

FERRITIC AND MARTENSITIC STEELS, INCL. PRECIPITATION HARDENING STEELS

Application Segments

Engineering

Available Product Variants

Long Products*

Semi-Finished Products / Billet

*) 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 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. However, use 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. (ESR, PESR, VAR). Certain processing procedures and service conditions may cause these products to become subject to stress-corrosion cracking. For applications, such as bolting, where stress-corrosion is a possibility, the product should be precipitation heat treated for not less than 4 hours at the highest temperature compatible with the strength requirements but in no case lower than 1025 °F (552 °C).

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

Process Melting

Airmelted + ESR

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	
17-4 PH	Market grade	A564	ASTM
1.4542	SEL	F899	
X5CrNiCuNb16-4	EN		
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. 0.60	3.00 to 5.00	3.00 to 5.00	0.15 to 0.45

Related to ASTM A564

Delivery condition

Solution Annealed + Quenched

Hardness (HB)	max. 363
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Solution Annealed + Quenched

Hardness (HRC)	max. 38 Optional on sizes, smaller than 12.7mm
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Round Bars and Wire Rod (if any)

		Diameter*			
		mm		inch	
ROLLED					
5.00	-	13.50		0.197	- 0.531
15.00	-	65.00		0.591	- 2.559

* Diameter 5.00 - 13.50 mm available as Wire Rod.

Diameter 15 - 65 mm round bars.

More information regarding MOQ, lengths and tolerances upon request.

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

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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