



TECHNICAL DATA - Special Alloys

NICKEL/CHROMIUM ALLOY: **Alloy 825 (UNS N08826 or CU5MCuC)**

Description

Alloy 825 is a 40% Nickel, 20% Chromium Alloy with Copper & Molybdenum and Niobium additions designed for exceptional corrosion resistance to acids, and both oxidizing and reducing atmospheres.

Heat Treatment

Castings in 825 are normally supplied in the solution annealed condition.

Applications

Petroleum refining, Ore and Copper refining, Steel pickling equipment, heat exchangers and sour gas components. Food processing, chemical processing.

Design Considerations

Section thicknesses from 8 mm up can be cast satisfactorily in Alloy 825. Designs with drastic changes in section should be avoided, and uniform thickness maintained whenever possible.

Summary of Properties

Nominal Chemical Composition %

C	Mn	Si	P	S	Cr	Mo	Ni	Nb	Cu
0.05	0.8	0.8	0.03	0.03	21.0	3.0	41.0	1.0	2.0

Mechanical Properties at room temperature

UTS 520 MPa

Yield 240 MPa

Elongation 20%

Hardness 200 BHN Max

Physical Properties (Room Temp)

Density (g/cm^3) 8.14

Melting Point ($^{\circ}\text{C}$) 1380

Specific Heat ($\text{J/kg}^{\circ}\text{C}$) 440

Electrical Resistivity (microhms/cm^3) 113

Magnetic Permeability 1.0μ

Thermal Conductivity (W/m-K) 11.0

Properties listed are typical of published laboratory tests and are intended as a guide only. This data should not be considered as guaranteed maximums or minimums. Materials should be tested under actual service conditions to determine their suitability for particular applications.