

AISI Type 430 Stainless Steel annealed at 815°C, cold worked to 89 HRB, tested at 870°C (1600°F)

Subcategory: Ferrous Metal; Metal; Stainless Steel; T 400 Series Stainless Steel

Close Analogs: Composition Notes: Iron content calculated as remainder.

Key Words: UNS S43000, AMS 5503, AMS 5627, ASME SA182, ASME SA240, ASME SA268, ASME SA479, ASTM A176, ASTM A182, ASTM A240, ASTM A268, ASTM A276, ASTM A314, ASTM A473, ASTM A479, ASTM A493, ASTM A511, ASTM A554, ASTM A580, ASTM A651, B.S. 430 S 15, ferritic, DIN 1.4016, AFNOR Z 8 C 17 (Fr), UNI X 8 Cr 17, JIS SUS 430, SS14 2320 (Sweden), FED QQ-S-763, FED QQ-S-766, FED STD-66, MIL SPEC MIL-S-862, SAE J405 (51430), ISO 683/13 8

Component	Wt. %		
С	Max 0.12		
Cr	14 - 18		
Fe	79 - 87		
Mn	Max 1		
Р	Max 0.04		
S	Max 0.03		
Si	Max 1		

Material Notes:

One of the most widely used "non-hardenable" stainless steels; magnetic in all conditions, good physical and mechanical characteristics, about three-quarters the ductility of low carbon strip and inferior to chrome-nickel grades; cost less than chromium-nickel stainless steels.

Applications: cabinet hardware, decorative appliance and automotive molding and trim, range hoods, restaurant equipment, drawn and formed parts and stampings.

Corrosion Resistance: Excellent resistance to citric and nitric acid, sulfur gases; slightly less corrosion and heat resistant than Types 301, 302, and 304.

Weldability: Poorer than Type 409; use common fusion and resistance techniques, but welds not suitable for rigorous service. Use AWS E/ER 308L or 430 weld filler.

Processing: Annealed 430 is susceptible to stretcher strains and roping. Skin passing after annealing reduces the likelihood of stretcher strains, but can also reduce the ductility somewhat.

Physical Properties Metric English Comments

Density7.8 q/cc0.282 lb/in3Mechanical PropertiesTensile Strength, Ultimate34 MPa4930 psiTensile Strength, Vield28 MPa4060 psi28 MPa4060 psiat 0.2% offsetElongation at Break95.5 %95.5 %Modulus of Elasticity200 GPa29000 ksiElectrical PropertiesElectrical Resistivity6e-005 ohm-cm6e-005 ohm-cmMagnetic Permeability600 - 1100600 - 1100Annealed condition at RTThermal PropertiesCTE, linear 500°C12.4 µm/m-°C6.89 µin/in-°FSpecific Heat Capacity0.46 J/g-°C0.11 BTU/lb-°FThermal Conductivity26.1 W/m-K181 BTU-in/hr-ff2-°FAt 0.0°C, 26.3 at 50°C1425 · 1510 °CMething Point1425 · 1510 °C2600 · 2750 °FSolidus1425 °C2600 · 750 °FSolidus1510 °C2750 °FMaximum Service Temperature, Air815 °C1500 °FMaximum Service Temperature, Air870 °C1600 °FNaximum Service Temperature, Air870 °C1600 °F				
Tensile Strength, Ultimate 34 MPa 4930 psi Tensile Strength, Yield 28 MPa 4060 psi at 0.2% offset Elongation at Break 95.5 % 95.5 % in 50 mm Modulus of Elasticity 200 GPa 29000 ksi 29000 ksi Electrical Properties Electrical Resistivity 6e-005 ohm-cm 6e-005 ohm-cm at 20°C Magnetic Permeability 600 - 1100 600 - 1100 annealed condition at RT Thermal Properties CTE, linear 500°C 12.4 µm/m-°C 6.89 µin/in-°F at 0.815°C Specific Heat Capacity 0.46 J/g-°C 0.11 BTU/lb-°F from 0.100°C (32.212°F) Thermal Conductivity 26.1 W/m-K 181 BTU-in/hr-ft-°F at 100°C, 26.3 at 500°C Melting Point 1425 - 1510 °C 2600 - 2750 °F 2600 - 2750 °F Solidus 1425 °C 2600 °F 2600 °F 2000 °F Liquidus 1510 °C 2600 °F Continuous Service	Density	<u>7.8 g/cc</u>	0.282 lb/in ³	
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	Liquidus	<u>1510 °C</u>	2750 °F	
Maximum Service Temperature, Air870 °C1600 °FIntermittent Service	Maximum Service Temperature, Air	<u>815 °C</u>	1500 °F	Continuous Service
	Maximum Service Temperature, Air	<u>870 °C</u>	1600 °F	Intermittent Service

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 consistant 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.