

## EDRO #8 Premium 420 Stainless Mold Steel

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

### Material Notes:

EDRO #8™ is a chromium-alloyed stainless tool steel with the following properties: excellent corrosion resistance, superior polishability, good wear resistance, good machinability, and stability in hardening. EDRO #8™ is recommended for all types of molding tools, its special properties make it particularly suitable for molds with the following demands: corrosion/staining resistance, i.e., for molding of corrosive materials, e.g. PVC, acetates, and for molds subjected to humid working/storage conditions; Wear resistance, i.e., for molding abrasive/filled materials, including injection-molded thermosetting grades - also for molds with exceptionally long production runs, e.g. electrical/electronic parts; disposable cutlery and containers; High surface finish, i.e., for production of optical parts, such as camera and sunglass lenses, and for medical containers, e.g. syringes, analysis phials. EDRO #8™ is resistant to corrosive attack by water, water vapor, weak organic acids, dilute solutions of nitrates, carbonates and other salts. Information provided by EDRO

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_EDRO-8-Premium-420-Stainless-Mold-Steel.php](http://www.lookpolymers.com/polymer_EDRO-8-Premium-420-Stainless-Mold-Steel.php)

Physical Properties	Metric	English	Comments
Density	7.67 g/cc	0.277 lb/in <sup>3</sup>	Hardened and tempered to 50 HRC
	@Temperature 399 °C	@Temperature 750 °F	
	7.75 g/cc	0.280 lb/in <sup>3</sup>	Hardened and tempered to 50 HRC
	@Temperature 199 °C	@Temperature 390 °F	
	7.81 g/cc	0.282 lb/in <sup>3</sup>	Hardened and tempered to 50 HRC
	@Temperature 20.0 °C	@Temperature 68.0 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	215	215	Delivery condition (soft annealed)
Hardness, Rockwell C	38	38	Tempered twice for 2 hr at temperature
	@Treatment Temp. 566 °C	@Treatment Temp. 1050 °F	
	50	50	Tempered twice for 2 hr at temperature
	@Treatment Temp. 482 °C	@Treatment Temp. 900 °F	
	52	52	Tempered twice for 2 hr at temperature
	@Treatment Temp. 177 °C	@Treatment Temp. 350 °F	
	53	53	Tempered twice for 2 hr at temperature
	@Treatment Temp. 260 °C	@Treatment Temp. 500 °F	

Mechanical Properties	<sup>55</sup> Metric	<sup>55</sup> English	Comments
	@Treatment Temp. 399 °C	@Treatment Temp. 750 °F	Tempered twice for 2 hr at temperature
	55 @Treatment Temp. 93.3 °C	55 @Treatment Temp. 200 °F	Tempered twice for 2 hr at temperature
Tensile Strength, Ultimate	1420 MPa	206000 psi	45 HRC, Round bar 1" diameter, Hardened in oil from 1880°F and tempered twice
	1770 MPa	256000 psi	50 HRC, Round bar 1" diameter, Hardened in oil from 1880°F and tempered twice
	2070 MPa	300000 psi	55 HRC, Round bar 1" diameter, Hardened in oil from 1880°F and tempered twice
Tensile Strength, Yield	1280 MPa	185000 psi	45 HRC, Round bar 1" diameter, Hardened in oil from 1880°F and tempered twice
	1470 MPa	213000 psi	50 HRC, Round bar 1" diameter, Hardened in oil from 1880°F and tempered twice
	1610 MPa	234000 psi	55 HRC, Round bar 1" diameter, Hardened in oil from 1880°F and tempered twice
Elongation at Yield	8.0 %	8.0 %	in 2", 55 HRC, Round bar 1" diameter, Hardened in oil from 1880°F and tempered twice
	10 %	10 %	in 2", 50 HRC, Round bar 1" diameter, Hardened in oil from 1880°F and tempered twice
	12 %	12 %	in 2", 45 HRC, Round bar 1" diameter, Hardened in oil from 1880°F and tempered twice
Reduction of Area	27 %	27 %	55 HRC, Round bar 1" diameter, Hardened in oil from 1880°F and tempered twice
	30 %	30 %	50 HRC, Round bar 1" diameter, Hardened in oil from 1880°F and tempered twice
	40 %	40 %	45 HRC, Round bar 1" diameter, Hardened in oil from 1880°F and tempered twice
Modulus of Elasticity	190 GPa @Temperature 399 °C	27500 ksi @Temperature 750 °F	
	210 GPa @Temperature 199 °C	30400 ksi @Temperature 390 °F	

Mechanical Properties	Metric	English	Comments
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Izod Impact	16.3 J	12.0 ft-lb	Tempered for 2 hr
	@Treatment Temp. 510 °C	@Treatment Temp. 950 °F	
	20.3 J	15.0 ft-lb	Tempered for 2 hr
	@Treatment Temp. 371 °C	@Treatment Temp. 700 °F	
	20.3 J	15.0 ft-lb	Tempered for 2 hr
	@Treatment Temp. 149 °C	@Treatment Temp. 300 °F	
	27.1 J	20.0 ft-lb	Tempered for 2 hr
	@Treatment Temp. 260 °C	@Treatment Temp. 500 °F	
	32.5 J	24.0 ft-lb	Tempered for 2 hr
	@Treatment Temp. 649 °C	@Treatment Temp. 1200 °F	
	74.6 J	55.0 ft-lb	Tempered for 2 hr
	@Treatment Temp. 760 °C	@Treatment Temp. 1400 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	11.0 µm/m-°C	6.10 µin/in-°F	
	@Temperature 20.0 - 199 °C	@Temperature 68.0 - 390 °F	
	11.5 µm/m-°C	6.40 µin/in-°F	
	@Temperature 20.0 - 399 °C	@Temperature 68.0 - 750 °F	
Specific Heat Capacity	0.460 J/g-°C	0.110 BTU/lb-°F	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Thermal Conductivity	22.9 W/m-K	159 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	23.9 W/m-K	166 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 199 °C	@Temperature 390 °F	
	24.9 W/m-K	173 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 399 °C	@Temperature 750 °F	

Thermal Properties	Metric	English	Comments
Component Elements Properties	Metric	English	Comments
Carbon, C	0.38 %	0.38 %	
Chromium, Cr	13.6 %	13.6 %	
Iron, Fe	84.42 %	84.42 %	As Balance
Manganese, Mn	0.50 %	0.50 %	
Silicon, Si	0.80 %	0.80 %	
Vanadium, V	0.30 %	0.30 %	

Descriptive Properties	Value	Comments
Color Code	Brown	

## Contact Songhan Plastic Technology Co.,Ltd.

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