Crucible Steel HALCOMB® 218 Tool Steel, AISI H11

Category : Metal , Ferrous Metal , Tool Steel , Hot Work Steel

Material Notes:

Halcomb 218 is a general purpose hot work tool steel, combining good toughness with moderate high-temperature strength and heat check resistance. Because of its high toughness, it is particularly suited for applications where drastic coolants are used, or where gross cracking resistance is a concern.Information provided by Crucible Industries

Order this product through the following link:
http://www.lookpolymers.com/polymer_Crucible-Steel-HALCOMB-218-Tool-Steel-AISI-H11.php

Physical Properties	Metric	English	Comments
Density	7.75 g/cc	0.280 lb/in³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	192 - 235	192 - 235	
Hardness, Rockwell C	26 - 28 @Tempering Temp. 649 °C	26 - 28 @Tempering Temp. 1200 °F	air cooled from 1850°F then tempered
	34 - 36 @Tempering Temp. 621 °C	34 - 36 @Tempering Temp. 1150 °F	air cooled from 1850°F then tempered
	40 - 43 @Tempering Temp. 593 °C	40 - 43 @Tempering Temp. 1100 °F	air cooled from 1850°F then tempered
	46 - 48 @Tempering Temp. 566 °C	46 - 48 @Tempering Temp. 1050 °F	air cooled from 1850°F then tempered
	52 - 54 @Tempering Temp. 538 °C	52 - 54 @Tempering Temp. 1000 °F	air cooled from 1850°F then tempered
Modulus of Elasticity	207 GPa	30000 ksi	
Charpy Impact	17.6 J @Tempering Temp. 538 °C	13.0 ft-lb @Tempering Temp. 1000 °F	air cooled from 1850°F then tempered; V-notch
	24.4 J @Tempering Temp. 566 °C	18.0 ft-lb @Tempering Temp. 1050 °F	air cooled from 1850°F then tempered; V-notch
	31.2 J	23.0 ft-lb	

Mechanical Properties	Metric	English	Comments
	@Tempering Temp. 593 °C	@ Tempering Temp. 1100 °F	air cooled from 1850°F then tempered, V-notch

Thermal Properties	Metric	English	Comments
CTE, linear	10.4 µm/m-°C @Temperature 21.1 - 93.3 °C	5.80 µin/in-°F @Temperature 70.0 - 200 °F	
	11.3 µm/m-°C @Temperature 21.1 - 204 °C	6.30 µin/in-°F @Temperature 70.0 - 400 °F	
	12.4 µm/m-°C @Temperature 21.1 - 427 °C	6.90 µin/in-°F @Temperature 70.0 - 800 °F	
	12.8 µm/m-°C @Temperature 21.1 - 538 °C	7.10 µin/in-°F @Temperature 70.0 - 1000 °F	
	13.1 µm/m-°C @Temperature 21.1 - 649 °C	7.30 µin/in-°F @Temperature 70.0 - 1200 °F	
Thermal Conductivity	2.16 W/m-K @Temperature 93.3 °C	15.0 BTU-in/hr-ft²-°F @Temperature 200 °F	
	2.31 W/m-K @Temperature 316 °C	16.0 BTU-in/hr-ft²-°F @Temperature 600 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.40 %	0.40 %	
Chromium, Cr	5.0 %	5.0 %	
Iron, Fe	91.6 %	91.6 %	as balance
Manganese, Mn	0.30 %	0.30 %	
Molybdenum, Mo	1.3 %	1.3 %	
Silicon, Si	0.90 %	0.90 %	
Vanadium, V	0.50 %	0.50 %	

Chemical Properties	Metric	English	Comments
Critical Temperature	818.3 °C	1505 °F	

Chemical Properties	Metric	English	Comments

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