CORROSION RESISTANT STEELS - MARTENSITIC PRECIPITATION HARDENING (PH) 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
- Injection molds and screws for the processing of glass fiber reinforced plastics
- Fasteners, Bolts, Nuts
- General Components for Mechanical Engineering
- Medical
- Shafts
- Food processing industry
- Medical Industry
- Mechanical Engineering
- Pumps and High Pressure Components
- Injection Molding

Technical data

Material designation	
17-4 PH	Market grade
1.4542	SEL
X5CrNiCuNb16-4	EN
S17400	UNS
630	AISI

Standards	
A564 F899	ASTM

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		
5.00	-	13.50
15.00	-	65.00

* 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.

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