Gold Disk Single Crystal

Gold disk single crystal delivers a defect?free monocrystalline surface for plasmonics, catalysis, quantum photonics, and surface?science research. **SKU:** 1000021749-group
Product Code: AU00-SC-000247

Material Properties for Precious Metals

Atomic Properties

Element	Value
Atomic number	79
Crystal structure	Face centred cubic
Electronic structure	Xe $4f^{1}$? $5d^{1}$? $6s^{1}$
Valences shown	1,3
Atomic weight(amu)	196.9665
Thermal neutron absorption cross-section(Barns)	98.8
Photo-electric work function(eV)	4.8
Atomic radius - Goldschmidt(nm)	0.144
Ionisation potential(No./eV)	1/ 9.22
Ionisation potential(No./eV)	2/ 20.5

Mechanical Properties

Element	Value
Material condition	Soft
Material condition	Hard
Poisson's ratio	0.42
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Bulk modulus(GPa)	171
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Tensile modulus(GPa)	78.5
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Hardness - Vickers(kgf $mm?^{2}$)	20-30
Hardness - Vickers(kgf $mm?^{2}$)	60
Tensile strength(MPa)	130
Tensile strength(MPa)	220

Element	Value
Yield strength(MPa)	205
Yield strength(MPa)	-

Electrical Properties

Element	Value
Electrical resistivity(μOhmcm)	2.20@20°C
Temperature coefficient(K?¹)	0.004@0-100°C
Thermal emf against Pt (cold 0C - hot 100C)(mV)	0.74

Physical Properties

Element	Value
Boiling point(C)	3080
Density(gcm?³)	19.3@20°C

Thermal Properties

Element	Value
Melting point(C)	1064.4
Latent heat of evaporation(J g?¹)	1738
Latent heat of fusion(J g?¹)	64.9
Specific heat(J K?¹ kg?¹)	129@25°C
Thermal conductivity(W m?¹ K?¹)	318@0-100°C
Coefficient of thermal expansion(x10?? K?¹)	14.1@0-100°C