

Crucible Steel 154 CM Martensitic Steel

Category : Metal , Ferrous Metal , Martensitic , Stainless Steel

Material Notes:

Crucible 154 CM is a modification of 440C martensitic stainless steel to which molybdenum has been added. 154 CM has better corrosion resistance, better wear resistance and better hot-hardness than 440C. For knife makers, it offers better edge retention than 440C. It also has higher attainable hardness and better through hardening characteristics than 440C. Information provided by Crucible Specialty Metals.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Crucible-Steel-154-CM-Martensitic-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 | 58.5 | 58.5 | |
| Modulus of Elasticity | 207 GPa | 30000 ksi | |

| Thermal 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 -73.3 - 21.1 $^{\circ}\text{C}$ | @Temperature -100 - 70.0 $^{\circ}\text{F}$ | |
| | 10.35 $\mu\text{m}/\text{m}\cdot\text{C}$ | 5.750 $\mu\text{in}/\text{in}\cdot\text{F}$ | |
| | @Temperature 21.0 - 149 $^{\circ}\text{C}$ | @Temperature 69.8 - 300 $^{\circ}\text{F}$ | |
| Thermal Conductivity | 10.91 $\mu\text{m}/\text{m}\cdot\text{C}$ | 6.061 $\mu\text{in}/\text{in}\cdot\text{F}$ | |
| | @Temperature 21.0 - 260 $^{\circ}\text{C}$ | @Temperature 69.8 - 500 $^{\circ}\text{F}$ | |
| | 11.86 $\mu\text{m}/\text{m}\cdot\text{C}$ | 6.589 $\mu\text{in}/\text{in}\cdot\text{F}$ | |
| | @Temperature 21.0 - 482 $^{\circ}\text{C}$ | @Temperature 69.8 - 900 $^{\circ}\text{F}$ | |
| Thermal Conductivity | 24.2 W/m-K | 168 BTU-in/hr-ft ² - $^{\circ}\text{F}$ | |
| | @Temperature 95.0 $^{\circ}\text{C}$ | @Temperature 203 $^{\circ}\text{F}$ | |

| Component Elements Properties | Metric | English | Comments |
|-------------------------------|---------|---------|--------------|
| Carbon, C | 1.05 % | 1.05 % | |
| Chromium, Cr | 14 % | 14 % | |
| Iron, Fe | 80.95 % | 80.95 % | As Remainder |

| Component Elements Properties | Metric | English | Comments |
|-------------------------------|--------|---------|----------|
| Molybdenum, Mo | wt% | 0.04 | |

| Descriptive Properties | Value | Comments |
|-------------------------|-------|---------------------|
| Total Carbide Volume; % | 17.5 | |
| Wear Resistance; mg | 49 | Pin abrasion method |

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