



Device Material Content

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Package: 144 csBGA with SnAgCu Solder Balls
Total Device Weight 0.093 Grams

Copper wire version
MSL: 3
Peak Reflow Temp: 260°C

December, 2012	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	5.73%	0.0053			Silicon chip	7440-21-3	Die size: 3.07 x 2.76 mm
Mold	47.81%	0.0445	41.59%	0.0387	Silica	60676-86-0	Mold Compound composition: 75 to 95% Fused silica filler (LSC uses 87% in our calculation) 2 to 10% Epoxy resin (LSC uses 5% in our calculation) 2 to 10% Phenol resin (LSC uses 5% in our calculation) 0.5 to 5% Metal hydroxide (LSC uses 2.75% in our calculation) 0.1 to 0.5% Carbon Black (LSC uses 0.25% in our calculation) Mold Compound Density ranges between 1.9 and 2.1 grams/cc
			2.39%	0.0022	Epoxy Resin	-	
			2.39%	0.0022	Phenol Resin	-	
			1.31%	0.0012	Metal Hydroxide	-	
			0.12%	0.0001	Carbon Black	1333-86-4	
D/A Epoxy	0.93%	0.0009	0.74%	0.0007	Silver filled epoxy	7440-22-4	Die attach epoxy Density: 4 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%	0.0002	Organic esters & resins	-	
Wire	1.23%	0.0011	1.21%	0.00113	Copper	7440-50-8	98.5%
			0.02%	0.00002	Palladium	7440-05-3	
Solder Balls	16.23%	0.0151	15.66%	0.0146	Tin (Sn)	7440-31-5	Solder ball composition Sn96.5/Ag3/Cu0.5 (SAC305)
			0.49%	0.0005	Silver (Ag)	7440-22-4	
			0.08%	0.00008	Copper (Cu)	7440-50-8	
Substrate	19.05%	0.0177	12.96%	0.0120	Glass fiber	65997-17-3	60 to 75% glass fiber (LSC uses 68% in our calculation)
			6.10%	0.0057	BT Resins	-	
Foil	9.02%	0.0084			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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