



2017

# 100% Material Declaration Data Sheet for Virtex-II Pro FPGA EF1704

Average Weight : 19.5981 g

Component	Substance Description	CAS # or Description	% of component	Use in product	Component weight / substance weight ( in grams)	Component % of total
Silicon die					0.722555	3.687%
	Silicon	7440-21-3	100.00	basis	0.722555	
Bump					0.009467	0.048%
	EU	-	100.00		0.009467	
Underfill					0.095000	0.485%
	Bisphenol F/ epichlorohydrin copolymer	9003-36-5	20.00	basis	0.019000	
	Phenolic resin	trade secret	15.00	basis	0.014250	
	Bisphenol A type liquid epoxy resin	25068-38-6	5.00	basis	0.004750	
	Amine type accelerator	trade secret	5.00	basis	0.004750	
	Silicon dioxide	60676-86-0	51.50	basis	0.048925	
	Carbon black	1333-86-4	1.00	basis	0.000950	
	Additives	trade secret	2.50	Additive	0.002375	
Solder paste					0.017312	0.088%
	Tin	7440-31-5	63.00	metal	0.010907	
	Silver	7439-92-1	37.00	metal	0.006405	
Capacitor 1					0.022080	0.113%
	BaTiO3	12047-27-7	78.8	Ceramic	0.017399	
	Nickel	7440-02-0	2.7	Inner electrode	0.000596	
	Copper	7440-50-8	16.5	Out electrode	0.003643	
	Nickel	7440-02-0	0.45	Plating1	0.000099	
	Tin	7440-31-5	1.55	Plating2	0.000342	
Capacitor 2					0.048000	0.245%
	Barium titanate	12047-27-7	85.92	Ceramic	0.041240	
	Calcium monoxide	1305-78-8	1.92	Ceramic	0.000920	
	Nickel	7440-02-0	2.50	Internal Electrode	0.001200	
	glass, oxide	65997-17-3	0.08	Termination	0.000040	
	Silver	7440-22-4	4.50	Termination	0.002160	
	Nickel	7440-02-0	3.75	Plating	0.001800	
	Tin	7440-31-5	1.33	Plating	0.000640	
Cap under coating					0.200000	1.021%
	Silica(Amorphous)	7631-86-9	53.40		0.106800	
	Epoxy Resin B	9003-36-5	27.50		0.055000	
	Hardener	19900-65-3	10.00		0.020000	
	Epoxy Resin A	25068-38-6	5.00		0.010000	
	Low stress additive	Trade Secret	3.00		0.006000	
	Adhesion Promoter	2530-83-8	1.00		0.002000	
	Carbon Black	1333-86-4	0.10		0.000200	
Cap top coating					0.000920	0.005%
	Aluminium nitride	24304-00-5	27.55		0.000253	
	Siloxane polymer	Trade Secret	27.55		0.000253	
	Boron Nitride	10043-11-5	27.55		0.000253	
	4,4'-isopropylidenebis[(allyloxy)benzene]	3739-67-1	5.65		0.000052	
	Siloxanes and Silicones, Me Ph, [(ethenyl(dimethylsilyl)oxy)-	225927-21-9	5.65		0.000052	
	Additive	Trade Secret	5.65		0.000052	
	Toluene	108-88-3	0.40		0.000004	
Heat sink					12.017700	61.321%
	Copper	7440-50-8	98.35	Main material	11.819408	
	Nickel	7440-02-0	1.65	Main material	0.198292	
Heat sink adhesive					0.300000	1.531%
	Treated aluminum oxide	-	80.00	Main material	0.240000	
	Dimethyl siloxane,	68083-19-2	20.00	Main material	0.060000	
Solder ball					1.620941	8.271%
	Tin	7440-31-5	63.00	Main material	1.021193	
	Lead	7439-92-1	37.00	Main material	0.599748	
Substrate					4.544108	23.186%
	Copper	7440-50-8	24.43		1.110126	
	Gold	7440-57-5	0.10		0.004544	
	Nickel	7440-02-0	0.45		0.020448	
	Tin	7440-31-5	0.11		0.004999	
	Lead	7439-92-1	0.07		0.003181	
	Core	N/A	58.77		2.670572	
	PP	N/A	14.05		0.638447	
	Solder Mask	N/A	2.02		0.091791	

## Revision History

Date	Version	Description of Revisions
11/10/2017	1.0	Initial Xilinx release.