Super Duplex — ASTM A995 6A

Standard Specification for Castings, Austenitic-Ferritic (Duplex) Stainless Steel, for Pressure-Containing Parts

MATERIAL DATASHEET

GROUP	SUB GROUP	INDUSTRY
Ferrous Stainless Steel Alloys	**ASTM A995 / A995M**	**Investment Casting**

This pressure-grade duplex casting alloy uniquely combines tungsten and copper alongside chromium, nickel, molybdenum, and nitrogen to create superior resistance to both oxidizing and reducing corrosive environments. The dual austenitic-ferritic microstructure delivers an exceptional balance of high tensile strength and 25% elongation, ensuring reliable performance under demanding pressure conditions. Solution annealing optimizes the phase balance, making it the preferred choice for critical pressure-containing valves, pumps, and industrial casting applications.

CHEMICAL COMPOSITION

ELEMENT	SYMBOL	COMPOSITION
Carbon	C %	0.030 max.
Silicon	Si %	1.000 max.
Manganese	Mn %	1.000 max.
Phosphorus	P %	0.030 max.
Sulphur	S %	0.025 max.
Chromium	Cr %	24.000 – 26.000
Nickel	Ni %	6.500 – 8.500
Molybdenum	Mo %	3.000 – 4.000
Copper	Cu %	0.500 – 1.000
Nitrogen	N %	0.200 – 0.300
Tungsten	W %	0.500 – 1.000
Iron	Fe %	Balance

MECHANICAL PROPERTIES

PERFORMANCE SPECIFICATIONS

Tensile Strength	Minimum Value	**690** MPa
Yield Strength	Minimum Value	**450** MPa
Elongation	Minimum Value	**25** %

✓ HEAT TREATMENT
Solution Annealing

INDUSTRY APPLICATIONS

- **Offshore oil & gas**

- **Chemical process industries**

- **Seawater systems**

- **Marine engineering**

- **Pressure-containing pump**

DISCLAIMER: All information in this datasheet is indicative only and is not intended to be a substitute for the full specification. It provides typical values for comparison between metal alloy options rather than a definitive statement of mechanical performance. Values may vary with temperature, product type, and application. This data does not constitute any guarantee of properties.

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