



PK1135(v1.0) September 21, 2021

# 100% Material Declaration Data Sheet for Virtex-4 FFG668 RoHS 6/6

Average Weight : 5.3575 g

Component	Substance Description	CAS # or Description	% of component	Use in product	Component weight / substance weight ( in grams)	Component % of total
Silicon die	Silicon	7440-21-3	100.00	basis	<b>0.299411</b>	<b>5.589%</b>
					0.299411	
Bump	Tin	7440-31-5	98.20	basis	0.009511	<b>0.178%</b>
	Silver	7440-22-4	1.80	basis	0.000171	
Underfill	Bisphenol F type liquid epoxy resin	9003-36-5	15.00	basis	0.007541	
	1,6-Bis(2,3-epoxypropoxy)naphthalene	27610-48-6	10.00	basis	0.005027	
	Bisphenol A type liquid epoxy resin	25068-38-6	5.00	basis	0.002514	
	Amine type hardener	Trade Secret	10.00	basis	0.005027	
	Silicon dioxide	60676-86-0	58.00	filler	0.029157	
	Carbon black	1333-86-4	1.00	color agent	0.000503	
	Additives	Trade Secret	1.00	additives	0.000503	
Solder paste	Tin	7440-31-5	85.4	metal	<b>0.005068</b>	<b>0.095%</b>
	Silver	7440-22-4	2.66	metal	0.004328	
	Copper	7440-50-8	0.44	metal	0.000135	
	Polymer	Trade Secret	1.53		0.000022	
	Organic amine	Trade Secret	3.3	flux	0.000078	
	Solvent	Trade Secret	5.36		0.000167	
	Organic acid	Trade secret	1.31		0.000272	
					0.000066	
					<b>0.001400</b>	<b>0.026%</b>
Capacitor	BaTiO3	12047-27-7	78.80	Ceramic	0.0011032	
	Nickel	7440-02-0	2.70	Internal Electrode	0.0003378	
	Copper	7440-50-8	16.50	Termination	0.000231	
	Nickel	7440-02-0	0.45	Plating	0.0000063	
	Tin	7440-31-5	1.55	Plating	0.0000217	
Heat sink	Copper	7440-50-8	98.35	Main material	<b>2.990000</b>	<b>55.809%</b>
	Nickel	7440-02-0	1.65	Main material	0.049335	
Heat sink adhesive	Aluminium Oxide Al2O3	1344-28-1	70.00	Main material	<b>0.088000</b>	<b>1.643%</b>
	Dimethyl siloxane, dimethylvinyl-terminated	68083-19-2	30.00	Main material	0.026400	
Solder ball					<b>0.559534</b>	<b>10.444%</b>
	Tin	7440-31-5	95.50	Main material	0.534355	
	Silver	7440-22-4	4.00	Main material	0.022381	
	Copper	7440-50-8	0.50	Main material	0.002798	
Substrate	Copper	7440-50-8	31.41	metal	<b>1.3326</b>	<b>24.874%</b>
	Tin	7440-31-5	0.76	metal	0.418557	
	Silver	7440-22-4	0.02	metal	0.010153	
	Core	Trade Secret	51.31	Core	0.000316	
	ABF	Trade Secret	13.30	ABF	0.683773	
	Solder Mask	Trade Secret	2.47	Solder Mask	0.177180	
	Resin	Trade Secret	0.73		0.032909	
				0.009740		

## Revision History

Date	Version	Description of Revisions
9/21/2021	1.0	Initial Xilinx Release. (XCN20006)

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