Device Material Content

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Package: **144 fpBGA** **with SnPb Solder Balls**

Total Device Weight **0.475** **Grams**

MSL: 3
Peak Reflow Temp: 240°C

July, 2004	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	2.76%	0.013			Silicon	7440-21-3	Die size: 5.50 x 3.30 mm
Mold	38.25%	0.182					Mold Compound composition:
			30.03%	0.143	Silica	60676-86-0	65 to 95% Silica (LSC uses 78.5% in our calculation)
			5.36%	0.025	Epoxy/Phenol Resin	-	5 to 22% Epoxy/Phenol Resin (LSC uses 14% in our calculation)
			0.38%	0.002	Brominated Epoxy Resin	68928-70-1	0 to 2% Brominated Epoxy Resin (LSC uses 1% in our calculation)
			0.96%	0.005	Antimony Trioxide	1309-64-4	0 to 5% Antimony Trioxide (LSC uses 2.5% in our calculation)
			0.38%	0.002	Antimony Pentoxide	1314-60-9	0 to 1.5% Antimony Pentoxide (LSC uses 1% in our calculation)
			0.96%	0.005	Siloxanes	-	0 to 5% Siloxanes (LSC uses 2.5% in our calculation)
			0.19%	0.001	Carbon Black	1333-86-4	0 to 1% Carbon Black (LSC uses 0.5% in our calculation)
							Mold Compound Density between 1.88 and 2.1 grams/cc
D/A Epoxy	0.39%	0.002					Die attach epoxy Density: 4 grams/cc
			0.31%	0.0015	Silver	7440-22-4	60 to 100% Silver (LSC uses 80% in our calculation)
			0.08%	0.0004	Organic esters and resins	-	0 to 30% Organic Esters and Resins (LSC uses 20% in our calculation)
Wire	0.89%	0.004			Gold (Au)	7440-57-5	1.00 mil diameter; 1 wire per solder ball
Solder Balls	30.10%	0.143					
			15.79%	0.075	Tin (Sn)	7440-31-5	Solder ball composition Sn63/Pb37
			14.39%	0.068	Lead (Pb)	7439-92-1	
Substrate	22.20%	0.105					
			15.10%	0.071	Glass fiber	65997-17-3	60-75% Glass fiber (LSC uses 68% in our calculation)
			7.10%	0.034	BT resins	-	
Foil	5.33%	0.025			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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