INCONEL 825 — ASTM A 494 Cu5MCuC

Standard Specification for Castings, Nickel and Nickel Alloy

MATERIAL DATASHEET

GROUP	SUB GROUP	INDUSTRY
Non-Ferrous Nickel Alloys	**ASTM A 494 Cu5MCuC**	**Investment Casting**

This alloy's high nickel-chromium composition makes it exceptionally resistant to seawater and acidic environments, ideal for marine and chemical processing industries. The molybdenum content enhances its resistance to pitting corrosion in chloride-rich conditions, extending service life significantly. Investment casting process allows manufacturers to produce highly complex shapes providing outstanding corossion resistance trusted globally for demanding, corrosion-intensive applications.

CHEMICAL COMPOSITION

ELEMENT	SYMBOL	COMPOSITION
Carbon	C %	0.050 max.
Silicon	Si %	1.000 max.
Manganese	Mn %	1.000 max.
Phosphorus	P %	0.030 max.
Sulphur	S %	0.020 max.
Chromium	Cr %	19.500 - 23.500
Nickel	Ni %	38.000 - 44.000
Molybdenum	Mo %	2.500 - 3.500
Niobium	Nb %	0.600 - 1.200
Copper	Cu %	1.500 - 3.500
Iron	Fe %	Balance

MECHANICAL PROPERTIES

PERFORMANCE SPECIFICATIONS

Tensile Strength	Minimum Value	**520** MPa
Yield Strength	Minimum Value	**240** MPa
Elongation	Minimum Value	**20** %

✓ HEAT TREATMENT
Solution Annealing

INDUSTRY APPLICATIONS

- VALVES
- PUMPS
- ENGINEERING
- AUTOMOTIVE
- AEROSPACE
- PHARMACEUTICAL
- AUTOMATION
- LOCOMOTIVES

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