

Schmolz + Bickenbach UGIMA® 303 HD Stainless Steel Bar

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

Material Notes:

Description: 303 UGIMA HD is a low sulfur version of Ugitech's improved machining 303 grade. It is designed to provide better metallurgical performance with respect to weldability, corrosion resistance, and formability, while maintaining machinability. 303 UGIMA HD is part of the UGIMA® family of enhanced machinability stainless steel grades. The UGIMA® manufacturing process, developed exclusively by Ugitech SA, results in a product that increases productivity and tool life, and improves surface finishes on all types of machined parts. 3 Once an optimum set-up has been established, machinists can take advantage of increased machine efficiency rates and have the ability to run lights out production. The UGIMA® and Ugima XLTM grades are engineered to give the same high performance every time without surprises Applications: Fasteners, Shafts, Valve Bodies, Valves, Valve Trim, Fittings, and Machined parts Information provided by Schmolz + Bickenbach

Order this product through the following link:

http://www.lookpolymers.com/polymer_Schmolz-Bickenbach-UGIMA-303-HD-Stainless-Steel-Bar.php

Physical Properties	Metric	English	Comments
Density	7.89 g/cc	0.285 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	220 - 240	220 - 240	Escomatic Coils
	170 - 190	170 - 190	Turned Bars
	@Thickness >=25.4 mm	@Thickness >=1.00 in	
	220 - 240	220 - 240	Cold Drawn Bars
	@Thickness <=25.4 mm	@Thickness <=1.00 in	
Tensile Strength	655 - 827 MPa	95000 - 120000 psi	Escomatic Coils
	586 - 689 MPa	85000 - 100000 psi	Turned Bars
	@Thickness >=25.4 mm	@Thickness >=1.00 in	
	655 - 827 MPa	95000 - 120000 psi	Cold Drawn Bars
	@Thickness <=25.4 mm	@Thickness <=1.00 in	
Tensile Strength, Yield	483 - 689 MPa	70000 - 100000 psi	Escomatic Coils
	@Strain 0.200 %	@Strain 0.200 %	
	241 - 379 MPa	35000 - 55000 psi	Turned Bars
	@Strain 0.200 %, Thickness >=25.4 mm	@Strain 0.200 %, Thickness >=1.00 in	
	483 - 689 MPa	70000 - 100000 psi	

Mechanical Properties	Metric @Strain 0.200 %, Thickness <=25.4 mm	English @Strain 0.200 %, Thickness <=1.00 in	Cold Drawn Bars Comments
Elongation at Yield	>= 30 %	>= 30 %	Escomatic Coils
	>= 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
Reduction of Area	>= 45 %	>= 45 %	Escomatic Coils
	>= 45 % @Thickness <=25.4 mm	>= 45 % @Thickness <=1.00 in	Cold Drawn Bars
	>= 60 % @Thickness >=25.4 mm	>= 60 % @Thickness >=1.00 in	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	<= 0.10 %	<= 0.10 %	
Chromium, Cr	17 - 19 %	17 - 19 %	
Copper, Cu	<= 1.0 %	<= 1.0 %	
Iron, Fe	65.895 - 69.995 %	65.895 - 69.995 %	
Manganese, Mn	<= 2.0 %	<= 2.0 %	
Molybdenum, Mo	<= 0.60 %	<= 0.60 %	
Nickel, Ni	8.0 - 10 %	8.0 - 10 %	
Nitrogen, N	<= 0.11 %	<= 0.11 %	
Phosphorous, P	<= 0.045 %	<= 0.045 %	

Silicon, Si Component Elements Properties	$\leq 0.10\%$ Metric	$\leq 0.10\%$ English	Comments
Sulfur, S	0.15 - 0.25 %	0.15 - 0.25 %	

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

Processing Properties	Metric	English	Comments
Annealing Temperature	1010 - 1090 Â°C	1850 - 2000 Â°F	Followed by rapid cooling with forced air or water quenching
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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