Device Material Content

5555 NE Moore Ct.
Hillsboro OR 97124
custreq@lscc.com

Package: **1152 fcBGA (organic)** **with SAC305 Solder Balls** FFN1152 35 x 35mm
Total Device Weight **10.35** **Grams** SC40 version 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	2.01%	0.208			Silicon (Si)	7440-21-3	Die Size: SC40: 13.60 x 13.07mm
Bumps	0.09%	0.0098	0.0923%	0.0134	Tin (Sn)	7440-31-5	97.4%
			0.0025%	0.0004	Silver (Ag)	7440-22-4	2.6%
Lid	52.12%	5.392	51.856%	5.365	Copper	7440-50-8	99.5%
			0.261%	0.027	Nickel	7440-02-0	0.5%
Adhesive	0.77%	0.080	0.696%	0.072	Alumina	1344-28-1	90%
			0.077%	0.008	Others	Trade Secret	10%
Underfill	0.38%	0.039	0.019%	0.0020	Bisphenol A type liquid epoxy resin	25068-38-6	5%
			0.038%	0.0039	Bisphenol F type liquid epoxy resin	9003-36-5	10%
			0.049%	0.0051	Naphthalene	27610-48-6	13%
			0.038%	0.0039	Amine type accelerator	Trade Secret	10%
			0.211%	0.0218	Silicon dioxide	60676-86-0	56%
			0.004%	0.0004	Carbon black	1333-86-4	1%
			0.019%	0.0020	Additives	Trade Secret	5%
Thermally conductive adhesive	0.68%	0.070	0.575%	0.060	Aluminum	7429-90-5	85%
			0.101%	0.011	Resin and additive mixture	Trade Secret	15%
Solder Balls	9.19%	0.951	8.915%	0.918	Tin (Sn)	7440-31-5	96.5%
			0.276%	0.029	Sliver(Ag)	7440-22-4	3.0%
			0.046%	0.005	Copper(Cu)	7440-50-8	0.5%
Substrate	34.21%	3.625	7.424%	0.780	Glass fiber	65997-17-3	21.7%
			13.411%	1.408	Resin and additive mixture	Trade Secret	39.2%
			13.377%	1.407	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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Rev. A

Device Material Content

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Package: 1152 fcBGA (organic) **with SAC305 Solder Balls** FFN1152 35 x 35mm
Total Device Weight 10.59 Grams SC80 version 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	3.15%	0.334			Silicon (Si)	7440-21-3	Die Size: SC80: 18.20 x 15.7mm
Bumps	0.13%	0.0138					
			0.1269%	0.0134	Tin (Sn)	7440-31-5	97.4%
			0.0034%	0.0004	Silver (Ag)	7440-22-4	2.6%
Lid	51.00%	5.403					
			50.741%	5.376	Copper (Cu)	7440-50-8	99.5%
			0.255%	0.027	Nickel (Ni)	7440-02-0	0.5%
Adhesive	0.85%	0.090					
			0.765%	0.081	Alumina	1344-28-1	90%
			0.085%	0.009	Others	Trade Secret	10%
Underfill	0.59%	0.062					
			0.029%	0.003	Bisphenol A type liquid epoxy resin	25068-38-6	5%
			0.059%	0.006	Bisphenol F type liquid epoxy resin	9003-36-5	10%
			0.076%	0.008	Naphthalene	27610-48-6	13%
			0.059%	0.006	Amine type accelerator	Trade Secret	10%
			0.328%	0.035	Silicon dioxide	60676-86-0	56%
			0.006%	0.001	Carbon black	1333-86-4	1%
			0.029%	0.003	Additives	Trade Secret	5%
Thermally conductive adhesive	1.09%	0.115					
			0.923%	0.098	Aluminum (Al)	7429-90-5	85%
			0.163%	0.017	Resin and additive mixture	Trade Secret	15%
Solder Balls	8.99%	0.952					
			8.717%	0.919	Tin (Sn)	7440-31-5	96.5%
			0.270%	0.029	Silver (Ag)	7440-22-4	3.0%
			0.045%	0.005	Copper(Cu)	7440-50-8	0.5%
Substrate	34.21%	3.625					
			7.424%	0.786	Glass fiber	65997-17-3	21.7%
			13.411%	1.420	Resin and additive mixture	Trade Secret	39.2%
			13.377%	1.419	Copper(Cu)	7440-50-8	39.1%

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Rev. A