CORROSION RESISTANT STEELS - MARTENSITIC PRECIPITATION HARDENING (PH) STEELS

Application Segments

Engineering

Available Product Variants

Long Products* | Semi-Finished Products / Billet

* Presented data refer exclusivly to long products. Please observe the detailed explanations at the end of the data sheet (pdf).

Product Description

BÖHLER N713 is an ESR-remelted corrosion-resistant steel available in bar, wire, and forgings. It is a martensitic, precipitation-hardenable (PH-type) chromium-nickel-copper-titanium-niobium steel with high strength and toughness. The steel can be precipitation-hardened in a single-stage aging treatment to a minimum tensile strength of 225 KSI (1551 MPa) with good ductility and toughness. These products are typically used for parts requiring corrosion resistance, stress corrosion resistance, and high strength up to 427 °C (800 °F) with good transverse ductility and transverse strength at large cross-sectional dimensions.

The steel is typically used for medical instruments and engineering components, but is not limited to these applications. Certain processing methods and operating conditions can cause stress corrosion cracking to occur in these products.

Process Melting

Airmelted + ESR

Applications

- Surgery

Technical data

Material designation	
XM-16	Market grade
Custom 455	
S45500	UNS

Standards	
A564	ASTM
F899	

Chemical composition (wt. %)

C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	Nb
max. 0.03	max. 0.50	max. 0.50	max. 0.015	max. 0.015	11.00 to 12.50	max. 0.50	7.50 to 9.50	1.50 to 2.50	0.90 to 1.40	0.10 to 0.50

Related to ASTM A564 XM-16

Delivery condition

Solution annealed	
Hardness (HRC)	max. 36

Solution annealed	
Hardness (HB)	max. 331

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.