

## Carpenter Micro-Melt® M-42 Alloy (AISI M42)

Category : Metal , Ferrous Metal , Tool Steel

**Material Notes:**

Micro-Melt® M-42 alloy is a powder metal super-high-speed steel possessing a hardness capability of Rockwell C 68/70. This alloy has been used for cutting tools in the toughest machining operations. The advantages of Micro-Melt premium 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. Applications: Twist drills, Turning tools, End mills, Milling cutters, Broaches, Router Bits, Form tools, Keyway cutters, Dovetail tools, Flycutters, Thread rolling dies, Tool bits. 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-42-Alloy-AISI-M42.php](http://www.lookpolymers.com/polymer_Carpenter-Micro-Melt-M-42-Alloy-AISI-M42.php)

Physical Properties	Metric	English	Comments
Specific Gravity	7.98 g/cc	7.98 g/cc	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	64 - 66	64 - 66	As quenched
	65 - 67	65 - 67	Tempered at 1100°F
Modulus of Elasticity	206.8 GPa	29990 ksi	
Izod Impact Unnotched	14.9 - 31.2 J	11.0 - 23.0 ft-lb	

Component Elements Properties	Metric	English	Comments
Carbon, C	1.1 %	1.1 %	
Chromium, Cr	3.75 %	3.75 %	
Cobalt, Co	8.25 %	8.25 %	
Iron, Fe	74.69 %	74.69 %	As Balance
Molybdenum, Mo	9.5 %	9.5 %	
Sulfur, S	0.060 %	0.060 %	
Tungsten, W	1.5 %	1.5 %	
Vanadium, V	1.15 %	1.15 %	

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