Device Material Content

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Package: **64 ucBGA** **with SnAgCu Solder Balls**
Total Device Weight **0.03** **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	10.17%	0.0031			Silicon chip	7440-21-3	Die size: 2.31 x 2.10 mm
Mold	43.27%	0.013					Mold Compound composition:
			37.64%	0.0113	Silica	60676-86-0	75 to 95% Fused silica filler (LSC uses 87% in our calculation)
			2.16%	0.0006	Epoxy Resin	-	2 to 10% Epoxy resin (LSC uses 5% in our calculation)
			2.16%	0.0006	Phenol Resin	-	2 to 10% Phenol resin (LSC uses 5% in our calculation)
			1.19%	0.0004	Metal Hydroxide	-	0.5 to 5% Metal hydroxide (LSC uses 2.75% in our calculation)
			0.11%	0.00003	Carbon Black	1333-86-4	0.1 to 0.5% Carbon Black (LSC uses 0.25% in our calculation)
							Mold Compound Density ranges between 1.9 and 2.1 grams/cc
D/A Epoxy	1.64%	0.0005			Silver filled epoxy		Die attach epoxy Density: 4 grams/cc
			1.31%	0.0004	Silver (Ag)	7440-22-4	60 to 100% Silver (LSC uses 80% in our calculation)
			0.33%	0.0001	Organic esters & resins	-	0 to 40% Organic Esters and Resins (LSC uses 20% in our calculation)
Wire	2.67%	0.0008			Gold (Au)	7440-57-5	0.80 mil diameter; 1 wire per solder ball
Solder Balls	12.94%	0.0039					
			12.49%	0.0037	Tin (Sn)	7440-31-5	Solder ball composition Sn96.5/Ag3/Cu0.5 (SAC305)
			0.39%	0.00012	Silver (Ag)	7440-22-4	
			0.06%	0.00002	Copper (Cu)	7440-50-8	
Substrate	19.03%	0.0057					
			12.94%	0.0039	Glass fiber	65997-17-3	60 to 75% glass fiber (LSC uses 68% in our calculation)
			6.09%	0.0018	BT Resins	-	
Foil	10.28%	0.0031			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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