PK958 (v1.0) June 12, 2018

100% Material Declaration Data Sheet for UltraScale + FLGA 2577

Average Weight : 45.6607 g

Component	Substance Description	CAS # or Description	% of component	Use in product	Component weight / substance weight (in grams)	Component % of total
Silicon die					**1.210854**	**2.65%**
	Silicon	7440-21-3	100.00	basis	1.210854	
Micro-bump					**0.095448**	**0.21%**
	Copper	7440-50-8	54.80	metal	0.052306	
	Nickel	7440-02-0	22.69	metal	0.021653	
	Tin	7440-31-5	21.87	metal	0.020876	
	Silver	7440-22-4	0.64	metal	0.000613	
Micro-bump underfill					**0.581180**	**1.27%**
	Amorphous silica	trade secret	46.87	filler	0.272388	
	Amine compound	trade secret	20.84	glue	0.121095	
	Epoxy resin compound-A	trade secret	15.627	glue	0.090821	
	Epoxy resin compound-B	trade secret	15.627	glue	0.090821	
	Epoxy resin compound-C	trade secret	1.042	glue	0.006055	
Mold compound					**0.130315**	**0.29%**
	Silica filler	trade secret	86.022	filler	0.112099	
	Epoxy resin	trade secret	8.602	glue	0.011210	
	Hardener resin	trade secret	5.376	glue	0.007006	
Interposer die					**0.273600**	**0.60%**
	Silicon	7440-21-3	100.000	basis	0.273600	
C4 Bump					**0.150809**	**0.33%**
	Copper	7440-50-8	5.407	metal	0.008154	
	Nickel	7440-02-0	3.223	metal	0.004861	
	Tin	7440-31-5	57.532	metal	0.086763	
	Lead	7439-92-1	33.838	metal	0.051031	
Solder Paste					**0.053198**	**0.12%**
	Tin	7440-31-5	96.5	metal	0.051336	
	Silver	7440-22-4	3	metal	0.001596	
	Copper	7440-50-8	0.5	metal	0.000266	
C4 Underfill					**0.190624**	**0.42%**
	Bisphenol F/ epichlorohydrin copolymer	9003-36-5	24	basis	0.045750	
	Phenolic resin	trade secret	19	basis	0.036219	
	Bisphenol A type liquid	25068-38-6	4	basis	0.007625	
	Amine type accelerator	trade secret	5	basis	0.009531	
	Silicon dioxide	60676-86-0	44.1	basis	0.084065	
	Carbon black	1333-86-4	0.9	basis	0.001716	
	Additives	trade secret	3	additive	0.005719	
Lid					**26.100208**	**57.16%**
	Copper	7440-50-8	99.64	main material	26.006247	
	Nickel	7440-02-0	0.36	main material	0.093961	
Lid Adhesive				main material	**0.148522**	**0.33%**
	Silicone	Confidential	80	main material	0.118818	
	Others	Confidential	20	main material	0.029704	
Lid TIM				main material	**0.717484**	**1.57%**
	Aluminum oxide	1344-28-1	85	main material	0.609861	
	Zinc oxide	1314-13-2	5	main material	0.035874	
	Silicone	Confidential	9	main material	0.064574	
	Others	Confidential	1	main material	0.007175	
Solder Ball				main material	**1.906632**	**4.18%**
	Tin	7440-31-5	96.5	main material	1.839900	
	Silver	7440-22-4	3	main material	0.057199	
	Copper	7440-50-8	0.5	main material	0.009533	
Capacitor 1					**0.064312**	**0.14%**
	Titanium Dioxide	13463-67-7	15.11		0.009718	
	Misc		5.04		0.003241	
	Nickel	7440-02-0	33.44	inner electrode	0.021506	
	Copper	7440-50-8	11.87	out electrode	0.007634	
	Silicon Dioxide	7631-86-9	1.06		0.000682	
	Diboron trioxide; Boric	1303-86-2	0.26		0.000167	
	Nickel	7440-02-0	0.81	plating1	0.000521	
	Tin	7440-31-5	2.19	plating2	0.001408	
	Other		30.22		0.019435	
Capacitor 2					**0.024223**	**0.05%**
	BaTiO3 type	12047-27-7	51.1	ceramic	0.012378	
	Copper	7440-50-8	27	inner electrode	0.006540	
	Nickel	7440-02-0	16.9	out electrode	0.004094	
	Nickel	7440-02-0	2	plating1	0.000484	
	Tin	7440-31-5	3	plating2	0.000727	
Substrate					**14.013287**	**30.69%**
	Copper	7440-50-8	37.06		5.193324	
	Tin	7440-31-5	0.34		0.047645	
	Lead	7439-92-1	0.11		0.015415	
	Core	N/A	47.21		6.615673	
	ABF	N/A	14.16		1.984281	
	Solder Mask	N/A	1.11		0.155547	

Revision History

Date	Version	Description of Revisions
6/12/2018	1.0	Initial Xilinx release.

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