

Bohler-Uddeholm UDDEHOLM STAVAX® ESR Modified 420

Category : Metal , Ferrous Metal , Stainless Steel , Tool Steel

Material Notes:

Premium grade stainless tool steelStavax® ESR is characterized by: Good corrosion resistance Good polishability Good wear resistance Good machinability Good stability in hardeningApplications: Uddeholm Stavax ESR is recommended for all types of moulding tools and its special proper ties make it particularly suitable for moulds 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.Wear resistance, i.e. for moulding abrasive/ filled materials, including injection-moulded thermosetting grades. Uddeholm Stavax ESR is recommended for moulds with long production runs, e.g. disposable cutlery and containers.High surface finish, i.e. for the production of optical parts, such as camera and sun glasses lenses, and for medical containers, e.g. syringes, analysis phials.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Bohler-Uddeholm-UDDEHOLM-STAVAX-ESR-Modified-420.php

Physical Properties	Metric	English	Comments
Density	7.81 g/cc	0.282 lb/in ³	hardened to 50 HRC
	7.67 g/cc	0.277 lb/in ³	hardened to 50 HRC
	@Temperature 399 °C	@Temperature 750 °F	
	7.75 g/cc	0.280 lb/in ³	hardened to 50 HRC
	@Temperature 199 °C	@Temperature 390 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	200	200	Soft annealed (Delivery condition)
Hardness, Rockwell C	30 - 55	30 - 55	tempering temp 200 - 1200°F
Tensile Strength, Ultimate	1420 MPa	206000 psi	hardened to 45 HRC
	1770 MPa	256000 psi	hardened to 50 HRC
Tensile Strength, Yield	1280 MPa	185000 psi	hardened to 45 HRC
	@Strain 0.200 %	@Strain 0.200 %	
	1470 MPa	213000 psi	hardened to 50 HRC
	@Strain 0.200 %	@Strain 0.200 %	
Modulus of Elasticity	200 GPa	29000 ksi	(hardened to 50 HRC)
	180 GPa	26100 ksi	hardened to 50 HRC
	@Temperature 399 °C	@Temperature 750 °F	
	190 GPa	27600 ksi	hardened to 50 HRC

Mechanical Properties	@Temperature 199 °C Metric	@Temperature 390 °F English	Comments
CTE, linear	11.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	6.10 $\mu\text{in}/\text{in}\cdot\text{°F}$	hardened to 50 HRC
	@Temperature 199 °C	@Temperature 390 °F	
	11.3 $\mu\text{m}/\text{m}\cdot\text{°C}$	6.30 $\mu\text{in}/\text{in}\cdot\text{°F}$	hardened to 50 HRC
	@Temperature 399 °C	@Temperature 750 °F	
Specific Heat Capacity	0.460 J/g-°C	0.110 BTU/lb-°F	hardened to 50 HRC
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Thermal Conductivity	16.0 W/m-K	111 BTU-in/hr-ft ² -°F	hardened to 50 HRC
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	20.0 W/m-K	139 BTU-in/hr-ft ² -°F	hardened to 50 HRC
	@Temperature 199 °C	@Temperature 390 °F	
	24.0 W/m-K	167 BTU-in/hr-ft ² -°F	hardened to 50 HRC
	@Temperature 399 °C	@Temperature 750 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.38 %	0.38 %	
Chromium, Cr	13.6 %	13.6 %	
Iron, Fe	84.3 %	84.3 %	as balance
Manganese, Mn	0.50 %	0.50 %	
Silicon, Si	0.90 %	0.90 %	
Vanadium, V	0.30 %	0.30 %	

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