Device Material Content

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Package: **672 fpBGA** **with SnPb Solder Balls**

Total Device Weight **3.40** **Grams**

MSL: 3
Peak Reflow Temp: 225°C

November, 2009	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	1.44%	0.0489			Silicon chip	7440-21-3	Die size: 8.11 x 8.34 mm
Mold	35.11%	1.194					Mold Compound composition:
			28.09%	0.9551	Silica (fused, amorphous)	60676-86-0	65 to 95% Silica (LSC uses 80% in our calculation)
			4.92%	0.1671	Epoxy/Phenol Resin	-	3 to 22% Epoxy/Phenol Resin (LSC uses 14% in our calculation)
			1.05%	0.0358	Siloxanes	-	1 to 5% Siloxanes (LSC uses 3% in our calculation)
			0.35%	0.0119	Brominated Epoxy Resin	68928-70-1	0 to 2% Brominated Epoxy Resin (LSC uses 1% in our calculation)
			0.18%	0.0060	Antimony Trioxide	1309-64-4	0.1 to 0.5% Antimony Trioxide (LSC uses 0.5% in our calculation)
			0.35%	0.0119	Antimony Pentoxide	1314-60-9	0 to 1.5% Antimony Pentoxide (LSC uses 1% in our calculation)
			0.18%	0.0060	Carbon Black	1333-86-4	0.1 to 1% Carbon Black (LSC uses 0.5% in our calculation)
							Mold Compound Density between 1.8 and 2.1 grams/cc
D/A Epoxy	0.20%	0.0069					Die attach epoxy Density: 4 grams/cc
			0.16%	0.0053	Silver	7440-22-4	60 to 100% Silver (LSC uses 77% in our calculation)
			0.03%	0.0011	Organic esters and resins	-	1 to 35% Organic Esters and Resins (LSC uses 16% in our calculation)
			0.01%	0.0003	Silane Compound	-	5 to 10% Silane Compound (LSC uses 5% in our calculation)
			0.00%	0.0001	Curing Agent and Hardener	-	1 to 5% Curing Agent and Hardener (LSC uses 2% in our calculation)
Wire	0.58%	0.0197			Gold (Au)	7440-57-5	0.8 to 1.0 mil diameter; 1 wire per solder ball
Solder Balls	22.77%	0.774					
			14.35%	0.488	Tin (Sn)	7440-31-5	Solder ball composition Sn63/Pb37
			8.43%	0.287	Lead (Pb)	7439-92-1	
Substrate	18.32%	0.623					
			12.46%	0.424	Glass fiber	65997-17-3	60 to 75% glass fiber (LSC uses 68% in our calculation)
			5.86%	0.199	BT Resins	-	
Foil	21.57%	0.734			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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