

Crucible Steel 161 Tool Steel, High Carbon H13

Category : Metal , Ferrous Metal , Tool Steel

Material Notes:

Crucible 161 is a high carbon modification of H13, intended for applications requiring higher hardness, compressive strength, wear resistance, or tempering resistance (hot hardness), at slightly lower toughness. It may be used at tool temperatures up to about 1000 F, with brief exposures up to 1100 F. Information provided by Crucible Industries

Order this product through the following link:

http://www.lookpolymers.com/polymer_Crucible-Steel-161-Tool-Steel-High-Carbon-H13.php

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

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	197 - 229	197 - 229	
Hardness, Rockwell C	32.5	32.5	air cooled from 1900°F then tempered
	@Tempering Temp. 649 °C	@Tempering Temp. 1200 °F	
	44.5	44.5	air cooled from 1900°F then tempered
	@Tempering Temp. 621 °C	@Tempering Temp. 1150 °F	
	48.5	48.5	air cooled from 1900°F then tempered
	@Tempering Temp. 593 °C	@Tempering Temp. 1100 °F	
	52.5	52.5	air cooled from 1900°F then tempered
	@Tempering Temp. 566 °C	@Tempering Temp. 1050 °F	
	56.5	56.5	air cooled from 1900°F then tempered
	@Tempering Temp. 538 °C	@Tempering Temp. 1000 °F	
Modulus of Elasticity	207 GPa	30000 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	11.5 µm/m-°C	6.40 µin/in-°F	
	@Temperature 21.1 - 204 °C	@Temperature 70.0 - 400 °F	
	12.2 µm/m-°C	6.80 µin/in-°F	

Thermal Properties	Metric @Temperature 21.1 - 427 °C	English @Temperature 70.0 - 509 °F	Comments
	13.1 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	7.30 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	
	@Temperature 21.1 - 649 °C	@Temperature 70.0 - 1200 °F	
Thermal Conductivity	2.09 W/m-K	14.5 BTU-in/hr-ft ² -°F	
	@Temperature 93.3 °C	@Temperature 200 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.50 %	0.50 %	
Chromium, Cr	5.0 %	5.0 %	
Iron, Fe	90.4 %	90.4 %	as balance
Manganese, Mn	0.40 %	0.40 %	
Molybdenum, Mo	1.6 %	1.6 %	
Silicon, Si	1.0 %	1.0 %	
Vanadium, V	1.1 %	1.1 %	

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