Schmolz + Bickenbach P-20 High Hard Plastic Mold Steel

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

Material Notes:

Description: P-20 High Hard is an improved pre-hardened mold steel that has been specially designed for large plastic molds; Material is forged on a 5000 ton press assuring maximum deformation during the forging process; and Hardness loss in large cross sections is minimalCharacteristics: Improved polishability compared to P-20 modified; Excellent compressive strength; and Minimum hardness loss in large cross sectionApplications: Injection molds, Compression molds, Mold frames, Forming tools and Die holdersStress Relieving (Heat Treatment): 850Â°F-900Â°F hold 1 hr/in; Cooling: Air cool; Note: Large cross sections require accurate control of temperatures and timesInformation provided by Schmolz + Bickenbach

Order this product through the following link:
http://www.lookpolymers.com/polymer_Schmolz-Bickenbach-P-20-High-Hard-Plastic-Mold-Steel.php

Physical Properties	Metric	English	Comments
Density	7.86 g/cc	0.284 lb/inÂ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	33 @Treatment Temp. 621 Â°C, Time 7200 sec	33 @Treatment Temp. 1150 Â°F, Time 2.00 hour	
	35 @Treatment Temp. 593 Â°C, Time 7200 sec	35 @Treatment Temp. 1100 Â°F, Time 2.00 hour	
	40 @Treatment Temp. 566 Â°C, Time 7200 sec	40 @Treatment Temp. 1050 Â°F, Time 2.00 hour	
	43 @Treatment Temp. 538 Â°C, Time 7200 sec	43 @Treatment Temp. 1000 Â°F, Time 2.00 hour	
	47 @Treatment Temp. 482 Â°C, Time 7200 sec	47 @Treatment Temp. 900 Â°F, Time 2.00 hour	
	50 @Treatment Temp. 427 Â°C, Time 7200 sec	50 @Treatment Temp. 800 Â°F, Time 2.00 hour	

Mechanical Properties	Metric	English	Comments
	@Treatment Temp. 371 Â°C, Time 7200 sec	@Treatment Temp. 700 Â°F, Time 2.00 hour	
Tensile Strength	1030 MPa @Temperature -5.56 Â°C	150000 psi @Temperature 22.0 Â°F	Hardened and tempered to 34 HRC
Tensile Strength, Yield	896 MPa @Temperature 22.0 Â°C	130000 psi @Temperature 71.6 Â°F	Hardened and tempered to 34 HRC
Elongation at Yield	15 % @Temperature 22.0 Â°C	15 % @Temperature 71.6 Â°F	Hardened and tempered to 34 HRC
Reduction of Area	35 % @Temperature 22.0 Â°C	35 % @Temperature 71.6 Â°F	Hardened and tempered to 34 HRC

Thermal Properties	Metric	English	Comments
CTE, linear	12.2 Âµm/m-Â°C @Temperature 21.1 - 93.3 Â°C	6.80 Âµin/in-Â°F @Temperature 70.0 - 200 Â°F	
	12.6 Âµm/m-Â°C @Temperature 21.1 - 204 Â°C	7.00 Âµin/in-Â°F @Temperature 70.0 - 400 Â°F	
	12.8 Âµm/m-Â°C @Temperature 21.1 - 302 Â°C	7.10 Âµin/in-Â°F @Temperature 70.0 - 575 Â°F	
Thermal Conductivity	29.1 W/m-K @Temperature 21.1 Â°C	202 BTU-in/hr-ftÂ²-Â°F @Temperature 70.0 Â°F	
	30.1 W/m-K @Temperature 204 Â°C	209 BTU-in/hr-ftÂ²-Â°F @Temperature 400 Â°F	
	31.1 W/m-K @Temperature 427 Â°C	216 BTU-in/hr-ftÂ²-Â°F @Temperature 800 Â°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.34 %	0.34 %	

Component Elements Properties	Metric	English	Comments
Chromium, Cr	1.75 %	1.75 %	
Iron, Fe	96.31 %	96.31 %	
Manganese, Mn	0.80 %	0.80 %	
Molybdenum, Mo	0.40 %	0.40 %	
Silicon, Si	0.40 %	0.40 %	

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