

Molybdenum

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1-800-348-6268

42

Mo

95.94

Molybdenum

Molybdenum is an excellent material due to its unique mechanical and chemical properties that can meet the most demanding application requirements in many diverse industries. Molybdenum is best categorized as a refractory metal due to its very high melting point, low coefficient of thermal expansion and a high level of thermal conductivity. The strength of Molybdenum increases the more the metal is cold worked. Pure Molybdenum is conducive to many applications in high-temperature furnace building because of its excellent availability, good workability and favorable high-temperature properties, such as low vapor pressure and high melting point.

APPLICATIONS

Structural furnace members, windings and components, containers for components exposed to high temperatures, nose cones, nozzles, support vanes, heat radiation shields, cathodes, magnetron end hats, x-ray tube components, high temperature applications.

Typical Physical Properties

Density	g/cm ³	10.22
Melting Point	°F	4748
	°C	2620
Specific Electrical Resistance	(Ω mm ²)/m	0.056
Specific Heat@20°C	J/(gK)	0.254
Recrystallization Temp		1100
Thermal Conductivity@ 20°C	W/(m-K)	142
Coefficient of Linear Thermal Expansion@ 20°C	m/(m-K)	5.2 x 10 ⁻⁶

Typical Mechanical Properties

		Stress	
		Relieved	Recrystallized
Tensile Strength (R _m)	MPa-20 °C	800	500
	MPa-1000 °C	230	150
	MPa-1400 °C	60	60
Elongation	%-20°C	20	50
	%-1000°C	10	40
	%-1400°C	40	40
Typical Hardness	HV10	> 220	160-180
Modulus of Elasticity @ 20°C	GPa	320	
	GPa		160

Forms | Sizes

Plate	0.1875"- 1.500"
Round Bar Rod	0.040"- 4.00"
Sheet	0.005"- 0.125"
Coiled Sheet	0.005"- 0.015"
Threaded Rod & Hex Nuts	Various
Wire	0.001"- 0.100"

Typical Application



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CHEMISTRY

C 0.010 max., O 0.0070 max., N 0.0020 max., Fe 0.010, Ni 0.005 max., Si 0.010 max., Mo Balance >99.95

(Source: ASTM B386 & B387 Type 1 Table 1 Chemical Requirement)



Specifications

MS 7800, ASTM B386 Type 361 (Plate + Sheet), B387 Type 361 (Round Bar), CAS 7439-98-7, UNS R03610