

Crucible Steel 440B Chromium Steel

Category : Metal , Ferrous Metal , Stainless Steel , T 400 Series Stainless Steel

Material Notes:

Crucible 440B is a hardenable chromium steel which is cutlery grade having high attainable hardness and toughness. This grade is magnetic at all times. Information provided by Crucible Specialty Metals.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Crucible-Steel-440B-Chromium-Steel.php

Physical Properties	Metric	English	Comments
Specific Gravity	7.75 g/cc	7.75 g/cc	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	220	220	
Hardness, Rockwell C	49	49	tempering temperature-1000°F
	58	58	as quenched
	58	58	tempering temperature- 212°F
Tensile Strength, Ultimate	738 MPa	107000 psi	
Tensile Strength, Yield	427 MPa	62000 psi	
	@Strain 0.200 %	@Strain 0.200 %	
Elongation at Break	18 %	18 %	in 2"
Reduction of Area	35 %	35 %	
Modulus of Elasticity	200 GPa	29000 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	10.3 $\mu\text{m}/\text{m}\cdot\text{°C}$	5.70 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 26.7 - 93.3 °C	@Temperature 80.0 - 200 °F	
	10.8 $\mu\text{m}/\text{m}\cdot\text{°C}$	6.00 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 26.7 - 538 °C	@Temperature 80.0 - 1000 °F	
Specific Heat Capacity	0.460 J/g-°C	0.110 BTU/lb-°F	
	@Temperature 0.000 - 100 °C	@Temperature 32.0 - 212 °F	
	24.2 W/m-K	168 BTU-in/hr-ft ² -°F	

Thermal Properties	Metric @ Temperature 93.3 °C	English @ Temperature 200 °F	Comments
Melting Point	1370 - 1510 °C	2500 - 2750 °F	
Solidus	1370 °C	2500 °F	
Liquidus	1510 °C	2750 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.75 - 0.95 %	0.75 - 0.95 %	
Chromium, Cr	16 - 18 %	16 - 18 %	
Iron, Fe	>= 78.23 %	>= 78.23 %	As Remainder
Manganese, Mn	<= 1.0 %	<= 1.0 %	
Molybdenum, Mo	<= 0.75 %	<= 0.75 %	
Phosphorous, P	<= 0.040 %	<= 0.040 %	
Silicon, Si	<= 1.0 %	<= 1.0 %	
Sulfur, S	<= 0.030 %	<= 0.030 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000600 ohm-cm @Temperature 23.0 °C	0.0000600 ohm-cm @Temperature 73.4 °F	

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