Solution Annealed + Quenched |          |
|------------------------------|----------|
| Hardness (HB)                | max. 363 |
| Solution Annealed + Quenched |          |
| Hardness (HRC)               | max. 38  |

## Round Bars and Wire Rod (if any)

|        |   | Diameter |       |
|--------|---|----------|-------|
|        |   | mm       | inch  |
| ROLLED |   |          |       |
| 12.50  | - | 130.00   | 0.492 |
|        |   |          | 5.118 |
| FORGED |   |          |       |
| 130.10 | - | 203.20   | 5.122 |
|        |   |          | 8.000 |

More information regarding MOQ, length and tolerance upon request. Flat Bars upon request.

**Long Products:** For additional specifications, technical requirements, and other dimensions, please contact our regional voestalpine BÖHLER sales companies.

**Open Die Forgings:** Product Variant may differ in terms of melting process, technical data, delivery, and surface condition as well as available product dimensions. Please contact the business unit Open Die Forgings of voestalpine BÖHLER Edelstahl GmbH & Co KG.

**Sheet & Plates:** Product Variant may differ in terms of melting process, technical data, delivery, and surface condition as well as available product dimensions. Please contact voestalpine BÖHLER Bleche GmbH & Co KG.

**Semi-Finished Products:** Product Variant may differ in terms of melting process, technical data, delivery, and surface condition as well as available product dimensions. Please contact the business unit Semi Finished Products of voestalpine BÖHLER Edelstahl GmbH & Co KG.

*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.