

Latrobe Tatmo-VN™ ASTM M7 High Speed Steel

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

Material Notes:

TATMO-VN is an M7 type high speed steel modified by alloy balancing and a nitrogen addition to develop superior hardness response in heat treatment. It is an excellent grade for many cutting tool applications that require an optimum balance of red hardness, edge toughness and wear resistance. The combination of outstanding properties and high hardness response makes Tatmo-VN a logical alternative for cobalt high speed steels in many cutting tool applications. Typical applications for Tatmo-VN high speed steel include twist drills, taps, end mills, reamers and milling cutters. 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-Tatmo-VN-ASTM-M7-High-Speed-Steel.php

Physical Properties	Metric	English	Comments
Specific Gravity	7.94 g/cc	7.94 g/cc	
Density	7.94 g/cc	0.287 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	59.0	59.0	Oil Quenched at 1218°C; 622°C Temper Temperature
	63	63	Oil Quenched from 1191°C; 482°C Temper Temperature
	63	63	Oil Quenched from 1191°C; 482°C Temper Temperature
	63.5	63.5	Oil Quenched at 1218°C; 482°C Temper Temperature
	66.1	66.1	Oil Quenched from 1191°C; 538°C Temper Temperature
	66.5	66.5	Oil Quenched at 1218°C; 538°C Temper Temperature
Modulus of Elasticity	207 GPa	30000 ksi	
Machinability	45 - 50 %	45 - 50 %	1% Carbon Steel
Izod Impact Unnotched	28.5 J	21.0 ft-lb	Oil Quenched at 1218°C; 482°C Temper Temperature
	32.5 J	24.0 ft-lb	Oil Quenched at 1218°C; 594°C Temper Temperature
	36.6 J	27.0 ft-lb	Oil Quenched at 1218°C; 622°C Temper Temperature
	39.3 J	29.0 ft-lb	Oil Quenched at 1191°C; 594°C

Mechanical Properties	Metric	English	Comments
	52.9 J	39.0 ft-lb	Oil Quenched at 1191°C; 622°C

Thermal Properties	Metric	English	Comments
CTE, linear	11.68 $\mu\text{m}/\text{m}\cdot\text{°C}$	6.489 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 21.0 - 204 °C	@Temperature 69.8 - 399 °F	
	13.3 $\mu\text{m}/\text{m}\cdot\text{°C}$	7.39 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 21.0 - 538 °C	@Temperature 69.8 - 1000 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	1.02 %	1.02 %	
Chromium, Cr	3.75 %	3.75 %	
Iron, Fe	82.53 %	82.53 %	
Manganese, Mn	0.25 %	0.25 %	
Molybdenum, Mo	8.5 %	8.5 %	
Silicon, Si	0.30 %	0.30 %	
Tungsten, W	1.75 %	1.75 %	
Vanadium, V	1.9 %	1.9 %	

Chemical Properties	Metric	English	Comments
Critical Temperature	749 °C	1380 °F	Ar3
	780 °C	1440 °F	Ar1
	824 °C	1520 °F	Ac1
	860 °C	1580 °F	Ac3

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