Device Material Content

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Package: **132 ucBGA** **with SnAgCu Solder Balls**
Total Device Weight **0.067** **Grams**

Copper Bond Wire Version
MSL: 3
Peak Reflow Temp: 260°C

December, 2012	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	3.27%	0.0021			Silicon chip	7440-21-3	Die size: 1.77 x 1.91 mm
Mold	51.45%	0.0334					Mold Compound composition:
			42.70%	0.02776	Silica	60676-86-0	75 to 95% Fused silica filler (LSC uses 85% in our calculation)
			3.86%	0.00251	Epoxy Resin	-	2 to 10% Epoxy resin (LSC uses 6% in our calculation)
			3.86%	0.00251	Phenol Resin	-	2 to 10% Phenol resin (LSC uses 6% in our calculation)
			0.77%	0.00050	Metal Hydroxide	-	0.5 to 5% Metal hydroxide (LSC uses 2.75% in our calculation)
			0.26%	0.00017	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	0.53%	0.0003					Die attach epoxy Density: 4 grams/cc
			0.42%	0.00027	Silver (Ag)	7440-22-4	60 to 100% Silver (LSC uses 80% in our calculation)
			0.11%	0.00007	Organic esters & resins	-	0 to 40% Organic Esters and Resins (LSC uses 20% in our calculation)
Wire	1.76%	0.0011					Pd coated Copper, 0.8 mil diameter
			1.74%	0.00113	Copper	7440-50-8	98.5%
			0.03%	0.00002	Palladium	7440-05-3	1.5%
Solder Balls	12.37%	0.0080					
			11.94%	0.00776	Tin (Sn)	7440-31-5	Solder ball composition Sn96.5/Ag3/Cu0.5 (SAC305)
			0.37%	0.00024	Silver (Ag)	7440-22-4	
			0.06%	0.00004	Copper (Cu)	7440-50-8	
Substrate	21.13%	0.0137					
			14.37%	0.00934	Glass fiber	65997-17-3	60 to 75% glass fiber (LSC uses 68% in our calculation)
			6.76%	0.00440	BT Resin	-	
Foil	9.49%	0.0062			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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