Schmolz + Bickenbach UGIMA 303 UXÂ® Stainless Steel Bar

Category : Metal , Ferrous Metal , Austenitic , Stainless Steel , T 300 Series Stainless Steel

Material Notes:

Description: 303 UGIMA UXÂ® is an improved machining grade produced only by Ugitech, providing the ultimate level of machinability available in an austenitic stainless steel. 303 UGIMA UXÂ® features the added benefit of increased cold formability when compared with that of standard type 303 stainless steels. The combination of machinability and cold formability affored by 303 UGIMA UXÂ® is great, and provides the optimum solution for even the most difficult fabrication challenges. Other advantages offered by 303 UGIMA UXÂ® when compared with standard type 303 stainless steels include increased corrosion resistance in certain media, and ability to withstand moderate amounts of cold deformation with no significant increase in magnetic permeability. 303 UGIMA UXÂ® builds upon the proprietary UGIMAÂ® technology with the addition of copper, allowing for good machinablity across a wide range of operations and cutting conditions. It allows for machinability at both low and high speeds, in cam-driven and CNC machines, and with high-speed Steel or carbide tooling. Machine shops using 303 UGIMA UXÂ® have experienced consistent success regardless of machine, operation, tooling, or cutting conditions. From lot to lot, 303 Ugima UXÂ® is engineered to give the same high performance every time without surprises.Information provided by Schmolz + Bickenbach

Order this product through the following link:
http://www.lookpolymers.com/polymer_Schmolz-Bickenbach-UGIMA-303-UX-Stainless-Steel-Bar.php

Physical Properties	Metric	English	Comments
Density	7.89 g/cc	0.285 lb/inÂ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	170 - 190 @Thickness >=25.4 mm	170 - 190 @Thickness >=1.00 in	Turned Bars
	220 - 240 @Thickness <=25.4 mm	220 - 240 @Thickness <=1.00 in	Cold Drawn Bars
Tensile Strength	586 - 689 MPa @Thickness >=25.4 mm	85000 - 100000 psi @Thickness >=1.00 in	Turned Bars
	689 - 793 MPa @Thickness <=25.4 mm	100000 - 115000 psi @Thickness <=1.00 in	Cold Drawn Bars
	517 - 689 MPa @Treatment Temp. 1010 - 1090 Â°C	75000 - 100000 psi @Treatment Temp. 1850 - 2000 Â°F	Heat Treatment
Tensile Strength, Yield	241 - 379 MPa @Strain 0.200 %, Thickness >=25.4 mm	35000 - 55000 psi @Strain 0.200 %, Thickness >=1.00 in	Turned Bars
	517 - 655 MPa	75000 - 95000 psi	

Mechanical Properties	Metric	English	Comments
	@Strain 0.200 %, Thickness <=25.4 mm	@Strain 0.200 %, Thickness <= 1.00 in	Cold Drawn Bars
	>= 172 MPa @Treatment Temp. 1010 - 1090 Â°C, Strain 0.200 %	>= 25000 psi @Treatment Temp. 1850 - 2000 Â°F, Strain 0.200 %	Heat Treatment
Elongation at Yield	>= 30 % @Thickness <=25.4 mm	>= 30 % @Thickness <=1.00 in	Cold Drawn Bars
	>= 50 % @Thickness >=25.4 mm	>= 50 % @Thickness >=1.00 in	Turned Bars
	>= 35 % @Treatment Temp. 1010 - 1090 Â°C	>= 35 % @Treatment Temp. 1850 - 2000 Â°F	Heat Treatment
Reduction of Area	>= 45 %	>= 45 %	Cold Drawn Bars
	>= 60 %	>= 60 %	Turned Bars
Modulus of Elasticity	197 GPa	28500 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	16.7 Âµm/m-Â°C @Temperature 20.0 - 200 Â°C	9.30 Âµin/in-Â°F @Temperature 68.0 - 392 Â°F	
Thermal Conductivity	15.3 W/m-K @Temperature 20.0 Â°C	106 BTU-in/hr-ftÂ²-Â°F @Temperature 68.0 Â°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.080 %	<= 0.080 %	
Chromium, Cr	17 - 19 %	17 - 19 %	
Copper, Cu	1.4 - 1.8 %	1.4 - 1.8 %	
Iron, Fe	>= 67.075 %	>= 67.075 %	
Manganese, Mn	<= 1.0 %	<= 1.0 %	
Nickel, Ni	8.0 - 10 %	8.0 - 10 %	
Phosphorous, P	<= 0.045 %	<= 0.045 %	
Silicon, Si	<= 1.0 %	<= 1.0 %	

Component Elements Properties	Metric	English	Comments
Sulfur, S	>= 0.15 %	>= 0.15 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000730 ohm-cm	0.0000730 ohm-cm	

Processing Properties	Metric	English	Comments
Hot-Working Temperature	954 - 1200 Â°C	1750 - 2200 Â°F	Forging range
	1180 - 1200 Â°C	2150 - 2200 Â°F	Heat in range

Descriptive Properties	Value	Comments
Corrosion Resistance	Acetic Acid	2/4
	Humidity	3/4
	NaCl (Saline Mist)	2/4
	Nitric Acid	3/4
	Phosphoric Acid	2/4
	Sodium Carbonate	2/4
	Sulfuric Acid	2/4

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