# Molybdenum Square Single Crystal

Molybdenum square single crystal provides grain?free structure, thermal conductivity, and purity for X?ray systems, substrates, and crystallographic studies. **SKU:** 1000025668-group
**Product Code:** MO00-SC-000171

## Material Properties for Metals

### Atomic Properties

| Element | Value |
|---|---|
| Atomic number | 42 |
| Crystal structure | Body centred cubic |
| Electronic structure | Kr 4d? $5s^1$ |
| 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 |
| Ionisation potential( No./eV ) | 4/ 46.4 |

### Mechanical Properties

| Element | Value |
|---|---|
| Material condition | Hard |

| Element | Value |
|---|---|
| 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?² ) | 250 |
| Hardness - Vickers( kgf mm?² ) | 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( µOhmcm ) | 5.7@20°C |
| Superconductivity critical temperature( K ) | 0.915 |
| Temperature coefficient( K?¹ ) | 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?³ ) | 10.22@20°C |

## Thermal Properties

| Element | Value |
|---|---|
| Melting point( C ) | 2617 |
| Latent heat of evaporation( J g?¹ ) | 6153 |
| Latent heat of fusion( J g?¹ ) | 290 |
| Specific heat( J K?¹ kg?¹ ) | 251@25°C |
| Thermal conductivity( W m?¹ K?¹ ) | 138@0-100°C |
| Coefficient of thermal expansion( x10?? K?¹ ) | 5.1@0-100°C |