Formax™
Gold Wire for Stacked Die and Multi-tier Applications

**Benefits**
- Engineered and specifically designed for stacked die and multi-tier applications
- Highly accurate and consistent loop profiles support high wire bond yields
- Improved loop linearity and stability achieves higher moulding yields
- Versatile looping capabilities
- Robust 1st and 2nd bondability provides for consistently higher bond test results
- Proven intermetallic stability based on 3N gold composition

<table>
<thead>
<tr>
<th>Recommended Technical Data of Formax</th>
<th>High Reliability</th>
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</thead>
<tbody>
<tr>
<td><strong>Diameter</strong></td>
<td><strong>Elongation (%)</strong></td>
</tr>
<tr>
<td>Microns</td>
<td>15</td>
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<tr>
<td>Mils</td>
<td>18</td>
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<td></td>
<td>20</td>
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<td>23</td>
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<td>25</td>
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</tbody>
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<thead>
<tr>
<th>Recommended Specs for Ball Bonding</th>
<th>1000 hours</th>
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<tbody>
<tr>
<td>Elongation (%)</td>
<td></td>
</tr>
<tr>
<td>15 Microns 0.6 Mils</td>
<td>2 – 5</td>
</tr>
<tr>
<td>18 Microns 0.7 Mils</td>
<td>2 – 6</td>
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<tr>
<td>20 Microns 0.8 Mils</td>
<td>2 – 6</td>
</tr>
<tr>
<td>23 Microns 0.9 Mils</td>
<td>2 – 7</td>
</tr>
<tr>
<td>25 Microns 1.0 Mils</td>
<td>2 – 7</td>
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</tbody>
</table>

For other diameters, please contact Heraeus Bonding Wires sales representative.

Highly reliable intermetallic growth.
Cross section of molded device after aging @175°C.
Characteristics for 25 µm diameter

- Non-Gold Elements: < 200 ppm
- Elastic Modulus: ~ 90 GPa
- Heat Affected Zone (HAZ): 40 – 170 µm
- Melting Point: 1063 ºC
- Density: 19.3 g/cm³
- Heat Conductivity: 3.17 W/cm·K
- Electrical Resistivity: 2.3 µΩ·cm
- Coeff. of Linear Expansion (20 – 100ºC): 14.2 ppm/K
- Fusing Current for 25 µm, dia 10 mm length (in air): 0.37 A
- FAB Hardness: 57 – 68 HV (0.01 N/5 s)

Formax accurate loops

Loop Height Consistency & Wire Sway

- Formax: 16 mil loop height / 275 mil span
- Ref: 1 mil (25 µm) wire diameter

Loop Height Consistency & Die-edge Clearance

- Formax: 3 mil loop height / 200 mil span
- Ref: 1 mil (25 µm) wire diameter

Gold Wire Segmentation by Properties

- Superior Reliability
- Widest Bonding Window
- Highest Looping Performance

- Sensitive Pad Effectiveness

- Average

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