

EDRO EDRO400™ #40 Prehardened Insert Quality Martensitic Stainless Steel

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

Material Notes:

EDRO400™ is a remelted 400 series martensitic stainless steel supplied prehardened to 40 HRC (375 HB). EDRO400™ is characterized by excellent polishability, superior corrosion resistance, high level of dimensional stability, enhanced machinability, good ductility and toughness, uniform and consistent hardness, good thermal conductivity, good resistance to indentation (compressive strength), smooth as rolled plate surfaces, and excellent weldability. EDRO400™ chemical composition, melting and refining practice and thermal treatment establish physical and mechanical properties designed to provide homogeneity, superior polished surface finishes, improved corrosion resistance, reduced mold maintenance costs, dimensional stability, uniform and consistent hardness, and safe and simple weld repair. Applications: plastic injection mold inserts / cavities, extrusion tooling, rubber molds, components, and constructional parts. Information provided by EDRO

Order this product through the following link:

http://www.lookpolymers.com/polymer_EDRO-EDRO400-40-Prehardened-Insert-Quality-Martensitic-Stainless-Steel.php

Physical Properties	Metric	English	Comments
Density	7.81 g/cc	0.282 lb/in ³	
	@Temperature 199 °C	@Temperature 390 °F	
	7.86 g/cc	0.284 lb/in ³	
	@Temperature 20.0 °C	@Temperature 68.0 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	38 - 42	38 - 42	
Hardness, Vickers	420	420	Gas Nitriding, thickness refers to distance from surface
	@Treatment Temp. 470 °C, Thickness 0.0400 mm	@Treatment Temp. 878 °F, Thickness 0.00157 in	
	420	420	Gas Nitriding, thickness refers to distance from surface
	@Treatment Temp. 470 °C, Thickness 0.100 mm	@Treatment Temp. 878 °F, Thickness 0.00394 in	
	430	430	Plasma Nitriding, thickness refers to distance from surface
	@Treatment Temp. 400 °C, Thickness 0.100 mm	@Treatment Temp. 752 °F, Thickness 0.00394 in	
	450	450	Plasma Nitriding, thickness refers to distance from surface
	@Treatment Temp. 400 °C, Thickness 0.0400 mm	@Treatment Temp. 752 °F, Thickness 0.00157 in	

Mechanical Properties	500 Metric	500 English	Comments <i>Plasma Nitriding, thickness refers to distance from surface</i>
	@Treatment Temp. 400 °C, Thickness 0.0300 mm	@Treatment Temp. 752 °F, Thickness 0.00118 in	
	500 @Treatment Temp. 470 °C, Thickness 0.0200 mm	500 @Treatment Temp. 878 °F, Thickness 0.000787 in	Gas Nitriding, thickness refers to distance from surface
	800 @Treatment Temp. 470 °C, Thickness 0.0180 mm	800 @Treatment Temp. 878 °F, Thickness 0.000709 in	Gas Nitriding, thickness refers to distance from surface
	1000 @Treatment Temp. 400 °C, Thickness 0.0200 mm	1000 @Treatment Temp. 752 °F, Thickness 0.000787 in	Plasma Nitriding, thickness refers to distance from surface
	1050 @Treatment Temp. 470 °C, Thickness 0.00700 mm	1050 @Treatment Temp. 878 °F, Thickness 0.000276 in	Gas Nitriding, thickness refers to distance from surface
	1100 @Treatment Temp. 470 °C, Thickness 0.0100 mm	1100 @Treatment Temp. 878 °F, Thickness 0.000394 in	Gas Nitriding, thickness refers to distance from surface
	1100 @Treatment Temp. 400 °C, Thickness 0.0100 mm	1100 @Treatment Temp. 752 °F, Thickness 0.000394 in	Plasma Nitriding, thickness refers to distance from surface
Tensile Strength, Ultimate	1300 MPa @Temperature 20.0 °C	189000 psi @Temperature 68.0 °F	Longitudinal Tests from 6.3" rolled plate at 375 HB
Tensile Strength, Yield	1010 MPa @Strain 0.200 %, Temperature 20.0 °C	146000 psi @Strain 0.200 %, Temperature 68.0 °F	Longitudinal Tests from 6.3" rolled plate at 375 HB
Elongation at Yield	13 % @Temperature 20.0 °C	13 % @Temperature 68.0 °F	in 2"
Reduction of Area	33 % @Temperature 20.0 °C	33 % @Temperature 68.0 °F	
Modulus of Elasticity	190 GPa @Temperature 199 °C	27600 ksi @Temperature 390 °F	

Mechanical Properties	200 GPa Metric	29000 ksi English	Comments
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Charpy Impact	12.2 J	9.00 ft-lb	Average CharpyV-notch from 6.3" plate at 387 HB
	@Temperature 20.0 °C	@Temperature 68.0 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	11.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	6.10 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 20.0 - 199 °C	@Temperature 68.0 - 390 °F	
Thermal Conductivity	28.2 W/m-K	196 BTU-in/hr-ft ² -°F	
	@Temperature 199 °C	@Temperature 390 °F	

Descriptive Properties	Value	Comments
Color Code	Red White Stripe	

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