

Au HA10 3N Gold Bonding Wire for Sensitive Pad Structures



In contrast to doped Au wires, alloyed wire types contain a low percentage of alloying elements. This results in markedly higher wire strength, shorter heat affected zones and better thermal stability without a significant increase in electrical resistance. The increased wire strength, while maintaining all other mechanical properties, permits a reduction of

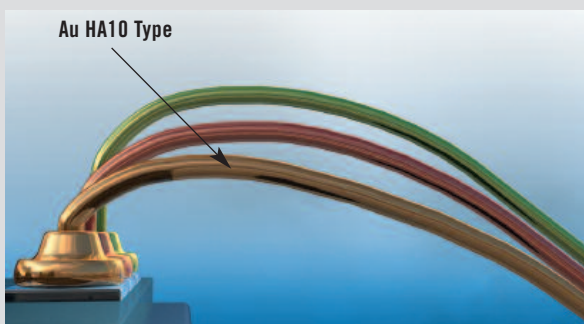
wire diameter together with a marked saving in precious metal costs.

Areas of application

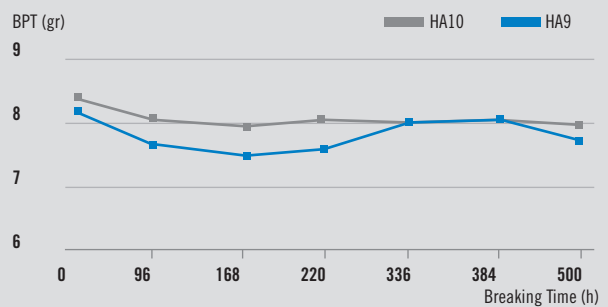
- High frequency bonding
- Low temperature bonding
- Low- and long-loop bonding
- High speed bonding
- Ultra Fine pitch bonding
- Ball bumping

Au HA10 Benefits

- High reliability wire type
- Increased strength, high loop stiffness
- Very good pull strengths and shear
- Long & low loop geometries
- Optimum stabilized phase formation
- High thermal stability
- Improved reliability



Breaking Load vs. Elongation



Recommended Technical Data of Au HA10

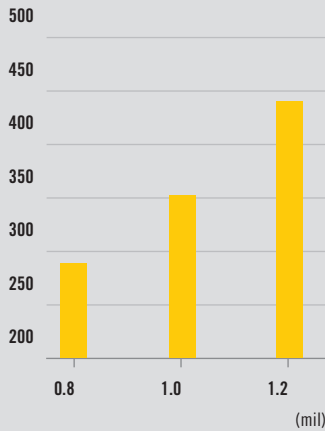
Diameter	Microns (µm)	17.5	20	23	25	28	30	High Temp	Elongation %					
									> 0.5	> 0.5	> 0.5	> 0.5	> 0.5	> 0.5
	Mils	0.7	0.8	0.9	1.0	1.1	1.2		Breaking Load					
									> 4	> 5	> 7	> 8	> 10	> 11
Room Temp	Elongation %	2-7	2-8	2-8	2-8	3-8	3-8							
	Breaking Load	> 5	> 6	> 7	> 8	> 10	> 12							

Characteristics of Au HA10

Non-Gold Elements	< 600 ppm	Melting Point	1063 °C
Break Load @ Room Temperature at 4% EL	> 6 g	Density	19.32 g/cm ³
Break Load @ 250°C / 20 sec	> 3 g	Heat Conductivity	– W/cmK
Elastic Modulus	> 90 GPa	Electrical Resistivity	2.3 μOhm-cm
Heat Affected Zone (HAZ) on 50 μm ball diameter	40~85 μm	Coeff. of Linear Expansion (0 – 100°C)	14.2 ppm / K
Neck Strength at 37 μm ball diameter	10 g	Fusing Current for 25 μm, dia 10 mm length (in air), A	0.5

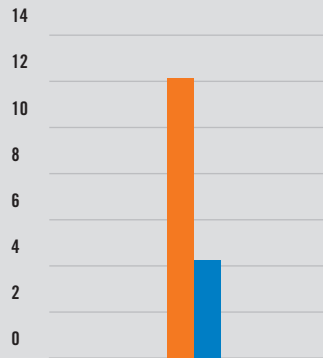
Fusing current

Wire Fusing Current (mA)



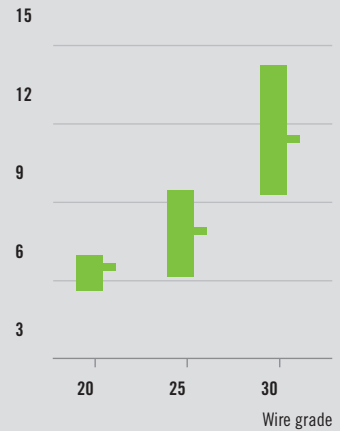
Mechanical properties

Breaking Load (g) Elongation (%)

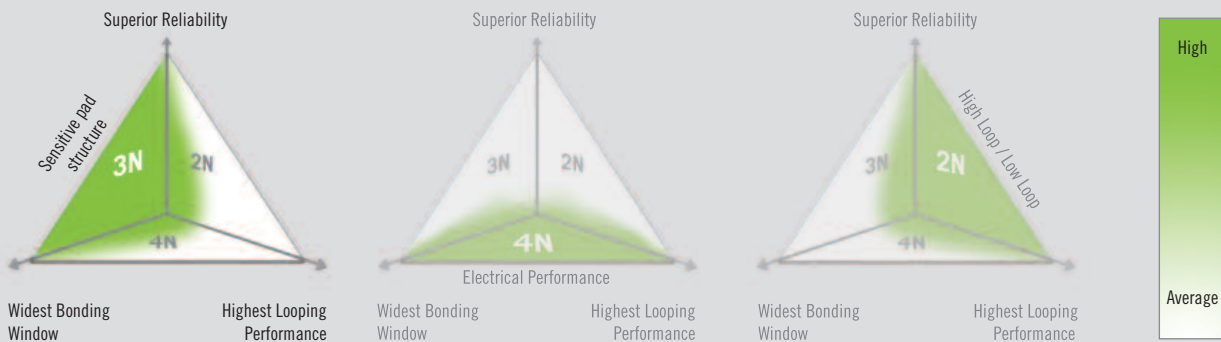


Neck Strength

Neck breaking force in cN



Gold Wire Segmentation by Properties



W. C. Heraeus GmbH

Contact Materials Division
 Business Unit Bonding Wires
 Heraeusstr.12 – 14
 63450 Hanau, Germany
 Telefon +49 6181.35 - 5591
 Fax +49 6181.35 - 5179
 bonding.wires@heraeus.com
 www.heraeus-contactmaterials.com