H.C. Starck NRCÂ® Tantalum (UNS R05200)

Category : Metal , Nonferrous Metal , Refractory Metal , Pure Element

Material Notes:

Applications: High strength and excellent corrosion resistance make tantalum ideal for use in the manufacture and repair of chemical process equipment and heat exchangers. Other uses are rupture discs, cathode plates, heat shielding, ordnance, sputtering and medical applications.Forms Available: Foil, Sheet, Plate, Welded Tubing, Rod, Wire and Bar.Metallurgical Characteristics: Material is single-phase tantalum. Stress relieve at 1500Â°F, re-crystallize at 1900Â°F.Information provided by H.C. Starck.

Order this product through the following link:
http://www.lookpolymers.com/polymer_HC-Starck-NRC-Tantalum-UNS-R05200.php

Physical Properties	Metric	English	Comments
Specific Gravity	16.6 g/cc	16.6 g/cc	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	25 - 65	25 - 65	hardness as annealed, typical
Hardness, Vickers	80 - 120	80 - 120	hardness as annealed, typical
Tensile Strength	>= 160 MPa @Temperature 249 Â°C	>= 23200 psi @Temperature 480 Â°F	
	>= 175 MPa @Temperature 199 Â°C	>= 25400 psi @Temperature 390 Â°F	
	>= 200 MPa @Temperature 98.9 Â°C	>= 29000 psi @Temperature 210 Â°F	
	>= 207 MPa @Temperature 21.1 Â°C	>= 30000 psi @Temperature 70.0 Â°F	
Tensile Strength, Ultimate	241 - 310 MPa @Temperature 20.0 Â°C	35000 - 45000 psi @Temperature 68.0 Â°F	typical
Tensile Strength, Yield	138 - 207 MPa @Temperature 20.0 Â°C	20000 - 30000 psi @Temperature 68.0 Â°F	typical
	>= 69.6 MPa @Strain 0.200 %, Temperature 249 Â°C	>= 10100 psi @Strain 0.200 %, Temperature 480 Â°F	
	>= 80.0 MPa	>= 11600 psi	

Mechanical Properties	Metric	English	Comments
	@Strain 0.200 %, Temperature 199 Â°C	@Strain 0.200 %, Temperature 390 Â°F	
	>= 100 MPa @Strain 0.200 %, Temperature 98.9 Â°C	>= 14500 psi @Strain 0.200 %, Temperature 210 Â°F	
	>= 138 MPa @Strain 0.200 %, Temperature 21.1 Â°C	>= 20000 psi @Strain 0.200 %, Temperature 70.0 Â°F	
Elongation at Break	>= 10 % @Temperature 199 Â°C	>= 10 % @Temperature 390 Â°F	
	>= 15 % @Temperature 98.9 Â°C	>= 15 % @Temperature 210 Â°F	
	>= 20 % @Temperature 21.1 Â°C	>= 20 % @Temperature 70.0 Â°F	
Modulus of Elasticity	186 GPa	27000 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	6.48 Âµm/m-Â°C @Temperature 20.0 - 500 Â°C	3.60 Âµin/in-Â°F @Temperature 68.0 - 932 Â°F	
Specific Heat Capacity	0.141 J/g-Â°C @Temperature 100 Â°C	0.0336 BTU/lb-Â°F @Temperature 212 Â°F	
Thermal Conductivity	55.3 W/m-K @Temperature 20.0 - 100 Â°C	384 BTU-in/hr-ftÂ²-Â°F @Temperature 68.0 - 212 Â°F	
Melting Point	3017 Â°C	5463 Â°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.0050 %	<= 0.0050 %	
Hydrogen, H	<= 0.0010 %	<= 0.0010 %	
Iron, Fe	<= 0.0050 %	<= 0.0050 %	
Molybdenum, Mo	<= 0.020 %	<= 0.020 %	
Nickel, Ni	<= 0.0050 %	<= 0.0050 %	

Component Elements Properties	Metric	English	Comments
Niobium, Nb (Columbium, Cb)	<= 0.030 %	<= 0.030 %	
Nitrogen, N	<= 0.0050 %	<= 0.0050 %	
Oxygen, O	<= 0.010 %	<= 0.010 %	
Silicon, Si	<= 0.0010 %	<= 0.0010 %	
Tantalum, Ta	>= 99.884 %	>= 99.884 %	balance
Titanium, Ti	<= 0.0040 %	<= 0.0040 %	
Tungsten, W	<= 0.030 %	<= 0.030 %	

Electrical Properties	Metric	English	Comments
Volume Resistivity	0.0000147 ohm-cm @Temperature 0.000 - 100 Â°C	0.0000147 ohm-cm @Temperature 32.0 - 212 Â°F	

Chemical Properties	Metric	English	Comments
Atomic Mass	180.95	180.95	
Atomic Number	73	73	
Thermal Neutron Cross Section	21.3 barns/atom	21.3 barns/atom	

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