High Alloy Steel ASTM A351 Gr. CF3

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

MATERIAL DATASHEET

GROUP	SUB GROUP	INDUSTRY
Ferrous Stainless Steel Alloys	ASTM A351 / 351M Castings	Investment Casting

This low-carbon austenitic stainless steel casting grade offers excellent corrosion resistance with a maximum carbon content of just 0.03%, virtually eliminating the risk of sensitization and intergranular corrosion. Its chromium-nickel composition provides reliable performance in moderately corrosive environments including food processing, dairy, and general chemical industries. Solution annealing heat treatment ensures a stable austenitic microstructure, making it a dependable and cost-effective choice for pressure-containing casting applications.

CHEMICAL COMPOSITION

ELEMENT	SYMBOL	COMPOSITION
Carbon	C %	0.030 max.
Silicon	Si %	2.000 max.
Manganese	Mn %	1.500 max.
Phosphorus	P %	0.040 max.
Sulphur	S %	0.040 max.
Chromium	Cr %	17.000 - 21.000
Nickel	Ni %	8.000 - 12.000
Molybdenum	Mo %	0.500 max.
Iron	Fe %	Balance

MECHANICAL PROPERTIES

PERFORMANCE SPECIFICATIONS

Tensile Strength	Minimum Value	485 MPa
Yield Strength	Minimum Value	205 MPa
Elongation	Minimum Value	35 %

✓ HEAT TREATMENT
Solution Annealing

INDUSTRY APPLICATIONS

- Dairy plant pumps 
- Food Processing 
- Water treatment systems 
- Dairy Beverages 
- Pharmaceutical piping 
- Beverage industry equipment 

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