Bohler-Uddeholm UDDEHOLM MIRRAX ESR Plastic Mold Steel

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

Material Notes:

Uddeholm Mirrax ESR is specially developed and adapted for larger molds that require corrosion resistance and/or high surface finish.It is characterized by:High hardenability for consistent properties in large dimensionsGood ductility and toughness for a safe productionHigh corrosion resistance for low maintenance requirementsExcellent polishability for aesthetic quality and functionGood wear resistance for longer lifeUddeholm Mirrax ESR is also the right choice for larger tools when contamination in production is totally unacceptable: within the medical industry, optical industry and for other high quality transparent articles.Applications: Although Uddeholm Mirrax ESR is recommended for all types of moulds, its special properties make it particularly suitable for molds with the following demands:Corrosion/staining resistance, i.e. for moulding of corrosive materials, e.g. PVC, acetates, and for moulds subjected to humid working/storage conditions.High surface finish, i.e. for the production of optical parts, such as camera and sunglass lenses, and for medical components, e.g. syringes, analysis vials etc..Toughness/ductility, i.e. for complex molds Outstanding through-hardening characteristics i.e. high-hardenability, important for larger molds.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Bohler-Uddeholm-UDDEHOLM-MIRRAX-ESR-Plastic-Mold-Steel.php

Physical Properties	Metric	English	Comments
Density	7.74 g/cc	0.280 lb/in³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	250	250	Annealed
Hardness, Rockwell C	52	52	without tempering
Tensile Strength, Ultimate	1500 MPa	218000 psi	at HRC 45
	1780 MPa	258000 psi	at HRC 50
Tensile Strength, Yield	1200 MPa	174000 psi	at HRC 45
	1290 MPa	187000 psi	at HRC 50
Modulus of Elasticity	180 GPa @Temperature 400 °C	26100 ksi @Temperature 752 °F	
	200 GPa @Temperature 200 °C	29000 ksi @Temperature 392 °F	
	210 GPa @Temperature 20.0 °C	30500 ksi @Temperature 68.0 °F	
Impact Test	180 J	133 ft-lb	without tempering; at HRC 52
	220 J	162 ft-lb	tempered at 300°C; at HRC 50

Mechanical Properties	Metric	English	Comments
Thermal Properties	**Metric**	**English**	**Comments**
CTE, linear	11.1 µm/m-°C @Temperature 20.0 - 200 °C	6.17 µin/in-°F @Temperature 68.0 - 392 °F	
	11.7 µm/m-°C @Temperature 20.0 - 400 °C	6.50 µin/in-°F @Temperature 68.0 - 752 °F	
Specific Heat Capacity	0.460 J/g-°C	0.110 BTU/lb-°F	
Thermal Conductivity	20.0 W/m-K @Temperature 200 °C	139 BTU-in/hr-ft²-°F @Temperature 392 °F	
	24.0 W/m-K @Temperature 400 °C	167 BTU-in/hr-ft²-°F @Temperature 752 °F	

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