## Device Material Content

**Package:** 381 caBGA  
**Assembly:** ASEM  
**Size (mm):** 17 x 17  
**Lead pitch (mm):** 0.8  
**MSL:** 3  
**Reflow max (ºC):** 260

### Die
- **Weight (g):** 0.0266
- **% of Total Pkg. Wt.:** 2.65%
- **Substance:** Silicon chip
- **CAS #:** 7440-21-3
- **% of Subst.:** 100.00%
- **Notes:** Die size: 6.55 x 7.04 mm

### Mold Compound
- **Weight (g):** 0.4067
- **% of Total Pkg. Wt.:** 40.47%
- **Substances:**
  - Epoxy Resin: 7440-22-4
  - Phenol Novolac: 9003-35-4
  - Metal Hydroxide
  - Carbon Black: 1333-86-4
  - Silica Fused: 60676-86-0
- **% of Subst.:**
  - Epoxy Resin: 7.00%
  - Phenol Novolac: 5.00%
  - Metal Hydroxide: 5.00%
  - Carbon Black: 0.50%
  - Silica Fused: 82.50%
- **Notes:** Mold Compound: Sumitomo G750SE (ULA)

### D/A Epoxy
- **Weight (g):** 0.0038
- **% of Total Pkg. Wt.:** 0.38%
- **Substances:**
  - Silver: 7440-22-4
  - Esters & resins
- **% of Subst.:**
  - Silver: 80.00%
  - Esters & resins: 20.00%
- **Notes:** Die attach epoxy: Henkel (Ablebond) 2100A

### Wire
- **Weight (g):** 0.0026
- **% of Total Pkg. Wt.:** 0.26%
- **Substances:**
  - Copper: 7440-50-8
  - Palladium: 7440-05-3
- **% of Subst.:**
  - Copper: 98.50%
  - Palladium: 1.50%
- **Notes:** 0.8 mil diameter; 1 wire per solder ball

### Solder Balls
- **Weight (g):** 0.0949
- **% of Total Pkg. Wt.:** 9.44%
- **Substances:**
  - Tin (Sn): 7440-31-5
  - Silver (Ag): 7440-22-4
  - Copper (Cu): 7440-50-8
- **% of Subst.:**
  - Tin (Sn): 96.50%
  - Silver (Ag): 3.00%
  - Copper (Cu): 0.50%
- **Notes:** SAC305

### Substrate
- **Weight (g):** 0.4703
- **% of Total Pkg. Wt.:** 46.80%
- **Substances:**
  - Laminate*
  - Solder mask PSR4000 AU318
  - Copper
  - Nickel plating
  - Gold plating
- **% of Subst.:**
  - Laminate*: 59.00%
  - Solder mask PSR4000 AU318: 14.17%
  - Copper: 22.00%
  - Nickel plating: 4.05%
  - Gold plating: 0.78%
- **Notes:** B1 Resin CCL-HL832NX-A

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**Notes:**
- * 0.28% 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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Rev. C