

Bohler-Uddeholm UDDEHOLM ELMAX® Powder Metallurgy Stainless Mold Steel

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

Material Notes:

High chromium-vanadium-molybdenum alloyed steelA through-hardening corrosion resistant mold steel made by powder metallurgy processing techniques. The high wear resistance makes ELMAX® suitable for long production runs; e.g. electronic parts.ELMAX® is characterized by: High wear resistance High compressive strength Corrosion resistant Very good dimensional stabilityApplications: New types of engineering plastics, with high filler contents, place greater demands on the tooling material, in terms of wear resistance and corrosion resistance. Uddeholm Elmax has been specially developed for high-tech applications. These include products within the electronic industry such as connectors, plugs, switches, resistors, integrated circuits, etc. Uddeholm Elmax can also be used in the food processing industry and for industrial and custom knives, where a combination of corrosion resistance and wear resistance is required

Order this product through the following link:

http://www.lookpolymers.com/polymer_Bohler-Uddeholm-UDDEHOLM-ELMAX-Powder-Metallurgy-Stainless-Mold-Steel.php

Physical Properties	Metric	English	Comments
Density	7.81 g/cc	0.282 lb/in ³	hardened to 58 HRC
	7.67 g/cc @Temperature 400 °C	0.277 lb/in ³ @Temperature 752 °F	hardened to 58 HRC
	7.75 g/cc @Temperature 200 °C	0.280 lb/in ³ @Temperature 392 °F	hardened to 58 HRC

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	250	250	Soft annealed (Delivery condition)
Hardness, Rockwell C	48 - 62	48 - 62	tempering temp 210 - 1110°F
Tensile Strength, Yield	1790 MPa @Strain 0.200 %	260000 psi @Strain 0.200 %	hardened to 50 RC
	2140 MPa @Strain 0.200 %	310000 psi @Strain 0.200 %	hardened to 55 RC
	2310 MPa @Strain 0.200 %	335000 psi @Strain 0.200 %	hardened to 60 RC
Modulus of Elasticity	240 GPa	34800 ksi	(hardened to 58 HRC)
	220 GPa @Temperature 400 °C	31900 ksi @Temperature 752 °F	hardened to 58 HRC
	230 GPa	33400 ksi	

Mechanical Properties	Metric @ Temperature 200 °C	English @ Temperature 392 °F	hardened to 58 HRC Comments
Compressive Yield Strength	2300 MPa	334000 psi	0.2%, hardened to 50 RC
	2700 MPa	392000 psi	0.2%, hardened to 55 RC
	3000 MPa	435000 psi	0.2%, hardened to 60 RC

Thermal Properties	Metric	English	Comments
CTE, linear	10.8 µm/m-°C	6.00 µin/in-°F	hardened to 58 HRC
	@Temperature 200 °C	@Temperature 392 °F	
	11.7 µm/m-°C	6.50 µin/in-°F	hardened to 58 HRC
	@Temperature 400 °C	@Temperature 752 °F	
Specific Heat Capacity	0.460 J/g-°C	0.110 BTU/lb-°F	hardened to 58 HRC
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Thermal Conductivity	21.0 W/m-K	146 BTU-in/hr-ft²-°F	hardened to 58 HRC
	@Temperature 200 °C	@Temperature 392 °F	
	23.0 W/m-K	160 BTU-in/hr-ft²-°F	hardened to 58 HRC
	@Temperature 400 °C	@Temperature 752 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	1.7 %	1.7 %	
Chromium, Cr	18 %	18 %	
Iron, Fe	75.2 %	75.2 %	as balance
Manganese, Mn	0.30 %	0.30 %	
Molybdenum, Mo	1.0 %	1.0 %	
Silicon, Si	0.80 %	0.80 %	
Vanadium, V	3.0 %	3.0 %	

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