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Physical and Mechanical Properties of Tungsten

Atomic Number	74
Atomic Weight, amu	183.92
Melting Point, °C	3410
Boiling Point, °C	5900
Density, gm/cc	19.3
Lattice Structure	Body Centered Cubic
Lattice Constant, Å	3.1585
Atomic Volume, cc/gm atom	9.53
Specific Heat@ 20°C, J/Kg.K	140
Vapor Pressure, mm Hg, @	
1527 °C	1.93 x 10 ⁻¹⁵
2127 °C	7.90 x 10 ⁻⁹
2000 °C	3.99 x 10 ⁻⁸
2500 °C	5.00 x 10 ⁻⁶
2727 °C	6.50 x 10 ⁻⁵
3000 °C	9.97 x 10 ⁻⁴
3227 °C	4.68 x 10 ⁻³
Electrical Resistivity, microhm-cm, @	
20 °C	5.50
100 °C	7.28
500 °C	18.00
700 °C	22.43
1000 °C	33.00
1100 °C	34.65
1500 °C	49.66
1800 °C	57.52
2100 °C	69.61
3000 °C	100.00
Temperature coefficient of Electrical Resistivity, per °C (20 – 100 °C)	0.00482
Thermal Conductivity, cal/sq.cm/cm/sec/ °C, @	
20 °C	0.400
100 °C	0.380
500 °C	0.290
927 °C	0.275
1127 °C	0.268
1327 °C	0.260
1527 °C	0.253
1727 °C	0.245
2000 °C	0.222
Linear Coefficient of Thermal Expansion per °C (mean value 0 -500 °C) worked Annealed	4.98 x 10 ⁻⁶ 4.45 x 10 ⁻⁶
Electron Work Function, eV	4.55
Young's Modulus, psi, (room temp)	59 x 10 ⁶
Conductivity, % IACS	30