Device Material Content

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Package: 256 ftBGA with SnAgCu Solder Balls
Total Device Weight 1.234 Grams

Option 2 (ECP3 Products)
Copper Bond 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	1.22%	0.0151			Silicon chip	7440-21-3	Die size: 4.64 x 5.16 mm
Mold	37.10%	0.4578					Mold Compound composition:
			33.39%	0.4121	Silica	60676-86-0	86 to 93% Silica Fused or Amorphous (LSC uses 90% in our calculation)
			2.23%	0.0275	Epoxy Resin	-	1.5 to 7% Epoxy resin (LSC uses 6% in our calculation)
			1.48%	0.0183	Phenol Resin	-	1 to 6% Phenol resin (LSC uses 4% in our calculation)
			0.07%	0.0009	Carbon Black	1333-86-4	0.2% Carbon Black
							Mold Compound Density ranges between 1.99 and 2.09 grams/cc
D/A Epoxy	0.17%	0.0021			Silver-filled epoxy		Die attach epoxy Density: 4 grams/cc
			0.14%	0.0017	Silver (Ag)	7440-22-4	70 to 90% Silver (LSC uses 80% in our calculation)
			0.03%	0.0004	Organic esters and resins	-	10 to 30% Organic Esters and Resins (LSC uses 20% in our calculation)
Wire	0.33%	0.0041					Pd coated Copper, 0.8 mil diameter
			0.325%	0.0040	Copper	7440-50-8	98.5%
			0.005%	0.0001	Palladium	7440-05-3	1.5%
Solder Balls	20.18%	0.2490					
			19.37%	0.2390	Tin (Sn)	7440-31-5	Solder ball composition Sn96.5/Ag3/Cu0.5
			0.71%	0.0087	Silver (Ag)	7440-22-4	
			0.10%	0.0012	Copper (Cu)	7440-50-8	
Substrate	21.36%	0.2636					
			14.52%	0.1792	Glass fiber	65997-17-3	60 to 75% glass fiber (LSC uses 68% in our calculation)
			6.83%	0.0843	BT Resins	-	
Foil	19.64%	0.2423			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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