

## Crucible Steel REX® M4 High Speed Steel

Category : Metal , Ferrous Metal , Tool Steel

### Material Notes:

REX M4 is a special purpose high speed steel designed to give high wear resistance in tools. Its high vanadium and carbon content provide for high resistance to cratering and wear in cold work punches, die inserts, and cutting applications involving high speeds and light cuts. It is designed to give maximum performance working with abrasive materials, exhibiting better wear resistance than M2 or M3. Information provided by Crucible Industries

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Crucible-Steel-REX-M4-High-Speed-Steel.php](http://www.lookpolymers.com/polymer_Crucible-Steel-REX-M4-High-Speed-Steel.php)

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

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	63	63	hardened at 2120°F, then quenched and tempered
	@Tempering Temp. 568.3 °C	@Tempering Temp. 1055 °F	
	65	65	hardened at 2200°F, then quenched and tempered
	@Tempering Temp. 551.7 °C	@Tempering Temp. 1025 °F	
Modulus of Elasticity	214 GPa	31000 ksi	
Charpy Impact	11.5 J	8.50 ft-lb	hardened at 2200°F, then tempered; C-notch
	@Tempering Temp. 551.7 °C	@Tempering Temp. 1025 °F	
	14.9 J	11.0 ft-lb	hardened at 2120°F, then tempered; C-notch
	@Tempering Temp. 568.3 °C	@Tempering Temp. 1055 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	9.58 µm/m-°C	5.32 µin/in-°F	
	@Temperature 37.8 - 260 °C	@Temperature 100 - 500 °F	
	11.2 µm/m-°C	6.24 µin/in-°F	
	@Temperature 37.8 - 427 °C	@Temperature 100 - 800 °F	
	12.0 µm/m-°C	6.64 µin/in-°F	
	@Temperature 37.8 -	@Temperature 100 -	

Thermal Properties	538 °C Metric	1000 °F English	Comments
	12.3 µm/m-°C	6.82 µin/in-°F	
	@Temperature 37.8 - 649 °C	@Temperature 100 - 1200 °F	
	12.6 µm/m-°C	6.99 µin/in-°F	
	@Temperature 37.8 - 816 °C	@Temperature 100 - 1500 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	1.3 %	1.3 %	
Chromium, Cr	4.3 %	4.3 %	
Iron, Fe	79.7 %	79.7 %	as balance
Manganese, Mn	0.30 %	0.30 %	
Molybdenum, Mo	4.5 %	4.5 %	
Silicon, Si	0.30 %	0.30 %	
Tungsten, W	5.6 %	5.6 %	
Vanadium, V	4.0 %	4.0 %	

Chemical Properties	Metric	English	Comments
Critical Temperature	840.6 °C	1545 °F	Ac<sub>1</sub>

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