Device Material Content

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Package: **672 fpBGA** **with SnAgCu Solder Balls**

Total Device Weight **3.30** **Grams**

MSL: 3
Peak Reflow Temp: 250°C

November, 2009	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	1.48%	0.0489			Silicon chip	7440-21-3	Die size: 8.11 x 8.34 mm
Mold	36.73%	1.212					Mold Compound composition:
			29.38%	0.970	Silica (Fused or Amorphous)	60676-86-0	75 to 95% Silica Fused or Amorphous (LSC uses 80% in our calculation)
			2.94%	0.0970	Epoxy resin	-	1 to 20% Epoxy resin (LSC uses 8% in our calculation)
			2.94%	0.0970	Phenol resin	-	2 to 20% Phenol resin (LSC uses 8% in our calculation)
			1.29%	0.0424	Cristalline Silica	14808-60-7	<5% Cristalline Silica (LSC uses 3.5% in our calculation)
			0.18%	0.0061	Carbon Black	1333-86-4	<1% Carbon Black (LSC uses 0.5% in our calculation)
							Mold Compound Density between 1.8 and 2.1 grams/cc
D/A Epoxy	0.21%	0.0069					Die attach epoxy Density: 4 grams/cc
			0.17%	0.0055	Silver	7440-22-4	60 to 100% Silver (LSC uses 80% in our calculation)
			0.04%	0.0014	Organic esters and resins	-	0 to 40% Organic Esters and Resins (LSC uses 20% in our calculation)
Wire	0.60%	0.0197			Gold (Au)	7440-57-5	0.8 to 1.0 mil diameter; 1 wire per solder ball
Solder Balls	19.89%	0.656					Qualified Solder ball compositions:
			19.09%	0.630	Tin (Sn)	7440-31-5	Sn95.5/Ag4/Cu0.5
			0.70%	0.0230	Silver (Ag)	7440-22-4	Sn96.5/Ag3/Cu0.5
			0.10%	0.0033	Copper (Cu)	7440-50-8	LSC uses: Sn96/Ag3.5/Cu0.5 for calculations
Substrate	18.87%	0.623					
			12.83%	0.424	Glass fiber	65997-17-3	60 to 75% glass fiber (LSC uses 68% in our calculation)
			6.04%	0.1993	BT Resins	-	
Foil	22.23%	0.734			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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