BRODER METALS GROUP Alloy 825

Alloy 825 is an austenitic nickel-iron-chromium alloy with additions of copper, molybdenum, and titanium-stabilised to resist pitting and intergranular attack. Molybdenum and copper enable Alloy 825 to resist reducing agents and acids, while chromium gives Alloy 825 resistance to oxidising conditions. Alloy 825 is therefore highly suitable where required properties include good resistance to stress-corrosion cracking, pitting, and crevice corrosion.

Alloy 825 is also often used where oxidising and non-oxidising hot acids (especially sulphuric, phosphoric, nitric and organic acids, as well as alkalis such as sodium or potassium hydroxide) come into contact with the metal.

Mechanical properties are stable up to approximately 550°C (1020°F)

These properties make Alloy 825 ideally suitable for use in heating coils, tanks, baskets and chains in sulphuric acid pickling plants, heat exchangers in phosphoric and other acid and chemical production applications. Other applications include sea-water-cooled heat exchangers, offshore product piping systems, for components in sour gas service in pollution- control equipment, and oil and gas well piping and in nuclear fuel reprocessing components.

Broder Metals Group stocks and supplies Alloy 825 round bar to the full range of the following specifications:
ASTM B425
UNS N008825
BS ISO 3076 NA16
NACE MR0175/ISO 15156-3
Werkstoffe 2.4858

We can supply material in the hot worked annealed and peeled or annealed and cold drawn condition. Our standard sizes of alloy 825 range from 12.7mm-250mm.

Nominal Chemical Composition by Percent:

	Ni	Cr	Fe	Mn	C	Cu	Si	S	Al	Ti	Mo	-
Min	38.0	19.5	22	-	-	1.5	-	-	-	0.6	2.5	%
Max	46.0	23.5	-	1.0	0.05	3.0	0.5	0.03	0.2	1.2	3.5	%

Heat Treatment

Alloy 825 is stabilise annealed at 940°C. The softest structure is obtained at 980°C.

Mechanical Properties

Annealed Condition	Ksi	MPa	%
Tensile Strength, min	85	586	-
Yield Strength (0.2% offset), min	35	241	-
Elongation in 2", or 5D 0 mm or 4D, min %	-	-	30

Reduction in area and hardness are not required as per ASTM B425-99 (2005)
We have our own certified NDT ultrasonic operators on site and can offer examinations to API 6A PSL 3 or ISO 10423, (to method ASTM A388) if required by the customer.