



Device Material Content

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Package: 64 csBGA with SnAgCu Solder Balls
Total Device Weight 0.047 Grams

Copper Bond Wire version
Halogen Free
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	4.53%	0.0021			Silicon chip	7440-21-3	Die size: 1.77 x 1.91 mm
Mold	49.16%	0.0231	42.77%	0.02010	Silica fused	60676-86-0	Mold Compound composition: 75 to 95% Fused silica filler (LSC uses 87% 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) 0.5 to 5% Metal hydroxide (LSC uses 2.75% in our calculation) 0.1 to 0.5% Carbon Black (LSC uses 0.25% in our calculation) Mold Compound Density between 1.9 and 2.1 grams/cc
			2.46%	0.00116	Epoxy Resin	-	
			2.46%	0.00116	Phenol Resin	-	
			1.35%	0.00064	Metal Hydroxide	-	
			0.12%	0.00006	Carbon Black	1333-86-4	
D/A Epoxy	0.73%	0.00034	0.58%	0.00027	Silver filled epoxy	7440-22-4	Die attach epoxy Density: 4 grams/cc 60 to 90% Silver (LSC uses 80% in our calculation) 0 to 40% Organic Esters and Resins (LSC uses 20% in our calculation)
			0.15%	0.00007	Organic esters & resins	-	
Wire	1.85%	0.0009	1.82%	0.00085	Copper	7440-50-8	Pd coated Copper, 0.8 mil diameter 98.5% Cu 1.5% Pd
			0.03%	0.00001	Palladium	7440-05-3	
Solder Balls	14.33%	0.0067	13.77%	0.0065	Tin (Sn)	7440-31-5	Solder ball composition Sn96.5/Ag3/Cu0.5 (SAC305)
			0.43%	0.0002	Silver (Ag)	7440-22-4	
			0.07%	0.00003	Copper (Cu)	7440-50-8	
Substrate	20.30%	0.0095	13.80%	0.0065	Glass fiber	65997-17-3	60 to 75% glass fiber (LSC uses 68% in our calculation)
			6.50%	0.0031	BT Resins	-	
Foil	9.11%	0.0043			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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Rev. K