



PK936(v1.0) November 10, 2017

# 100% Material Declaration Data Sheet for 7 Series Virtex

## FFG1158 RoHS 6/6

Average Weight : 14.9683 g

Component	Substance Description	CAS # or Description	% of component	Use in product	Component weight / substance weight ( in grams)	Component % of total
Silicon die					0.488579	3.264%
	Silicon	7440-21-3	100.00	basis	0.488579	
Bump					0.019712	0.132%
	Tin	7440-31-5	98.20	basis	0.019357	
	Silver	7440-22-4	1.80	basis	0.000355	
Underfill					0.056000	0.374%
	Bisphenol F type liquid epoxy resin	9003-36-5	15.00	basis	0.008400	
	1,6-Bis(2,3-epoxypropoxy)naphthalene	27610-48-6	10.00	basis	0.005600	
	Bisphenol A type liquid epoxy resin	25068-38-6	5.00	basis	0.002800	
	Amine type hardener	trade secret	10.00	basis	0.005600	
	Silicon dioxide	60676-86-0	58.00	filler	0.032480	
	Carbon black	1333-86-4	1.00	color agent	0.000560	
	Additives	trade secret	1.00	additives	0.000560	
Solder paste					0.005896	0.039%
	Tin	7440-31-5	96.50	metal	0.005690	
	Silver	7440-22-4	3.00	metal	0.000177	
	Copper	7440-50-8	0.50	metal	0.000029	
Capacitor 1					0.007200	0.048%
	BaTiO3 type	1304-28-5	40.00	Ceramic	0.002880	
	Titanium dioxide	13463-67-7	20.00		0.001440	
	Misc	-	6.67		0.000480	
	Nickel	7440-02-0	2.42	Inner electrode	0.000174	
	Copper	7440-50-8	20.73	Out electrode	0.001493	
	Silicon dioxide	7631-86-9	1.85		0.000133	
	diboron trioxide; boric oxide	1303-86-2	0.45		0.000032	
	Nickel	7440-02-0	2.12	Plating1	0.000153	
	Tin	7440-31-5	5.76	Plating2	0.000415	
Capacitor2					0.007600	0.051%
	Barium oxide, obtained by calcining witherite	1304-28-5	37.01	Ceramic	0.002813	
	Titanium dioxide	13463-67-7	18.51		0.001407	
	Misc	-	6.17		0.000469	
	Nickel	7440-02-0	4.90	Inner Electrode	0.000372	
	Indium(III) oxide	1312-43-2	9.15		0.000695	
	Tin dioxide	18282-10-5	1.83		0.000139	
	Frits	65997-18-4	5.49		0.000417	
	Nickel	7440-02-0	1.83		0.000139	
	Copper	7440-50-8	12.05	Outer Electrode	0.000916	
	diboron trioxide; boric oxide	1303-86-2	0.27		0.000021	
	Silicon dioxide	7631-86-9	1.07		0.000081	
	Nickel	7440-02-0	0.49	Plating1	0.000037	
	Tin	7440-31-5	1.23	Plating2	0.000093	
Capacitor3					0.006440	0.043%
	BaTiO3 type	1304-28-5	31.67	Ceramic	0.002040	
	Titanium dioxide	13463-67-7	15.83		0.001019	
	Misc	-	5.28		0.000340	
	Nickel	7440-02-0	26.67	Inner Electrode	0.001718	
	Copper	7440-50-8	15.10	Outer Electrode	0.000972	
	Silicon dioxide	7631-86-9	1.34		0.000086	
	diboron trioxide; boric oxide	1303-86-2	0.33		0.000021	
	Nickel	7440-02-0	1.00	Plating1	0.000064	
	Tin	7440-31-5	2.78	Plating2	0.000179	
Capacitor 4					0.041280	0.276%
	BaTiO3 type	1304-28-5	34.54	Ceramic	0.014258	
	Titanium dioxide	13463-67-7	17.27		0.007129	
	Misc	-	5.76		0.002378	
	Ni	7440-02-0	31.90	Inner electrode	0.013168	
	Cu	7440-50-8	8.52	Out electrode	0.003517	
	Silicon dioxide	7631-86-9	0.76		0.000314	
	diboron trioxide; boric oxide	1303-86-2	0.19		0.000078	
	Ni	7440-02-0	0.29	Plating1	0.000120	
Heat sink					0.000318	
	Copper	7440-50-8	98.35	Main material	8.807341	59.827%
	Nickel	7440-02-0	1.65	Main material	0.147759	
Heat sink adhesive					0.189000	1.263%
	Aluminium Oxide Al2O3	-	80.00	Main material	0.151200	
	Dimethyl siloxane, dimethylvinyl-terminated	68083-19-2	20.00	Main material	0.037800	
Solder ball					0.965683	6.452%
	Tin	7440-31-5	96.50	Main material	0.931884	
	Silver	7440-22-4	3.00	Main material	0.028970	
	Copper	7440-50-8	0.50	Main material	0.004828	
Substrate					4.225800	28.232%
	Copper	7440-50-8	47.55		2.009368	
	Tin	7440-31-5	0.88		0.037187	
	Silver	7440-22-4	0.03		0.001268	
	Core	N/A	36.68		1.550023	
	ABF	N/A	13.13		0.554848	
	Solder Mask	N/A	1.73		0.073106	

### Revision History

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