



Device Material Content

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Package: 100 csBGA with SnAgCu Solder Balls
Total Device Weight 0.147 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	5.85%	0.00859			Silicon chip	7440-21-3	Die size: 4.71 x 2.90 mm
Mold	65.03%	0.09560	55.28%	0.08126	Silica	60676-86-0	Mold Compound composition: 75 to 95% Fused silica filler (LSC uses 83% in our calculation) 2 to 10% Epoxy resin (LSC uses 7.5% in our calculation) 2 to 10% Phenol resin (LSC uses 7.5% in our calculation) 0.5 to 2.5% Metal hydroxide (LSC uses 1.5% in our calculation) 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
			3.90%	0.00574	Epoxy Resin	-	
			3.90%	0.00574	Phenol Resin	-	
			0.98%	0.00143	Metal Hydroxide	-	
			0.13%	0.00019	Carbon Black	1333-86-4	
			0.85%	0.00124	Other (trade secret)	-	
D/A Epoxy	0.94%	0.00139	0.76%	0.0011	Silver filled epoxy	7440-22-4	Die attach epoxy Density: 4.0 grams/cc 60 to 100% Silver (LSC uses 80% in our calculation) 0 to 40% Organic Esters and Resins (LSC uses 20% in our calculation)
			0.19%	0.0003	Silver (Ag) Organic esters and resins	-	
Wire	2.00%	0.00293			Gold (Au)	7440-57-5	0.8 to 1.0 mil diameter; 1 wire per solder ball; wire length 3 mm
Solder Balls	7.16%	0.01053	6.84%	0.0101	Tin (Sn)	7440-31-5	Solder ball composition Sn95.5/Ag4/Cu0.5
			0.29%	0.0004	Silver (Ag)	7440-22-4	
			0.04%	0.00005	Copper (Cu)	7440-50-8	
Substrate	11.56%	0.01700	7.86%	0.0116	Glass fiber	65997-17-3	60 to 75% glass fiber (LSC uses 68% in our calculation)
			3.70%	0.0054	BT Resins	-	
Foil	7.46%	0.01096			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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