Molybdenum, Annealed | MECHANICAL AND PHYSICAL PROPERTIES

	Metric	English
Physical Properties		
Density	10.22 g/cc	0.3692 lb/in^3
a Lattice Constant	3.147 Å	3.147 Å
	@Temperature 25.0 °C	@Temperature 77.0 °F
Molecular Weight	95.94 g/mol	95.94 g/mol
Melting Point	2617 °C	4743 °F
Boiling Point	4639 °C	8382 °F
Chemical Properties		
Atomic Mass	95.94	95.94
Atomic Number	42	42
Atomic Volume	1.53E-29	1.53E-29
Thermal Neutron Cross Section	2.5 barns/atom	2.5 barns/atom
X-ray Absorption Edge	0.61977 Å	0.61977 Å
	4.32066 Å	4.32066 Å
	4.7133 Å	4.7133 Å
	4.9093 Å	4.9093 Å
Electrode Potential	-0.200 V	-0.200 V
Electronegativity	2.16	2.16
Ionic Radius	0.620 Å	0.620 Å
	0.700 Å	0.700 Å
	0.930 Å	0.930 Å
Electrochemical Equivalent	1.79 g/A/h	1.79 g/A/h
Mechanical Properties		
Hardness, Brinell	225	225
Hardness, Rockwell A	60	60
Hardness, Rockwell B	98	98
Hardness, Rockwell C	19	19
Hardness, Vickers	230	230
Tensile Strength, Ultimate	324 MPa	47000 psi
	350 MPa	50800 psi
Modulus of Elasticity	330 GPa	47900 ksi
	160 GPa	23200 ksi
	@Temperature 2000 °C	@Temperature 3630 °F
	200 GPa	29000 ksi
	@Temperature 1800 °C	@Temperature 3270 °F
	250 GPa	36300 ksi
	@Temperature 1400 °C	@Temperature 2550 °F
	275 GPa	39900 ksi
	@Temperature 1000 °C	@Temperature 1830 °F
Compressive Yield Strength	400 MPa	58000 psi
Bulk Modulus	272 GPa	39500 ksi
Poissons Ratio	0.38	0.38
Shear Modulus	120 GPa	17400 ksi
Shear Strength	500 MPa	72500 psi

Electrical Properties		
Electrical Resistivity	0.00000570 ohm-cm	0.00000570 ohm-cm
	0.00000520 ohm-cm	0.00000520 ohm-cm
	@Temperature 0.000 °C	@Temperature 32.0 °F
	0.00000570 ohm-cm	0.00000570 ohm-cm
	@Temperature 27.0 °C	@Temperature 80.6 °F
	0.0000239 ohm-cm	0.0000239 ohm-cm
	@Temperature 727 °C	@Temperature 1340 °F
	0.0000292 ohm-cm	0.0000292 ohm-cm
	@Temperature 927 °C	@Temperature 1700 °F
	0.0000352 ohm-cm	0.0000352 ohm-cm
	@Temperature 1127 °C	@Temperature 2061 °F
	0.0000412 ohm-cm	0.0000412 ohm-cm
	@Temperature 1327 °C	@Temperature 2421 °F
	0.0000472 ohm-cm	0.0000472 ohm-cm
	@Temperature 1527 °C	@Temperature 2781 °F
	0.0000535 ohm-cm	0.0000535 ohm-cm
	@Temperature 1727 °C	@Temperature 3141 °F
	0.0000595 ohm-cm	0.0000595 ohm-cm
	@Temperature 1927 °C	@Temperature 3501 °F
	0.0000660 ohm-cm	0.0000660 ohm-cm
	@Temperature 2127 °C	@Temperature 3861 °F
	0.0000692 ohm-cm	0.0000692 ohm-cm
	@Temperature 2227 °C	@Temperature 4041 °F
	0.0000718 ohm-cm	0.0000718 ohm-cm
	@Temperature 2327 °C	@Temperature 4221 °F
	0.0000782 ohm-cm	0.0000782 ohm-cm
	@Temperature 2527 °C	@Temperature 4581 °F
	0.0000814 ohm-cm	0.0000814 ohm-cm
	@Temperature 2622 °C	@Temperature 4752 °F
Magnetic Susceptibility	9.30E-07	9.30E-07
Critical Magnetic Field Strength, Oersted	93 - 99	93 - 99
Critical Superconducting Temperature	0.910 - 0.920 K	0.910 - 0.920 K
Thermal Properties		
Heat of Fusion	293 J/g	126 BTU/lb
Heat of Vaporization	5610 J/g	2410 BTU/lb
CTE, linear	5.35 µm/m-°C	2.97 µin/in-°F
	@Temperature 20.0 °C	@Temperature 68.0 °F
	6.00 µm/m-°C	3.33 µin/in-°F
	@Temperature 0.000 - 250 °C	@Temperature 32.0 - 482 °F
	6.00 µm/m-°C	3.33 µin/in-°F
	@Temperature 0.000 - 500 °C	@Temperature 32.0 - 932 °F
Specific Heat Capacity	6.50 µm/m-°C	3.61 µin/in-°F
	@Temperature 0.000 - 1000 °C	@Temperature 32.0 - 1830 °F
	0.217 J/g-°C	0.0519 BTU/lb-°F
	0.255 J/g-°C	0.0609 BTU/lb-°F
Thermal Conductivity	138 W/m-K	958 BTU-in/hr-ft^2-°F
	100 W/m-K	694 BTU-in/hr-ft^2-°F
	@Temperature 1127 °C	@Temperature 2061 °F
	105 W/m-K	729 BTU-in/hr-ft^2-°F
	@Temperature 927 °C	@Temperature 1700 °F
	112 W/m-K	777 BTU-in/hr-ft^2-°F
	@Temperature 727 °C	@Temperature 1340 °F

Thermal Properties		
	118 W/m-K	819 BTU-in/hr-ft²-°F
	@Temperature 527 °C	@Temperature 981 °F
	126 W/m-K	874 BTU-in/hr-ft²-°F
	@Temperature 327 °C	@Temperature 621 °F
	130 W/m-K	902 BTU-in/hr-ft²-°F
	@Temperature 227 °C	@Temperature 441 °F
	134 W/m-K	930 BTU-in/hr-ft²-°F
	@Temperature 127 °C	@Temperature 261 °F
	138 W/m-K	958 BTU-in/hr-ft²-°F
	@Temperature 27.0 °C	@Temperature 80.6 °F
	143 W/m-K	992 BTU-in/hr-ft²-°F
	@Temperature -73.0 °C	@Temperature -99.4 °F
	150 W/m-K	1040 BTU-in/hr-ft²-°F
	@Temperature -263 °C	@Temperature -441 °F
	179 W/m-K	1240 BTU-in/hr-ft²-°F
	@Temperature -173 °C	@Temperature -279 °F
	210 W/m-K	1460 BTU-in/hr-ft²-°F
	@Temperature -193 °C	@Temperature -315 °F
	250 W/m-K	1740 BTU-in/hr-ft²-°F
	@Temperature -213 °C	@Temperature -351 °F
	280 W/m-K	1940 BTU-in/hr-ft²-°F
	@Temperature -253 °C	@Temperature -423 °F
	350 W/m-K	2430 BTU-in/hr-ft²-°F
	@Temperature -233 °C	@Temperature -387 °F
Melting Point	2617 °C	4743 °F
Boiling Point	4639 °C	8382 °F
Heat of Formation	0.000 kJ/mol	0.000 kJ/mol
	658.1 kJ/mol	658.1 kJ/mol

References

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