

## Technical datasheet

## Alloy 825 / W-Nr. 2.4858

A nickel-iron-chromium alloy with additions of molybdenum and copper for enhanced corrosion resistance. This grade is especially resistance to sulphuric and phosphoric acid.

### Available products

Product form	Size	Size range to
Sheet/plate	0.5 mm thickness	15.0 mm thickness
Bar	8.0 mm diameter	80.0 mm diameter
Tube/pipe	6.0 mm outside diameter	219.1 mm outside diameter

### Chemical composition (%)

Ni	Fe	Cr	Mo	Cu	Ti	Mn	C
38.0-46.0	22.0 min	19.5-23.5	2.5-3.5	1.5-3.0	0.6-1.2	1.0 max	0.05 max

### Major specifications

ASTM B163, B423, B424, B425, B564, B829 B906 BS 3072, 3073, 3074, 3076	UNS N08825 DIN 17744, 17750, 17751, 17752, 17754
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### Physical properties

Density	8.14 g/cm <sup>3</sup>
Melting range	1370-1400°C

### Mechanical properties – typical room temperature properties

Yield strength	310 MPa
Tensile strength	690 MPa
Elongation	45 %

### Key attributes

Alloy 825 has exceptional resistance to a wide range of highly corrosive environments thanks to its nickel-iron-chromium composition with additions of molybdenum, copper and titanium. This grade has excellent resistance to both reducing and oxidising acids, resists stress corrosion cracking and is also resistant to localised forms of attack such as pitting and crevice corrosion. It is resistant to nitric acid and is especially resistant to sulphuric and phosphoric acids. Alloy 825 has good mechanical properties from cryogenic temperatures to moderately high temperatures.

Alloy 825 has excellent forming and welding characteristics and can be readily formed by cold working. Please contact us for further details on forming, fabrication and welding consumables.

### Applications

Chemical processing equipment, heat exchangers, evaporators, vessels, tanks  
Sulphuric acid production and pickling equipment  
Pollution control equipment  
Oil and gas extraction – heat exchangers, evaporators, offshore piping  
Food processing industry

All information is subject to change without notice. The properties correspond to the material in the heading. They may vary for other specifications. Please contact us for more details.