

## Schmolz + Bickenbach Thermodur® 2344 EFS Extra Fine Structure - Hot Work Die Steel

Category : Metal , Ferrous Metal , Tool Steel , Hot Work Steel

### Material Notes:

Description: THERMODUR 2344 is a single melt Extra Fine Structure (EFS) hot work die steel; and Supplied in the annealed condition  
 Characteristics: Good toughness; Good resistance to thermal shock and fatigue; Good hardenability; and Good high-temperature strength  
 Applications: Hot forging dies, Hot extrusion tooling, Forming dies, Plastic molds and Shot sleeve  
 Stress Relieving (Heat Treatment): 1200°F for 2 hours; Cooling: Cool slowly to 930°F in air; Hardness:

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Schmolz-Bickenbach-Thermodur-2344-EFS-Extra-Fine-Structure-Hot-Work-Die-Steel.php](http://www.lookpolymers.com/polymer_Schmolz-Bickenbach-Thermodur-2344-EFS-Extra-Fine-Structure-Hot-Work-Die-Steel.php)

Physical Properties	Metric	English	Comments
Density	7.78 g/cc	0.281 lb/in <sup>3</sup>	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	34	34	
	@Treatment Temp. 700.0 °C, Time 7200 sec	@Treatment Temp. 1292 °F, Time 2.00 hour	
	42	42	
	@Treatment Temp. 650.0 °C, Time 7200 sec	@Treatment Temp. 1202 °F, Time 2.00 hour	
	50	50	
	@Treatment Temp. 600.0 °C, Time 7200 sec	@Treatment Temp. 1112 °F, Time 2.00 hour	
	54	54	
@Treatment Temp. 400 °C, Time 7200 sec	@Treatment Temp. 752 °F, Time 2.00 hour		
54	54		
@Treatment Temp. 550.0 °C, Time 7200 sec	@Treatment Temp. 1022 °F, Time 2.00 hour		
56	56		
@Treatment Temp. 500 °C, Time 7200 sec	@Treatment Temp. 932 °F, Time 2.00 hour		
Tensile Strength	1320 MPa	192000 psi	42 HRC

Mechanical Properties	Metric MPa	English psi	Comments
	1790 MPa	259000 psi	52 HRC

Thermal Properties	Metric	English	Comments
CTE, linear	10.8 $\mu\text{m}/\text{m}\cdot\text{C}^\circ$	6.00 $\mu\text{in}/\text{in}\cdot\text{F}^\circ$	
	@Temperature 21.1 - 93.3 $^\circ\text{C}$	@Temperature 70.0 - 200 $^\circ\text{F}$	
	11.9 $\mu\text{m}/\text{m}\cdot\text{C}^\circ$	6.60 $\mu\text{in}/\text{in}\cdot\text{F}^\circ$	
	@Temperature 21.1 - 204 $^\circ\text{C}$	@Temperature 70.0 - 400 $^\circ\text{F}$	
	12.6 $\mu\text{m}/\text{m}\cdot\text{C}^\circ$	7.00 $\mu\text{in}/\text{in}\cdot\text{F}^\circ$	
	@Temperature 21.1 - 399 $^\circ\text{C}$	@Temperature 70.0 - 750 $^\circ\text{F}$	
Thermal Conductivity	25.5 W/m-K	177 BTU-in/hr-ft <sup>2</sup> - $^\circ\text{F}$	
	@Temperature 21.1 $^\circ\text{C}$	@Temperature 70.0 $^\circ\text{F}$	
	27.5 W/m-K	191 BTU-in/hr-ft <sup>2</sup> - $^\circ\text{F}$	
	@Temperature 343 $^\circ\text{C}$	@Temperature 650 $^\circ\text{F}$	
	30.3 W/m-K	210 BTU-in/hr-ft <sup>2</sup> - $^\circ\text{F}$	
	@Temperature 704 $^\circ\text{C}$	@Temperature 1300 $^\circ\text{F}$	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.40 %	0.40 %	
Chromium, Cr	5.3 %	5.3 %	
Iron, Fe	90.9 %	90.9 %	
Molybdenum, Mo	1.4 %	1.4 %	
Silicon, Si	1.0 %	1.0 %	
Vanadium, V	1.0 %	1.0 %	

Processing Properties	Metric	English	Comments
Annealing Temperature	749 - 799 $^\circ\text{C}$	1380 - 1470 $^\circ\text{F}$	Soft; Cooling: Furnace 20 $^\circ\text{F}/\text{hour}$ to 1200 $^\circ\text{F}$ / Then air cool; < 230 HB

**Contact Songhan Plastic Technology Co.,Ltd.**

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