

# CORROSION-RESISTANT STEELS - AUSTENITIC STEELS AND NON MAGNETIC STEELS

## Application Segments

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Oil & Gas/CPI

## Available Product Variants

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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

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BÖHLER P513 is a weldable, non-magnetic, austenitic stainless steel with resistance to seawater and intercrystalline corrosion. It offers the best abrasion resistance of all stainless steels. The corrosion resistance of BÖHLER P513 is better than that of conventional austenitic Cr-Ni steels (type 304), and even better than Cr-Ni-Mo steel (type 316) under standard test conditions against chloride pitting, stress corrosion cracking and crevice corrosion. BÖHLER P513 is an alloy with a high silicon and manganese content and added nitrogen, which also works well at high temperatures around 1800 °F. Silicon and manganese prevent wear and scuffing even in the annealed condition. Higher strengths can be achieved by cold forming, but this does not significantly improve abrasion resistance. BÖHLER P513 is used in the aerospace, food and pharmaceutical, oilfield, petrochemical, surgical and chemical industries, e.g. for valve stems and valve seats, fastening systems, shielding, chain drive systems, pins, bushings and roller bearings, wear rings and pistons in pumps.

## Process Melting

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Airmelted

## Applications

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- > Components for food processing and animal feed
- > Food processing industry
- > Valves and Actuators
- > Wire Lines
- > Orthopedics
- > Fasteners, Bolts, Nuts
- > Other Oil and Gas + CPI components
- > Well Completion Tools
- > Well Logging Tools
- > Cardiology
- > Flowlines & Connectors
- > Tubular Products, Flanges, Fittings
- > Wellhead, X-mas trees and Manifolds (incl. Tubing hangers), BOPs
- > Surgery

Technical data

Material designation		Standards	
Nitronic 60	Market grade	A193	ASTM
S21800	UNS	A194	
		A276/A276M	
		A479/A479M	

Chemical composition (wt. %)

C	Si	Mn	P	S	Cr	Ni	N
max. 0.10	3.5 to 4.5	7.0 to 9.0	max. 0.060	max. 0.030	16.0 to 18.0	8.0 to 9.0	0.08 to 0.18

Related to ASTM A193 B8S,B8SA

Delivery condition

Solution annealed	
Hardness (HB)	max. 271
Tensile Strength (N/mm <sup>2</sup> )	min. 656
Yield Strength (MPa)	min. 345

Round Bars and Wire Rod (if any)

Diameter* mm	
<b>ROLLED</b>	
5.00	13.50
5.00	130.00
<b>FORGED</b>	
130.10	304.80

\* Diameter 5.00 - 13.50 mm available as Wire Rod.  
Diameter 5.00 - 130 mm round bars.  
Further information on MOQ, lengths and tolerances 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.