

## Schmolz + Bickenbach Cryodur® 2379 (D-2) Cold Work Die Steel

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

### Material Notes:

**Description:** Cryodur® 2379 is a high carbon, high chromium tool steel developed for high wear applications and Supplied in the annealed condition  
**Characteristics:** Excellent abrasive wear resistance; High compressive strength; Good stability during heat treatment; and Good through hardening properties  
**Applications:** Forming Rolls, Threading rolls, Fine blanking die, Cold extrusion dies, Coining dies, and Trim die  
**Stress Relieving (Heat Treatment):** 1200°F-1290°F; **Cooling:** Hold time 2 hours, slowly cool to 930°F, then air cool  
**Hardening (Heat Treatment):** 1840°F-1905°F Hold at temperature for 30 minutes; **Cooling:** Furnace quench to 350°F, air cool to 120°F, immediately temper;  
**Hardness:**

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Schmolz-Bickenbach-Cryodur-2379-D-2-Cold-Work-Die-Steel.php](http://www.lookpolymers.com/polymer_Schmolz-Bickenbach-Cryodur-2379-D-2-Cold-Work-Die-Steel.php)

Physical Properties	Metric	English	Comments
Density	7.70 g/cc	0.278 lb/in <sup>3</sup>	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	50	50	
	@Treatment Temp. 600.0 °C, Time 7200 sec	@Treatment Temp. 1112 °F, Time 2.00 hour	
	56	56	
	@Treatment Temp. 550.0 °C, Time 7200 sec	@Treatment Temp. 1022 °F, Time 2.00 hour	
	58	58	
	@Treatment Temp. 300 °C, Time 7200 sec	@Treatment Temp. 572 °F, Time 2.00 hour	
	58	58	
@Treatment Temp. 400 °C, Time 7200 sec	@Treatment Temp. 752 °F, Time 2.00 hour		
58	58		
@Treatment Temp. 500 °C, Time 7200 sec	@Treatment Temp. 932 °F, Time 2.00 hour		
61	61		
@Treatment Temp. 200 °C, Time 7200 sec	@Treatment Temp. 392 °F, Time 2.00 hour		

Mechanical Properties	<sup>63</sup> Metric	<sup>63</sup> English	Comments
	@Treatment Temp. 100 °C, Time 7200 sec	@Treatment Temp. 212 °F, Time 2.00 hour	
Compressive Strength	1900 MPa	275000 psi	55 HRC
	2140 MPa	310000 psi	60 HRC
	2210 MPa	320000 psi	62 HRC

Thermal Properties	Metric	English	Comments
CTE, linear	10.4 µm/m-°C	5.80 µin/in-°F	
	@Temperature 21.1 - 93.3 °C	@Temperature 70.0 - 200 °F	
	11.3 µm/m-°C	6.30 µin/in-°F	
	@Temperature 21.1 - 204 °C	@Temperature 70.0 - 400 °F	
	12.2 µm/m-°C	6.80 µin/in-°F	
	@Temperature 21.1 - 399 °C	@Temperature 70.0 - 750 °F	
Thermal Conductivity	16.7 W/m-K	116 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	20.5 W/m-K	142 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 343 °C	@Temperature 650 °F	
	24.2 W/m-K	168 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 704 °C	@Temperature 1300 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	1.55 %	1.55 %	
Chromium, Cr	12 %	12 %	
Iron, Fe	84.15 %	84.15 %	
Manganese, Mn	0.35 %	0.35 %	
Molybdenum, Mo	0.75 %	0.75 %	
Silicon, Si	0.30 %	0.30 %	
Vanadium, V	0.90 %	0.90 %	

Processing Properties	Metric	English	Comments
Annealing Temperature	829.4 - 860 °C	1525 - 1580 °F	Soft; Cooling: Furnace 20°F/hour to 1200°F/ Then air cool; < 250 HB

## Contact Songhan Plastic Technology Co.,Ltd.

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