

## Schmolz + Bickenbach UGIMA® 304 Cu Stainless Steel Bar

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

### Material Notes:

Description: 304Cu UGIMA® is an enhanced machining grade produced only by Ugitech, providing the ultimate level of machinability available in a non-resulfurized austenitic stainless steel. 304Cu UGIMA® also features the added benefit of increased cold formability when compared with that of standard type 304 stainless steels. The increased copper content in 304Cu UGIMA® provides corrosion resistance superior to 304L and comparable to 316L. The unique combination of machinability, cold formability, and corrosion resistance afforded by 304Cu UGIMA® is unique in the industry, and provides the optimum solution for even the most difficult fabrication challenges. 304Cu UGIMA® builds upon the proprietary UGIMA manufacturing process with the addition of copper, allowing for good machinability across a wide range of operations and cutting conditions. It allows for superior machinability at both low and high speeds, cam-driven and CNC machines, and with high-speed steel or carbide tooling. Machine shops using 304Cu UGIMA® have experienced consistent success regardless of machine, operation, tooling, or cutting conditions. From lot to lot 304Cu UGIMA® 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-304-Cu-Stainless-Steel-Bar.php](http://www.lookpolymers.com/polymer_Schmolz-Bickenbach-UGIMA-304-Cu-Stainless-Steel-Bar.php)

Physical Properties	Metric	English	Comments
Density	7.81 g/cc	0.282 lb/in <sup>3</sup>	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	145 - 185	145 - 185	Turned Bars
	@Thickness >=25.4 mm	@Thickness >=1.00 in	
	180 - 210	180 - 210	Cold Drawn Bars
	@Thickness <=25.4 mm	@Thickness <=1.00 in	
Tensile Strength	483 - 621 MPa	70000 - 90000 psi	Turned Bars
	@Thickness >=25.4 mm	@Thickness >=1.00 in	
	586 - 724 MPa	85000 - 105000 psi	Cold Drawn Bars
	@Thickness <=25.4 mm	@Thickness <=1.00 in	
Tensile Strength, Yield	207 - 345 MPa	30000 - 50000 psi	Turned Bars
	@Strain 0.200 %, Thickness >=25.4 mm	@Strain 0.200 %, Thickness >=1.00 in	
	483 - 621 MPa	70000 - 90000 psi	Cold Drawn Bars
	@Strain 0.200 %, Thickness <=25.4 mm	@Strain 0.200 %, Thickness <=1.00 in	
Elongation at Yield	28 - 40 %	28 - 40 %	Cold Drawn Bars

Mechanical Properties	@Thickness <=25.4 mm Metric	@Thickness <=1.00 in English	Comments
	48 - 62 %	48 - 62 %	Turned Bars
	@Thickness >=25.4 mm	@Thickness >=1.00 in	
Reduction of Area	68 - 75 %	68 - 75 %	Cold Drawn Bars
	@Thickness <=25.4 mm	@Thickness <=1.00 in	
	70 - 82 %	70 - 82 %	Turned Bars
	@Thickness >=25.4 mm	@Thickness >=1.00 in	
Modulus of Elasticity	200 GPa	29000 ksi	Tension
	@Temperature 20.0 Â°C	@Temperature 68.0 Â°F	
	200 GPa	29000 ksi	Tension
	@Temperature 500 Â°C	@Temperature 932 Â°F	

Thermal Properties	Metric	English	Comments
CTE, linear	1.80 Âµm/m-Â°C	1.00 Âµin/in-Â°F	
	@Temperature 20.0 - 500 Â°C	@Temperature 68.0 - 932 Â°F	
	16.5 Âµm/m-Â°C	9.17 Âµin/in-Â°F	
	@Temperature 20.0 - 200 Â°C	@Temperature 68.0 - 392 Â°F	
Thermal Conductivity	16.7 W/m-K	116 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 20.0 Â°C	@Temperature 68.0 Â°F	
	18.0 W/m-K	125 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 500 Â°C	@Temperature 932 Â°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.10 %	<= 0.10 %	
Chromium, Cr	17 - 19 %	17 - 19 %	
Copper, Cu	3.0 - 4.0 %	3.0 - 4.0 %	
Iron, Fe	>= 63.825 %	>= 63.825 %	
Manganese, Mn	<= 2.0 %	<= 2.0 %	
Nickel, Ni	8.0 - 10 %	8.0 - 10 %	
Phosphorous, P			

Component Elements Properties	$\leq 0.045\%$ Metric	$\leq 0.045\%$ English	Comments
Silicon, Si	$\leq 1.0\%$	$\leq 1.0\%$	
Sulfur, S	$\leq 0.030\%$	$\leq 0.030\%$	

Processing Properties	Metric	English	Comments
Hot-Working Temperature	$\geq 954\text{ }^{\circ}\text{C}$	$\geq 1750\text{ }^{\circ}\text{F}$	Forge
	999 - 1200 $^{\circ}\text{C}$	1830 - 2190 $^{\circ}\text{F}$	Forging range
	1150 - 1220 $^{\circ}\text{C}$	2100 - 2230 $^{\circ}\text{F}$	Heat in range
	$\leq 1290\text{ }^{\circ}\text{C}$	$\leq 2350\text{ }^{\circ}\text{F}$	Heat of core during fast forging

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

## Contact Songhan Plastic Technology Co.,Ltd.

Website : [www.lookpolymers.com](http://www.lookpolymers.com)

Email : [sales@lookpolymers.com](mailto:sales@lookpolymers.com)

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China