

# NI-BASE ALLOYS

## Application Segments

Oil & Gas/CPI

## Available Product Variants

Long Products\*

Semi-Finished Products / Billet

Plates

Open Die Forgings

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

## Product Description

BÖHLER L718 API (UNS N07718) is a high-strength, corrosion-resistant nickel chromium iron molybdenum material that offers high strength and excellent corrosion resistance, particularly in H<sub>2</sub>S and CO<sub>2</sub> environments. It is a precipitation hardenable alloy, the precipitation hardening effect is mainly achieved by additions of Niobium, Titanium and Aluminium. The ease and economy with which BÖHLER L718 API can be fabricated, combined with good tensile, fatigue, creep, and rupture strength, have resulted in its use in a wide range of applications. It has been widely recognised by the oil industry and it is now widely used in this field. BÖHLER L718 API offers outstanding weldability with resistance to post-weld cracking. It can be used in high temperatures as it maintains strength at elevated temperatures. Several conditions of BÖHLER L718 API are available and it is offered to the NACE/API 6A CRA versions at 120 / 140 ksi min yield as well as the 150 ksi high strength version. All tempers are suitable for sour service and can be used for pressure containing and pressure controlling equipment in corrosive environments. Typical applications include packers, pumps, connectors, and fasteners as well as gate valves, choke stems, tubing hangers and fire safe valves but also multiple downhole drilling & completions, nuclear and surface applications.

## Process Melting

VIM + VAR

## Applications

- > Oil & Gas / CPI
- > Wellhead, X-mas trees and Manifolds (incl. Tubing hangers), BOPs
- > Flowlines & Connectors
- > Well Logging Tools
- > CPI (incl. LNG, Urea)
- > Well Completion Tools
- > Other Oil and Gas + CPI components
- > Tubular Products, Flanges, Fittings
- > Components for Chemical plants (incl. LNG, FGD, Urea, LDPE, etc.)
- > Heat Exchanger
- > Fasteners, Bolts, Nuts
- > Drilling tools and components
- > Valves and Actuators
- > Components for underground construction (drilling, shafts, etc.)
- > Oil & Gas, CPI & Renewables

## Technical data

Material designation		Standards	
Alloy 718API	Market grade	API 6A CRA	Others
N07718	UNS	NACE MR0103 / ISO 17945	
		NACE MR0175 / ISO 15156	

### Chemical composition (wt. %)

C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Co	Ti	Al	Nb	B	Fe	Pb	Bi	Ca	Mg	Se
max. 0.045	max. 0.35	max. 0.35	max. 0.010	max. 0.010	17.0 to 21.0	2.80 to 3.30	50.0 to 55.0	max. 0.23	max. 1.00	0.80 to 1.15	0.40 to 0.60	4.87 to 5.20	max. 0.0060	REM	max. 0.0010	max. 0.00005	max. 0.0030	max. 0.0060	max. 0.0060

Refers to API Standard 6A CRA N07718 | Nb + Ta 4.87 to 5.20

### Delivery condition

#### Solution annealed + precipitation hardened | 120k

Hardness (HRC)	32 to 40
Tensile Strength (MPa)	min. 1,034
Yield Strength (MPa)	827 to 1,000

#### Solution annealed + precipitation hardened | 140k

Hardness (HRC)	34 to 44
Tensile Strength (MPa)	min. 1,138
Yield Strength (MPa)	965 to 1,034

#### Solution annealed + precipitation hardened | 150k

Hardness (HRC)	35 to 45
Tensile Strength (MPa)	min. 1,207
Yield Strength (MPa)	1,034 to 1,207

### Round Bars and Wire Rod (if any)

Diameter*		mm	
<b>ROLLED</b>			
5.00	-	13.50	
12.50	-	101.60	
<b>FORGED</b>			
101.70	-	355.60	

\* Diameter 5.00 - 13.50 mm available as Wire Rod.

Diameter 12.5 - 101.60 mm round bars.

Variant 140k is available in forged products only

More information regarding MOQ, lengths and tolerances upon request. Flat bars on request.

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**Long Products:** For additional specifications, technical requirements, and other dimensions, please contact our regional voestalpine BÖHLER sales companies.

**Open Die Forgings:** Product Variant may differ in terms of melting process, technical data, delivery, and surface condition as well as available product dimensions. Please contact the business unit Open Die Forgings of voestalpine BÖHLER Edelstahl GmbH & Co KG.

**Sheet & Plates:** Product Variant may differ in terms of melting process, technical data, delivery, and surface condition as well as available product dimensions. Please contact voestalpine BÖHLER Bleche GmbH & Co KG.

**Semi-Finished Products:** Product Variant may differ in terms of melting process, technical data, delivery, and surface condition as well as available product dimensions. Please contact the business unit Semi Finished Products of voestalpine BÖHLER Edelstahl GmbH & Co KG.

*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.