

Schmolz + Bickenbach Formadur® 2316/2316 ESR Plastic Mold Steel

Category : Metal , Ferrous Metal , Tool Steel , Mold Steel

Material Notes:

Increased corrosion resistance in comparison to Formadur 2083, good polishability. Usually this grade is supplied quenched and tempered to 300 HB
 Applications: Molds for processing plastics with corrosive reactions
 Hardening (Heat Treatment): 1020°C- 1050°C; Quenching: Oil or salt bath, 500-550°C; Hardness: 49 HRC Quenched
 Information provided by Schmolz + Bickenbach

Order this product through the following link:

http://www.lookpolymers.com/polymer_Schmolz-Bickenbach-Formadur-23162316-ESR-Plastic-Mold-Steel.php

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	32	32	
	@Treatment Temp. 600.0 °C	@Treatment Temp. 1112 °F	
	46	46	
	@Treatment Temp. 300 °C	@Treatment Temp. 572 °F	
	46	46	
	@Treatment Temp. 400 °C	@Treatment Temp. 752 °F	
	47	47	
@Treatment Temp. 200 °C	@Treatment Temp. 392 °F		
47	47		
@Treatment Temp. 500 °C	@Treatment Temp. 932 °F		
49	49		
@Treatment Temp. 100 °C	@Treatment Temp. 212 °F		

Thermal Properties	Metric	English	Comments
CTE, linear	10.5 µm/m-°C	5.83 µin/in-°F	
	@Temperature 20.0 - 100 °C	@Temperature 68.0 - 212 °F	
	10.7 µm/m-°C	5.94 µin/in-°F	
@Temperature 20.0 - 150 °C	@Temperature 68.0 - 302 °F		
10.8 µm/m-°C	6.00 µin/in-°F		

Thermal Properties	Metric	English	Comments
	10.9 $\mu\text{m}/\text{m}\cdot\text{°C}$ @Temperature 20.0 - 250 °C	6.06 $\mu\text{in}/\text{in}\cdot\text{°F}$ @Temperature 68.0 - 482 °F	
	11.1 $\mu\text{m}/\text{m}\cdot\text{°C}$ @Temperature 20.0 - 300 °C	6.17 $\mu\text{in}/\text{in}\cdot\text{°F}$ @Temperature 68.0 - 572 °F	
	11.3 $\mu\text{m}/\text{m}\cdot\text{°C}$ @Temperature 20.0 - 350 °C	6.28 $\mu\text{in}/\text{in}\cdot\text{°F}$ @Temperature 68.0 - 662 °F	
	11.5 $\mu\text{m}/\text{m}\cdot\text{°C}$ @Temperature 20.0 - 400 °C	6.39 $\mu\text{in}/\text{in}\cdot\text{°F}$ @Temperature 68.0 - 752 °F	
	11.6 $\mu\text{m}/\text{m}\cdot\text{°C}$ @Temperature 20.0 - 450 °C	6.44 $\mu\text{in}/\text{in}\cdot\text{°F}$ @Temperature 68.0 - 842 °F	
	11.7 $\mu\text{m}/\text{m}\cdot\text{°C}$ @Temperature 20.0 - 500 °C	6.50 $\mu\text{in}/\text{in}\cdot\text{°F}$ @Temperature 68.0 - 932 °F	
Thermal Conductivity	23.2 W/m-K @Temperature 500 °C	161 BTU-in/hr-ft ² -°F @Temperature 932 °F	
	23.5 W/m-K @Temperature 23.0 °C	163 BTU-in/hr-ft ² -°F @Temperature 73.4 °F	
	24.1 W/m-K @Temperature 400 °C	167 BTU-in/hr-ft ² -°F @Temperature 752 °F	
	24.2 W/m-K @Temperature 150 °C	168 BTU-in/hr-ft ² -°F @Temperature 302 °F	
	24.4 W/m-K @Temperature 300 °C	169 BTU-in/hr-ft ² -°F @Temperature 572 °F	
	24.4 W/m-K @Temperature 350 °C	169 BTU-in/hr-ft ² -°F @Temperature 662 °F	
Processing Properties	Metric	English	Comments
Annealing Temperature	760 - 800.0 °C	1400 - 1472 °F	Soft; Cooling: Furnace; < 230 HB

Descriptive Properties	Value	Comments
Corrosion Properties/Weight loss rate	0.2% Hydrochloric Acid	20 g/hm ²
	5% Acetic Acid	0.1 g/hm ²
	5% Nitric Acid	1 g/hm ²
	5% Sulphuric Acid	90 g/hm ²

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