MW Components

Stainless Steel 316B Fact Sheet

Do you need custom fasteners created with Stainless Steel 316B? Since our inception, Elgin Fastener Group has met every challenge of providing Quality, Timely, Cost-effective solutions for specialty fastener applications. Every product is built to your specifications, using your prints if necessary.

Below are the technical specifications of the Stainless Steel 316B Bar Stock we have available to meet your needs.

AISI Type 316 Stainless Steel, annealed and cold drawn bar

Subcategory: Metal; Stainless Steel; T 300 Series Stainless Steel

Key Words: UNS S31600, AISI 316, DIN 1.4401, DIN 1.4408, DIN X5CrNiMo17122, TGL 39672 X5CrNiMo1911, TGL 7143X5CrNiMo1811, ISO 2604-1 F62, ISO 2604-2 TS60, ISO 2604-2 TS61, ISO 2604-4 P60, ISO 2604-4 P61, ISO 4954 X5CrNiMo17122E, ISO 683/13 20, ISO 683/13 20a, ISO 6931 X5CrNiMo17122

Component	Wt. %
C	0.08
Cr	17
Fe	65
Mn	2
Mo	2.5
Ni	12
P	0.045
S	0.03
Si	1

Material Notes:
Molybdenum content increases resistance to marine environments. High creep strength at elevated temperatures and good heat resistance. Biocompatible. Fabrication characteristics similar to Types 302 and 304.

Applications: food and pharmaceutical processing equipment, marine exterior trim, surgical implants, and industrial equipment that handles the corrosive process chemicals used to produce inks, rayons, photographic chemicals, paper, textiles, bleaches, and rubber.

Corrosion Resistance: better corrosion resistance than 302 and 304; resists sodium and calcium brines; hypochlorite solutions, phosphoric acid; and the sulfite liquors and sulfurous acids used in the paper pulp industry.

MicroGroups inventory of small diameter 304 and 316 and other stainless steel, nickel based alloys, and titanium alloys exceeds 5 million feet. Redraw of material to specific sizes and shapes, as well as secondary operations to convert tubing into components and assemblies. Visit http://www.microgroup.com or Phone 1-800-ALL-TUBE (1-800 255-8823) or 1-508-533-4925.

Physical Properties	Metric	English	Comments
Density	8 g/cc	0.289 lb/in³	
Mechanical Properties			
Hardness, Brinell	190	190	
Hardness, Knoop	212	212	Converted from Brinell hardness.
Hardness, Rockwell B	91	91	
Hardness, Vickers	199	199	Converted from Brinell hardness.
Tensile Strength, Ultimate	620 MPa	89900 psi	
Tensile Strength, Yield	415 MPa	60200 psi	
Elongation at Break	45 %	45 %	in 50 mm
Modulus of Elasticity	193 GPa	28000 ksi	
Charpy Impact	105 J	77.4 ft-lb	V-notch
Izod Impact	129 J	95.1 ft-lb	
Electrical Properties			
Electrical Resistivity	7.4e-005 ohm-cm	7.4e-005 ohm-cm	at 20ºC
Thermal Properties			
CTE, linear 20°C	16 µm/m-°C	8.89 µin/in-°F	0 - 100ºC
CTE, linear 250°C	16.2 µm/m-°C	9 µin/in-°F	at 0-315°C (32-600°F)
CTE, linear 500°C	17.5 µm/m-°C	9.72 µin/in-°F	0 - 540ºC
Heat Capacity	0.5 J/g-°C	0.12 BTU/lb-°F	from 0-100°C (32-212°F)
Thermal Conductivity	16.3 W/m-K	113 BTU-in/hr-ft²-°F	100ºC
Melting Point	1370 - 1400 °C	2500 - 2550 °F	
Solidus	1370 °C	2500 °F	
Liquidus	1400 °C	2550 °F	
Maximum Service Temperature, Air	870 °C	1600 °F	Intermittent Service
Maximum Service Temperature, Air	925 °C	1700 °F	Continuous Service

References are available for this material.