



100% Material Declaration Data Sheet for Versal™ ACAP XCVM1402-VSVD1760

PK1163(v1.0) January 16, 2023

Average Weight : 17.9591 g

Component	Substance Description	CAS # or Description	% of component	Use in product	Component weight / substance weight (in grams)	Component % of total
Silicon die	Silicon	N/A	100.00	basis	0.465248	2.591%
					0.465248	
Bump	P1	N/A	20.77	basis	0.027246	0.152%
	Ti (UBM)	7440-32-6	0.08	metal	0.000021	
	Cu (UBM)	7440-50-8	0.46	metal	0.000126	
	Cu (bump)	7440-50-8	61.66	metal	0.016801	
	Plating Ni	7440-02-0	0.00	metal	0.000000	
	Silver	7440-22-4	0.31	metal	0.000083	
	Tin	7440-31-5	16.72	metal	0.004554	
					0.047600	0.265%
Underfill	Bisphenol F type liquid epoxy resin	9003-36-5	20.00	basis	0.009520	
	1,6-Bis(2,3-epoxypropoxy)naphthalene	27610-48-6	5.00	basis	0.002380	
	Amine type hardener	trade secret	7.50	basis	0.003570	
	Silicon dioxide	60676-86-0	61.50	filler	0.029274	
	Carbon black	1333-86-4	1.00	color agent	0.000476	
	Additives	trade secret	5.00	additives	0.002380	
				0.021710	0.121%	
Solder paste	Tin	7440-31-5	86.35	metal	0.018747	
	Silver	7440-22-4	2.70	metal	0.000586	
	Copper	7440-50-8	0.45	metal	0.000098	
	Polymer	trade secret	1.40		0.000304	
	Organic amine solvent	trade secret	3.00	flux	0.000651	
	Diglycolic acid	trade secret	4.90		0.001064	
			1.20		0.000261	
				0.001000	0.006%	
Solder paste	Tin	7440-31-5	85.40	metal	0.000854	
	silver	7440-22-4	2.70	metal	0.000027	
	Copper	7440-50-8	0.40	metal	0.000004	
	Polymer	-	5.50		0.000055	
	Organic amine solvent	-	3.50	flux	0.000035	
	Solvent	-	2.50		0.000025	
				0.048000	0.267%	
Capacitor 1	Barium oxide, obtained by calcining witherite	1304-28-5	37.87	Main material	0.018179	
	Titanium dioxide	13463-67-7	18.94	Main material	0.009090	
	Misc		6.31	Main material	0.003030	
	Nickel	7440-02-0	16.88	Inner Electrode	0.008100	
	Copper (Cu)	7440-50-8	12.94	Terminal Electrode	0.006210	
	Silicon dioxide	7631-86-9	1.15	Main material	0.000552	
	Diboron trioxide; Boric oxide	1303-86-2	0.29	Main material	0.000138	
	Nickel	7440-02-0	3.13	Electroplating	0.001500	
Tin	7440-31-5	2.50	Electroplating	0.001200		
				0.009600	0.053%	
Capacitor 2	Ceramic	66402-68-4	22.75	Dielectric	0.002184	
	Nickel	7440-02-0	30.75	Inner Electrode	0.002952	
	Copper	7440-50-8	41.13	Terminal Electrode	0.003948	
	Nickel	7440-02-0	2.00	Electroplating	0.000192	
	Tin	7440-31-5	3.38	Electroplating	0.000324	
				0.024000	0.134%	
Capacitor 3	BaTiO3	12047-27-7	34.00	Ceramic	0.008160	
	Nickel	7440-02-0	18.10	Internal Electrode	0.004344	
	Copper	7440-50-8	41.10	Termination	0.009864	
	Nickel	7440-02-0	3.40	Plating	0.000816	
	Tin	7440-31-5	3.40	Plating	0.000816	
				0.000581	0.003%	
Resistor	Aluminum oxide; Alumina; Corundum; Al2O3	1344-28-1	76.44	Ceramic Substrate	0.000444	
	Quartz; SiO2	14808-60-7	1.66		0.000010	
	Magnesium oxide; MgO	1309-48-4	0.79		0.000005	
	Calcium oxide; CaO	1305-78-8	0.24		0.000001	
	Gold; Au	7440-57-5	0.03		0.000000	
	Lead(II) oxide; Lead oxide (PbO); C.I. Pigment Yellow 46; Lead monoxide; Lead(2+) oxide	1317-36-8	0.00		0.000000	
	Boron oxide; B2O3	1303-86-2	0.00		0.000000	
	Silver; Ag	7440-22-4	0.81		0.000005	
	Bisphenol A, epichlorohydrin polymer; Epoxy resin; Epon 820; Araldite GY 250	-	0.17	Termination	0.000001	
	Silver; Ag	7440-22-4	0.73		0.000004	
	Bisphenol A, epichlorohydrin polymer; Epoxy resin; Epon 820; Araldite GY 250	-	0.15		0.000001	
	Bisphenol A, epichlorohydrin polymer; Epoxy resin; Epon 820; Araldite GY 250	-	1.14		0.000007	
	Silver; Ag	7440-22-4	1.14		0.000007	
	Carbon black; C	1333-86-4	0.23		0.000001	
	Nickel; Ni	7440-02-0	7.40		0.000043	
	Tin; Sn	7440-31-5	6.88		0.000040	
	Chromium; Cr	7440-47-3	0.01		0.000000	
	Nickel; Ni	7440-02-0	0.01	Resistive Element	0.000000	
	Aluminum; Al	7429-90-5	0.00		0.000000	
	Silicon; Si	7440-21-3	0.00		0.000000	
EP (Epoxy resin)		1.25		0.000007		
Ceramics	60676-86-0	0.48		0.000003		
	68186-91-4	0.18		0.000001		
	1333-86-4	0.11		0.000001		
Others (Powder, etc)		0.11	Overcoat	0.000001		
	14807-96-6	0.11		0.000001		
	1304-76-3	0.03		0.000000		
	10361-44-1	0.00		0.000000		
				7.740000	43.098%	
Heat sink	Carbon	7440-44-0	0.08	Main material	0.006192	
	Silicon	7440-21-3	1.00	Main material	0.077400	
	Manganese	7439-96-5	2.00	Main material	0.154800	
	Phosphorus	7723-14-0	0.05	Main material	0.003483	
	Sulfur	7704-34-9	0.03	Main material	0.002322	
	Chromium; Cr	7440-47-3	20.00	Main material	1.548000	
	Nickel	7440-02-0	10.50	Main material	0.812700	
	Iron	7439-89-6	66.35	Main material	5.135103	
				0.059000	0.329%	
Heat sink adhesive	Treated Aluminium Oxide	None	80.00	Main material	0.047200	
	Dimethyl siloxane, dimethylvinyl-terminated	68083-19-2	20.00	Main material	0.011800	
				1.747833	9.732%	
Solder ball	Tin	7440-31-5	96.50	Main material	1.686659	
	Silver	7440-22-4	3.00	Main material	0.052435	
	Copper	7440-50-8	0.50	Main material	0.008739	
				7.767253	43.250%	
Substrate	Copper	7440-50-8	44.20		3.433126	
	Tin	7440-31-5	0.25		0.019418	
	Silver	7440-22-4	0.01		0.000777	
	Core	N/A	37.54		2.915827	
	Plugging	N/A	0.53		0.041166	
	ABF	N/A	16.22		1.259848	
	Solder Mask	N/A	1.25		0.097091	

Revision History

Date	Version	Description of Revisions
1/16/2023	1.0	Initial Xilinx Release.

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