

Gold Top Hat Single Crystal

Formula: Au

Percentage Purity: 99.999%

Top Section Thickness: 1mm

Bottom Section Thickness: 1mm

Outside Diameter: 10mm

Inside Diameter: 8mm

Orientation: -100

Orientation Accuracy: = 1°

Polish: Unpolished

CAS Number: 7440-57-5

UOM Code: 218-922-03

SKU: 1000048671-group

Product Code: AU00-SC-000177

Material Properties for Precious Metals

Atomic Properties

Element	Value
Atomic number	79
Crystal structure	Face centred cubic
Electronic structure	Xe 4f ¹⁴ 5d ¹⁰ 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

Element	Value
Poisson's ratio	0.42
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
Yield strength(MPa)	205
Yield strength(MPa)	-

Electrical Properties

Element	Value
Electrical resistivity(μOhmcm)	2.20@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($\times 10^{-6}$ K ⁻¹)	14.1@0-100°C