

Alloy 825

A nickel-iron-chromium grade with addition of molybdenum and copper, Alloy 825 has excellent corrosion resistance.

Alloy 825 is a high performing nickel-iron-chromium alloy with additions of molybdenum, copper, and titanium. The nickel content is sufficient for resistance to chloride-ion stress-corrosion cracking.

PRODUCT FORMS

PRODUCT FORM	SIZE RANGE FROM	SIZE RANGE TO
Alloy 825 pipe	0.5 in	8 in
Alloy 825 round bar	10 mm	334 mm
Alloy 825 sheet & plate	2 mm	10 mm
Alloy 825 pipe fittings	2 mm	10 mm
Alloy 825 flanges	2 mm	10 mm

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CHEMICAL ANALYSIS

%	NI	CR	FE	C	MN	SI	CU	MO	AL	TI	P	S
Min	38	19.5	Balance	0	0	0	1.5	2.5	0	0.6	0	0
Max	46	23.5	-	0.05	1	0.5	3	3.5	0.2	1.2	0.020	0.010

APPLICATIONS

- 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
- Chemical and Food Processing

ABOUT ALLOY 825

The nickel in Alloy 825, in conjunction with the molybdenum and copper, gives superb resistance to reducing environments such as those containing sulfuric and phosphoric acids. The molybdenum prevents resistance to pitting and crevice corrosion. The alloy's chromium content confers resistance to a variety of oxidising substances such as nitric acid, nitrates and oxidising salt. NeoNickel specialises in supplying high performance metal alloys to a wide variety of industries. As a highly respected European supplier we provide the finest quality heat resistant, corrosion resistant, aerospace, titanium and stainless steel alloys anywhere on the market.

PROPERTIES

Density:	8.14 g/cm ³
Melting Range:	1370-1400°C
Specific Heat Capacity:	440 J/kg.°C
Electrical Resistivity:	1.13 μΩ.m
Poisson's Ratio:	0.29 - 0.34

MECHANICAL & PHYSICAL PROPERTIES

MECHANICAL & PHYSICAL PROPERTIES	21.1°C	93.3°C	148.9°C	204.4°C	315.6°C	371.1°C	426.7°C	537.8°C	684.9°C	982°C
Ultimate Tensile Strength /MPa	585	530	525	515	500	495	485	-	-	-
0.2% Yield Strength /MPa	240	205	190	180	170	165	155	-	-	-
Elongation %	30	-	-	-	-	-	-	-	-	-
Coefficient of Thermal Expansion /μm/m°C **	-	14.1	14.1	14.8	15.3	15.6	15.6	15.8	16	-
Thermal Conductivity /kcal/(hr.m.°C)	9.55	10.578	10.578	11.868	13.224	14.534	14.534	15.652	16.856	-
Modulus of Elasticity / GPa	196	192	192	187	181	174	174	168	162	118

SPECIFICATIONS

UNS Number: N08825

W.Wr.Number: 2.4858

Standards: ASTM B163, B423, B424, B425, B564, B704, B705, B366, B751, B775, B829