

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

## Application Segments

Aerospace

Land Based Turbines

## 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 N700 SA 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 starting material of any size for forging purposes. 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, but their use is not limited to such applications.

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

For applications such as bolted joints where stress corrosion is possible, the product should be aged for at least 4 hours at the highest temperature compatible with the strength requirements, but in no case lower than 552 °C.

## Process Melting

Airmelted

## Applications

- > Other Aerospace Components
  - > Filling
- > Structural parts (Aerospace)
  - > Surgery
- > Machine Components

## Technical data

Material designation		Standards	
17-4 PH	Market grade	10088-3	EN ISO
1.4548	SEL	A564	ASTM
X5CrNiCu17-4	EN	5643	AMS
EZ6CNU17.04			
S17400	UNS		
630	AISI		

### Chemical composition (wt. %)

C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Nb
max. 0.07	max. 1.00	max. 1.00	max. 0.040	max. 0.030	15.00 to 17.50	max. 0.50	3.00 to 5.00	3.00 to 5.00	5xC to 0.45

Related to AMS 5643

### 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
<b>ROLLED</b>									
5.50	-	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	2,297			3.00	-	4.00	IT h/k 11
120.01	-	140.00	2,300			3.00	-	5.00	IT h/k 14
<b>FORGED</b>									
140.01	-	180.00	1,320			2.00	-	5.00	IT h/k 14
180.01	-	210.00	1,496			2.00	-	5.00	IT h/k 14

#### Flat Bars

Width mm			Thickness mm			MOQ ex mill kg			Length m			Tolerance
<b>ROLLED</b>												
15.00	-	121.00	8.00	-	86.00	1,100			3.00	-	4.00	LN 1017
120.00	-	150.00	25.00	-	85.00	1,100			3.00	-	4.00	LN 1017
150.00	-	275.00	20.00	-	100.00	1,100			3.00	-	4.00	LN 1017
275.00	-	330.00	25.00	-	80.00	1,100			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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