

Crucible Steel CPM® Rex® 54® (HS) High Speed Steel

Category : Metal , Ferrous Metal , Carbon Steel , High Carbon Steel , Tool Steel

Material Notes:

CPM Rex 54 is a cobalt-bearing high speed steel designed to offer an improvement in the red hardness of the popular M4 grade, while maintaining wear properties equivalent to M4. CPM Rex 54 has a chemical analysis very similar to M4 to which cobalt has been added for superior red hardness which allows for higher cutting speeds. It contains higher vanadium (4%) than either M35 (2%) or CPM Rex 45 (3%), and therefore offers improved wear resistance over these two grades, while maintaining a similar red hardness level. The CPM process results in a homogeneous microstructure with a finer, more uniform carbide distribution imparting superior dimensional stability, grindability and toughness when compared to steels produced by conventional processes. The CPM process also allows the design of more highly alloyed grades which cannot be produced by conventional steelmaking. Information provided by Crucible Specialty Metals.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Crucible-Steel-CPM-Rex-54-HS-High-Speed-Steel.php

Physical Properties	Metric	English	Comments
Density	8.144 g/cc	0.2942 lb/in³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	225 - 255	225 - 255	Annealed
Hardness, Rockwell C	57	57	Hardening Temperature- 2100°C; Tempering Temperature- 1150°C
	67	67	Hardening Temperature- 2200°C; Tempering Temperature- 1000°C
Modulus of Elasticity	207 GPa	30000 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	11.5 µm/m-°C	6.39 µin/in-°F	
	@Temperature 20.0 - 260 °C	@Temperature 68.0 - 500 °F	
	12.1 µm/m-°C	6.72 µin/in-°F	
	@Temperature 20.0 - 540 °C	@Temperature 68.0 - 1000 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	1.48 %	1.48 %	
Chromium, Cr	4.0 %	4.0 %	
Cobalt, Co	5.0 %	5.0 %	

Iron, Fe Component Elements Properties	75.05 % Metric	75.05 % English	As Remainder Comments
Molybdenum, Mo	5.0 %	5.0 %	
Sulfur, S	0.22 %	0.22 %	
Tungsten, W	5.5 %	5.5 %	
Vanadium, V	3.75 %	3.75 %	

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