Device Material Content

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Package: **1704 fcBGA (organic) with SAC305 Solder Balls**
Total Device Weight 19.56 Grams

MSL: 4
Peak Reflow Temp: 245°C

December, 2010	**% of Total Pkg. Wt.**	**Weight (g)**	**% of Total Pkg. Wt.**	**Weight (g)**	**Substance**	**CAS #**	**Notes / Assumptions:**
Die	1.71%	0.334			Silicon (Si)	7440-21-3	Die Size: 18.20 x 15.7mm
Bumps	0.071%	0.0138					
			0.069%	0.0134	Tin (Sn)	7440-31-5	97.4%
			0.002%	0.0004	Silver (Ag)	7440-22-4	2.6%
Lid	39.20%	7.668					
			39.009%	7.630	Copper	7440-50-8	99.5%
			0.196%	0.038	Nickel	7440-02-0	0.5%
Ring	26.27%	5.139					
			26.144%	5.114	Copper	7440-50-8	99.5%
			0.131%	0.026	Nickel	7440-02-0	0.5%
Adhesive	0.72%	0.140					
			0.644%	0.126	Alumina	1344-28-1	90%
			0.072%	0.014	Others	Trade Secret	10%
Underfill	0.36%	0.070					
			0.018%	0.0035	Bisphenol A type liquid epoxy resin	25068-38-6	5%
			0.036%	0.0070	Bisphenol F type liquid epoxy resin	9003-36-5	10%
			0.047%	0.0091	Naphthalene	27610-48-6	13%
			0.036%	0.0070	Amine type accelerator	Trade Secret	10%
			0.200%	0.0392	Silicon dioxide	60676-86-0	56%
			0.004%	0.0007	Carbon black	1333-86-4	1%
			0.018%	0.0035	Additives	Trade Secret	5%
Thermally conductive adhesive	0.59%	0.115					
			0.500%	0.098	Aluminum	7429-90-5	85%
			0.088%	0.017	Resin and additive mixture	Trade Secret	15%
Solder Balls	4.87%	0.952					
			4.697%	0.919	Tin (Sn)	7440-31-5	96.5%
			0.146%	0.029	Sliver(Ag)	7440-22-4	3.0%
			0.024%	0.005	Copper(Cu)	7440-50-8	0.5%
Substrate	26.21%	5.127					
			5.688%	1.112	Glass fiber	65997-17-3	21.7%
			10.267%	2.008	Resin and additive mixture	Trade Secret	39.2%
			10.260%	2.007	Copper(Cu)	7440-50-8	39.1%

Notes:

The values listed above are nominal values based on the data provided by outside sources and have not been validated.

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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Pb lead-free

RoHS 2002/95/EC

Rev. A