

Weartech International WT-12 Cobalt Hardfacing & Wear Resistant Alloy

Category : Metal , Nonferrous Metal , Cobalt Alloy

Material Notes:

Applications: extrusion dies, scissor blades, saw blades, guide bars, wood cutting tools, pump sleeves, twist rolls, knives
Information provided by Weartech International

Order this product through the following link:

http://www.lookpolymers.com/polymer_Weartech-International-WT-12-Cobalt-Hardfacing-Wear-Resistant-Alloy.php

Physical Properties	Metric	English	Comments
Density	8.53 g/cc	0.308 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	44 - 52	44 - 52	
Hardness, Vickers	250	250	
	@Treatment Temp. 760 °C	@Treatment Temp. 1400 °F	
	295	295	
	@Treatment Temp. 649 °C	@Treatment Temp. 1200 °F	
	325	325	
	@Treatment Temp. 538 °C	@Treatment Temp. 1000 °F	
	350	350	
	@Treatment Temp. 427 °C	@Treatment Temp. 800 °F	
	425	425	
	@Treatment Temp. 25.0 °C	@Treatment Temp. 77.0 °F	
Tensile Strength	524 MPa	76000 psi	As Cast
Elongation at Yield	0.00 - 1.0 %	0.00 - 1.0 %	
Charpy Impact	9.49 J	7.00 ft-lb	As Cast

Thermal Properties	Metric	English	Comments
CTE, linear	15.1 µm/m-°C	8.40 µin/in-°F	
Specific Heat Capacity	0.410 J/g-°C	0.0980 BTU/lb-°F	

Melting Point Thermal Properties	$\leq 1290^{\circ}\text{C}$ Metric	$\leq 2350^{\circ}\text{F}$ English	Comments
Liquidus	1290 °C	2350 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	1.4 %	1.4 %	
Chromium, Cr	29 %	29 %	
Cobalt, Co	54.1 - 60.1 %	54.1 - 60.1 %	
Iron, Fe	≤ 3.0 %	≤ 3.0 %	
Nickel, Ni	≤ 3.0 %	≤ 3.0 %	
Silicon, Si	1.5 %	1.5 %	
Tungsten, W	8.0 %	8.0 %	

Descriptive Properties	Value	Comments
Corrosion Resistance, Hydrochloric Acid Conc. 5.65%	<5 mils/year	RT
	>400 mils/year	Boiling
Corrosion Resistance, Nitric Acid Conc. 25-65%	<5 mils/year	RT
	>400 mils/year	Boiling
Corrosion Resistance, Sulfuric Acid Conc. 5-10%	<5 mils/year	RT
	>400 mils/year	150 °F
Relative Wear Performance	Cold Abrasion	Excellent
	Corrosion	Excellent
	Erosion	Excellent
	Hot Abrasion	Excellent
	Impact	Good/Moderate
	Metal to Metal	Excellent

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