

Crucible Steel REX® TMO High Speed Steel, AISI M1

Category : Metal , Ferrous Metal , Tool Steel

Material Notes:

REX TMO molybdenum-tungsten high speed steel is a tough general purpose high speed steel with high cutting efficiency and excellent finishing properties. It is adapted to fast light cuts on soft or medium hard materials. Information provided by Crucible Industries

Order this product through the following link:

http://www.lookpolymers.com/polymer_Crucible-Steel-REX-TMO-High-Speed-Steel-AISI-M1.php

Physical Properties	Metric	English	Comments
Density	7.92 g/cc	0.286 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	217 - 235	217 - 235	
Hardness, Rockwell C	57	57	oil quenched from 2100°F then tempered
	@Tempering Temp. 621 °C	@Tempering Temp. 1150 °F	
	59.5	59.5	
	@Tempering Temp. 607.2 °C	@Tempering Temp. 1125 °F	
	61	61	
	@Tempering Temp. 593 °C	@Tempering Temp. 1100 °F	
	62.6	62.6	
	@Tempering Temp. 579.4 °C	@Tempering Temp. 1075 °F	
63.8	@Tempering Temp. 566 °C	@Tempering Temp. 1050 °F	
	64.3	64.3	
@Tempering Temp. 551.7 °C	@Tempering Temp. 1025 °F		
64.5	64.5	oil quenched from 2100°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	10.5 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	5.85 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	
	@Temperature 37.8 - 260 $^{\circ}\text{C}$	@Temperature 100 - 500 $^{\circ}\text{F}$	
	12.1 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	6.75 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	
	@Temperature 37.8 - 427 $^{\circ}\text{C}$	@Temperature 100 - 800 $^{\circ}\text{F}$	
	12.5 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	6.93 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	
	@Temperature 37.8 - 538 $^{\circ}\text{C}$	@Temperature 100 - 1000 $^{\circ}\text{F}$	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.83 %	0.83 %	
Chromium, Cr	3.75 %	3.75 %	
Iron, Fe	83.4 %	83.4 %	as balance
Manganese, Mn	0.30 %	0.30 %	
Molybdenum, Mo	8.5 %	8.5 %	
Silicon, Si	0.35 %	0.35 %	
Tungsten, W	1.7 %	1.7 %	
Vanadium, V	1.15 %	1.15 %	

Chemical Properties	Metric	English	Comments
Critical Temperature	827 $^{\circ}\text{C}$	1520 $^{\circ}\text{F}$	

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