

# 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 A959 (Alloy 28, UNS N08028, W. Nr. 1.4563) is a nickel-iron-chromium alloy with additions of molybdenum and copper. It has excellent resistance to both reducing and oxidizing acids, to stress-corrosion cracking, and to localized attack such as pitting and crevice corrosion. The alloy is especially resistant to sulphuric and phosphoric acid. Equipment used for chemical processing, pollution control equipment, oil and gas well piping, natural gas and oil transportation, nuclear fuel reprocessing and transportation, acid production and pickling equipment and transportation. The alloy was originally developed for use in the manufacture of phosphoric acid, especially for heat exchangers in the concentration unit, where corrosive conditions are at their worst.

## Process Melting

Airmelted

## Applications

- > Chemical industry - general
- > Heat Exchanger
- > Well Completion Tools
- > Components for Chemical plants (incl. LNG, FGD, Urea, LDPE, etc.)
- > Other Oil and Gas + CPI components
- > Well Logging Tools
- > CPI (incl. LNG, Urea)
- > Paper and Pulp Industry / Printing
- > Wellhead, X-mas trees and Manifolds (incl. Tubing hangers), BOPs

## Technical data

Material designation		Standards	
Alloy 28	Market grade	10088-3	EN ISO
1.4563	SEL		
X1NiCrMoCu31-27-4	EN		
N08028	UNS		

Chemical composition (wt. %)

C	Si	Mn	P	S	Cr	Mo	Ni	Cu	N
max. 0.020	max. 0.70	max. 2.00	max. 0.030	max. 0.010	26.0 to 28.0	3.0 to 4.0	30.0 to 32.0	0.70 to 1.50	max. 0.10

Refers to DIN EN 10088-3 1.4563.

Delivery condition

Solution Annealed + Quenched

Hardness (HB)	max. 230
Tensile Strength (MPa)	500 to 750
Yield Strength (MPa)	min. 220

Round Bars and Wire Rod (if any)

Diameter mm	
<b>ROLLED</b>	
12.50	130.00
<b>FORGED</b>	
130.10	203.20

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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