Device Material Content

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Package: **64 csBGA** **with SnPb Solder Balls**

Total Device Weight **0.048** **Grams**

MSL: 3
Peak Reflow Temp: 240°C

August, 2012	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	4.43%	0.0021			Silicon chip	7440-21-3	Die size: 1.77 x 1.91 mm
Mold	35.68%	0.0171					Mold Compound composition:
			30.32%	0.3032	Silica	60676-86-0	75-95% Silica (LSC uses 85% in our calculation)
			2.14%	0.0214	Epoxy resin	-	2-10% Epoxy resin (LSC uses 6% in our calculation)
			2.14%	0.0214	Phenol resin	-	2-10% Phenol Resin (LSC uses 6% in our calculation)
			0.89%	0.0089	Metal Hydroxide	-	0.5 to 2.5% Metal Hydroxide (LSC uses 2.5% in our calculation)
			0.18%	0.00178	Carbon Black	1333-86-4	0.1-0.5% Carbon Black (LSC uses 0.5% in our calculation)
							Mold Compound Density between 1.9 and 2.1 grams/cc
D/A Epoxy	0.72%	0.00034					
			0.33%	0.00027	Silver (Ag)	7440-22-4	60 to 90% Silver (LSC uses 80% in our calculation)
			0.08%	0.00007	Organic esters and resins	-	0 to 40% Organic Esters and Resins (LSC uses 20% in our calculation)
Wire	3.17%	0.0015			Gold (Au)	7440-57-5	0.8 to 1.0 mil diameter; 1 wire per solder ball
Solder Balls	16.59%	0.0080					
			10.45%	0.0050	Tin (Sn)	7440-31-5	Solder ball composition Sn63/Pb37
			6.14%	0.0029	Lead (Pb)	7439-92-1	
Substrate	30.50%	0.0146					
			20.74%	0.0100	Glass fiber	65997-17-3	60 to 75% glass fiber (LSC uses 68% in our calculation)
			9.76%	0.0047	BT Resins	-	
Foil	8.92%	0.0043			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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