

Schmolz + Bickenbach Cryodur® 2990 Cold Work Die Steel

Category : Metal , Ferrous Metal , Tool Steel , Cold Work Steel

Material Notes:

Description: Newly developed ledeburitic cold-work steel with high hardness, good toughness and high tempering resistance combined with high wear resistance. Applications: Cutting and punching tools including precision cutting tools, threading dies and rolls, rotary shear blades, cold pilger mandrels, pressure pads and plastic moulds, cold-forming and deep-drawing dies, woodworking tools and cold rolls. Hardening (Heat Treatment): 1030°C-1080°C; Quenching: Air, oil or salt bath, 500-550°C; Hardness: 62-64 HRC Quenched Information provided by Schmolz + Bickenbach

Order this product through the following link:

http://www.lookpolymers.com/polymer_Schmolz-Bickenbach-Cryodur-2990-Cold-Work-Die-Steel.php

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	46	46	Hardening 1030 °C
	@Treatment Temp. 600.0 °C	@Treatment Temp. 1112 °F	
	48	48	Hardening 1080 °C
	@Treatment Temp. 600.0 °C	@Treatment Temp. 1112 °F	
	55	55	Hardening 1030 °C
	@Treatment Temp. 575.0 °C	@Treatment Temp. 1067 °F	
	57	57	Hardening 1030 °C
	@Treatment Temp. 300 °C	@Treatment Temp. 572 °F	
	57	57	Hardening 1080 °C
	@Treatment Temp. 575.0 °C	@Treatment Temp. 1067 °F	
	58	58	Hardening 1030 °C
	@Treatment Temp. 400 °C	@Treatment Temp. 752 °F	
	59	59	Hardening 1030 °C
	@Treatment Temp. 200 °C	@Treatment Temp. 392 °F	
	59	59	Hardening 1030 °C
	@Treatment Temp. 550.0 °C	@Treatment Temp. 1022 °F	
	59	59	Hardening 1080 °C

Mechanical Properties	@Treatment Temp. 200 Metric	@Treatment Temp. 392 English	Comments
	59	59	
	@Treatment Temp. 300 °C	@Treatment Temp. 572 °F	Hardening 1080 °C
	60	60	
	@Treatment Temp. 500 °C	@Treatment Temp. 932 °F	Hardening 1030 °C
	60	60	
	@Treatment Temp. 525 °C	@Treatment Temp. 977 °F	Hardening 1030 °C
	60	60	
	@Treatment Temp. 400 °C	@Treatment Temp. 752 °F	Hardening 1080 °C
	61	61	
	@Treatment Temp. 550.0 °C	@Treatment Temp. 1022 °F	Hardening 1080 °C
	62	62	
	@Treatment Temp. 100 °C	@Treatment Temp. 212 °F	Hardening 1030 °C
	63	63	
	@Treatment Temp. 500 °C	@Treatment Temp. 932 °F	Hardening 1080 °C
	63	63	
	@Treatment Temp. 525 °C	@Treatment Temp. 977 °F	Hardening 1080 °C
	64	64	
	@Treatment Temp. 100 °C	@Treatment Temp. 212 °F	Hardening 1080 °C

Thermal Properties	Metric	English	Comments
CTE, linear	11.4 µm/m-°C	6.33 µin/in-°F	
	@Temperature 20.0 - 100 °C	@Temperature 68.0 - 212 °F	
	11.6 µm/m-°C	6.44 µin/in-°F	
	@Temperature 20.0 - 150 °C	@Temperature 68.0 - 302 °F	
	11.7 µm/m-°C	6.50 µin/in-°F	

Thermal Properties	Metric @Temperature 20.0 - 200 °C	English @Temperature 68.0 - 392 °F	Comments
	11.9 µm/m-°C @Temperature 20.0 - 250 °C	6.61 µin/in-°F @Temperature 68.0 - 482 °F	
	12.0 µm/m-°C @Temperature 20.0 - 300 °C	6.67 µin/in-°F @Temperature 68.0 - 572 °F	
	12.1 µm/m-°C @Temperature 20.0 - 350 °C	6.72 µin/in-°F @Temperature 68.0 - 662 °F	
	12.3 µm/m-°C @Temperature 20.0 - 400 °C	6.83 µin/in-°F @Temperature 68.0 - 752 °F	
	12.4 µm/m-°C @Temperature 20.0 - 450 °C	6.89 µin/in-°F @Temperature 68.0 - 842 °F	
	12.6 µm/m-°C @Temperature 20.0 - 500 °C	7.00 µin/in-°F @Temperature 68.0 - 932 °F	
Thermal Conductivity	24.1 W/m-K @Temperature 23.3 °C	167 BTU-in/hr-ft²-°F @Temperature 74.0 °F	
	25.9 W/m-K @Temperature 100 °C	180 BTU-in/hr-ft²-°F @Temperature 212 °F	
	26.8 W/m-K @Temperature 150 °C	186 BTU-in/hr-ft²-°F @Temperature 302 °F	
	26.8 W/m-K @Temperature 500 °C	186 BTU-in/hr-ft²-°F @Temperature 932 °F	
	27.1 W/m-K @Temperature 200 °C	188 BTU-in/hr-ft²-°F @Temperature 392 °F	
	27.4 W/m-K @Temperature 300 °C	190 BTU-in/hr-ft²-°F @Temperature 572 °F	
	27.4 W/m-K @Temperature 400 °C	190 BTU-in/hr-ft²-°F @Temperature 752 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	1.0 %	1.0 %	
Chromium, Cr	8.0 %	8.0 %	
Iron, Fe	87.4 %	87.4 %	
Molybdenum, Mo	1.1 %	1.1 %	
Silicon, Si	0.90 %	0.90 %	
Vanadium, V	1.6 %	1.6 %	

Processing Properties	Metric	English	Comments
Annealing Temperature	343 °C	650 °F	Stress-relief; Cooling: Furnace
	830.0 - 860 °C	1526 - 1580 °F	Soft; Cooling: Furnace; < 250HB

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