



100% Material Declaration Data Sheet FF672

PK134 (v1.6) March 11, 2011

Average Weight: 6.5771 g

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	0.443503	6.743
	Doped silicon	7440-21-3	100.00		0.443503	
Solder Bump				Die to package	0.024729	0.376
	Tin	7440-31-5	63.00		0.015580	
	Lead	7439-92-1	37.00		0.009150	
Die Underfill					0.056000	0.851
	Bisphenol F-type liquid epoxy resin	9003-36-5	20.00	Basis	0.011200	
	Phenolic resin	Trade secret	15.00	Basis	0.008400	
	Bisphenol A-type liquid epoxy resin	25068-38-6	5.00	Basis	0.002800	
	Amine type accelerator	Trade secret	5.00	Basis	0.002800	
	Silicon dioxide	60676-86-0	51.50	Basis	0.028840	
	Carbon black	1333-86-4	1.00	Basis	0.000560	
	Additives	Trade secret	2.50	Additive	0.001400	
Solder Paste					0.048000	0.730
	Tin	7440-31-5	96.50	Basis	0.046320	
	Silver	7440-22-4	3.00	Basis	0.001440	
	Copper	7440-50-8	0.50	Basis	0.000240	

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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
Substrate					2.203200	33.498
Plating	Copper	7440-50-8	32.44	Main material	0.714749	
	Nickel	7440-02-0	0.68	Main material	0.014888	
	Gold	7440-57-5	0.15	Main material	0.003226	
Bump	Lead	7439-92-1	0.77	Main material	0.016916	
	Tin	7440-31-5	1.31	Main material	0.028803	
Copper Foil	Copper	7440-50-8	4.60	Main material	0.101292	
Core	Bismaleimide	13676-54-5	17.60	Main material	0.387686	
	Triazine	25722-66-1	17.60	Main material	0.387686	
	Epoxy Resin	29690-82-2 68541-56-0 25068-38-6	5.28	Main material	0.116306	
	Inorganic filler	13776-74-4 7631-86-9	0.59	Main material	0.012923	
	Fiberglass	65997-17-3	17.60	Main material	0.387686	
ABF	Bisphenol A-type epoxy resin	25068-38-6	0.00	Main material	0.000000	
	Cyclohexane	108-94-1	0.00	Main material	0.000000	
	N, N-dimethylformamide	68-12-2	0.00	Main material	0.000000	
	Silica powder (Silicon dioxide)	7631-86-9	0.00	Main material	0.000000	
Solder Mask	Levelling agents and others	N/A	0.01	Main material	0.000248	
	Phthalocyanine blue, organic pigment	N/A	0.00	Main material	0.000062	
	Amine compound	N/A	0.01	Main material	0.000124	
	Barium sulfate	7727-43-7	0.19	Main material	0.004221	
	Silica	15468-32-3	0.10	Main material	0.002111	
	Talc	14807-96-6	0.10	Main material	0.002111	
	Diethylene glycol monoethyl ether acetate	N/A	0.05	Main material	0.001117	
	Dipropylane glycol monomethyl ether	N/A	0.04	Main material	0.000962	
	Dipropylane glycol monomethyl ether acetate	N/A	0.13	Main material	0.002824	
	High boiling-point petroleum solvent	N/A	0.11	Main material	0.002359	
	Aromatic carbonyl compound	N/A	0.04	Main material	0.000838	
	Acrylic monomer	N/A	0.05	Main material	0.001055	
	Acrylic resin	N/A	0.38	Main material	0.008287	
	Epoxy resin	N/A	0.21	Main material	0.004718	

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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					0.016000	0.243
	Ceramic (BaTiO3 type)	Trade secret	51.10	Ceramic	0.008176	
	Inner electrode (Ni)	7440-02-0	27.00	Inner electrode	0.004320	
	Outer electrode (Cu)	7440-50-8	16.90	Outer electrode	0.002704	
	Plating1 (Ni)	7440-02-0	2.00	Plating1	0.000320	
	Plating2 (Sn)	7440-31-5	3.00	Plating2	0.000480	
Heat Sink					3.040000	46.221
	Copper	7440-50-8	99.45	Main material	3.023280	
	Nickel	7440-02-0	0.55	Main material	0.016720	
Heat Sink Adhesive					0.106000	1.612
	Aluminum oxide(Al2O3)	1344-28-1	70.00	Main material	0.074200	
	Zinc oxide (ZnO)	1314-13-2	15.00	Main material	0.015900	
	Silicone	Trade Secret	15.00	Main material	0.015900	
	Additives	Trade Secret		Additive		
Solder Balls					0.639608	9.725
	Tin (Sn)	7440-31-5	63.00	Base metal	0.402953	
	Lead (Pb)	7439-92-1	37.00	Base metal	0.236655	

Revision History

The following table shows the revision history for this document.

Date	Version	Description of Revisions
3/23/06	1.0	Initial Xilinx release.
6/09/06	1.1	100% Material Declaration
9/19/06	1.2	Updated component descriptions and weights
1/17/07	1.3	Corrected component CAS number for Chromium
6/27/07	1.4	Corrected component weights and percentages
7/20/10	1.5	Updated Heat Spreader substance description
12/22/10	1.5.1	Corrected "FF668" to "FF672" in data sheet title
3/11/11	1.6	Updated component weights and descriptions

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