

Alloy 825

Technical Datasheet



Service. Quality. Value.

Nickel Iron Chromium Alloy

Typical Applications

- Evaporators
- Seawater heat exchangers
- Air cooled heat exchangers
- Sour gas components
- Chemical processing equipment
- Air pollution scrubbers
- Pipe systems
- Ore processing

Product Description

Alloy 825 is a nickel iron chromium alloy which has been developed to provide exceptional resistance to numerous corrosive environments including both oxidating and reducing. These environments include sulphuric, sulphurous, phosphoric, nitric, hydrofluoric and organic acids and alkalis such as sodium or potassium hydroxide, and acidic chloride solutions. Alloy 825 also offers outstanding performance in subsea applications.

Key features

- Excellent resistance to reducing and oxidizing acids
- Excellent resistance to pitting and crevice corrosion
- Outstanding subsea performance
- Readily formable and weldable
- Superb resistance to chloride stress corrosion cracking

Corrosion resistance

Excellent - Alloy 825 is especially resistant to sulphuric and phosphoric acids.

Availability

Bar, tube, strip, plate, sheet

Weldability

Good.

Chemical Composition (weight %)

	C	Mn	S	Si	Cr	Ni	Fe	Mo	Cu	Ti	Al
min					19.5	38.0	22.0	2.5	1.5	0.6	
max	0.05	1.00	0.03	0.5	23.5	46.0		3.5	3.0	1.2	0.2

Mechanical Properties

Tensile Properties Annealed Condition	Tensile Strength N/mm ² 590 min	0.2% Proof Strength N/mm ² 220 min	Elongation 5.65√S0 (%) 30 min
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Physical Properties

Density	Magnetic Permeability	Specific Heat	Specific Gravity	Melting Range
0.294lb/in ³ 8.14g/cm ³	200 oersted 1.005	0.105 Btu/lb-°F 440 J/kg-°K	8.13	2500-2550°F 1370-1400°C

Technical Assistance

Our knowledgeable staff backed up by our resident team of qualified metallurgists and engineers, will be pleased to assist further on any technical topic.

UK Service Centres:

Smiths Belfast **02895 908 897**
 Smiths Biggleswade **01767 604 704**
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 Smiths Verwood **01202 824 347**
 Main Office **0845 527 3331**

Quality & Testing:



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