Device Material Content

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Package: 332 caBGA with SnAgCu Solder Balls
Total Device Weight 1.04 Grams

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

December, 2011	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	0.72%	0.0075			Silicon chip	7440-21-3	Die size: 3.40 x 3.50 mm
Mold	45.53%	0.4735					Mold Compound composition:
			40.97%	0.4261	Silica	60676-86-0	86 to 93% Silica Fused or Amorphous (LSC uses 90% in our calculation)
			2.73%	0.0284	Epoxy Resin	-	1.5 to 7% Epoxy resin (LSC uses 6% in our calculation)
			1.82%	0.0189	Phenol Resin	-	1 to 6% Phenol resin (LSC uses 4% in our calculation)
			0.09%	0.0009	Carbon Black	1333-86-4	0.2% Carbon Black
							Mold Compound Density ranges between 1.99 and 2.09 grams/cc
D/A Epoxy	0.10%	0.0011			Silver filled epoxy		Die attach epoxy Density: 4 grams/cc
			0.08%	0.0008	Silver (Ag)	7440-22-4	70 to 90% Silver (LSC uses 80% in our calculation)
			0.02%	0.0002	Organic esters and resins	-	10 to 30% Organic Esters and Resins (LSC uses 20% in our calculation)
Wire	0.42%	0.0044					Pd coated Copper, 0.8 mil diameter
			0.42%	0.00433	Copper	7440-50-8	98.5%
			0.01%	0.00007	Palladium	7440-05-3	1.5%
Solder Balls	11.32%	0.1177					
			10.92%	0.1136	Tin (Sn)	7440-31-5	Solder ball composition Sn96.5/Ag3/Cu0.5
			0.34%	0.0035	Silver (Ag)	7440-22-4	
			0.06%	0.0006	Copper (Cu)	7440-50-8	
Substrate	27.29%	0.2838					
			18.56%	0.1930	Glass fiber	65997-17-3	60 to 75% glass fiber (LSC uses 68% in our calculation)
			8.73%	0.0908	BT Resins	-	
Foil	14.62%	0.1521			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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