Alloy 825

Grade: Alloy 825 (UNS N08825, ASTM B425)
Type: Annealed Nickel-Chromium-Iron based alloy.

Nominal Composition	
Element	**Weight %**
Carbon	0.05 max
Silicon	0.50 max
Manganese	1.0 max
Sulphur	0.03 max
Molybdenum	2.5 – 3.5
Chromium	19.5 – 23.5
Nickel	38.0 – 46.0 max
Aluminium	0.2 max
Titanium	0.6 – 1.2
Iron	22 max
Copper	1.5 – 3.0

Notes
The grade is classed as Iron-Nickel-Chromium alloy

Mechanical Properties Condition: Annealed and where lower hardness is required Solution Annealed. Typical properties below are in the Annealed condition.

Property	Typical Values
Ultimate Tensile Strength	85 min Ksi (586 MPa)
0.2 % Yield Strength	35 min Ksi (241 MPa)
Elongation	30 % min
Reduction of Area	35 % min
Charpy Impact Toughness	27 mean J at – 60° C
Hardness	35 HRC max

Notes:

Nickel-Chromium-Iron-Molybdenum-Copper Alloy.

Maximum hardness shown is based on compliance with NACE MR0175 (2003).

Grade has relatively low strength but very high corrosion resistance, excellent sub zero impact properties.

Used extensively for applications such as fittings, valves, gaskets, tubing. Also used for corrosion resistant weld

Excellent resistance to stress corrosion cracking and good pitting resistance in most environments.