

# NI-BASE ALLOYS

## Available Product Shapes

Semi-Finished Products / Billet
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## Product Description

Equipment for sulphuric acid mud treatment, tubings and casings exposed to severe corrosive attack (sour gas) in the petroleum industry; sulphonation plants in detergent production; pickling equipment in the iron and steel industry as well as phosphatizing and sulphatizing plants; pulp and plastics industries; vegetable conservation; cooling water tubes (brackish or seawater); transport containers for corrosive media; propeller shafts for reactor fuel regeneration plants.

## Properties

Nickel-base alloy with excellent corrosion resistance. Good resistance to the attack of reducing as well as oxidizing hot acids such as mixtures of nitric, phosphoric and sulphuric acids. Superior resistance to pitting and stress corrosion cracking in the presence of weak acid chlorides. BÖHLER L314 is therefore well suited for applications involving extremely corrosive environments, such as H<sub>2</sub>S and CO<sub>2</sub> at high partial pressures, high chloric media and high pressures. Resistant to intergranular corrosion. For optimum resistance, surfaces should be pickled, scalefree heat treated or machined.

## Applications

- > Comp. for Chemical plants (incl. LNG, FGD, Urea, LDPE, etc.)
  - > Oil & Gas
  - > Tubular Products, Flanges, Fittings
- > CPI (inc. LNG, Urea)
  - > Other Oil and Gas + CPI comps.
- > Food processing Industry
  - > Pumps and High Pressure Components

Material designation		Standards	
2.4858	SEL	NA16	BS
N08825	UNS		
NiCr21Mo	EN		
NCF825	JIS		
Alloy 825	Market grade		

## Chemical composition

C	Cr	Mo	Ni	Cu	Ti
≤ 0,025	21.50	3.00	40.00	2.30	0.90

## Heat treatment

Solution annealing		
Temperature (°C / °F)	1080 / 1976 - 1100 / 2012	Water, air.

### Physical Properties at 20°C / 68°F

Density	8.15 / 0.29	[kg/dm <sup>3</sup> / lb/in <sup>3</sup> ]
Thermal conductivity	11 / 6.36	[W/(m.K) / BTU (IT) ft/hr/ft <sup>2</sup> /F]
Specific heat	450 / 107.48	[J/(kg.K) / BTU (IT) lb/F]
Spec. electrical resistance	1.1 / 0.001	[Ohm.mm <sup>2</sup> /m / Ohm.inch <sup>2</sup> /ft]
Modulus of elasticity	195 / 28.28	[10 <sup>3</sup> N/mm <sup>2</sup> / 10 <sup>3</sup> ksi]

### Thermal Expansions

Temperature (°C / °F)	100 / 212	200 / 392	300 / 572	400 / 752	500 / 932	600 / 1112
Thermal expansion (10 <sup>-6</sup> m/(m.K) / 10 <sup>-6</sup> inch/(inch.F))	14 / 7.778	14.9 / 8.278	15.3 / 8.5	15.6 / 8.667	15.9 / 8.833	16.1 / 8.944

For more information see [www.voestalpine.com/boehler-edelstahl](http://www.voestalpine.com/boehler-edelstahl)

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