

MATERIAL DATA SHEET · NICKEL ALLOYS

Alloy 825 (UNS N08825) — Chemical Composition & Mechanical Properties

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Alloy 825 (UNS N08825) is a nickel alloys grade for nickel alloy forgings, fittings & pipe (UNS N08825, EN / W.Nr 2.4858). It is also known as Incoloy 825 (trade name). This sheet summarises its chemical composition limits, minimum mechanical properties, heat treatment and typical service. Teshi Group manufactures flanges and fittings in this grade.

At a glance

Material family	Nickel alloys
Product form	Nickel alloy forgings, fittings & pipe
UNS	N08825
EN / W.Nr	2.4858
Also known as	Incoloy 825 (trade name)
PREN (min values)	27.8

Mechanical properties

Tensile strength, min	586 MPa
Yield strength (0.2 % offset), min	241 MPa
Elongation, min	30 %
Hardness	Not specified

Chemical composition (weight %)

Ni 38.0–46.0	Cr 19.5–23.5	Mo 2.5–3.5	Cu 1.5–3.0	Ti 0.6–1.2
Fe 22.0 min	C 0.05 max	Mn 1.0 max	Si 0.5 max	S 0.03 max
Al 0.2 max				

Single values are maximums unless shown as a range or "min".

Heat treatment

Annealed

Typical service

Sulphuric and phosphoric acid, sour oil and gas, pickling

International equivalents (nearest)

USA — specification	Alloy 825 (UNS N08825)
USA — UNS	N08825
Europe — EN designation	NiCr21Mo
Europe — W.Nr	2.4858
Japan — JIS	NCF825
China — GB / NB	NS1402 (GB/T 15007)
China — old GB designation	0Cr21Ni42Mo3Cu2Ti
UK — BS (withdrawn)	NA16

Same alloy in other product forms

Flanges & forged fittings	ASTM B564 N08825
Butt-weld fittings	ASTM B366 WPNICMC
Seamless pipe	ASTM B423 N08825
Welded pipe	ASTM B705 N08825
Plate	ASTM B424 N08825
Bar	ASTM B425 N08825

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