

# FERRITIC AND MARTENSITIC STEELS, INCL. PRECIPITATION HARDENING STEELS

## Application Segments

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Oil & Gas/CPI

## Available Product Variants

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Long Products

Semi-Finished Products / Billet

## Product Description

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BÖHLER N425 (UNS S41427) -Super 13Cr -is a martensitic stainless steel with a Nickel content of about 5% and 2% Molybdenum that offers high performance and excellent corrosion resistance in CO<sub>2</sub> environment, chlorides and low concentrations of H<sub>2</sub>S. The low carbon improves weldability while maintaining the martensitic microstructure.

During production, special attention is paid to fine grain and lowest delta ferrite content and the material is specially tested for toughness and behaviour under sour gas stress.

Due to the higher alloy content, the corrosion resistance of BÖHLER N425 is higher than that of 13%Cr stainless steels. As a result of the chemical analysis and its microstructure, BÖHLER N425 is particularly insensitive to intergranular corrosion and very resistant to fatigue and stress corrosion cracking.

To achieve the best possible corrosion resistance with BÖHLER N425, it is essential to polish the surfaces concerned.

BÖHLER N425 offers good mechanical properties in the quenched and tempered condition and very good low temperature properties. Recommended temperature of use: - 60 to 350°C.

BÖHLER N425 is available in two conditions. A 95 ksi min yield condition that is suitable for limited NACE sour service with a maximum hardness of 29 HRC. A 110 ksi version is also available for standard and CO<sub>2</sub> service. This material is used in downhole completion tools for components such as packers, safety valves as well as other applications.

## Process Melting

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Airmelted

## Applications

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- > Chemical industry - general
- > CPI (incl. LNG, Urea)
- > Wellhead, X-mas trees and Manifolds (incl. Tubing hangers), BOPs
- > Comp. for Chemical plants (incl. LNG, FGD, Urea, LDPE, etc.)
- > Other Oil and Gas + CPI comps.
- > Comp. for Industrial Gas Compressors
- > Well Completion Tools

## Technical data

Material designation		Standards	
Super13Cr	Market grade	MDS VABÖHLERN425 95KSI	NORSOK
S41427	UNS	MDS VABÖHLERN425 110KSI	

## Chemical composition (wt. %)

C	Si	Mn	P	S	Cr	Mo	Ni	V	Ti
max. 0.03	max. 0.50	max. 1.0	max. 0.02	max. 0.005	11.5 to 13.5	1.5 to 2.5	4.5 to 6.0	0.01 to 0.50	max. 0.01

Refers to NORSOK MDS VABÖHLER N425 95/110 KSI UNS S41427

## Delivery condition

### Hardened+Tempered, Stress relieved | 95KSI

Hardness (HRC)	max. 29
Tensile Strength (MPa   ksi)	min. 724   106
Yield Strength (MPa   ksi)	655 to 758   95 to 110

### Hardened+Tempered, Stress relieved | 110KSI

Hardness (HRC)	max. 32
Tensile Strength (MPa   ksi)	min. 862   126
Yield Strength (MPa   ksi)	758 to 862   110 to 126

## Round Bars and Wire Rod (if any)

mm		Diameter		inch	
<b>FORGED</b>					
101.70	-	254.00		4.004	- 10.000

More information regarding MOQ, lengths and tolerances upon request.

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

**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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