

Carpenter Speed Star® High Speed Steel (Red-Hard) (AISI M2)

Category : Metal , Ferrous Metal , Tool Steel

Material Notes:

Speed Star high speed steel in a fine-grained "Moly"-Tungsten high-speed steel manufactured under close control. It has certain advantages over 18-4-1 high speed steels, some of which are lower cost, less weight per cubic inch, lower hardening temperature and somewhat easier machining. Applications: Lathe tools, Planer tools, Drills, Taps, Reamers, Broaches, Milling cutters, Form cutters, Thread chasers, End mills, Gear cutters, Wood knives. Information provided by Carpenter Technology Corporation. Speed Star® is a registered trademark of Carpenter Technology Corporation.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Carpenter-Speed-Star-High-Speed-Steel-Red-Hard-AISI-M2.php

Physical Properties	Metric	English	Comments
Specific Gravity	8.15 g/cc	8.15 g/cc	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	62	62	Tempered at 1150°F, Quenched at 2200°F
	65	65	As hardened, Quenched at 2200°F
Compressive Yield Strength	3250 MPa	471000 psi	when tempered at 300°F
Izod Impact Unnotched	67.0 J	49.4 ft-lb	when tempered at 300°F
Abrasion	25.8	25.8	loss in mm ³ , As-Hardened; ASTM G65
	77.7	77.7	loss in mm ³ , Tempered at 1275°F; ASTM G65

Thermal Properties	Metric	English	Comments
CTE, linear	10.0 µm/m-°C	5.56 µin/in-°F	
	@Temperature 20.0 - 100 °C	@Temperature 68.0 - 212 °F	
	12.2 µm/m-°C	6.78 µin/in-°F	
	@Temperature 20.0 - 500 °C	@Temperature 68.0 - 932 °F	
	12.6 µm/m-°C	7.00 µin/in-°F	
	@Temperature 20.0 - 850 °C	@Temperature 68.0 - 1560 °F	

Component Elements Properties	Metric	English	Comments

Carbon C Component Elements Properties	0.02 % Metric	0.02 % English	Comments
Chromium, Cr	4.25 %	4.25 %	
Iron, Fe	81.33 %	81.33 %	As Balance
Manganese, Mn	0.30 %	0.30 %	
Molybdenum, Mo	5.0 %	5.0 %	
Silicon, Si	0.25 %	0.25 %	
Tungsten, W	6.25 %	6.25 %	
Vanadium, V	1.8 %	1.8 %	

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