Device Material Content

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Package: **184 csBGA** **with SnAgCu Solder Balls**
Total Device Weight **0.174** **Grams**

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

March, 2013	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	4.50%	0.0078			Silicon chip	7440-21-3	Die size: 143 x 147 mil
Mold	49.65%	0.0864					Mold Compound: EME-G750E
			41.31%	0.0719	Silica fused	60676-86-0	75 to 95% Fused silica filler (LSC uses 83.2% in our calculation)
			2.48%	0.0043	Epoxy Resin A	-	2 to 8% Epoxy resin A (LSC uses 5% in our calculation)
			0.74%	0.0013	Epoxy Resin B	-	0.5 to 2.5% Epoxy resin B (LSC uses 1.5% in our calculation)
			2.48%	0.0043	Phenol Novolac	9003-35-4	2 to 8% Phenol Novolac (LSC uses 5% in our calculation)
			2.48%	0.0043	Metal Hydroxide	-	2 to 8% Metal Hydroxide (LSC uses 5% in our calculation)
			0.15%	0.0003	Carbon Black	1333-86-4	0.1 to 0.5% Carbon Black (LSC uses 0.3% in our calculation)
D/A Epoxy	0.65%	0.0011			Silver filled epoxy		Die attach epoxy: Ablebond 2100A
			0.90%	0.0009	Silver (Ag)	7440-22-4	70 to 90% Silver (LSC uses 80% in our calculation)
			0.22%	0.0002	Organic esters and resins	-	10 to 40% Organic Esters and Resins (LSC uses 20% in our calculation)
Wire	5.29%	0.0092					Pd coated Copper, 0.8 mil diameter
			5.15%	0.0074	Copper	7440-50-8	98.5%
			0.14%	0.0018	Palladium	7440-05-3	1.5%
Solder Balls	9.50%	0.0165					SAC305
			10.70%	0.0160	Tin (Sn)	7440-31-5	Solder ball composition Sn96.5/Ag3/Cu0.5
			0.45%	0.0005	Silver (Ag)	7440-22-4	
			0.06%	0.0001	Copper (Cu)	7440-50-8	
Substrate	30.41%	0.0529					CCL-HL832NX
			20.69%	0.0116	BT Resin CCL-HL832NX	-	68.06%
			2.53%	0.0044	Copper	7440-50-8	8.33%
			5.07%	0.0088	Solder Mask-PSR4000 AUS 308	-	16.67%
			0.84%	0.0015	Nickel plating	7440-02-0	2.78%
			0.03%	0.0001	Gold plating	7440-57-5	0.11%
			4.39%	0.0054	Copper thickness in hole	7440-50-8	4.17%

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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Rev. A