

Crucible Steel WR-95 Tool Steel, AISI H10 Modified

Category : Metal , Ferrous Metal , Tool Steel

Material Notes:

WR-95 is a modified H10, with cobalt added to improve its high temperature properties. It is an upgrade from H13 in applications requiring improved hot hardness or heat check resistance, at a slight decrease in toughness. It may be used at tool temperatures up to about 1100F, with brief exposures up to about 1200F. Information provided by Crucible Industries

Order this product through the following link:

http://www.lookpolymers.com/polymer_Crucible-Steel-WR-95-Tool-Steel-AISI-H10-Modified.php

Physical Properties	Metric	English	Comments
Density	7.83 g/cc	0.283 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	40.5	40.5	air cooled from 1900°F then tempered
	@Tempering Temp. 649 °C	@Tempering Temp. 1200 °F	
	50.5	50.5	
	@Tempering Temp. 621 °C	@Tempering Temp. 1150 °F	
	54.5	54.5	
	@Tempering Temp. 593 °C	@Tempering Temp. 1100 °F	air cooled from 1900°F then tempered
	57	57	air cooled from 1900°F then tempered
	@Tempering Temp. 566 °C	@Tempering Temp. 1050 °F	
	58	58	air cooled from 1900°F then tempered
	@Tempering Temp. 538 °C	@Tempering Temp. 1000 °F	
Modulus of Elasticity	207 GPa	30000 ksi	
Charpy Impact	12.2 J	9.00 ft-lb	air cooled from 1900°F then tempered; V-notch
	@Tempering Temp. 538 °C	@Tempering Temp. 1000 °F	
	13.6 J	10.0 ft-lb	
	@Tempering Temp. 566 °C	@Tempering Temp. 1050 °F	air cooled from 1900°F then tempered; V-notch
	16.3 J	12.0 ft-lb	air cooled from 1900°F then tempered; V-notch
	@Tempering Temp. 593 °C	@Tempering Temp.	

Mechanical Properties	°C Metric	1100 °F English	Comments
	19.0 J	14.0 ft-lb	
	@Tempering Temp. 621 °C	@Tempering Temp. 1150 °F	air cooled from 1900°F then tempered; V-notch
	21.0 J	15.5 ft-lb	
	@Tempering Temp. 649 °C	@Tempering Temp. 1200 °F	air cooled from 1900°F then tempered; V-notch

Thermal Properties	Metric	English	Comments
CTE, linear	11.3 µm/m-°C	6.30 µin/in-°F	
	@Temperature 21.1 - 93.3 °C	@Temperature 70.0 - 200 °F	
	11.7 µm/m-°C	6.50 µin/in-°F	
	@Temperature 21.1 - 260 °C	@Temperature 70.0 - 500 °F	
	12.1 µm/m-°C	6.70 µin/in-°F	
	@Temperature 21.1 - 427 °C	@Temperature 70.0 - 800 °F	
Thermal Conductivity	12.8 µm/m-°C	7.10 µin/in-°F	
	@Temperature 21.1 - 538 °C	@Temperature 70.0 - 1000 °F	
	13.3 µm/m-°C	7.40 µin/in-°F	
	@Temperature 21.1 - 649 °C	@Temperature 70.0 - 1200 °F	
	2.16 W/m-K	15.0 BTU-in/hr-ft ² -°F	
	@Temperature 93.3 °C	@Temperature 200 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.35 %	0.35 %	
Chromium, Cr	3.5 %	3.5 %	
Cobalt, Co	2.0 %	2.0 %	
Iron, Fe	89.85 %	89.85 %	as balance
Manganese, Mn	0.30 %	0.30 %	
Molybdenum, Mo	2.5 %	2.5 %	
Silicon, Si	0.90 %	0.90 %	

Vanadium V Component Elements Properties	0.60 % Metric	0.60 % English	Comments
Chemical Properties	Metric	English	Comments
Critical Temperature	843 °C	1550 °F	

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