100% Material Declaration Data Sheet FFG1156

Average Weight: 11.0927g

Component	Substance Description	CAS Number or Description	Percentage of Component	Use in Product	Component Weight/ Substance Weight (grams)	Component Percent of Total
Silicon Die (FPGA)				Silicon IC	**0.77363**	**6.974**
	Doped silicon	7440-21-3	100.00	Basis	0.77363	
Solder Bump				Die to package	**0.258210**	**2.328**
	Tin (Sn)	7440-31-5	63.00	Basis	0.162672	
	Lead (Pb)	7439-92-1	37.00	Basis	0.095538	
Die Underfill					**0.130000**	**1.172**
	Bisphenol F-type liquid epoxy resin	9003-36-5	15.00	Basis	0.019500	
	Phenolic resin	Trade secret	15.00	Basis	0.019500	
	Bisphenol A-type liquid epoxy resin	25068-38-6	5.00	Basis	0.006500	
	Amine type accelerator	Trade secret	5.00	Basis	0.006500	
	Silicon dioxide	60676-86-0	54.00	Basis	0.070200	
	Carbon black	1333-86-4	1.00	Basis	0.001300	
	Additives	Trade secret	5.000	Basis	0.006500	
Heat Spreader					**4.989300**	**44.978**
	Copper (Cu)	7440-50-8	98.65	Main material	4.921944	
	Nickel (Ni)	7440-02-0	1.35	Main material	0.067356	
Heat Spreader Adhesive					**0.152000**	**1.370**
	Organopolysiloxane mixture	N/A	100.00	Main material	0.152000	
Solder Balls					**0.965679**	**8.706**
	Tin (Sn)	7440-31-5	95.50	Main material	0.922224	
	Silver (Ag)	7440-22-4	4.00	Main material	0.038627	
	Copper (Cu)	7440-50-8	0.50	Main material	0.004828	
Capacitor					**0.041280**	**0.372**
	Ceramic ($BaTiO_3$)	N/A	61.80	Ceramic	0.025511	
	Inner electrode (Ni)	7440-02-0	27.00	Inner electrode	0.011146	
	Outer electrode (Cu)	7440-50-8	9.90	Outer electrode	0.004087	
	Plating 1 (Ni)	7440-02-0	0.40	Plating1	0.000165	
	Plating 2 (Sn)	7440-31-5	0.90	Plating2	0.000372	

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Component	Substance Description	CAS Number or Description	Percentage of Component	Use in Product	Component Weight/ Substance Weight (grams)	Component Percent of Total
Capacitor					**0.039600**	**0.357**
	Ceramic ($BaTiO_3$)	N/A	67.40	Ceramic	0.026690	
	Inner electrode (Ni)	7440-02-0	17.00	Inner electrode	0.006732	
	Outer electrode (Cu)	7440-50-8	13.80	Outer electrode	0.005465	
	Plating 1 (Ni)	7440-02-0	0.50	Plating1	0.000198	
	Plating 2 (Sn)	7440-31-5	1.30	Plating2	0.000515	
Ink					**Trace**	**Trace**
	2-Butoxyethanol	111-76-2	Trace	Basis	Trace	
	Benzylalcohol	100-51-6	Trace	Basis	Trace	
	Isobutanol	78-83-1	Trace	Basis	Trace	
	Xylene	1330-20-7	Trace	Basis	Trace	
	Bisphenol	25068-38-6	Trace	Basis	Trace	
Substrate					**3.743**	**33.743**
Plating	Copper	7440-50-8	37.54	Main material	1.405	
	Nickel	7440-02-0	0.61	Main material	0.023	
	Gold	7440-57-5	0.19	Main material	0.007	
Bump	Lead	7439-92-1	0.48	Main material	0.018	
	Tin	7440-31-5	0.83	Main material	0.031	
Core	Bismaleimide	13676-54-5	13.36	Main material	0.500	
	Triazine	25722-66-1	13.36	Main material	0.500	
	Epoxy resin	29690-82-2 68541-56-0 25068-38-6	4.01	Main material	0.150	
	Inorganic filler	13776-74-4/7631	0.45	Main material	0.017	
	Fiberglass	65997-17-3	13.36	Main material	0.500	
ABF	Bisphenol A-type epoxy resin	25068-38-6	3.93	Main material	0.147	
	Cyclohexane	108-94-1	3.93	Main material	0.147	
	N, N-dimethylformamide	68-12-2	3.93	Main material	0.147	
	Silica powder (Silicon dioxide)	7631-86-9	3.93	Main material	0.147	
Solder Mask	Solder mask	N/A	0.11	Main material	0.0040	

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Revision History

The following table shows the revision history for this document.

Date	Version	Description of Revisions
11/02/09	1.0	Initial Xilinx release.
08/03/10	1.1	Updated average weight. Updated component percentage of total for all components. Added substances and corresponding data to ink and substrate components.
07/22/11	1.1.1	Change CAS# for N, N-dimethylformamide from 68-12-1 to 68-12-2

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