

## Latrobe DuraTech T15 Powder Metal High Speed Steel (ASTM T15)

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

### Material Notes:

DuraTech T15 powder metallurgy high speed steel is cobalt-bearing super high speed steel which can be heat treated to a hardness as high as 67 Rockwell C. A high volume of hard vanadium carbides provides very high wear resistance. The cobalt content provides excellent resistance to softening at high service temperatures (red or hot hardness). These properties translate into extended retention of hard, sharp cutting edges on tools produced from DuraTech T15. Because of the powder metal (PM) manufacturing, DuraTech T15 is far easier to grind and exhibits impact toughness that is more than double that of traditional, ingot-cast T15 high speed steel. Typical tooling applications in which DuraTech T15 excels include high-performance broaches, form tools, milling cutters, end mills, taps, and reamers. DuraTech T15 is the high speed steel of choice for any cutting application on strong or abrasive materials that generate high cutting tool temperatures. 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-T15-Powder-Metal-High-Speed-Steel-ASTM-T15.php](http://www.lookpolymers.com/polymer_Latrobe-DuraTech-T15-Powder-Metal-High-Speed-Steel-ASTM-T15.php)

Physical Properties	Metric	English	Comments
Specific Gravity	8.19 g/cc	8.19 g/cc	
Density	8.19 g/cc	0.296 lb/in <sup>3</sup>	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	64	64	Oil Quenched from 1232 <sup>o</sup> C, 5 minutes
	65.0	65.0	Oil Quenched from 1219 <sup>o</sup> C, 5 minutes
	66.5	66.5	Oil Quenched from 1177 <sup>o</sup> C, 5 minutes
Modulus of Elasticity	207 GPa	30000 ksi	
	207 GPa	30000 ksi	
Machinability	35 - 40 %	35 - 40 %	1% Carbon Steel

Thermal Properties	Metric	English	Comments
CTE, linear	10.6 $\mu\text{m/m-}^{\circ}\text{C}$	5.89 $\mu\text{in/in-}^{\circ}\text{F}$	
	@Temperature 21.0 - 204 $^{\circ}\text{C}$	@Temperature 69.8 - 399 $^{\circ}\text{F}$	
	12.11 $\mu\text{m/m-}^{\circ}\text{C}$	6.728 $\mu\text{in/in-}^{\circ}\text{F}$	
	@Temperature 21.0 - 649 $^{\circ}\text{C}$	@Temperature 69.8 - 1200 $^{\circ}\text{F}$	

Component Elements Properties	Metric	English	Comments
Carbon, C	1.6 %	1.6 %	
Chromium, Cr	4.25 %	4.25 %	
Cobalt, Co	5.0 %	5.0 %	
Iron, Fe	70.55 %	70.55 %	
Manganese, Mn	0.30 %	0.30 %	
Molybdenum, Mo	0.75 %	0.75 %	
Silicon, Si	0.30 %	0.30 %	
Tungsten, W	12.25 %	12.25 %	
Vanadium, V	5.0 %	5.0 %	

Chemical Properties	Metric	English	Comments
Critical Temperature	766 Â°C	1410 Â°F	Ar3
	785 Â°C	1450 Â°F	Ar1
	827 Â°C	1520 Â°F	Ac1
	854 Â°C	1570 Â°F	Ac3

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