



PK458 (v1.0) March 4, 2011

# 100% Material Declaration Data Sheet FF1759 Virtex-6

**Average Weight: 20.7585 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>0.935666</b>	<b>4.507</b>
	Doped silicon	7440-21-3	100.00	Basis	0.935666	
<b>Solder Bump</b>				Die to package	<b>0.048899</b>	<b>0.236</b>
	Tin (Sn)	7440-31-5	63.00	Basis	0.030806	
	Lead (Pb)	7439-92-1	37.00	Basis	0.018093	
<b>Die Underfill</b>					<b>0.130000</b>	<b>0.626</b>
	Bisphenol F-type liquid epoxy resin	9003-36-5	20.00	Basis	0.026000	
	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	51.50	Basis	0.066950	
	Carbon black	1333-86-4	1.00	Basis	0.001300	
	Additives	Trade secret	2.50	Basis	0.003250	

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<b>Substrate</b>					<b>5.632439</b>	<b>27.133</b>
<b>Plating</b>	Copper (Cu)	7440-50-8	39.78	Main material	2.240418	
	Nickel (Ni)	7440-02-0	0.42	Main material	0.023850	
	Gold (Au)	7440-57-5	0.09	Main material	0.005167	
<b>Bump</b>	Lead (Pb)	7439-92-1	0.40	Main material	0.022345	
	Tin (Sn)	7440-31-5	0.68	Main material	0.038048	
<b>Copper Foil</b>	Copper (Cu)	7440-50-8	3.52	Main material	0.198108	
<b>Core</b>	Fiberglass	65997-17-3	21.81	Main material	1.228250	
	Epoxy resin	N/A	21.81	Main material	1.228250	
<b>ABF</b>	Bisphenol A-type epoxy resin	25068-38-6	2.57	Main material	0.144500	
	Cyclohexane	108-94-1	2.57	Main material	0.144500	
	N, N-dimethylformamide	68-12-2	2.57	Main material	0.144500	
	Silica powder (Silicon dioxide)	7631-86-9	2.57	Main material	0.144500	
<b>Solder Mask</b>	Levelling agents & others	N/A	0.01	Main material	0.000560	
	Phthalocyanine blue, organic pigment	N/A	0.00	Main material	0.000140	
	Amine compound	N/A	0.00	Main material	0.000280	
	Barium sulfate	7727-43-7	0.17	Main material	0.009520	
	Silica	15468-32-3	0.08	Main material	0.004760	
	Talc	14807-96-6	0.08	Main material	0.004760	
	Diethylene glycol monoethyl ether acetate	N/A	0.04	Main material	0.002520	
	Dipropylane glycol monomethyl ether	N/A	0.04	Main material	0.002170	
	Dipropylane glycol monomethyl ether acetate	N/A	0.11	Main material	0.006370	
	High boiling-point petroleum solvent	N/A	0.09	Main material	0.005320	
	Aromatic carbonyl compound	N/A	0.03	Main material	0.001890	
	Acrylic monomer	N/A	0.04	Main material	0.002380	
	Acrylic resin	N/A	0.33	Main material	0.018691	
	Epoxy resin	N/A	0.19	Main material	0.010640	

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<b>Solder Paste</b>					<b>0.083000</b>	<b>0.400</b>
	Tin	7440-31-5	96.50	Basis	0.080095	
	Silver	7440-22-4	3.00	Basis	0.002490	
	Copper	7440-50-8	0.50	Basis	0.000415	
<b>Capacitor 1</b>					<b>0.056000</b>	<b>0.270</b>
	Ceramic (BaTiO3 type)	Trade secret	61.80	Ceramic	0.034608	
	Inner electrode (Ni)	7440-02-0	27.00	Inner electrode	0.015120	
	Outer electrode (Cu)	7440-50-8	9.90	Outer electrode	0.005544	
	Plating1 (Ni)	7440-02-0	0.40	Plating1	0.000224	
	Plating2 (Sn)	7440-31-5	0.90	Plating2	0.000504	
<b>Capacitor 2</b>					<b>0.081900</b>	<b>0.395</b>
	Ceramic (BaTiO3 type)	Trade secret	67.40	Ceramic	0.055201	
	Inner electrode (Ni)	7440-02-0	17.00	Inner electrode	0.013923	
	Outer electrode (Cu)	7440-50-8	13.80	Outer electrode	0.011302	
	Plating1 (Ni)	7440-02-0	0.50	Plating1	0.000410	
	Plating2 (Sn)	7440-31-5	1.30	Plating2	0.001065	
<b>Capacitor 3</b>					<b>0.005400</b>	<b>0.026</b>
	Ceramic (BaTiO3 type)	Trade secret	66.00	Ceramic	0.003564	
	Inner electrode (Ni)	7440-02-0	2.67	Inner electrode	0.000144	
	Outer electrode (Cu)	7440-50-8	23.33	Outer electrode	0.001260	
	Plating1 (Ni)	7440-02-0	2.33	Plating1	0.000126	
	Plating2 (Sn)	7440-31-5	5.67	Plating2	0.000306	
<b>Heat Sink</b>					<b>11.900000</b>	<b>57.326</b>
	Copper	7440-50-8	97.94	Main material	11.654860	
	Nickel	7440-02-0	2.06	Main material	0.245140	
<b>Heat Sink Adhesive</b>					<b>0.210000</b>	<b>1.012</b>
	Aluminium Oxide	1344-28-1	70.00	Main material	0.147000	
	Zinc Oxide	1314-13-2	15.00	Main material	0.031500	
	Silicone	Trade Secret	15.00	Main material	0.031500	
	Additive	Trade Secret		Additive		
<b>Solder Balls</b>					<b>1.675163</b>	<b>8.070</b>
	Tin (Sn)	7440-31-5	63.00	Base metal	1.055353	
	Lead (Pb)	7439-92-1	37.00	Base metal	0.619810	

## Revision History

The following table shows the revision history for this document.

Date	Version	Description of Revisions
3/4/11	1.0	Initial Xilinx release.

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