

Crucible Steel Nitriding #135 Modified Steel, AISI 4140 Modified

Category : Metal , Ferrous Metal , Alloy Steel , AISI 4000 Series Steel

Material Notes:

Nitriding #135 steel is a modification of AISI 4140 specifically designed to be nitrided for high surface hardness and abrasion resistance. Information provided by Crucible Industries

Order this product through the following link:

http://www.lookpolymers.com/polymer_Crucible-Steel-Nitriding-135-Modified-Steel-AISI-4140-Modified.php

Physical Properties	Metric	English	Comments
Density	7.75 g/cc	0.280 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	28 - 30	28 - 30	
Hardness, Rockwell HR30N	86	86	at surface
	62	62	
	@Thickness 0.508 mm	@Thickness 0.0200 in	
	70	70	
	@Thickness 0.381 mm	@Thickness 0.0150 in	
	82	82	
	@Thickness 0.254 mm	@Thickness 0.0100 in	
	84	84	
	@Thickness 0.203 mm	@Thickness 0.00800 in	
	86	86	
	@Thickness 0.127 mm	@Thickness 0.00500 in	
	87	87	
	@Thickness 0.0762 mm	@Thickness 0.00300 in	
Hardness, Vickers	1110	1110	at surface
	420	420	
	@Thickness 0.508 mm	@Thickness 0.0200 in	
	600	600	
	@Thickness 0.381 mm	@Thickness 0.0150 in	
	950	950	

Mechanical Properties	Metric @ Thickness 0.254 mm	English @ Thickness 0.0100 in	Comments
	1040	1040	
	@Thickness 0.203 mm	@Thickness 0.00800 in	
	1120	1120	
	@Thickness 0.127 mm	@Thickness 0.00500 in	
	1140	1140	
	@Thickness 0.0762 mm	@Thickness 0.00300 in	
Modulus of Elasticity	207 GPa	30000 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	12.6 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	7.00 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	
	@Temperature 21.1 - 121 $^{\circ}\text{C}$	@Temperature 70.0 - 250 $^{\circ}\text{F}$	
	12.8 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	7.10 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	
	@Temperature 21.1 - 204 $^{\circ}\text{C}$	@Temperature 70.0 - 400 $^{\circ}\text{F}$	
	13.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	7.25 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	
	@Temperature 21.1 - 427 $^{\circ}\text{C}$	@Temperature 70.0 - 800 $^{\circ}\text{F}$	
Thermal Conductivity	3.46 W/m-K	24.0 BTU-in/hr-ft ² - $^{\circ}\text{F}$	
	@Temperature 93.3 $^{\circ}\text{C}$	@Temperature 200 $^{\circ}\text{F}$	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	1.15 %	1.15 %	
Carbon, C	0.40 %	0.40 %	
Chromium, Cr	1.6 %	1.6 %	
Iron, Fe	95.6 %	95.6 %	as balance
Manganese, Mn	0.60 %	0.60 %	
Molybdenum, Mo	0.35 %	0.35 %	
Silicon, Si	0.30 %	0.30 %	

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