

Bohler-Uddeholm UDDEHOLM QRO® 90 SUPREME Hot Work Tool Steel

Category : Metal , Ferrous Metal , Alloy Steel , Chrome-moly Steel , Tool Steel , Hot Work Steel

Material Notes:

Chromium-molybdenum-vanadium alloyed steel QRO® 90 SUPREME is a premium hot work die steel with high hot yield strength and very good temper resistance. Especially suited for die casting of aluminum, copper and brass. QRO® 90 SUPREME is characterized by: Excellent high temperature strength and hot hardness Very good temper resistance Unique resistance to thermal fatigue Excellent thermal conductivity Good toughness and ductility in longitudinal and transverse directions Uniform machinability Good heat treatment properties Applications: Die Casting Dies and Associated Tooling, Extrusion dies and Extrusion Tooling and Forging dies

Order this product through the following link:

http://www.lookpolymers.com/polymer_Bohler-Uddeholm-UDDEHOLM-QRO-90-SUPREME-Hot-Work-Tool-Steel.php

Physical Properties	Metric	English	Comments
Density	7.78 g/cc	0.281 lb/in ³	hardness of 45 HRC
	7.58 g/cc	0.274 lb/in ³	hardness of 45 HRC
	@Temperature 599 °C	@Temperature 1110 °F	
	7.67 g/cc	0.277 lb/in ³	hardness of 45 HRC
	@Temperature 399 °C	@Temperature 750 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	180	180	Soft annealed (Delivery condition)
Tensile Strength, Ultimate	1250 MPa	181000 psi	hardness of 40 HRC
	1470 MPa	213000 psi	hardness of 45 HRC
	1620 MPa	235000 psi	hardness of 48 HRC
Tensile Strength, Yield	1100 MPa	160000 psi	hardness of 40 HRC
	@Strain 0.200 %	@Strain 0.200 %	
	1270 MPa	184000 psi	hardness of 45 HRC
	@Strain 0.200 %	@Strain 0.200 %	
	1400 MPa	203000 psi	hardness of 48 HRC
	@Strain 0.200 %	@Strain 0.200 %	
Modulus of Elasticity	210 GPa	30500 ksi	(hardness of 45 HRC)
	140 GPa	20300 ksi	hardness of 45 HRC
	@Temperature 599 °C	@Temperature 1110 °F	
	180 GPa	26100 ksi	

Mechanical Properties	Metric	English	Comments
Charpy Impact	17.6 J	13.0 ft-lb	V-notch
	@Temperature 399 °C	@Temperature 750 °F	
	47.5 J	35.0 ft-lb	V-notch
	@Temperature 98.9 °C	@Temperature 210 °F	
	47.5 J	35.0 ft-lb	V-notch
	@Temperature 599 °C	@Temperature 1110 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	12.6 µm/m-°C	7.00 µin/in-°F	hardness of 45 HRC
	@Temperature 399 °C	@Temperature 750 °F	
	13.1 µm/m-°C	7.30 µin/in-°F	hardened to 45 HRC
	@Temperature 599 °C	@Temperature 1110 °F	
Thermal Conductivity	33.0 W/m-K	229 BTU-in/hr-ft ² -°F	hardness of 45 HRC
	@Temperature 399 °C	@Temperature 750 °F	
	33.0 W/m-K	229 BTU-in/hr-ft ² -°F	hardness of 45 HRC
	@Temperature 599 °C	@Temperature 1110 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.38 %	0.38 %	
Chromium, Cr	2.6 %	2.6 %	
Manganese, Mn	0.75 %	0.75 %	
Molybdenum, Mo	2.25 %	2.25 %	
Silicon, Si	0.30 %	0.30 %	
Vanadium, V	0.90 %	0.90 %	

Processing Properties	Metric	English	Comments
Processing Temperature	1029 °C	1885 °F	heated for 30 min, then quenched in air and tempered 2 + 2 h at 1190°F (hardness = 45 HRC)

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215, Fengxian District, Shanghai City, China