Crucible Steel CHRO-MOW® Tool Steel, AISI H12

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

Material Notes:

Chro-Mow is a general purpose hot work tool steel, combining good high-temperature strength with moderate toughness and heat check resistance. It is suited for applications where drastic coolants are used. It may be used up to tool temperatures of about 1000F, with brief exposures up to about 1100F.Information provided by Crucible Industries

Order this product through the following link:
http://www.lookpolymers.com/polymer_Crucible-Steel-CHRO-MOW-Tool-Steel-AISI-H12.php

Physical Properties	Metric	English	Comments
Density	7.78 g/cc	0.281 lb/in³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	192 - 235	192 - 235	
Hardness, Rockwell C	30 - 32 @Tempering Temp. 621 °C	30 - 32 @Tempering Temp. 1150 °F	air cooled from 1850°F then tempered
	40 - 42 @Tempering Temp. 593 °C	40 - 42 @Tempering Temp. 1100 °F	air cooled from 1850°F then tempered
	44 - 46 @Tempering Temp. 566 °C	44 - 46 @Tempering Temp. 1050 °F	air cooled from 1850°F then tempered
	51 - 53 @Tempering Temp. 538 °C	51 - 53 @Tempering Temp. 1000 °F	air cooled from 1850°F then tempered
Modulus of Elasticity	207 GPa	30000 ksi	
Charpy Impact	10.8 J @Tempering Temp. 538 °C	8.00 ft-lb @Tempering Temp. 1000 °F	air cooled from 1850°F then tempered; V-notch
	14.9 J @Tempering Temp. 566 °C	11.0 ft-lb @Tempering Temp. 1050 °F	air cooled from 1850°F then tempered; V-notch
	17.6 J @Tempering Temp. 593 °C	13.0 ft-lb @Tempering Temp. 1100 °F	air cooled from 1850°F then tempered; V-notch

Thermal Properties	Metric	English	Comments
CTE, linear	11.0 µm/m-°C @Temperature 21.1 - 93.3 °C	6.10 µin/in-°F @Temperature 70.0 - 200 °F	
	11.7 µm/m-°C @Temperature 21.1 - 204 °C	6.50 µin/in-°F @Temperature 70.0 - 400 °F	
	12.6 µm/m-°C @Temperature 21.1 - 427 °C	7.00 µin/in-°F @Temperature 70.0 - 800 °F	
	13.3 µm/m-°C @Temperature 21.1 - 649 °C	7.40 µin/in-°F @Temperature 70.0 - 1200 °F	
Thermal Conductivity	2.02 W/m-K @Temperature 93.3 °C	14.0 BTU-in/hr-ft²-°F @Temperature 200 °F	
	2.16 W/m-K @Temperature 316 °C	15.0 BTU-in/hr-ft²-°F @Temperature 600 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.35 %	0.35 %	
Chromium, Cr	5.0 %	5.0 %	
Iron, Fe	90.45 %	90.45 %	as balance
Manganese, Mn	0.35 %	0.35 %	
Molybdenum, Mo	1.3 %	1.3 %	
Silicon, Si	1.0 %	1.0 %	
Tungsten, W	1.2 %	1.2 %	
Vanadium, V	0.35 %	0.35 %	

Chemical Properties	Metric	English	Comments
Critical Temperature	835.0 °C	1535 °F	

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