Device Material Content

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Package: **256 ftBGA** **with SnPb Solder Balls**
Total Device Weight **0.705** **Grams**

MSL: 3
Peak Reflow Temp: 225°C

November, 2009	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	1.00%	0.0071			Silicon chip	7440-21-3	Die size: 3.35 x 3.35 mm
Mold	52.80%	0.372					Mold Compound composition:
			43.83%	0.3090	Silica	60676-86-0	75 to 95% Fused silica filler (LSC uses 83% in our calculation)
			3.96%	0.0279	Epoxy Resin	-	2 to 10% Epoxy resin (LSC uses 7.5% in our calculation)
			3.96%	0.0279	Phenol Resin	-	2 to 10% Phenal resin (LSC uses 7.5% in our calculation)
			0.79%	0.0056	Metal Hydroxide	-	0.5 to 2.5% Metal hydroxide (LSC uses 1.5% in our calculation)
			0.26%	0.0019	Carbon Black	1333-86-4	0.1 to 0.5% Carbon Black (LSC uses 0.5% in our calculation)
							Mold Compound Density ranges between 1.8 and 2.1 grams/cc
D/A Epoxy	0.16%	0.0011			Silver-filled epoxy		Die attach epoxy Density: 4 grams/cc
			0.13%	0.0009	Silver	7440-22-4	60 to 100% Silver (LSC uses 80% in our calculation)
			0.03%	0.0002	Organic esters and resins	-	0 to 40% Organic Esters and Resins (LSC uses 20% in our calculation)
Wire	1.07%	0.0075			Gold (Au)	7440-57-5	0.8 to 1.0 mil diameter; 1 wire per package lead
Solder Balls	16.29%	0.115					
			10.26%	0.0723	Tin (Sn)	7440-31-5	Solder ball composition Sn63/Pb37
			6.03%	0.0425	Lead (Pb)	7439-92-1	
Substrate	23.42%	0.165					
			15.92%	0.1123	Glass fiber	65997-17-3	60 to 75% glass fiber (LSC uses 68% in our calculation)
			7.49%	0.0528	BT Resins	-	
Copper	5.27%	0.037			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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