

H.C. Starck WCu 70/30 Tungsten-Copper Composite Material

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

Material Notes:

Description of Product: Tungsten-copper composite materials are produced by copper infiltration of porous sintered tungsten. They are available with different copper contents (10 - 30 %). A thermal conductivity over 200 W/m K is producible. Range of Application: Switching contacts for high-voltage and medium-voltage, heat sinks for passive thermal management, electrodes for erosive processing. Information provided by H.C. Starck.

Order this product through the following link:

http://www.lookpolymers.com/polymer_HC-Starck-WCu-7030-Tungsten-Copper-Composite-Material.php

Physical Properties	Metric	English	Comments
Density	14.1 - 14.5 g/cc	0.509 - 0.524 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	160 - 220	160 - 220	2.5 mm ball
	@Load 62.5 kg	@Load 138 lb	
Tensile Strength, Ultimate	>= 350 MPa	>= 50800 psi	
Modulus of Elasticity	220 GPa	31900 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	8.80 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	4.89 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 20.0 - 100 $\text{Å}^\circ\text{C}$	@Temperature 68.0 - 212 $\text{Å}^\circ\text{F}$	
	9.20 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	5.11 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 20.0 - 300 $\text{Å}^\circ\text{C}$	@Temperature 68.0 - 572 $\text{Å}^\circ\text{F}$	
	9.50 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	5.28 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 20.0 - 450 $\text{Å}^\circ\text{C}$	@Temperature 68.0 - 842 $\text{Å}^\circ\text{F}$	
Thermal Conductivity	150 - 240 W/m-K	1040 - 1670 BTU-in/hr-ft ² · $\text{Å}^\circ\text{F}$	

Component Elements Properties	Metric	English	Comments
Copper, Cu	27 - 33 %	27 - 33 %	
Tungsten, W	67 - 73 %	67 - 73 %	

Electrical Properties	Metric	English	Comments
Volume Resistivity	0.0000040 ohm-cm	0.0000040 ohm-cm	

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