# Device Material Content

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**Package:** **100 caBGA** **with SnAgCu Solder Balls**
**Total Device Weight** **0.27** **Grams**

MSL: 3
Peak Reflow Temp: 260°C

| November, 2009 | % of Total Pkg. Wt. | Weight (g) | % of Total Pkg. Wt. | Weight (g) | Substance | CAS # | Notes / Assumptions: |
|---|---|---|---|---|---|---|---|
| **Die** | 3.46% | 0.0093 | | | Silicon chip | 7440-21-3 | Die size: 3.53 x 4.17 mm |
| **Mold** | 52.49% | 0.1407 | | | | | Mold Compound composition: |
| | | | 44.62% | 0.1196 | Silica | 60676-86-0 | 75 to 95% Fused silica filler (LSC uses 83% in our calculation) |
| | | | 3.15% | 0.0084 | Epoxy Resin | - | 2 to 10% Epoxy resin (LSC uses 7.5% in our calculation) |
| | | | 3.15% | 0.0084 | Phenol Resin | - | 2 to 10% Phenol resin (LSC uses 7.5% in our calculation) |
| | | | 0.79% | 0.0021 | Metal Hydroxide | - | 0.5 to 2.5% Metal hydroxide (LSC uses 1.5% in our calculation) |
| | | | 0.10% | 0.0003 | Carbon Black | 1333-86-4 | 0.1 to 0.5% Carbon Black (LSC uses 0.5% in our calculation) |
| | | | | | | | Mold Compound Density between 1.9 and 2.1 grams/cc |
| **D/A Epoxy** | 0.56% | 0.0015 | | | Silver filled epoxy | | Die attach epoxy Density: 4 grams/cc |
| | | | 0.45% | 0.0012 | Silver (Ag) | 7440-22-4 | 60 to 100% Silver (LSC uses 80% in our calculation) |
| | | | 0.11% | 0.0003 | Organic esters and resins | - | 0 to 40% Organic Resins (LSC uses 20% in our calculation) |
| **Wire** | 1.09% | 0.0029 | | | Gold (Au) | 7440-57-5 | 0.8 to 1.0 mil diameter; 1 wire per solder ball; wire length 3 mm |
| **Solder Balls** | 14.16% | 0.0380 | | | | | |
| | | | 13.52% | 0.0362 | Tin (Sn) | 7440-31-5 | Solder ball composition Sn95.5/Ag4.0/Cu0.5% |
| | | | 0.57% | 0.0015 | Silver (Ag) | 7440-22-4 | |
| | | | 0.07% | 0.0002 | Copper (Cu) | 7440-50-8 | |
| **Substrate** | 21.85% | 0.0586 | | | | | |
| | | | 14.86% | 0.0398 | Glass fiber | 65997-17-3 | 60 to 75% glass fiber (LSC uses 68% in our calculation) |
| | | | 6.99% | 0.0187 | BT Resins | - | |
| **Foil** | 6.39% | 0.0171 | | | Copper (Cu) | 7440-50-8 | |

**Notes:**

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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lead-free RoHS 2002/95/EC

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