

Crucible Steel REX® M3-1 High Speed Steel, AISI M3-1

Category : Metal , Ferrous Metal , Tool Steel

Material Notes:

REX M3-1 is a lower carbon, lower vanadium modification of M3-2 high speed steel. This lower alloy content results in better machining and grinding characteristics compared to M3-2, with a slight improvement in toughness and a moderate decrease in wear resistance in between that of M2 and M3-2. Information provided by Crucible Industries

Order this product through the following link:

http://www.lookpolymers.com/polymer_Crucible-Steel-REX-M3-1-High-Speed-Steel-AISI-M3-1.php

Physical Properties	Metric	English	Comments
Density	8.17 g/cc	0.295 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	225 - 255	225 - 255	
Hardness, Rockwell C	65	65	oil quenched from 2100°F
	52	52	oil quenched from 2100°F then tempered
	@Tempering Temp. 649 °C	@Tempering Temp. 1200 °F	
	56	56	oil quenched from 2100°F then tempered
	@Tempering Temp. 621 °C	@Tempering Temp. 1150 °F	
	60	60	oil quenched from 2100°F then tempered
	@Tempering Temp. 593 °C	@Tempering Temp. 1100 °F	
	62	62	oil quenched from 2100°F then tempered
	@Tempering Temp. 566 °C	@Tempering Temp. 1050 °F	
	63	63	oil quenched from 2100°F then tempered
	@Tempering Temp. 551.7 °C	@Tempering Temp. 1025 °F	
	63.5	63.5	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
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Thermal Properties CTE, linear	Metric 11.9 $\mu\text{m}/\text{m}\cdot\text{C}$	English 6.60 $\mu\text{in}/\text{in}\cdot\text{F}$	Comments
	@Temperature 21.1 - 260 °C	@Temperature 70.0 - 500 °F	
	11.9 $\mu\text{m}/\text{m}\cdot\text{C}$	6.60 $\mu\text{in}/\text{in}\cdot\text{F}$	
	@Temperature 21.1 - 427 °C	@Temperature 70.0 - 800 °F	
	12.1 $\mu\text{m}/\text{m}\cdot\text{C}$	6.70 $\mu\text{in}/\text{in}\cdot\text{F}$	
	@Temperature 21.1 - 538 °C	@Temperature 70.0 - 1000 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	1.02 %	1.02 %	
Chromium, Cr	4.0 %	4.0 %	
Iron, Fe	81.25 %	81.25 %	as balance
Manganese, Mn	0.25 %	0.25 %	
Molybdenum, Mo	5.0 %	5.0 %	
Silicon, Si	0.30 %	0.30 %	
Sulfur, S	0.030 %	0.030 %	
Tungsten, W	5.75 %	5.75 %	
Vanadium, V	2.4 %	2.4 %	

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

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