

Crucible Steel CPM® 154 Tool Steel

Category : Metal , Ferrous Metal , Carbon Steel , Tool Steel

Material Notes:

CPM 154 is CPM-manufactured version of Crucible's standard 154 CM. The CPM manufacturing process produces a uniform distribution of the carbides in this grade, giving this CPM 154 easier grinding and polishing, plus better toughness, than conventional 154 CM, while retaining similar heat treat response and wear properties. CPM 154 offers better corrosion resistance, better wear resistance and better hot-hardness than 440C, plus higher toughness. For knifemakers, it offers better edge retention and chipping resistance than 440C. Information provided by Crucible Industries

Order this product through the following link:

http://www.lookpolymers.com/polymer_Crucible-Steel-CPM-154-Tool-Steel.php

Physical Properties	Metric	English	Comments
Density	7.78 g/cc	0.281 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	62	62	austenitized at 1900°F then quenched
	63	63	austenitized at 1900°F then quenched + freeze
	51	51	austenitized at 1900°F then quenched and tempered
	@Tempering Temp. 566 °C	@Tempering Temp. 1050 °F	
	54	54	austenitized at 1900°F then quenched and tempered
	@Tempering Temp. 538 °C	@Tempering Temp. 1000 °F	
	56	56	austenitized at 1900°F then quenched and tempered
	@Tempering Temp. 316 °C	@Tempering Temp. 600 °F	
56	@Tempering Temp. 427 °C	@Tempering Temp. 800 °F	austenitized at 1900°F then quenched and tempered
	56	56	austenitized at 1900°F then quenched and tempered
	@Tempering Temp. 482 °C	@Tempering Temp. 900 °F	
59	@Tempering Temp. 204 °C	@Tempering Temp. 400 °F	austenitized at 1900°F then quenched and tempered
Modulus of Elasticity	207 GPa	30000 ksi	

Mechanical Properties	Metric	English	Comments
CTE, linear	7.02 $\mu\text{m}/\text{m}\cdot\text{°C}$	3.90 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature -74.0 - 21.0 °C	@Temperature -101 - 69.8 °F	
	7.33 $\mu\text{m}/\text{m}\cdot\text{°C}$	4.07 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 21.0 - 38.0 °C	@Temperature 69.8 - 100 °F	
	10.35 $\mu\text{m}/\text{m}\cdot\text{°C}$	5.750 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 21.0 - 149 °C	@Temperature 69.8 - 300 °F	
	10.91 $\mu\text{m}/\text{m}\cdot\text{°C}$	6.061 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 21.0 - 260 °C	@Temperature 69.8 - 500 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	1.05 %	1.05 %	
Chromium, Cr	14 %	14 %	
Iron, Fe	80.95 %	80.95 %	as balance
Molybdenum, Mo	4.0 %	4.0 %	

Descriptive Properties	Value	Comments
Wear Resistance	49 mg	weight loss, pin abrasion method

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