## Device Material Content

**Assembly:** ASEM  
**Size (mm):** 8 x 8  
**Lead pitch (mm):** 0.5  
**MLS:** 3  
**Reflow max (ºC):** 260

### Package Information
- **Package:** 100 csBGA  
- **Total Device Weight:** 0.147 Grams  
- **Package Code:** MN100

### Products
**Die**: 5.85%  
**Silicon chip**  
Die size: 4.71 x 2.90 mm

**Mold Compound**: 66.11%  
- **Epoxy Resin**: 4.63%  
- **Phenol Novolac**: 3.31%  
- **Metal Hydroxide**: 3.31%  
- **Carbon Black**: 0.33%  
- **Silica Fused**: 54.54%

**D/A Epoxy**: 0.94%  
- **Silver**: 0.76%  
- **Epoxy Resin**: 0.19%

**Wire**: 0.92%  
- **Copper**: 0.91%  
- **Silver**: 0.01%  
- **Palladium**: 0.00%

**Solder Balls**: 7.16%  
- **Tin (Sn)**: 6.91%  
- **Silver (Ag)**: 0.21%  
- **Copper (Cu)**: 0.04%

**Substrate**: 19.02%  
- **Laminate***: 12.36%  
- **Solder mask PSR-4000 AUS 308**: 2.04%  
- **Copper**: 3.91%  
- **Nickel plating**: 0.68%  
- **Gold plating**: 0.03%

### Notes
- * 0.12% max. concentration of Bisphenol A (CAS# 80-05-7) in substrate laminate material as impurity - not intentionally added.
- The values listed above are nominal values based on studies of representatives of this particular package type, and are believed to be as accurate as possible.
- Constituent substances and proportions in epoxy materials are before curing.
- The information provided above is representative of the package as of the date listed, and is subject to change at any time.

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**PCN#05A:17**

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**www.latticesemi.com**  
**Rev. M1**
### Device Material Content

**Package:** 100 csBGA  
**Package Code:** MN100  
**Assembly:** ASET  
**Total Device Weight:** 0.147 Grams  
**Size (mm):** 8 x 8  
**Lead pitch (mm):** 0.5  
**MSL:** 3  
**Reflow max (°C):** 260

#### Products:

- **Reflow max (°C):** 260
- **Die:** 0.1% of Pkg. Wt.: 0.00086
- **Mold Compound:** 66.1% of Pkg. Wt.: 0.0972
- **D/A Epoxy:** 0.94% of Pkg. Wt.: 0.0014
- **Wire:** 0.92% of Pkg. Wt.: 0.0013
- **Solder Balls:** 7.16% of Pkg. Wt.: 0.0105
- **Substrate:** 19.02% of Pkg. Wt.: 0.0280

#### Notes / Assumptions:

- **Notes:**
  - **Die:** Die size: 4.71 x 2.90 mm  
  - **Mold Compound:** Kyocera KE-G2250 series (ULA)  
  - **D/A Epoxy:** Die attach epoxy: Henkel (Ablebond) 2100A  
  - **Substrate:** Bisphenol A (CAS# 80-05-7) in substrate laminate material as impurity - not intentionally added.

### Materials Content

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS #</th>
<th>% of Subst.</th>
<th>% of Total Pkg. Wt.</th>
<th>Weight (g)</th>
<th>% of Total Pkg. Wt.</th>
<th>Weight (g)</th>
<th>Notes / Assumptions</th>
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<tbody>
<tr>
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<td>7440-21-3</td>
<td>100.00%</td>
<td>0.0086</td>
<td>5.85%</td>
<td>0.0086</td>
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<tr>
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<td>0.04%</td>
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</tbody>
</table>

**Die:** Die size: 4.71 x 2.90 mm  
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**Constituent substances and proportions in epoxy materials are before curing.**

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**Notes:**

- **Die:** Die size: 4.71 x 2.90 mm
- **Mold Compound:** Kyocera KE-G2250 series (ULA)
- **D/A Epoxy:** Die attach epoxy: Henkel (Ablebond) 2100A
- **Substrate:** Bisphenol A (CAS# 80-05-7) in substrate laminate material as impurity - not intentionally added.
# Device Material Content

**Package Code:** MN100  
**Assembly:** ATP  
**Size (mm):** 8 x 8

**Lead pitch (mm):** 0.5  
**MSL:** 3  
**Reflow max (ºC):** 260

## Materials

<table>
<thead>
<tr>
<th>Substance</th>
<th>% of Subst.</th>
<th>CAS #</th>
<th>Notes / Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Die</td>
<td>5.85%</td>
<td>7440-21-3</td>
<td>Die size: 4.71 x 2.90 mm</td>
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<tr>
<td>Silicon chip</td>
<td>0.0086</td>
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<tr>
<td>Mold Compound</td>
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<td>Solid Epoxy Resin</td>
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<td>Metal Hydroxide</td>
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<td>Carbon Black</td>
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<td>Palladium</td>
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<td>Tin (Sn)</td>
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<td>Copper (Cu)</td>
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<tr>
<td>Solder Balls</td>
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<td>Tin (Sn)</td>
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<td>Copper (Cu)</td>
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<td>Nickel plating</td>
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<td>Gold plating</td>
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<td>BT Resin CCL-HLX32NX-A</td>
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</tbody>
</table>

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