



High Alloy Steel ASTM A351 Gr. CF8M

Standard Specification for Castings, Austenitic, for Pressure-Containing Parts

MATERIAL DATASHEET

GROUP
Ferrous Stainless Steel Alloys

SUB GROUP
ASTM A351 / 351M Castings

INDUSTRY
Investment Casting

This molybdenum-bearing austenitic stainless steel casting grade represents a significant upgrade over CF8, offering enhanced resistance to pitting, crevice corrosion, and reducing acids in harsh industrial environments. The 2-3% molybdenum addition makes it particularly well-suited for pump and valve components exposed to seawater, chlorides, and aggressive chemical media. Its robust mechanical properties combined with solution annealing heat treatment ensure dimensional accuracy and microstructural integrity for the most demanding pressure-containing casting applications.



CHEMICAL COMPOSITION

ELEMENT	SYMBOL	COMPOSITION
Carbon	C %	0.080 max.
Silicon	Si %	1.500 max.
Manganese	Mn %	1.500 max.
Phosphorus	P %	0.040 max.
Sulphur	S %	0.040 max.
Chromium	Cr %	18.000 - 21.000
Nickel	Ni %	9.000 - 12.000
Molybdenum	Mo %	2.000 - 3.000
Iron	Fe %	Balance



MECHANICAL PROPERTIES

PERFORMANCE SPECIFICATIONS

Tensile Strength **485**
Minimum Value MPa

Yield Strength **205**
Minimum Value MPa

Elongation **30**
Minimum Value %



HEAT TREATMENT
Solution Annealing



INDUSTRY APPLICATIONS

Chemical reactors



Acid transfer systems



Offshore piping



Marine valves



Corrosive slurry pumps



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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