The Physical Properties

ATOMIC PROPERTIES

Atomic Number	74
Atomic Weight	184
Atomic Volume	9.53 cm^3/gram atom
Lattice Structure	Body centred cubic
Density, 20° C (68°F)	19.3 grams/c.c. 316.3 grams/in^3 0.697 Lbs./in^3

THERMAL PROPERTIES

Melting Point	3410±20°C (6170°F)		
Boiling Point	5930°C		
Thermal Conductivity	20°C	(70°F)	0.31 cal/(sec) (cm) (°C)
	1000°C	(1830°F)	0.27 cal/(sec) (cm) (°C)
	1600°C	(2910°F)	0.25 cal/(sec) (sm) (°C)
Linear Coefficient of Expansion	20°C	(70°F)	4.43 x 10^{-6} Per degree
	1000°C	(1830°F)	5.17 x 10^{-6} Per degree
	2000°C	(3630°F)	7.24 x 10^{-6} Per degree
Specific Heat	20°C	(70°F)	0.033 cal/(gm) (°C)
	1000°C	(1830°F)	0.041 cal/(gm) (°C)
	2000°C	(3630°F)	0.047 cal/(gm) (°C)

MECHANICAL PROPERTIES OF TUNGSTEN

Hardness, VPN	Swaged bar 350-500 VPN. Increases with decrease in size
Tensible Strength, 1000psi	Swagged Rod 50-215 0.250" dia. 70 0.100" dia. 150 0.050" dia. 200 Drawn Wire 200-600
Yield Strength (Ambient Temperatures)	Yield strength of recrystallized tungsten is approximately equal to the tensile strength because of the brittle fracture when tested in tension. Well-worked tungsten reveals a small degree of elongation (0-4%) so that the yield strength is approximately 90 ± 5% of the tensile strength depending upon the percent offset used to establish this value.
Youngs Modulus, 10^6psi	20°C (70°F) 59 1000°C (1830° F) 47
Torsion Modulus, 10^6psi	20°C (70°F) 24
Poisson's Ratio	0.284 (Single crystal), 0.17
Compressibility, cm^2/kg	Swaged Bar 2.93 x 10^{-7} Drawn Wire 3.15 x 10^{-7}

Properties represent average values only. Data will vary with type of sample and previous work history.

ELECTRICAL PROPERTIES

Specific Resistance (Resistivity)	20°C	(70°F)	5.5 Microhm - cm
	1000°C	(1830°F)	33 Microhm - cm
	2000°C	(3630°F)	66 Microhm - cm
	3000°C	(5430°F)	103 Microhm - cm
Temp.Coefficient of Electrical Resistivity	(0-100°C) 4.6 x 10^{-3} Per °C		
Elect. Conductivity (percent IACS)	31		