



Device Material Content

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Package: 484 fpBGA with SnAgCu Solder Balls
Total Device Weight 2.21 Grams

MSL: 3
Peak Reflow Temp: 250°C

November, 2009	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	3.58%	0.0790			Silicon chip	7440-21-3	Die size: 9.63 x 11.36 mm
Mold	25.07%	0.554	22.11% 1.25% 1.25% 0.38% 0.08%	0.4886 0.0277 0.0277 0.0083 0.0017	Silica (Fused or Amorphous) Epoxy resin Phenol resin Metal Hydroxide Carbon Black	60676-86-0 - - - 1333-86-4	Mold Compound composition: 75 to 95% Silica Fused or Amorphous (LSC uses 88.2% in our calculation) 2 to 10% Epoxy resin (LSC uses 5% in our calculation) 2 to 10% Phenol resin (LSC uses 5% in our calculation) 0 to 2.5% Metal Hydroxide (LSC uses 1.5% in our calculation) 0 to 0.5% Carbon black (LSC uses 0.3% in our calculation) Mold Compound Density between 1.8 and 2.1 grams/cc
D/A Epoxy	0.50%	0.0111	0.40% 0.10%	0.0089 0.0022	Silver (Ag) Organic esters and resins	7440-22-4 -	Die attach epoxy Density: 4 grams/cc 60 to 100% Silver (LSC uses 80% in our calculation) 0 to 30% Organic Esters and Resins (LSC uses 20% in our calculation)
Wire	0.64%	0.0142			Gold (Au)	7440-57-5	0.8 to 1.0 mil diameter; 1 wire per solder ball
Solder Balls	21.30%	0.471	20.45% 0.75% 0.11%	0.452 0.0165 0.0024	Tin (Sn) Silver (Ag) Copper (Cu)	7440-31-5 7440-22-4 7440-50-8	Qualified Solder ball compositions: Sn95.5/Ag4/Cu0.5 Sn96.5/Ag3/Cu0.5 LSC uses: Sn96/Ag3.5/Cu0.5 for calculations
Substrate	19.19%	0.424	13.05% 6.14%	0.288 0.136	Glass fiber BT Resins	65997-17-3 -	60 to 75% glass fiber (LSC uses 68% in our calculation)
Foil	29.72%	0.657			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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