

### Latrobe LSSâ, ¢ A2 Tool Steel (ASTM A2)

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

#### Material Notes:

TLS A2 tool steel is a versatile, air-hardening tool steel that is characterized by good toughness and excellent dimensional stability in heat treatment. TLS A2 is intermediate in wear resistance between O1 oil-hardening tool steel and D2 high-carbon, high-chromium tool steel. TLS A2 provides an effective combination of strength and toughness, tool performance, price, and a wide variety of product forms. Typical applications for TLS A2 tool steel include punches and dies, chuck jaws, cutting tools for woodworking, tooling for plastic injection, dowel pins, hammers, industrial knives, and gages.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-LSS-A2-Tool-Steel-ASTM-A2.php

Physical Properties	Metric	English	Comments
Specific Gravity	7.86 g/cc	7.86 g/cc	
Density	7.86 g/cc	0.284 lb/in³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	63	63	Air Cooled from 982°C, 30 minutes
	63.5	63.5	Air Cooled from 1038°C, 30 minutes
	64	64	Air Cooled from 1010°C, 30 minutes
Modulus of Elasticity	207 GPa	30000 ksi	
Machinability	70 %	70 %	1% Carbon Steel
Izod Impact Unnotched	67.8 J	50.0 ft-lb	Air Cooled from 954°C; 94°C Temper Temperature
	122 J	90.0 ft-lb	Air Cooled from 954°C; 316°C Temper Temperature
	229 J	169 ft-lb	Air Cooled from 954°C; 649°C Temper Temperature

Thermal Properties	Metric	English	Comments
	10.6 µm/m-°C	5.89 µin/in-°F	
CTE, linear	@Temperature 93.0 - 260 °C	@Temperature 199 - 500 °F	
	14.0 µm/m-°C	7.78 µin/in-°F	
	@Temperature 93.0 - 649 °C	@Temperature 199 - 1200 °F	

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Thermal Properties by	Metric <sup>1</sup> W/m-K	180 44 BTU-in/hr English	Comments	
Component Elements Properties	Metric	English	Comments	
Carbon, C	1.0 %	1.0 %		
Chromium, Cr	5.0 %	5.0 %		
Iron, Fe	91.7 %	91.7 %		
Manganese, Mn	0.75 %	0.75 %		
Molybdenum, Mo	1.0 %	1.0 %		
Silicon, Si	0.30 %	0.30 %		
Vanadium, V	0.25 %	0.25 %		

Chemical Properties	Metric	English	Comments
Critical Temperature	793 °C	1460 °F	Ac1

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