



## Device Material Content

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**Package: 256 ftBGA with SnAgCu Solder Balls**  
**Total Device Weight 0.705 Grams**

**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:
<b>Die</b>	1.00%	0.0071			Silicon chip	7440-21-3	Die size: 3.35 x 3.35 mm
<b>Mold</b>	55.89%	0.3940	48.06%	0.3388	Silica Fused	60676-86-0	Mold Compound composition: 75 to 95% Silica Fused (LSC uses 86% in our calculation) 2 to 8% Epoxy resin (LSC uses 4.5% in our calculation) 1 - 5% Phenol resin (LSC uses 3% in our calculation) 1 - 5% Phenol Novolac (LSC uses 3% in our calculation) 1 - 5% Metal Hydroxide (LSC uses 3% in our calculation) 0.1 - 0.5% Carbon Black (LSC uses 0.5% in our calculation) Mold Compound Density ranges between 1.8 and 2.1 grams/cc
			2.51%	0.0177	Epoxy Resin	-	
			1.68%	0.0118	Phenol Resin	-	
			1.68%	0.0118	Phenol Novolac	9003-35-4	
			1.68%	0.0118	Metal Hydroxide	-	
			0.28%	0.0020	Carbon Black	1333-86-4	
<b>D/A Epoxy</b>	0.16%	0.0011	0.13%	0.0009	Silver (Ag)	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)
			0.03%	0.0002	Organic esters and resins	-	
<b>Wire</b>	0.49%	0.0035	0.48%	0.0034	Copper (Cu)	7440-50-8	0.8 mil dia.; 1 wire per solder ball 98.5% Cu 1.5% Pd
			0.01%	0.0001	Palladium (Pd)	7440-05-3	
<b>Solder Balls</b>	13.78%	0.0971	13.30%	0.0937	Tin (Sn)	7440-31-5	SAC305 96.5% Sn 3% Ag 0.5% Cu
			0.41%	0.0029	Silver (Ag)	7440-22-4	
			0.07%	0.0005	Copper (Cu)	7440-50-8	
<b>Substrate</b>	28.69%	0.202	13.10%	0.0923	BT Resin CCL-HL832	-	BT Resin CCL-HL832 45.71% 11.43% 28.57% 4.76% 0.19% 9.52%
			3.27%	0.0231	Copper	7440-50-8	
			8.19%	0.0577	Solder mask PSR4000 AUS 308	-	
			1.36%	0.0096	Nickel plating	7440-02-0	
			0.05%	0.0004	Gold plating	7440-57-5	
			2.73%	0.0192	Copper thickness in hole	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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