

Carpenter Micro-Melt® 9 Tough Treated Tool Steel

Category : Metal , Ferrous Metal , Tool Steel

Material Notes:

Micro-Melt® 9 tool steel is a high vanadium tool steel produced using the Carpenter Micro-Melt powder process. This grade possesses wear resistance superior to most other tool steels along with good strength and toughness characteristics. In addition, it provides higher toughness characteristics than Micro-Melt® 10 alloy with slightly lower wear resistance. Micro-Melt 9 tool steel changes size only slightly after hardening. An expansion of about 0.0005 inches/inch is typical. Applications: punches, dies for blanking, piercing dies, forming rolls and dies, cold heading, steel mill rolls, cold extrusion, slitter knives, shears, pelletizer blades, nozzles, woodworking tools, cold extrusion barrels, cold extrusion liners, plastic injection molds, compacting tools. 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-9-Tough-Treated-Tool-Steel.php

Physical Properties	Metric	English	Comments
Specific Gravity	7.45 g/cc	7.45 g/cc	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	49	49	
Tensile Strength at Break	4171 MPa	605000 psi	
Tensile Strength, Ultimate	4206 MPa	610000 psi	
Modulus of Elasticity	200 GPa	29000 ksi	
Izod Impact Unnotched	40.67 J	30.00 ft-lb	Transverse
	135.6 J	100.0 ft-lb	Longitudinal
Abrasion	16.3	16.3	loss in mm ³ , after 30 minutes; ASTM G65

Component Elements Properties	Metric	English	Comments
Carbon, C	1.7 - 1.85 %	1.7 - 1.85 %	
Chromium, Cr	4.75 - 5.75 %	4.75 - 5.75 %	
Iron, Fe	79.67 - 79.7 %	79.67 - 79.7 %	As Balance
Manganese, Mn	0.35 - 0.60 %	0.35 - 0.60 %	
Molybdenum, Mo	1.1 - 1.5 %	1.1 - 1.5 %	
Silicon, Si	0.75 - 1.1 %	0.75 - 1.1 %	

<small>Sulfur, S</small> Component Elements Properties	<small><= 0.030 %</small> Metric	<small><= 0.030 %</small> English	Comments
Vanadium, V	8.25 - 9.5 %	8.25 - 9.5 %	

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