Device Material Content

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Package: 100 fpBGA with SnAgCu Solder Balls

Total Device Weight 0.303 Grams

November, 2009	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	2.84%	0.0086			Silicon chip	7440-21-3	Die size: 4.71 x 2.90 mm
Mold	51.61%	0.1564					Mold Compound composition:
			42.84%	0.1298	Fused silica	60676-86-0	75 to 95% Fused silica filler (LSC uses 83% in our calculation)
			3.87%	0.0117	Epoxy resin	-	2 to 10% Epoxy resin (LSC uses 7.5% in our calculation)
			3.87%	0.0117	Phenol resin	-	2 to 10% Phenal resin (LSC uses 7.5% in our calculation)
			0.77%	0.0023	Metal Hydroxide	-	0.5 to 2.5% Metal hydroxide (LSC uses 1.5% in our calculation)
			0.26%	0.0008	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	0.40%	0.0012					Die attach epoxy Density: 4 grams/cc
			0.32%	0.0010	Silver	7440-22-4	60 to 100% Silver (LSC uses 80% in our calculation)
			0.08%	0.00024	Organic esters and resins	-	0 to 40% Organic Esters and Resins (LSC uses 20% in our calculation)
Wire	0.97%	0.0029			Gold (Au)	7440-57-5	1.00 mil diameter; 1 wire per solder ball; wire length 3 mm
Solder Balls	12.52%	0.0380					
			11.96%	0.0362	Tin (Sn) (95.5%)	7440-31-5	Solder ball composition Sn95.5/Ag4.0/Cu0.5%
			0.50%	0.0015	Silver (Ag) (4.0%)	7440-22-4	
			0.06%	0.00019	Copper (Cu) (0.5%)	7440-50-8	
Substrate	24.82%	0.0752					
			16.88%	0.0511	Glass fiber	65997-17-3	60 to 75% glass fiber (LSC uses 68% in our calculation)
			7.94%	0.0241	BT Resins	-	
Foil	6.84%	0.0207			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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