



Device Material Content

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Package: 1020 fcBGA with SnAgCu Solder Balls
Total Device Weight 9.40 Grams

Version 2

MSL: 4
Peak Reflow Temp: 245°C

March, 2010	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	2.29%	0.215			Silicon (Si)	7440-21-3	Die Size: 13.60 x 13.07mm
Bumps	0.106%	0.010	0.106% 0.003%	0.0099 0.0003	Tin (Sn) Silver (Ag)	7440-31-5 7440-22-4	97.4% 2.6%
Lid	50.45%	4.742	50.14% 0.303%	4.714 0.0285	Copper (Cu) Nickel (Ni)	7440-50-8 7440-02-0	99.4% 0.6%
Thermal Paste Adhesive	0.77%	0.072	0.69% 0.08%	0.065 0.007	Alumina Others	1344-28-1 Trade Secret	90.0% 10.0%
Underfill	0.43%	0.040	0.013% 0.043% 0.064% 0.043% 0.238% 0.004% 0.021%	0.0012 0.004 0.006 0.004 0.0224 0.0004 0.002	Bisphenol A type liquid epoxy resin Bisphenol F type liquid epoxy resin Naphthalene Amine type accelerator Silicon dioxide Carbon black Additives	25068-38-6 9003-36-5 27610-48-6 Trade Secret 60676-86-0 1333-86-4 Trade Secret	3.0% 10.0% 15.0% 10.0% 56.0% 1.0% 5.0%
Thermal Conductive Paste	0.88%	0.083	0.66% 0.22%	0.0623 0.0208	Aluminum Resin and additive mixture	7429-90-5 Trade Secret	75.0% 25.0%
Solder Balls	9.33%	0.877	9.00% 0.28% 0.047%	0.846 0.0263 0.0044	Tin (Sn) Silver (Ag) Copper (Cu)	7440-31-5 7440-22-4 7440-50-8	96.5% 3.0% 0.5%

Substrate	21.76%	2.045	2.35%	0.221	Bisphenol A: Epoxy Resin Cyclohexane N-dimethylformamide Silica Powder Epoxy Resin Glass Cloth	80-05-7	10.8%
			0.26%	0.0247		110-82-7	1.2%
			0.26%	0.0247		68-12-2	1.2%
			3.37%	0.317		60676-86-0	15.5%
			7.76%	0.729		Trade Secret	35.6%
			7.76%	0.729		65997-17-3	35.6%
Foil	13.99%	1.315			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.

- The above material declaration can be used only as reference in identifying the Hazardous material content of the product.
- There is no guarantee on the Material composition accuracy as it is based on data provided by outside sources and has not been validated.
- This material declaration does not include data from any active and passive component assembled in the package.

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Rev. F