TorqBolt Inc.

MATERIAL GRADE DATA SHEET

AISI 317 STAINLESS STEEL

BOLTING MATERIAL FOR HIGH TEMPERATURE SERVICE

317 stainless steel, also known as UNS S31700 and Grade 317, is primarily comprised of 18% to 20% chromium and 11% to 15% nickel along with trace amounts of carbon, phosphorus, sulfur, silicon and balanced with iron. UNS S31700/S31703 commonly known as Stainless Steel 317/317L Dual Certified is the low carbon content version of Stainless Steel 317 for welded structures. Features and advantages of both Stainless Steel 317 and 317/317L Dual Certified include increased strength, corrosion resistance (including crevice and pitting), higher tensile strength and a higher stress-to-rupture ratio. Both grades resist pitting in acetic and phosphoric acids. With respect to cold working of Stainless Steel 317 and 317/317L Dual Certified, stamping, shearing, drawing and heading can all be successfully performed. In addition, annealing can be performed on both grades between 1850 F and 2050 F, followed by rapid cooling. Furthermore, all common hot working methods are possible with Stainless Steel 317 and 317/317L Dual Certified, between 2100 F and 2300 F

Chemical Properties

C	Mn	P	S	Si	Cr	Mo	Ni
0.08 Max	2.00 Max	0.045 Max	0.030 Max	1.00 Max	18.0-20.0	3.0-4.0	11.0-15.0

Mechanical Properties

Yeild strength	Tensile strength	Elongation	Reduction
Min 0.2% Mpa	Min Mpa	Min %	min %
205	515	30	50

Physical Properties

Density	Elastic Modulus	Mean Coefficient of Thermal			Thermal Conductivity		Specific Heat	Melting Point
(Kg/m^3)	(Gpa)	Expansion(µm/m/°C)			(W/m.K)		0-100°C	°F
8	193	8.9	10.3	11.1	9.4	12.4	1370	444

Heat Treatment

Solution Annealed @ 1040°C & Liquid Quenched @ 260°C

Equivalent Designation

UNS S31700
Din X5CrNiMo1713
Werkstoff.No. 1.4449
SS 317
SUS 317

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