



High Alloy Steel ASTM A351 Gr. CF10MC

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 controlled-carbon molybdenum-bearing austenitic casting grade bridges the performance gap between standard and low-carbon grades, offering a balanced combination of strength, corrosion resistance, and weldability. The defined carbon range of 0.1 Max. combined with 1.75-2.25% molybdenum provides excellent resistance to pitting corrosion and general chemical attack in chloride-containing and moderately aggressive environments. Its solution-annealed microstructure ensures consistent mechanical properties and dimensional precision, making it a reliable choice for valves, pumps, and pressure-containing components across general engineering and chemical processing industries.



CHEMICAL COMPOSITION

ELEMENT	SYMBOL	COMPOSITION
Carbon	C %	0.100 max.
Silicon	Si %	1.500 max.
Manganese	Mn %	1.500 max.
Phosphorus	P %	0.040 max.
Sulphur	S %	0.040 max.
Chromium	Cr %	15.000 - 18.000
Nickel	Ni %	13.000 - 16.000
Molybdenum	Mo %	1.750 - 2.250
Niobium	Nb %	1.2%
Iron	Fe %	Balance



MECHANICAL PROPERTIES

PERFORMANCE SPECIFICATIONS

Tensile Strength **485**
Minimum Value MPa**Yield Strength** **205**
Minimum Value MPa**Elongation** **20**
Minimum Value % **HEAT TREATMENT**
Solution Annealing

INDUSTRY APPLICATIONS

Sulfuric acid plants**Fertilizer industry****Acid transfer pumps****Chemical reactors****Corrosive processing lines**

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.

Tamboli Castings Limited

Bhavnagar, Gujarat, India

Phone: +91 278 2541000**Email:** info@tambolicastingslimited.com