

## H.C. Starck HPM 1800 Tungsten High Density Composite

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

### Material Notes:

Description of Product: Tungsten based composite materials are outstanding due to high density and good mechanical properties. The product can be delivered both as semi-finished product for further processing by the customer or in accordance with the drawing as finished machined component. Our HPM 1700 to HPM 1850 materials provide a solution in a wide range of applications requiring concentrated weight or density in a limited space. These lead-free parts meet legal requirements and recommendations to protect the environment. Range of Application: Balance weights, radiation protection, vibration absorbers, heat transfer, drilling bars. The mechanical characteristics have to guarantee the stability and strength in any application case. The absorption of x-ray and gamma radiation is in direct proportion to the density of the shielding material. Tungsten high density composites are more than 1.5 times as effective as lead and provide extremely efficient protection, particularly where space is limited. Information provided by H.C. Starck.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_HC-Starck-HPM-1800-Tungsten-High-Density-Composite.php](http://www.lookpolymers.com/polymer_HC-Starck-HPM-1800-Tungsten-High-Density-Composite.php)

Physical Properties	Metric	English	Comments
Density	17.8 - 18.2 g/cc	0.643 - 0.658 lb/in <sup>3</sup>	

Mechanical Properties	Metric	English	Comments
Hardness, Vickers	<= 332	<= 332	HV 30
Tensile Strength	830 MPa	120000 psi	
Tensile Strength, Yield	>= 520 MPa	>= 75400 psi	
Elongation at Break	14 %	14 %	
Modulus of Elasticity	370 GPa	53700 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	4.90 Åµm/m-Å°C	2.72 Åµin/in-Å°F	
	@Temperature 20.0 - 100 Å°C	@Temperature 68.0 - 212 Å°F	
	5.10 Åµm/m-Å°C	2.83 Åµin/in-Å°F	
	@Temperature 20.0 - 300 Å°C	@Temperature 68.0 - 572 Å°F	
	5.20 Åµm/m-Å°C	2.89 Åµin/in-Å°F	
	@Temperature 20.0 - 450 Å°C	@Temperature 68.0 - 842 Å°F	
Thermal Conductivity	>= 80.0 W/m-K	>= 555 BTU-in/hr-ft <sup>2</sup> -Å°F	

Component Elements Properties	Metric	English	Comments
Tungsten, W	95 %	95 %	Balance - Ni, Fe

Electrical Properties	Metric	English	Comments
Volume Resistivity	0.000014 ohm-cm	0.000014 ohm-cm	
Magnetic Permeability	>= 1.05	>= 1.05	

## Contact Songhan Plastic Technology Co.,Ltd.

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