

Incoloy 825

Incoloy 825 is a titanium-stabilized fully austenitic nickel-iron-chromium alloy with additions of copper and molybdenum. It is characterized by:

- good resistance to stress-corrosion cracking
- satisfactory resistance to pitting and crevice corrosion
- good resistance to oxidizing and non-oxidizing hot acids
- good mechanical properties at both room and elevated temperatures, up to approx. 550°C
- approval for pressure vessels with wall temperatures up to 450°C

Chemical Composition, %

element	Cr	Ni	Fe	Mo	Cu	Al	Ti	C	Mn	Si	S
min.	19.5	38.0	22.0	2.5	1.5		0.6				
max.	23.5	46.0		3.5	3.0	0.2	1.2	0.05	1.0	0.5	0.03

Chemical Composition according to ASTM. Some compositional limits of other specifications may vary slightly.

Designation and standards

National Standards	Material designation	Chemical composition	Forgings	Rod and bar	Plate and sheet	Strip	Seamless tube
ASTM ASME	UNS N08825		B564 SB564	B425 SB425	B424 SB424	B424 SB424	B423 SB423
DIN	2.4858 NiCr21Mo	DIN 17744	DIN 17754	DIN 17752	DIN 17750	DIN 17750	DIN 17751
GB/T	NS1402, NS142	GB/T 15007		GB/T 15008	GB/T 15009	GB/T 15010	GB/T 30059

Density 8.14g/cm³

Corrosion resistance

- good resistance to acids and alkalis under both oxidizing and reducing conditions
- good resistance to stress-corrosion cracking
- good resistance to sulphuric, phosphoric, nitric and organic acids, alkalis such as sodium or potassium hydroxide, and acidic chloride solutions

Applications

Incoloy 825 is used in a wide variety of applications up to a temperature of approx. 550°C.

Typical applications are:

- components such as heating coils, tanks, crates, baskets and chains in sulphuric acid pickling plants
- fuel element dissolvers
- sea-water-cooled heat exchangers, offshore product piping systems, tubes and components in sour gas service
- heat exchangers, evaporators, scrubbers, dip pipes etc. in phosphoric acid production
- air-cooled heat exchangers in petroleum refineries
- food processing
- chemical plant
- combustion-resistant alloy for high O₂ applications

You could send email to sales@huishih.com for more information.

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