

# CORROSION RESISTANT STEELS - MARTENSITIC PRECIPITATION HARDENING (PH ) STEELS

## Application Segments

Aerospace

Automotive

## 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 N709 is a premium aircraft-quality corrosion-resistant steel in the form of bars, wire, forgings up to 12.0 inches (305 mm) in diameter or least distance between parallel sides in the solution heat treated condition as well as stock of any size for forging.

It is a martensitic precipitation hardenable chromium-nickel-molybdenum-aluminium steel possessing high strength and toughness.

These products have been used typically for parts requiring corrosion resistance, stress-corrosion resistance and high strength up to 600 °F (316 °C) with good ductility and strength in the transverse direction in large section sizes but, but usage is not limited to such applications.

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

## Process Melting

VIM + VAR

## Applications

&gt; Other Aerospace Components

&gt; Structural parts (Aerospace)

&gt; Motorsport industry

## Technical data

| Material designation |              | Standards |     |
|----------------------|--------------|-----------|-----|
| 13-8 Mo              | Market grade | 5629      | AMS |
| 1.4534               | SEL          |           |     |
| X3CrNiMoAl13-8-2     | EN           |           |     |
| S13800               | UNS          |           |     |

## Chemical composition (wt. %)

| C         | Si        | Mn        | P          | S          | Cr             | Mo           | Ni           | Al           | N          |
|-----------|-----------|-----------|------------|------------|----------------|--------------|--------------|--------------|------------|
| max. 0.05 | max. 0.10 | max. 0.10 | max. 0.010 | max. 0.008 | 12.25 to 13.25 | 2.00 to 2.50 | 7.50 to 8.50 | 0.90 to 1.35 | max. 0.010 |

Related to AMS 5629

## 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<br>mm |   |        | MOQ ex mill<br>kg | Length<br>m |   |      | Tolerance |
|----------------|---|--------|-------------------|-------------|---|------|-----------|
| ROLLED         |   |        |                   |             |   |      |           |
| 5.01           | - | 12.49  | 1,050             | 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 | 2,200             | 2.00        | - | 5.00 | IT h/k 14 |

### Flat Bars

| Width<br>mm |   |        | Thickness<br>mm |   |        | MOQ ex mill<br>kg | Length<br>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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ONE STEP AHEAD.