Latrobe CM-50â„¢ ASTM M50 High Speed Steel

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

Material Notes:

CM-50 is classified as an intermediate type high speed steel of the molybdenum chromium- vanadium variety. It is recommended for applications with moderate cutting conditions, such as woodworking tools, where toughness is of prime importance and where there is less need for red hardness.Information Provided by Timken Latrobe Steel.Timken sold Latrobe in December 2006. They are now Latrobe Specialty Steels Co.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Latrobe-CM-50-ASTM-M50-High-Speed-Steel.php

Physical Properties	Metric	English	Comments
Specific Gravity	7.84 g/cc	7.84 g/cc	
Density	7.83 g/cc	0.283 lb/inÂ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	64	64	Oil Quenched from 1149Â°C
	64.5	64.5	Oil Quenched from 1038Â°C
	65	65	Oil Quenched from 1107Â°C
Modulus of Elasticity	203 GPa	29500 ksi	
Machinability	65 - 75 %	65 - 75 %	1% Carbon Steel
Izod Impact Unnotched	36.6 J	27.0 ft-lb	Oil Quenched at 1121Â°C; 482Â°C Temper Temperature
	67.8 J	50.0 ft-lb	Oil Quenched at 1121Â°C; 594Â°C Temper Temperature
	74.6 J	55.0 ft-lb	Oil Quenched at 1121Â°C; 622Â°C Temper Temperature

Thermal Properties	Metric	English	Comments
CTE, linear	11.3 Âµm/m-Â°C @Temperature 21.0 - 204 Â°C	6.28 Âµin/in-Â°F @Temperature 69.8 - 399 Â°F	
	12.98 Âµm/m-Â°C @Temperature 21.0 - 538 Â°C	7.211 Âµin/in-Â°F @Temperature 69.8 - 1000 Â°F	

Component Elements Properties	Metric	English	Comments

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Carbon, C	0.84 %	0.84 %	
Chromium, Cr	4.1 %	4.1 %	
Iron, Fe	89.01 %	89.01 %	
Manganese, Mn	0.30 %	0.30 %	
Molybdenum, Mo	4.25 %	4.25 %	
Silicon, Si	0.50 %	0.50 %	
Vanadium, V	1.0 %	1.0 %	

Chemical Properties	Metric	English	Comments
Critical Temperature	730 Â°C	1350 Â°F	Ar1
	751 Â°C	1380 Â°F	Ar3
	810 Â°C	1490 Â°F	Ac1
	846 Â°C	1550 Â°F	Ac3

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