

## Carpenter Micro-Melt® M-4 Alloy (AISI M4)

Category : Metal , Ferrous Metal , Carbon Steel , High Carbon Steel , Tool Steel

### Material Notes:

Micro-Melt® T-15 alloy is a high-carbon tungsten-cobalt-vanadium high speed powder metal. This grade possesses very high wear resistance coupled with high strength. The advantages of Micro-Melt premium powder high speed steels include ease of grinding, response to heat treatment, more uniform structure, greater wear resistance and improved toughness. In addition, Carpenter's unique hot rolling and rotary forging capabilities impart minimal distortion characteristics to these alloys. Micro-Melt M-4 alloy changes size only slightly after hardening. A 1" cube will expand about 0.0005" in hardening at 2225°F and will expand a like amount when tempered at 1050°F. Applications: Lathe tools, Planer tools, Drills, Taps, Reamers, Broaches, Milling cutters, Form cutters, Thread chasers, Hobs, Counterbores, Inserts-heading dies. Information provided by Carpenter Technology Corporation. Micro-Melt® is a registered trademark of Carpenter Technology Corporation.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Carpenter-Micro-Melt-M-4-Alloy-AISI-M4.php](http://www.lookpolymers.com/polymer_Carpenter-Micro-Melt-M-4-Alloy-AISI-M4.php)

Physical Properties	Metric	English	Comments
Specific Gravity	7.97 g/cc	7.97 g/cc	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	64 - 65	64 - 65	As hardened
	66	66	Tempered 2 hours at 1000°F
Modulus of Elasticity	213.7 GPa	31000 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	9.56 µm/m-°C	5.31 µin/in-°F	
	@Temperature 37.8 - 260 °C	@Temperature 100 - 500 °F	
	11.95 µm/m-°C	6.639 µin/in-°F	
	@Temperature 37.8 - 538 °C	@Temperature 100 - 1000 °F	
	12.6 µm/m-°C	7.00 µin/in-°F	
	@Temperature 37.8 - 816 °C	@Temperature 100 - 1500 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	1.35 %	1.35 %	
Chromium, Cr	4.5 %	4.5 %	

Component Elements Properties	Metric	English	Comments
Manganese, Mn	0.30 %	0.30 %	
Molybdenum, Mo	4.5 %	4.5 %	
Silicon, Si	0.30 %	0.30 %	
Sulfur, S	0.060 %	0.060 %	
Tungsten, W	5.5 %	5.5 %	
Vanadium, V	4.0 %	4.0 %	

## Contact Songhan Plastic Technology Co.,Ltd.

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