

C	Cr	Fe	Ni	Al	Ti	Cu	Mo
MAX		MAX		MAX			MAX
0.05	19.25-23.0	0.50	38.0-46.0	0.2	0.6-1.2	1.5-3.0	2.5-3.5

CHEMICAL COMPOSITION %

DESCRIPTION

Alloy 825 is a Nickel-iron-chromium alloy with additions of molybdenum, copper and titanium. The alloy's chemical composition provides exceptional resistance to many corrosive environments. The Nickel content is sufficient for resistance to Chloride-ion stress corrosion cracking. The nickel, combined with molybdenum and copper, also gives outstanding resistance to reducing environments such as those containing sulfuric and phosphoric acid. The molybdenum also aids resistance to pitting and crevice corrosion. The alloys Chromium content confers resistance to a variety of oxidizing substances such as nitric acid, nitrates and oxidizing salts. The titanium addition, with appropriate heat treatment, will stabilize the alloy against sensitization to intergranular corrosion.

DESIGN FEATURES

- Good resistance to stress corrosion cracking.
- Satisfactory resistance to pitting and crevice corrosion.
- Good resistance to oxidizing and non-oxidizing hot acids.
- Good mechanical properties at both room and elevated temperatures up to approximately 550° C (1020° F).
- Permission for pressure-vessel use at wall temperature up to 425° C (800° F).

AVAILABILITY

SPECS

AVAILABILITY		SPECS
SEAMLESS PIPE	1/2" - 8"	B423
WELDED PIPE	8" - 12"	B423
BUTT-WELD FITTINGS	1/2" - 8"	B366
FLANGES	1/2" - 8"	B425, B564,
		B16.5
BAR	1" - 6"	B425, B564
FORGINGS		B564

TYPICAL APPLICATIONS

Components such as heating coils, tanks, crates, baskets and chains in sulfuric acid pickling plants

Fuel element dissolvers-the alloy withstands the different media (sulfuric and nitric acids, caustic hydroxide etc.) used in processing

Sea water cooled heat exchangers; offshore product piping systems tubes and components in sour gas service - resistant to chloride-ion stress-corrosion cracking

Pipelines carrying wet sulphur dioxide gas and pulp digesters in the papermaking process

Heat exchangers, evaporators, scrubbers, etc. used in phosphoric acid production

Air cooled heat exchangers used in the processing of liquid petroleum gas (LPG)

TENSILE REQ

Tensile Strength	(KSI) 85
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Yield Strength	(KSI) 35
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KSI can be converted to MPA (Megapascals) by multiplying by 6.895.