

CORROSIONS-RESISTANT STEELS - AUSTENITIC STEELS AND NON MAGNETIC STEELS

Application Segments

Oil & Gas/CPI

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 P511 is a weldable, non-magnetic, austenitic steel with resistance to seawater and intergranular corrosion. This austenitic, stainless Cr-Ni-Mn-Mo-N steel has higher corrosion resistance than Cr-Ni-Mo grades 316, 316L, 317 and 317L and approximately twice the yield strength at room temperature. In addition, BÖHLER P511 has very good mechanical properties at both high and low temperatures. Unlike many austenitic stainless steels, it does not become magnetic when cold-formed or cooled to sub-zero temperatures. Thanks to its excellent notched impact strength at -196 °C (-320 °F), BÖHLER P511 is particularly suitable for low-temperature applications.

Typical applications are found in the oil and gas, chemical, fertilizer, paper, textile, food and marine industries for components requiring a combination of excellent corrosion resistance and high strength, e.g. pumps, valves and fittings, fasteners, cables, chains, ship fittings, boat and valve shafts, heat exchanger parts and springs.

Process Melting

Airmelted

Applications

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

Technical data

Material designation		Standards	
XM-19	Market grade	A182/A182M	ASTM
Nitronic 50		A276/A276M	
S20910	UNS	NACE MR0175 / ISO 15156	Others

Chemical composition (wt. %)

C	Si	Mn	P	S	Cr	Mo	Ni	V	Nb	N
max. 0.06	max. 1.00	4.0 to 6.0	max. 0.045	max. 0.030	20.5 to 23.5	1.50 to 3.00	11.5 to 13.5	0.10 to 0.30	0.10 to 0.30	0.20 to 0.40

Related to ASTM A479 XM19.

Delivery condition

Solution Annealed + Quenched	
Tensile Strength (MPa)	min. 690
Yield Strength (MPa)	min. 380

Round Bars and Wire Rod (if any)

Diameter*		mm	
ROLLED			
5.00	-	13.50	
5.00	-	130.00	
FORGED			
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.