



# 100% Material Declaration Data Sheet FF1153

PK191 (v1.1) July 8, 2011

**Average Weight: 10.662 g**

Component	Substance Description	CAS Number or Description	Percentage of Component	Use in Product	Component Weight/ Substance Weight (grams)	Component Percent of Total
<b>Silicon Die (FPGA)</b>				Silicon IC	<b>0.548912</b>	<b>5.148</b>
	Doped silicon	7440-21-3	100.00		0.548912	
<b>Solder Bump</b>				Die to package	<b>0.041809</b>	<b>0.392</b>
	Tin (Sn)	7440-31-5	63.00		0.026340	
	Lead (Pb)	7439-92-1	37.00		0.015469	
<b>Die Underfill</b>					<b>0.065000</b>	<b>0.610</b>
	Bisphenol F-type liquid epoxy resin	9003-36-5	20.00	Basis	0.013000	
	Phenolic resin	Trade secret	15.00	Basis	0.009750	
	Bisphenol A-type liquid epoxy resin	25068-38-6	5.00	Basis	0.003250	
	Amine type accelerator	Trade secret	5.00	Basis	0.003250	
	Silicon dioxide	60676-86-0	51.50	Basis	0.033475	
	Carbon black	1333-86-4	1.00	Basis	0.000650	
	Additives	Trade secret	2.50	Basis	0.001625	
<b>Solder Paste</b>					<b>0.070000</b>	<b>0.657</b>
	Tin (Sn)	7440-31-5	96.50	Basis	0.067550	
	Silver (Ag)	7440-22-4	3.00	Basis	0.002100	
	Copper (Cu)	7440-50-8	0.50	Basis	0.000350	

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<b>Substrate</b>					<b>3.600000</b>	<b>33.764</b>
<b>Plating</b>	Copper (Cu)	7440-50-8	32.04	Main material	1.153525	
	Nickel (Ni)	7440-02-0	0.44	Main material	0.015963	
	Gold (Au)	7440-57-5	0.10	Main material	0.003458	
<b>Bump</b>	Lead (Pb)	7439-92-1	0.49	Main material	0.017562	
	Tin (Sn)	7440-31-5	0.83	Main material	0.029903	
<b>Copper Foil</b>	Copper (Cu)	7440-50-8	2.96	Main material	0.106584	
<b>Core</b>	Bismaleimide	13676-54-5	16.09	Main material	0.579204	
	Triazine	25722-66-1	16.09	Main material	0.579204	
	Epoxy Resin	29690-82-2 68541-56-0 25068-38-6	4.83	Main material	0.173761	
	Inorganic filler	13776-74-4 7631-86-9	0.54	Main material	0.019307	
	Fiberglass	65997-17-3	16.09	Main material	0.579204	
<b>ABF</b>	Bisphenol A-type epoxy resin	25068-38-6	2.14	Main material	0.077023	
	Cyclohexane	108-94-1	2.14	Main material	0.077023	
	N, N-dimethylformamide	68-12-2	2.14	Main material	0.077023	
	Silica powder (Silicon dioxide)	7631-86-9	2.14	Main material	0.077023	
<b>Solder Mask</b>	Levelling agents and others	N/A	0.01	Main material	0.000274	
	Phthalocyanine blue, organic pigment	N/A	0.00	Main material	0.000068	
	Amine compound	N/A	0.00	Main material	0.000137	
	Barium sulfate	7727-43-7	0.13	Main material	0.004656	
	Silica	15468-32-3	0.06	Main material	0.002328	
	Talc	14807-96-6	0.06	Main material	0.002328	
	Diethylene glycol monoethyl ether acetate	N/A	0.03	Main material	0.001232	
	Dipropylane glycol monomethyl ether	N/A	0.03	Main material	0.001061	
	Dipropylane glycol monomethyl ether acetate	N/A	0.09	Main material	0.003115	
	High boiling-point petroleum solvent	N/A	0.07	Main material	0.002602	
	Aromatic carbonyl compound	N/A	0.03	Main material	0.000924	
	Acrylic monomer	N/A	0.03	Main material	0.001164	
	Acrylic resin	N/A	0.25	Main material	0.009140	
	Epoxy resin	N/A	0.15	Main material	0.005203	

Component	Substance Description	CAS Number or Description	Percentage of Component	Use in Product	Component Weight/ Substance Weight (grams)	Component Percent of Total
<b>Capacitor</b>					<b>0.028000</b>	<b>0.263</b>
	Ceramic (BaTiO3 type)	Trade secret	61.80	Ceramic	0.017304	
	Inner electrode (Ni)	7440-02-0	27.00	Inner electrode	0.007560	
	Outer electrode (Cu)	7440-50-8	9.90	Outer electrode	0.002772	
	Plating1 (Ni)	7440-02-0	0.40	Plating1	0.000112	
	Plating2 (Sn)	7440-31-5	0.90	Plating2	0.000252	
<b>Capacitor</b>					<b>0.093600</b>	<b>0.878</b>
	Ceramic (BaTiO3 type)	Trade secret	61.54	Ceramic	0.057600	
	Inner electrode (Ni)	7440-02-0	18.21	Inner electrode	0.017040	
	Outer electrode (Cu)	7440-50-8	17.95	Outer electrode	0.016800	
	Plating1 (Ni)	7440-02-0	0.77	Plating1	0.000720	
	Plating2 (Sn)	7440-31-5	1.54	Plating2	0.001440	
<b>Heat Sink</b>					<b>4.965400</b>	<b>46.570</b>
	Copper (Cu)	7440-50-8	99.54	Main material	4.942559	
	Nickel (Ni)	7440-02-0	0.46	Main material	0.022841	
<b>Heat Sink Adhesive</b>					<b>0.152000</b>	<b>1.426</b>
	Aluminum oxide	1344-28-1	70.00	Main material	0.106400	
	Zinc oxide	1314-13-2	15.00	Main material	0.022800	
	Silicone	Trade Secret	15.00	Main material	0.022800	
	Additives	Trade Secret		Additive		
<b>Solder Balls</b>					<b>1.097422</b>	<b>10.293</b>
	Tin (Sn)	7440-31-5	63.00	Base metal	0.691376	
	Lead (Pb)	7440-50-8	37.00	Base metal	0.406046	

## Revision History

The following table shows the revision history for this document.

Date	Version	Description of Revisions
05/19/10	1.0	Initial Xilinx release.
07/08/11	1.1	Update component weights

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