CORROSION RESISTANT STEELS - MARTENSITIC PRECIPITATION HARDENING (PH) STEELS

Application Segments

Aerospace | Automotive

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 is a high-quality corrosion-resistant steel in aerospace quality, in the form of bars, wire and forgings with a diameter/thickness of 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 increases in strength can be achieved by cold forming and subsequent precipitation hardening.
These products are typically used for parts requiring corrosion resistance and high strength up to 316°C. However, their use is not limited to such applications. However, use is not limited to such applications.
Certain processing methods and operating conditions can cause these products to become susceptible to stress corrosion cracking.
For applications such as bolting where stress corrosion cracking is possible, the product should be aged for a minimum of 4 hours at the highest temperature compatible with the strength requirements, but in no case lower than 552°C.

Process Melting

Airmelted + VAR

Applications

- Other Aerospace Components
- Other Automotive Components (Turbochargers, Piston Rings, Sensors, etc.)
- Structural parts (Aerospace)
- Machine Components
- Motorsport industry
- Filling

Technical data

Material designation	
17-4 PH	Market grade
1.4548	SEL
X5CrNiCu17-4	EN
EZ6CNU17.04	
S17400	UNS
630	AISI

Standards	
A564	ASTM
5643	AMS
5622	

BÖHLER

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BÖHLER N700

Chemical composition (wt. %)

C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Nb
max. 0.07	max. 1.00	max. 1.00	max. 0.025	max. 0.015	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 5622 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	2,297	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

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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ONE STEP AHEAD.