Latrobe DuraTechâ„¢ NINE Powder Metal Tool Steel

Category : Metal , Ferrous Metal , Alloy Steel , Carbon Steel , High Carbon Steel , Tool Steel , Air-Hardening Steel

Material Notes:

DuraTech NINE is an air-hardening, powder metal tool steel that provides very high wear resistance in combination with high impact toughness. A large volume of hard vanadium carbides provides the high wear resistance. DuraTech NINE contains less carbon and vanadium than DuraTech A11, which results in a lower attainable hardness, slightly lower wear resistance, but a significant increase in toughness. The lower carbon content also enables DuraTech NINE to be used in warm and hot work applications where resistance to thermal fatigue cracking is important. DuraTech NINE may be used in unique tooling applications for improved toughness compared to DuraTech A11 and high speed steels, and improved wear resistance compared to D2 and other tool steels. DuraTech NINE is widely used for plastic injection feed screws, non-return valves, shear blades, and forging dies.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-DuraTech-NINE-Powder-Metal-Tool-Steel.php

Physical Properties	Metric	English	Comments
Specific Gravity	7.41 g/cc	7.41 g/cc	
Density	7.39 g/cc	0.267 lb/inÂ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	53	53	Oil Quenched from 1025Â°C; 60 minutes
	56	56	Oil Quenched from 1066Â°C; 30 minutes
	61	61	Oil Quenched from 1077Â°C; 10 minutes
Modulus of Elasticity	221 GPa	32000 ksi	
Machinability	35 - 40 %	35 - 40 %	1% Carbon Steel

Thermal Properties	Metric	English	Comments
CTE, linear	10.71 Âµm/m-Â°C @Temperature 21.0 - 100 Â°C	5.950 Âµin/in-Â°F @Temperature 69.8 - 212 Â°F	
	12.31 Âµm/m-Â°C @Temperature 21.0 - 538 Â°C	6.839 Âµin/in-Â°F @Temperature 69.8 - 1000 Â°F	

Component Elements Properties	Metric	English	Comments

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Carbon, C	1.8 %	1.8 %	
Chromium, Cr	5.25 %	5.25 %	
Iron, Fe	81.2 %	81.2 %	
Manganese, Mn	0.50 %	0.50 %	
Molybdenum, Mo	1.35 %	1.35 %	
Silicon, Si	0.90 %	0.90 %	
Vanadium, V	9.0 %	9.0 %	

Chemical Properties	Metric	English	Comments
Critical Temperature	866 Â°C	1590 Â°F	Ac1

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com
Email : sales@lookpolymers.com
Tel : +86 021-51131842
Mobile : +86 13061808058
Skype : lookpolymers
Address : United North Road 215,Fengxian District, Shanghai City,China