

H.C. Starck WCu 85/15 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-8515-Tungsten-Copper-Composite-Material.php

Physical Properties	Metric	English	Comments
Density	16.1 - 16.7 g/cc	0.582 - 0.603 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	190 - 260	190 - 260	2.5 mm ball
	@Load 62.5 kg	@Load 138 lb	
Tensile Strength, Ultimate	>= 460 MPa	>= 66700 psi	
Modulus of Elasticity	290 GPa	42100 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	7.20 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	4.00 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 20.0 - 100 $\text{Å}^\circ\text{C}$	@Temperature 68.0 - 212 $\text{Å}^\circ\text{F}$	
	7.60 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	4.22 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 20.0 - 300 $\text{Å}^\circ\text{C}$	@Temperature 68.0 - 572 $\text{Å}^\circ\text{F}$	
	8.00 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	4.44 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 20.0 - 450 $\text{Å}^\circ\text{C}$	@Temperature 68.0 - 842 $\text{Å}^\circ\text{F}$	
Thermal Conductivity	135 - 210 W/m-K	937 - 1460 BTU-in/hr-ft ² - $\text{Å}^\circ\text{F}$	

Component Elements Properties	Metric	English	Comments
Copper, Cu	13 - 17 %	13 - 17 %	
Tungsten, W	83 - 87 %	83 - 87 %	

Electrical Properties	Metric	English	Comments
Volume Resistivity	0.0000050 ohm-cm	0.0000050 ohm-cm	

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