Device Material Content

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Package: 328 csBGA with SnAgCu Solder Balls
Total Device Weight 0.31 Grams

MSL: 3
Peak Reflow Temp: 260°C

May, 2012	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	4.49%	0.0139			Silicon chip	7440-21-3	Die size: 4.60 x 5.20 mm
Mold	49.30%	0.1528					Mold Compound composition:
			44.37%	0.1375	Silica	60676-86-0	86 to 93% Silica Fused or Amorphous (LSC uses 90% in our calculation)
			2.96%	0.0092	Epoxy Resin	-	1.5 to 7% Epoxy resin (LSC uses 6% in our calculation)
			1.97%	0.0061	Phenol Resin	-	1 to 6% Phenol resin (LSC uses 4% in our calculation)
			0.10%	0.0003	Carbon Black	1333-86-4	0.2% Carbon Black
							Mold Compound Density ranges between 1.99 and 2.09 grams/cc
D/A Epoxy	0.69%	0.0021					Die attach epoxy Density: 4 grams/cc
			0.55%	0.0017	Silver (Ag)	7440-22-4	70 to 90% Silver (LSC uses 80% in our calculation)
			0.14%	0.0004	Organic esters & resins	-	10 to 30% Organic Esters and Resins (LSC uses 20% in our calculation)
Wire	1.68%	0.0052			Gold (Au)	7440-57-5	Wire: 0.0114 mm (radius)
Solder Balls	11.11%	0.0344					
			10.67%	0.0331	Tin (Sn)	7440-31-5	Solder ball composition Sn96.5/Ag3/Cu0.5 (SAC305)
			0.39%	0.0012	Silver (Ag)	7440-22-4	
			0.06%	0.00017	Copper (Cu)	7440-50-8	
Substrate	20.48%	0.0635					
			13.92%	0.0432	Glass fiber	65997-17-3	60 to 75% glass fiber (LSC uses 68% in our calculation)
			6.55%	0.0203	BT Resins	-	
Foil	12.26%	0.0380			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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