

H.C. Starck NRCÂ® 91 Tantalum - 7% Tungsten Alloy

Category : Metal , Nonferrous Metal , Refractory Metal

Material Notes:

Applications: NRCÂ® 91 Metal wire products are primarily used for their superior tensile and yield strengths and torsion modulus. These properties are retained at high temperatures in vacuum. Further, this alloy has good dimensional stability even after repeated thermal cycles to 2400Â°F in vacuum. This alloy maintains tantalum's excellent corrosion resistance to halogens and acids. It is ideal for use in the manufacture of springs that are used in corrosive environments. This alloy is made by powder metallurgy. Forms Available: Wire between diameters 0.015 to 0.093". **Corrosion Resistance:** The chemical resistance properties of NRCÂ® 91 Metal, like tantalum, are similar to those of glass. The alloy resists attack by almost all acids, except hydrofluoric, and has been successfully employed in severely corrosive environments. It is not attacked by chlorine or bromine gases. Information provided by H.C. Starck.

Order this product through the following link:

http://www.lookpolymers.com/polymer_HC-Starck-NRC-91-Tantalum-7-Tungsten-Alloy.php

Physical Properties	Metric	English	Comments
Specific Gravity	16.8 g/cc	16.8 g/cc	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	80 - 90	80 - 90	hardness as annealed
Tensile Strength	572 MPa	83000 psi	annealed
	@Diameter 2.03 mm	@Diameter 0.0800 in	
	848 MPa	123000 psi	unannealed, drawn from annealed 0.080" wire
	@Diameter 1.57 mm	@Diameter 0.0620 in	
	965 MPa	140000 psi	unannealed, drawn from annealed 0.080" wire
	@Diameter 0.457 mm	@Diameter 0.0180 in	
Elongation at Break	1030 MPa	150000 psi	unannealed, drawn from annealed 0.080" wire
	@Diameter 1.14 mm	@Diameter 0.0450 in	
	1140 MPa	165000 psi	unannealed, drawn from annealed 0.080" wire
	@Diameter 0.838 mm	@Diameter 0.0330 in	
	5.0 %	5.0 %	unannealed, drawn from annealed 0.080" wire
	@Diameter 0.838 mm	@Diameter 0.0330 in	
	5.0 %	5.0 %	unannealed, drawn from annealed 0.080" wire
	@Diameter 0.457 mm	@Diameter 0.0180 in	
	6.0 %	6.0 %	unannealed, drawn from annealed 0.080" wire
	@Diameter 1.57 mm	@Diameter 0.0620 in	

Mechanical Properties	Metric	English	Comments
	@Diameter 1.14 mm	@Diameter 0.0450 in	unannealed, drawn from annealed 0.080" wire
	26 %	26 %	annealed
	@Diameter 2.03 mm	@Diameter 0.0800 in	
Modulus of Elasticity	186 GPa	27000 ksi	
Modulus of Rigidity	71.0 GPa	10300 ksi	
Poissons Ratio	0.31	0.31	Calculated

Thermal Properties	Metric	English	Comments
Melting Point	3025 Â°C	5477 Â°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.010 %	<= 0.010 %	
Hydrogen, H	<= 0.0010 %	<= 0.0010 %	
Iron, Fe	<= 0.010 %	<= 0.010 %	
Molybdenum, Mo	<= 0.050 %	<= 0.050 %	
Nickel, Ni	<= 0.0050 %	<= 0.0050 %	
Niobium, Nb (Columbium, Cb)	<= 0.10 %	<= 0.10 %	
Nitrogen, N	<= 0.010 %	<= 0.010 %	
Oxygen, O	<= 0.025 %	<= 0.025 %	
Silicon, Si	<= 0.015 %	<= 0.015 %	
Tantalum, Ta	>= 91.769 %	>= 91.769 %	Balance
Titanium, Ti	<= 0.0050 %	<= 0.0050 %	
Tungsten, W	6.5 - 8.0 %	6.5 - 8.0 %	

Electrical Properties	Metric	English	Comments
Volume Resistivity	0.0000188 ohm-cm	0.0000188 ohm-cm	
	@Temperature 0.000 - 100 Â°C	@Temperature 32.0 - 212 Â°F	

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

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