

# Molybdenum Disk

**Formula:** Mo

**Percentage Purity:** 99.9%

**Temper:** Annealed

**Thickness:** 0.125mm

**Diameter:** 15mm

**CAS Number:** 7439-98-7

**UOM Code:** 004-397-70

**SKU:** 1000000569-group

**Product Code:** MO00-FL-000330

## Material Properties for Metals

### Atomic Properties

| Element   | Value                              |
|---|------------------------------------|
| Atomic number                                     | 42                                 |
| Crystal structure                                 | Body centred cubic                 |
| Electronic structure                              | Kr 4d <sup>5</sup> 5s <sup>1</sup> |
| Valences shown                                    | 2, 3, 4, 5, 6                      |
| Atomic weight( amu )                              | 95.94                              |
| Thermal neutron absorption cross-section( Barns ) | 2.65                               |
| Photo-electric work function( eV )                | 4.2                                |
| Natural isotope distribution( Mass No./% )        | 95/ 15.9                           |
| Natural isotope distribution( Mass No./% )        | 96/ 16.7                           |
| Natural isotope distribution( Mass No./% )        | 98/ 24.1                           |
| Natural isotope distribution( Mass No./% )        | 97/ 9.6                            |
| Natural isotope distribution( Mass No./% )        | 92/ 14.8                           |
| Natural isotope distribution( Mass No./% )        | 94/ 9.3                            |
| Natural isotope distribution( Mass No./% )        | 100/ 9.6                           |
| Atomic radius - Goldschmidt( nm )                 | 0.14                               |
| Ionisation potential( No./eV )                    | 2/ 16.15                           |
| Ionisation potential( No./eV )                    | 5/ 61.2                            |
| Ionisation potential( No./eV )                    | 68                                 |
| Ionisation potential( No./eV )                    | 1/ 7.10                            |
| Ionisation potential( No./eV )                    | 3/ 27.2                            |

| Element                        | Value   |
|--------------------------------|---------|
| Ionisation potential( No./eV ) | 4/ 46.4 |

## Mechanical Properties

| Element                                   | Value   |
|---|---------|
| Material condition                        | Hard    |
| Material condition                        | Soft    |
| Poisson's ratio                           | 0.293   |
| Poisson's ratio                           | 0.293   |
| Bulk modulus( GPa )                       | 261.2   |
| Bulk modulus( GPa )                       | 261.2   |
| Tensile modulus( GPa )                    | 324.8   |
| Tensile modulus( GPa )                    | 324.8   |
| Hardness - Vickers( kgf mm <sup>2</sup> ) | 250     |
| Hardness - Vickers( kgf mm <sup>2</sup> ) | 200     |
| Tensile strength( MPa )                   | 485-550 |
| Tensile strength( MPa )                   | 620-690 |
| Yield strength( MPa )                     | 550     |
| Yield strength( MPa )                     | 415-450 |

## Electrical Properties

| Element   | Value           |
|---|-----------------|
| Electrical resistivity( $\mu\text{Ohmcm}$ )       | 5.7@20@20°C     |
| Superconductivity critical temperature( K )       | 0.915           |
| Temperature coefficient( K <sup>-1</sup> )        | 0.00435@0-100°C |
| Thermal emf against Pt (cold 0C - hot 100C)( mV ) | 1.45            |

## Physical Properties

| Element                     | Value      |
|-----------------------------|------------|
| Boiling point( C )          | 4612       |
| Density( gcm <sup>3</sup> ) | 10.22@20°C |

## Thermal Properties

| Element   | Value       |
|---|-------------|
| Melting point( C )  | 2617        |
| Latent heat of evaporation( J g <sup>-1</sup> )           | 6153        |
| Latent heat of fusion( J g <sup>-1</sup> )                | 290         |
| Specific heat( J K <sup>-1</sup> kg <sup>-1</sup> )       | 251@25°C    |
| Thermal conductivity( W m <sup>-1</sup> K <sup>-1</sup> ) | 138@0-100°C |

| <b>Element</b>  | <b>Value</b> |
|---|--------------|
| Coefficient of thermal expansion( $\times 10^{-6} \text{ K}^{-1}$ ) | 5.1@0-100°C  |