303 Stainless Steel, annealed bar

Categories: Metal; Ferrous Metal; Heat Resisting; Stainless Steel; T 300 Series Stainless Steel

Key Words: T303, T 303, 303SS, 303 SS, AFNOR Z 10 CNF 18.09 (Fr), UNI X 10 CrNiS 18 09, SUS 303, SS14 2346 (Sweden), B.S. 303 S 21, UNS S30300, AMS 5640 (1), ASME SA194, ASME SA320, ASTM A194, ASTM A314, ASTM A320, ASTM A320, ASTM A473, ASTM A581, ASTM A582, MIL SPEC MIL-S-862, SAE J405 (30303), DIN 1.4305, X12CrNiS188, EN 58M, austenitic, ISO 683/13 17, 18-8

Vendors: No vendors are listed for this material. Please click here if you are a supplier and would like information on how to add your listing to this material.

Physical Properties	Metric	English	Comments
Density	8.00 g/cc	0.289 lb/in³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	160	160	
Hardness, Knoop	180	180	Converted from Brinell
Hardness, Rockwell B	83	83	Converted from Brinell
Hardness, Vickers	167	167	Converted from Brinell
Tensile Strength, Ultimate	620 MPa	89900 psi	
Tensile Strength, Yield	240 MPa @Strain 0.2 %	34800 psi @Strain 0.2 %	
Elongation at Break	50 %	50 %	in 50 mm
Tensile Modulus	193 GPa	28000 ksi	
Poissons Ratio	0.25	0.25	Calculated
Fatigue Strength	240 MPa	34800 psi	annealed
	330 MPa	47900 psi	25% hardened
Shear Modulus	77.2 GPa	11200 ksi	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000720 ohm-cm	0.0000720 ohm-cm	
Magnetic Permeability	1.008	1.008	at RT

Thermal Properties	Metric	English	Comments
CTE, linear	17.2 µm/m-°C @Temperature 0.000 - 100 °C	9.56 µin/in-°F @Temperature 32.0 - 212 °F	
	17.8 µm/m-°C @Temperature 0.000 - 315 °C	9.89 µin/in-°F @Temperature 32.0 - 599 °F	
	18.4 µm/m-°C @Temperature 0.000 - 540 °C	10.2 µin/in-°F @Temperature 32.0 - 1000 °F	
	18.7 µm/m-°C @Temperature 0.000 - 650 °C	10.4 µin/in-°F @Temperature 32.0 - 1200 °F	
Specific Heat Capacity	0.500 J/g-°C @Temperature 0.000 - 100 °C	0.120 BTU/lb-°F @Temperature 32.0 - 212 °F	
Thermal Conductivity	16.2 W/m-K @Temperature 100 °C	112 BTU-in/hr-ft²-°F @Temperature 212 °F	
	21.5 W/m-K @Temperature 500 °C	149 BTU-in/hr-ft²-°F @Temperature 932 °F	
Melting Point	1400 - 1420 °C	2550 - 2590 °F	
Solidus	1400 °C	2550 °F	
Liquidus	1420 °C	2590 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.15 %	<= 0.15 %	
Chromium, Cr	18 %	18 %	
Iron, Fe	69 %	69 %	
Manganese, Mn	<= 2.0 %	<= 2.0 %	
Molybdenum, Mo	<= 0.60 %	<= 0.60 %	
Nickel, Ni	9.0 %	9.0 %	
Phosphorus, P	<= 0.20 %	<= 0.20 %	
Silicon, Si	<= 1.0 %	<= 1.0 %	
Sulfur, S	>= 0.15 %	>= 0.15 %	

References for this datasheet.

Some of the values displayed above may have been converted from their original units and/or rounded in order to display the information in a consistent format. Users requiring more precise data for scientific or engineering calculations can click on the property value to see the original value as well as raw conversions to equivalent units. We advise that you only use the original value or one of its raw conversions in your calculations to minimize rounding error. We also ask that you refer to MatWeb's terms of use regarding this information. Click here to view all the property values for this datasheet as they were originally entered into MatWeb.