# Device Material Content

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**Package:** **256 caBGA** **with SnPb Solder Balls**
**Total Device Weight** **0.532** **Grams**

MSL: 3
Peak Reflow Temp: 240°C

| **July, 2009** | **% of Total Pkg. Wt.** | **Weight (g)** | **% of Total Pkg. Wt.** | **Weight (g)** | **Substance** | **CAS #** | **Notes / Assumptions:** |
|---|---|---|---|---|---|---|---|
| **Die** | 1.74% | 0.009 | | | Silicon chip | 7440-21-3 | Die size: 3.53 x 4.17 mm |
| **Mold** | 47.10% | 0.251 | | | | | Mold Compound composition: |
| | | | 34.85% | 0.1854 | Silica (fused or amorphous) | 60676-86-0 | 67 to 85% Fused silica filler (LSC uses 74% in our calculation) |
| | | | 9.42% | 0.0501 | Epoxy/Phenol Resins | - | 15 to 28% Epoxy/Phenol resins (LSC uses 20% in our calculation) |
| | | | 0.24% | 0.0013 | Antimony Trioxide | 1309-64-4 | 0.1 to 1% Antimony Trioxide (LSC uses 0.5% in our calculation) |
| | | | 0.47% | 0.0025 | Antimony Pentoxide | 1314-60-9 | 1% Antimony Pentoxide (LSC uses 1% in our calculation) |
| | | | 0.47% | 0.0025 | Brominated Epoxy Resin | - | <2% Brominated Epoxy Resin (LSC uses 1% in our calculation) |
| | | | 1.41% | 0.0075 | Siloxanes | - | 1 to 5% Siloxanes (LSC uses 3% in our calculation) |
| | | | 0.24% | 0.0013 | Carbon Black | 1333-86-4 | 0.1 to 1% Carbon Black (LSC uses 0.5% in our calculation) |
| | | | | | | | Mold Compound Density ranges between 1.8 and 2.1 grams/cc |
| **D/A Epoxy** | 0.28% | 0.0015 | | | Silver filled epoxy | | Die attach epoxy Density: 4 grams/cc |
| | | | 0.22% | 0.0012 | Silver (Ag) | 7440-22-4 | 60 to 100% Silver (LSC uses 80% in our calculation) |
| | | | 0.06% | 0.0003 | Organic esters and resins | - | 0 to 40% Organic Resins (LSC uses 20% in our calculation) |
| **Wire** | 1.41% | 0.0075 | | | Gold (Au) | 7440-57-5 | 1.00 mil diameter; 1 wire per solder ball |
| **Solder Balls** | 21.58% | 0.115 | | | | | |
| | | | 13.60% | 0.0723 | Tin (Sn) | 7440-31-5 | Solder ball composition Sn63/Pb37% |
| | | | 7.99% | 0.0425 | Lead (Pb) | 7440-50-8 | |
| **Substrate** | 21.57% | 0.1148 | | | BT Resin | - | |
| | | | 14.67% | 0.0780 | Fibrous-glass-wool | 65997-17-3 | 60 to 75% glass fiber (LSC uses 68% in our calculation) |
| | | | 6.90% | 0.0367 | Resins | - | |
| **Foil** | 6.31% | 0.0336 | | | 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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Rev. B