### Device Material Content

**Assembly:** ASEM  
**Size (mm):** 19 x 19  
**Lead pitch (mm):** 1.0  
**MSL:** 3  
**Reflow max (°C):** 260

**Total Device Weight:** 1.14 Grams  
**FTN324**  
**324 ftBGA**

#### % of Total Pkg. Wt.  | Weight (g)  | % of Total Pkg. Wt.  | Weight (g)  | Substance  | CAS #  | % of Subst.  | Notes / Assumptions:
--- | --- | --- | --- | --- | --- | --- | ---
**Die**  | 0.87% | 0.0099  | 0.87% | Silicon chip | 7440-21-3 | 100.00% | Die size: 4.08 x 3.85 mm
**Mold Compound**  | 45.91% | 0.5233  | 40.40% | Silica Fused | 60676-86-0 | 88.00% | Mold Compound: Sumitomo G770
2.30%  | 0.0262  | Epoxy Resin  | - | - | 5.00% |
2.30%  | 0.0262  | Phenol Resin  | - | - | 5.00% |
0.80%  | 0.0092  | Metal Hydroxide  | - | - | 1.75% |
0.11%  | 0.0013  | Carbon Black  | 1333-86-4 | 0.25% |
**D/A Epoxy**  | 0.14% | 0.0016  | 0.11% | Silver  | 7440-22-4 | 80.00% | Die attach epoxy: Henkel (Ablebond) 2100A
0.03%  | 0.00032  | Esters & resins  | - | - | 20.00% |
**Wire**  | 0.83% | 0.0095  | 0.82% | Gold (Au)  | 7440-57-5 | 98.50% | 0.8 mil diameter; 1 wire per solder ball
**Solder Balls**  | 29.04% | 0.3111  | 28.03% | Tin (Sn)  | 7440-31-5 | 96.50% | SAC.305
0.87%  | 0.0099  | Silver (Ag)  | 7440-22-4 | 3.00% |
0.15%  | 0.0017  | Copper (Cu)  | 7440-50-8 | 0.50% |
**Substrate**  | 13.69% | 0.1560  | 4.24% | BT Resins  | - | 31.00% | BT Resin CCL-HL832NX-A*
9.31%  | 0.1061  | Glass fiber  | 65997-17-3 | 68.00% |
0.14%  | 0.0016  | Bisphenol A  | 80-05-7 | 1.00% |
**Foil**  | 6.22% | 0.0710  | 5.10% | Copper  | 7440-50-8 | 82.00% |
0.94%  | 0.0107  | Nickel plating  | 7440-02-0 | 15.10% |
0.18%  | 0.0021  | Gold plating  | 7440-57-5 | 2.91% |
**Solder Mask**  | 3.29% | 0.0175  | 1.85% | Quartz  | 14808-60-7 | 56.20% | Solder mask PSR4000 AUS 308
0.53%  | 0.0060  | 3-methoxy-3-methylbutylacetate  | 103429-90-9 | 16.00% |
0.72%  | 0.0082  | Barium Sulfate  | 7727-43-7 | 22.00% |
0.10%  | 0.0011  | Talc  | 14807-96-6 | 3.00% |
0.02%  | 0.0002  | Naphthalene  | 91-20-3 | 0.50% |
0.08%  | 0.0009  | Trade secret ingredients  | - | 2.30% |

**Notes:**  
SVHC:  
0.14%  | max. concentration of Bisphenol A (CAS# 80-05-7), contained in substrate laminate material as impurity - not intentionally added.

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Rev. E