

Crucible Steel 347 Chromium-Nickel Steel

Category : Metal , Ferrous Metal , Austenitic , Stainless Steel , T 300 Series Stainless Steel

Material Notes:

Crucible 347 is a non-hardenable austenitic chromium-nickel steel which are particularly adaptable for use at temperatures between 800 and 1650°F. This grade is non-magnetic in the annealed condition but is slightly magnetic when cold worked. Information provided by Crucible Specialty Metals.Composition: Nb + Ta content is 10xC min

Order this product through the following link:

http://www.lookpolymers.com/polymer_Crucible-Steel-347-Chromium-Nickel-Steel.php

Physical Properties	Metric	English	Comments
Specific Gravity	8.02 g/cc	8.02 g/cc	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	170	170	
Tensile Strength, Ultimate	621 MPa	90000 psi	
Tensile Strength, Yield	276 MPa @Strain 0.200 %	40000 psi @Strain 0.200 %	
Elongation at Break	50 %	50 %	in 2"
Reduction of Area	65 %	65 %	
Modulus of Elasticity	193 GPa	28000 ksi	Tension
Izod Impact Unnotched	136 J	100 ft-lb	

Thermal Properties	Metric	English	Comments
CTE, linear	16.7 $\mu\text{m/m-}^{\circ}\text{C}$ @Temperature 0.000 - 100 $^{\circ}\text{C}$	9.30 $\mu\text{in/in-}^{\circ}\text{F}$ @Temperature 32.0 - 212 $^{\circ}\text{F}$	
	17.1 $\mu\text{m/m-}^{\circ}\text{C}$ @Temperature 0.000 - 316 $^{\circ}\text{C}$	9.50 $\mu\text{in/in-}^{\circ}\text{F}$ @Temperature 32.0 - 600 $^{\circ}\text{F}$	
	19.1 $\mu\text{m/m-}^{\circ}\text{C}$ @Temperature 0.000 - 649 $^{\circ}\text{C}$	10.6 $\mu\text{in/in-}^{\circ}\text{F}$ @Temperature 32.0 - 1200 $^{\circ}\text{F}$	
Specific Heat Capacity	0.502 J/g- $^{\circ}\text{C}$ @Temperature 0.000 - 100 $^{\circ}\text{C}$	0.120 BTU/lb- $^{\circ}\text{F}$ @Temperature 32.0 - 212 $^{\circ}\text{F}$	

Thermal Properties	Metric	English	Comments
Thermal Conductivity	@Temperature 93.3 °C	@Temperature 200 °F	
	21.6 W/m-K	150 BTU-in/hr-ft ² -°F	
	@Temperature 538 °C	@Temperature 1000 °F	
Melting Point	1370 - 1400 °C	2500 - 2550 °F	
Solidus	1370 °C	2500 °F	
Liquidus	1400 °C	2550 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.080 %	<= 0.080 %	
Chromium, Cr	17 - 19 %	17 - 19 %	
Iron, Fe	>= 64.845 %	>= 64.845 %	As Remainder
Manganese, Mn	<= 2.0 %	<= 2.0 %	
Nickel, Ni	9.0 - 13 %	9.0 - 13 %	
Phosphorous, P	<= 0.045 %	<= 0.045 %	
Silicon, Si	<= 1.0 %	<= 1.0 %	
Sulfur, S	<= 0.030 %	<= 0.030 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000730 ohm-cm	0.0000730 ohm-cm	
	@Temperature 23.0 °C	@Temperature 73.4 °F	

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