

Crucible Steel CPM® REX® 121 HS High Speed Steel

Category : Metal , Ferrous Metal , Tool Steel

Material Notes:

CPM REX 121 is a new high vanadium cobalt bearing tool steel designed to offer a combination of the highest wear resistance, attainable hardness, and red hardness available in a high speed steel. Its superior red hardness permits higher cutting speeds compared to other high speed steels. Its superior wear resistance (due to the high vanadium content) helps maintain a sharp cutting edge at increased cutting speeds. CPM REX 121 also bridges the performance gap between high alloy tool steels and carbide materials. It may be used in cutting tools, where high cutting speeds demand higher heat resistance, but carbide is too brittle, or in high wear tooling applications (punches and dies) where carbide tools are too fragile. Because of the extremely fine and uniform CPM microstructure, sulfur may be added if desired, to improve the machinability. The higher sulfur content benefits the toolmaker by allowing ease of manufacture, and the tool user by allowing easier sharpening. The CPM process ensures that the additional sulfur will not detrimentally affect the tool's toughness. Information provided by Crucible Industries

Order this product through the following link:

http://www.lookpolymers.com/polymer_Crucible-Steel-CPM-REX-121-HS-High-Speed-Steel.php

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	360 - 410	360 - 410	
Hardness, Rockwell C	71	71	hardened at 1875°F
	55	55	hardened at 1875°F then tempered
	@Tempering Temp. 649 °C	@Tempering Temp. 1200 °F	
	63	63	hardened at 1875°F then tempered
	@Tempering Temp. 593 °C	@Tempering Temp. 1100 °F	
	66.5	66.5	hardened at 1875°F then tempered
	@Tempering Temp. 566 °C	@Tempering Temp. 1050 °F	
	67.5	67.5	hardened at 1875°F then tempered
	@Tempering Temp. 551.7 °C	@Tempering Temp. 1025 °F	
	68.5	68.5	hardened at 1875°F then tempered
	@Tempering Temp. 538 °C	@Tempering Temp. 1000 °F	
	69	69	hardened at 1875°F then tempered
	@Tempering Temp. 510 °C	@Tempering Temp. 950 °F	
Modulus of Elasticity	214 GPa	31000 ksi	

Mechanical Properties	Metric	English	Comments
Component Elements Properties	Metric	English	Comments
Carbon, C	3.4 %	3.4 %	
Chromium, Cr	4.0 %	4.0 %	
Cobalt, Co	9.0 %	9.0 %	
Iron, Fe	59 %	59 %	as balance
Molybdenum, Mo	5.0 %	5.0 %	
Sulfur, S	0.030 %	0.030 %	
Tungsten, W	10 %	10 %	
Vanadium, V	9.5 %	9.5 %	

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