

## Hogen HM3000 Tungsten-Based Metal

Category : Metal , Nonferrous Metal , Refractory Metal , Tungsten Alloy

### Material Notes:

Mil Spec T-21014D Class 3; ASTM B-777-99 Class 3; AMS T-21014 Class 3. Nil magnetic properties. Manufactured by powder metallurgy methods. The tungsten base offers high thermal conductivity and a low CTE which combine to resist thermal fatigue. The high melting point reduces soldering or erosion problems. To increase the machinability of this brittle metal, alloying elements are added and practical use of tungsten is possible for die casting tools. Used in resistance brazing and high temp applications. Used as counter weights and counter balances, radiation shielding components, tool shanks for boring bars and other tools for chatter-free machining. Data provided by Hogen Industries.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Hogen-HM3000-Tungsten-Based-Metal.php](http://www.lookpolymers.com/polymer_Hogen-HM3000-Tungsten-Based-Metal.php)

Physical Properties	Metric	English	Comments
Density	18.0 g/cc	0.650 lb/in <sup>3</sup>	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	34	34	
Tensile Strength, Ultimate	758 MPa	110000 psi	
Tensile Strength, Yield	590 MPa @Strain 0.200 %	85600 psi @Strain 0.200 %	
Elongation at Break	7.0 %	7.0 %	in 50 mm
Modulus of Elasticity	310 GPa	45000 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	4.43 $\mu\text{m/m-}^\circ\text{C}$ @Temperature 20.0 - 400 $^\circ\text{C}$	2.46 $\mu\text{in/in-}^\circ\text{F}$ @Temperature 68.0 - 752 $^\circ\text{F}$	
Thermal Conductivity	138 W/m-K	958 BTU-in/hr-ft <sup>2</sup> - $^\circ\text{F}$	

Component Elements Properties	Metric	English	Comments
Copper, Cu	1.5 %	1.5 %	
Nickel, Ni	3.5 %	3.5 %	
Tungsten, W	95 %	95 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000110 ohm-cm	0.0000110 ohm-cm	

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