Tantalum Coil

Formula: Ta
Percentage Purity: 99.9%
Temper: Annealed
Thickness: 0.04mm
Coil Width: 1mm
Length: 2m
CAS Number: 7440-25-7
UOM Code: 016-742-33
SKU: 1000002042-group
Product Code: TA00-FL-000157

Material Properties for Metals

Atomic Properties

Element	Value
Atomic number	73
Crystal structure	Body centred cubic
Electronic structure	Xe $4f^{1}$? $5d^{3}$ $6s^{2}$
Valences shown	2,3,4,5
Atomic weight(amu)	180.9479
Thermal neutron absorption cross-section(Barns)	22
Photo-electric work function(eV)	4.1
Natural isotope distribution(Mass No./%)	180/ 0.012
Natural isotope distribution(Mass No./%)	181/ 99.988
Atomic radius - Goldschmidt(nm)	0.147
Ionisation potential(No./eV)	1/ 7.88
Ionisation potential(No./eV)	2/ 16.2

Mechanical Properties

Element	Value
Material condition	Hard
Material condition	Soft
Poisson's ratio	0.342
Poisson's ratio	0.342

Element	Value
Bulk modulus(GPa)	196.3
Bulk modulus(GPa)	196.3
Tensile modulus(GPa)	185.7
Tensile modulus(GPa)	185.7
Hardness - Vickers(kgf mm?²)	200
Hardness - Vickers(kgf mm?²)	90
Tensile strength(MPa)	760
Tensile strength(MPa)	172-207
Yield strength(MPa)	705
Yield strength(MPa)	310-380

Electrical Properties

Element	Value
Electrical resistivity(µOhmcm)	13.5@20@20°C
Superconductivity critical temperature(K)	4.47
Temperature coefficient(K?¹)	0.0035@0-100°C
Thermal emf against Pt (cold 0C - hot 100C)(mV)	0.33

Physical Properties

Element	Value
Boiling point(C)	5425
Density(gcm?³)	16.6@20°C

Thermal Properties

Element	Value
Melting point(C)	2996
Latent heat of evaporation(J g?¹)	4165
Latent heat of fusion(J g?¹)	174
Specific heat(J K?¹ kg?¹)	140@25°C
Thermal conductivity(W m?¹ K?¹)	57.5@0-100
Coefficient of thermal expansion(x10?? K?¹)	6.5@0-100°C