Device Material Content

5555 NE Moore Ct.
Hillsboro OR 97124
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Package: 432 SBGA with SnPb Solder Balls
Total Device Weight 9.38 Grams

May, 2004	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	1.33%	0.125			Silicon	7440-21-3	Die size: 13.3 x 13.0 mm
Encapsulation	5.20%	0.488					Encapsulation composition:
			3.80%	0.356	Silica	60676-86-0	70 to 76% Silica (LSC uses 73% in our calculation)
			0.47%	0.044	Cycloaliphatic Epoxy resin	2386-87-0	1 to 15% Cycloaliphatic Epoxy resin (LSC uses 9% in our calculation)
			0.47%	0.044	Epoxy resin	129915-35-1	1 to 15% Epoxy resin (LSC uses 9% in our calculation)
			0.47%	0.044	Methyl Hexahydrophthalic Anhydride	25550-51-0	1 to 15% Methyl Hexahydrophthalic Anhydride (LSC uses 9% in our calculation)
							Encapsulation Density ranges between 1.7 and 1.9 grams/cc
D/A Epoxy	0.19%	0.018					
			0.14%	0.013	Silver (Ag)	7440-22-4	Die attach epoxy Density: 4 grams/cc
			0.05%	0.004	other	-	70 to 80% Ag (LSC uses 75% in our calculation)
Wire	0.14%	0.013			Gold (Au)	7440-57-5	1.00 mil diameter; 1 wire per solder ball
Solder Balls	9.39%	0.881					
			4.91%	0.461	Tin (Sn)	7440-31-5	Solder ball composition Sn63/Pb37
			4.48%	0.420	Lead (Pb)	7439-92-1	
Substrate (BT)	9.63%	0.903			BT Resin	-	
Copper	73.36%	6.882			Copper (Cu)	7440-50-8	
Lid Plating	0.76%	0.071			Nickel (Ni)	7440-02-0	

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.

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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