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

**Recommended Technical Data of Au HA10**

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Microns (µm)</th>
<th>17.5</th>
<th>20</th>
<th>23</th>
<th>25</th>
<th>30</th>
<th>33</th>
<th>38</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mils</td>
<td></td>
<td>0.7</td>
<td>0.8</td>
<td>0.9</td>
<td>1.0</td>
<td>1.2</td>
<td>1.3</td>
<td>1.5</td>
<td>2.0</td>
</tr>
<tr>
<td>Elongation</td>
<td>%</td>
<td>2 – 7</td>
<td>2 – 8</td>
<td>2 – 8</td>
<td>2 – 8</td>
<td>3 – 8</td>
<td>3 – 8</td>
<td>3 – 8</td>
<td>3 – 8</td>
</tr>
<tr>
<td>Breaking Load</td>
<td>cN</td>
<td>&gt; 5</td>
<td>&gt; 6</td>
<td>&gt; 8</td>
<td>&gt; 10</td>
<td>&gt; 15</td>
<td>&gt; 18</td>
<td>&gt; 22</td>
<td>&gt; 40</td>
</tr>
</tbody>
</table>

For other diameters, please contact Heraeus Bonding Wires sales representative.
The characteristics of Au HA10 (for 25 µm diameter)

Non-Gold Elements
- Max 0.1 %

Elastic Modulus
- > 85 GPa

Heat Affected Zone (HAZ)
- 65 – 105 µm

Melting Point
- 1063 °C

Density
- 19.31 g / cm³

Fusing Current
- Wire Fusing Current (mA)

<table>
<thead>
<tr>
<th>Wire diameter (mil)</th>
<th>0.8</th>
<th>1.0</th>
<th>1.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breaking Load (g)</td>
<td>14</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Elongation (%)</td>
<td>6</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

Mechanical properties

<table>
<thead>
<tr>
<th>Wire diameter (µm)</th>
<th>20</th>
<th>25</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neck breaking force in cN</td>
<td>15</td>
<td>12</td>
<td>9</td>
</tr>
</tbody>
</table>

Gold wire segmentation by properties

Superior Reliability
- Widest bonding window
- Highest looping performance

Electrical performance

High
- 3N
- 2N

Asia Pacific
- Phone +65 6571 7677
- electronics.apac@heraeus.com

Americas
- Phone +1 610 825 6050
- electronics.americas@heraeus.com

China
- Phone +86 21 3357 5457
- electronics.china@heraeus.com

Europe, Middle East and Africa
- Phone +49 6181 35 3069
- +49 6181 35 3627
- electronics.emea@heraeus.com

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Heraeus Deutschland GmbH & Co. KG
Heraeusstraße 12-14
63450 Hanau, Germany
www.heraeus-electronics.com