



# 100% Material Declaration Data Sheet for Virtex-4 FFG1148 RoHS 6/6

PK1134 (v1.0) August. 3, 2021

Average Weight : 10.5905 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	0.608121	5.742%
					<b>0.021502</b>	<b>0.203%</b>
Bump	Tin	7440-31-5	98.20	basis	0.021115	
	Silver	7440-22-4	1.80	basis	0.000387	
					<b>0.075000</b>	<b>0.708%</b>
Underfill	Bisphenol F type liquid epoxy resin	9003-36-5	20.00	basis	0.015000	
	Phenolic resin	trade secret	15.00	basis	0.011250	
	Bisphenol A type liquid epoxy resin	25068-38-6	5.00	basis	0.003750	
	Amine type accelerator	trade secret	5.00	basis	0.003750	
	Silicon dioxide	60676-86-0	51.50	filler	0.038625	
	Carbon black	1333-86-4	1.00	color agent	0.000750	
	Additives	trade secret	2.50	additives	0.001875	
					<b>0.006656</b>	<b>0.063%</b>
Solder paste	Tin	7440-31-5	85.4	metal	0.005684	
	Silver	7440-22-4	2.66	metal	0.000177	
	Copper	7440-50-8	0.44	metal	0.000029	
	Polymer	Trade secret	1.53		0.000102	
	Organic amine	Trade secret	3.3		0.000220	
	solvent	Trade secret	5.36	flux	0.000357	
	Organic acid	Trade secret	1.31		0.000087	
						<b>0.056000</b>
Capacitor 1	Ceramic element			Ceramic	0.000000	
	Barium oxide, obtained by calcining witherite	1304-28-5	34.54		1.934240	
	Titanium dioxide	13463-67-7	17.27		0.967120	
	Misc	-	5.76	Inner Electrode	0.322560	
	Nickel	7440-02-0	32.19		1.802640	
	Copper	7440-50-8	8.52		0.477120	
	Silicon dioxide	7631-86-9	0.76		0.042560	
	diboron trioxide; boric oxide	1303-86-2	0.19	Outer Electrode	0.010640	
	Tin	7440-31-5	0.77	Plating2	0.04312	
						<b>0.126000</b>
Capacitor 2	Barium oxide, obtained by calcining witherite	1304-28-5	34.54	Ceramic	4.352040	
	Titanium dioxide	13463-67-7	17.27		2.176020	
	Misc	-	5.76		0.725760	
	Nickel	7440-02-0	31.9	Inner Electrode	4.019400	
	Copper	7440-50-8	8.52	Outer Electrode	1.073520	
	Silicon dioxide	7631-86-9	0.76		0.095760	
	diboron trioxide; boric oxide	1303-86-2	0.19		0.023940	
	Nickel	7440-02-0	0.29	Plating1	0.036540	
	Tin	7440-31-5	0.77	Plating2	0.097020	
						<b>4.965400</b>
Heat sink	Copper	7440-50-8	98.35	Main material	4.883471	
	Nickel	7440-02-0	1.65	Main material	0.081929	
					<b>0.125000</b>	<b>1.180%</b>
Heat sink adhesive	Aluminium Oxide Al2O3	1344-28-1	70.00	Main material	0.087500	
	Dimethyl siloxane, dimethylvinyl-terminated	68083-19-2	30.00	Main material	0.037500	
					<b>0.961595</b>	<b>9.080%</b>
Solder ball	Tin	7440-31-5	95.50	Main material	0.918323	
	Silver	7440-22-4	4.00	Main material	0.038464	
	Copper	7440-50-8	0.50	Main material	0.004808	
					<b>3.6452</b>	<b>34.420%</b>
Substrate	Copper	7440-50-8	37.55	metal	1.368744	
	Tin	7440-31-5	0.54	metal	0.019831	
	Silver	7440-22-4	0.01	metal	0.000303	
	Lead	7439-92-1	0.16	metal	0.005915	
	Core	Trade Secret	44.71	Core	1.629831	
	ABF	Trade Secret	14.85	Build Up	0.541328	
	Solder Mask	Trade Secret	1.49	Solder Mask	0.054261	
	Resin	Trade Secret	0.69		0.025020	

## Revision History

Date	Version	Description of Revisions
8/3/2021	1.0	Initial Xilinx release.

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