

CORROSION RESISTANT STEELS - MARTENSITIC, SEMI- MARTENSITIC AND FERRITIC STEELS

Application Segments

Oil & Gas / CPI

Available Product Variants

Long Products

Semi-Finished Products / Billet

Product Description

BÖHLER N425 (UNS S41427) - Super 13Cr - is a martensitic stainless steel with a nickel content of approx. 5% and 2% molybdenum, with excellent corrosion resistance in a CO₂ environment and at low concentrations of chlorides and H₂S and is more resistant than comparable 13%Cr steels. The steel is particularly resistant to intergranular corrosion and stress corrosion cracking, is easy to weld and offers good mechanical properties in the quenched and tempered condition even at low temperatures. Recommended application temperature from - 60 to 350°C.

The material is specially tested for toughness and behavior under sour gas load.

In order to achieve the best possible corrosion resistance, it is essential to polish the relevant surfaces.

BÖHLER N425 is available with a minimum yield strength of 95 ksi and maximum hardness of 29 HRC, making it suitable for limited NACE oxygen applications and also available as a 110 ksi version for standard and CO₂ applications.

This material is used in downhole completion tools for components such as packers, safety valves and other applications.

Process Melting

Airmelted

Applications

- > Chemical industry - general
 - > CPI (incl. LNG, Urea)
 - > Wellhead, X-mas trees and Manifolds (incl. Tubing hangers), BOPs

- > Components for Chemical plants (incl. LNG, FGD, Urea, LDPE, etc.)
 - > Other Oil and Gas + CPI components

- > Components 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) | min. 724 |
| Yield Strength (MPa) | 655 to 758 |

Hardened+Tempered, Stress relieved | 110KSI

| | |
|------------------------|------------|
| Hardness (HRC) | max. 32 |
| Tensile Strength (MPa) | min. 862 |
| Yield Strength (MPa) | 758 to 862 |

Round Bars and Wire Rod (if any)

| Diameter mm | |
|----------------|--------|
| FORGED | |
| 101.70 | 254.00 |

More information regarding MOQ, lengths and tolerances upon 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.

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ONE STEP AHEAD.