

R906.10

EN: 2.4858

UNS: N08825

Alloy 825



R906.10, Known as Alloy 825 is an nickel iron chromium alloy, with molybdenum, copper and titanium addition. The grade has high resistance to general corrosion and pitting corrosion, good resistance to stress corrosion cracking and good resistance to corrosion in environments with hydrogen sulfide. The grade is used for welding similar Nickel-Iron-Chromium-Copper alloys. Common application for this grade is welding consumables for joining and cladding applications.

CHEMICAL COMPOSITION (Nominal) %

C	Si	Mn	Cr	Ni	Mo	N	Cu	Ti
0.015	0.020	0.80	23.20	43.50	3.30	0.02	1.70	0.90

PRE: 34.4 (PRE = Cr + 3.1 x Mo + 25 x N)

PHYSICAL PROPERTIES

Condition: Annealed

Density	8,14 g / cm ³
Modulus of elasticity, E	195 GPa
Specific heat 20°C	440 J / kg°C

TYPICAL MECHANICAL PROPERTIES

Condition: Annealed

Proof strength	Rp0.2	230 N / mm ²
Tensile strength	Rm	550-620 N / mm ²
Elongation	A10	50 %

THERMAL TREATMENT

Annealing temperature	980-1150 °C
	1796-2102 °F

MAX. OPERATING TEMPERATURE

Operating temp. in air	538 °C
	1000 °F

THERMAL CONDUCTIVITY

25 °C	11.1 W / m°C
100 °C	12.3 W / m°C
200 °C	13.8 W / m°C
300 °C	15.4 W / m°C

THERMAL EXPANSION

CTE

100 °C	14.1 μm/m°C
200 °C	14.8 μm/m°C
300 °C	15.3 μm/m°C

RESISTIVITY

25 °C	1.13 μΩ*m
100 °C	1.14 μΩ*m
200 °C	1.18 μΩ*m
300 °C	1.21 μΩ*m
400 °C	1.24 μΩ*m
500 °C	1.26 μΩ*m