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DATA SHEET: Pure Gold

Physical Property Information:

Purity	99.99% minimal (weight per cent)
Melting	1064.4°C
Density	19.32 Mg m ⁻³
Coefficient of Thermal Expansion (CTE)	1416 ppm/°C
Electrical Resistivity	2.06 μΩ cm

Mechanical Properties:

Ultimate Tensile Strength:	MPA (ksi)
“worked”	207 - 221 (30 - 32)
“annealed”	124 - 138 (18 - 20)

Young's Modulus:	GPA (10 ⁶ psi)
20°C	77 (11.2)

Typical impurity levels for the min. 99.99%-purity electronic grade alloy are compliant with ASTM B 562-95 (2005) and are less than:

Sn .001,	Pb .002,	Cu .005,	Ag .009,	As .003,	Bi .002,
Fe .002,	Ni .0003,	Cr .0003,	Mg .003,	Mn .0003,	Pd .005, and
Si .005.					

Application information:

Gold is used as a braze in electronic devices, due to its high thermal- and electrical conductivity and its resistance against corrosion and sulfidation(S and H₂S) and freedom of ionic migration. Due to its bionic compatibility with human tissues, it is the preferred brazing material for medical devices.

In special applications, gold is used as a high temperature solder for producing vacuum-tight pressure welds.

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