

## Crucible Steel CPM® S90V® (420V®) Tool Steel

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

### Material Notes:

CPM S90V is a unique tool steel made by the Crucible Particle Metallurgy process. It is a martensitic stainless steel with a high volume of vanadium carbides for exceptionally good wear resistance. S90V offers substantial improvements in wear resistance over 440C and D2, and other high chromium tool steels, with corrosion resistance equal to or better than 440C. Its high vanadium content favors the formation of hard vanadium carbides instead of chromium carbides for wear resistance, leaving sufficient chromium in the matrix to provide good corrosion resistance. The wear and corrosion resistance of S90V make it an excellent candidate to replace 440C, where increased wear is a primary concern. It can replace D2 or other tool steels in applications where improved corrosion resistance is also of benefit. The CPM process results in a finer, more uniform carbide distribution imparting improved toughness and grindability to high alloy steels. 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-S90V-420V-Tool-Steel.php](http://www.lookpolymers.com/polymer_Crucible-Steel-CPM-S90V-420V-Tool-Steel.php)

Physical Properties	Metric	English	Comments
Density	7.40 g/cc	0.267 lb/in <sup>3</sup>	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	277	277	Annealed
Hardness, Rockwell C	56 - 59	56 - 59	
Modulus of Elasticity	215 GPa	31200 ksi	
Charpy Impact	27.12 J	20.00 ft-lb	

Thermal Properties	Metric	English	Comments
CTE, linear	11.0 µm/m-°C	6.11 µin/in-°F	
	@Temperature 20.0 - 200 °C	@Temperature 68.0 - 392 °F	
Thermal Conductivity	17.3 W/m-K	120 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 65.0 °C	@Temperature 149 °F	
Shrinkage	-0.0500 - -0.0300 %	-0.0500 - -0.0300 %	

Component Elements Properties	Metric	English	Comments
Carbon, C	2.3 %	2.3 %	
Chromium, Cr	14 %	14 %	

Component Elements Properties	Metric	English	Comments
Tungsten, W	1.0 %	1.0 %	
Vanadium, V	9.0 %	9.0 %	

Descriptive Properties	Value	Comments
Corrosion Rate; mm/y	102 to 117	Dilute Aqua-Regia
	9 to 17	10% Boiling Acetic

## Contact Songhan Plastic Technology Co.,Ltd.

Website : [www.lookpolymers.com](http://www.lookpolymers.com)

Email : [sales@lookpolymers.com](mailto:sales@lookpolymers.com)

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China