

CORROSION RESISTANT STEELS - MARTENSITIC PRECIPITATION HARDENING (PH) STEELS

Application Segments

Oil & Gas/CPI

Available Product Variants

Long Products

Product Description

BÖHLER N700 is a corrosion-resistant steel in the form of bars, wire and forgings in the solution-annealed condition. 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 that require higher corrosion resistance than the usual 13% or 17% chromium steels and high strength up to 316 °C. However, their use is not limited to such applications. Remelting processes are used to improve steel purity and homogeneity. (ESR, PESR, VAR)

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

For applications such as bolting where stress corrosion cracking 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.
Typical applications for reactor construction and highly stressed pump parts, springs and ship shafts.

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

Solution Annealed + Quenched	
Hardness (HRC)	max. 38 Optional on sizes, smaller than 12.7mm

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.

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ONE STEP AHEAD.