

CORROSION RESISTANT STEELS - MARTENSITIC PRECIPITATION HARDENING (PH) STEELS

Application Segments

Oil & Gas / CPI

Available Product Variants

Long Products

Product Description

BÖHLER N700 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. 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 reactor construction, highly stressed pump parts and springs

Process Melting

Airmelted + VAR

Applications

- Shafts
- Other Oil and Gas + CPI components
- Valves and Actuators
- Pumps and High Pressure Components
- Oil & Gas, CPI & Renewables
- Wellhead, X-mas trees and Manifolds (incl. Tubing hangers), BOPs
- Fasteners, Bolts, Nuts
- Tubular Products, Flanges, Fittings

Technical data

Material designation		Standards	
17-4 PH	Market grade	A564	ASTM
1.4542	SEL		
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		
ROLLED		
12.50	-	130.00
FORGED		
130.10	-	203.20

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

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.