MaxSoft2
Copper Wire for High Pin Count and Fine Pitch Applications

MaxSoft2 Benefits & Features
- Higher MTBA (Mean Time Between Assist) and better workability
- Wider 1st and 2nd bond process window
- Able to bond at lower bonding parameter
- Softer FAB (Free Air Ball) & wire hardness
- Available in diameter ranging from 15 µm to 50 µm (0.6 mil to 2.0 mils)

MaxSoft2 vs. MaxSoft

1st Bond Process Window

FAB Hardness

Higher Stitch Pull

Recommended Technical Data of MaxSoft2

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Microns</th>
<th>Mils</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>0.6</td>
<td>0.6</td>
</tr>
<tr>
<td>18</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>20</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>23</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>25</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>28</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>30</td>
<td>1.2</td>
<td>1.2</td>
</tr>
<tr>
<td>33</td>
<td>1.3</td>
<td>1.3</td>
</tr>
<tr>
<td>38</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>50</td>
<td>2.0</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Recommended Specs for Ball Bonding
- Elongation (%): 7 – 12, 8 – 14, 10 – 15, 11 – 16, 12 – 17
- Breaking Load (g): 3 – 5, 4 – 6, 6 – 8, 7 – 10, 9 – 12, 11 – 14, 13 – 16, 17 – 21

For other diameters, please contact Heraeus Bonding Wires sales representative.
**Characteristics for 0.8 mil diameter**

### Physical Properties
- **Density**: 8.92 g/cm³
- **Melting Point**: 1081 °C
- **Thermal Conductivity**: 405 W/m.K
- **Specific Heat Capacity @ 25 °C**: 419 J/kg.K
- **Coeff. of Thermal Expansion**: 18.1 µm/m °C, (0 – 100 °C)
- **Electrical Resistivity**: 1.70 µΩ/cm
- **FAB Hardness**: 80 – 90 (0.01 N/5s)
- **Wire Hardness**: 82 – 92 (0.01 N/5s)
- **Elastic Modulus**: 80 – 90 GPa

### Chemical Composition
- **Cu Purity**: 99.97 % (min)

### Other Guidelines
- **Floor Life**: 7 days
- **Shelf Life Time**: 6 months
- **Shielding Gas**: Forming Gas (95N₂ :5H₂)

### Reliability Data

<table>
<thead>
<tr>
<th>Reliability</th>
<th>Test Conditions</th>
<th>Test Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>BHAST (Bias HAST)</td>
<td>130 °C / 85%RH +3v / 192 hrs</td>
<td>Passed</td>
</tr>
<tr>
<td>BPT (Ball Pull Test)</td>
<td>Spec. ≥ 2.7 g, Samples size = 30 readings</td>
<td>Passed</td>
</tr>
<tr>
<td>BST (Ball Shear Test)</td>
<td>Spec. ≥ 14 g, Samples size = 30 readings</td>
<td>Passed</td>
</tr>
</tbody>
</table>

- **Wire diameter**: 23 µm, Device: TSOP

### FAB Morphology
- **Target FAB**: 40 µm
  - **Wire Diameter**: 0.8 mil
  - **EFO Current/Time**: 60 mA/265 µs
  - **Bonder**: iConn

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

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

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

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

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

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