



# 100% Material Declaration Data Sheet for Versal HBM XCVH1782-LSVA4737

PK1180(v1.0) March 21, 2024

Average Weight

58.46432

g

Component	Substance Description	CAS # or Description	% of Component	Use in product	Component weight / substance weight ( in grams)	Component % of total
Silicon die					<b>3.016964</b>	<b>5.160%</b>
	Silicon	7440-21-3	100.00	basis	3.016964	
Micro-bump					<b>0.132932</b>	<b>0.227%</b>
	Copper	7440-50-8	54.80	metal	0.072847	
	Nickel	7440-02-0	22.69	metal	0.030156	
	Tin	7440-31-5	21.87	metal	0.029074	
	Silver	7440-22-4	0.64	metal	0.000855	
Micro-bump underfill					<b>0.065350</b>	<b>0.112%</b>
	Amorphous silica	trade secret	46.87	Filler	0.030628	
	Amine compound	trade secret	20.84	Glue	0.013616	
	Epoxy resin compound-A	trade secret	15.63	Glue	0.010212	
	Epoxy resin compound-B	trade secret	5.23	Glue	0.003416	
	Epoxy resin compound-C	trade secret	11.44	Glue	0.007477	
Molding compound					<b>0.171831</b>	<b>0.294%</b>
	Silica filler (SiO2)	trade secret	86.02	Filler	0.147812	
	Epoxy resin	trade secret	8.60	Glue	0.014781	
	Hardener resin	trade secret	5.38	Glue	0.009238	
Interposer die					<b>0.681119</b>	<b>1.165%</b>
	Silicon	7440-21-3	100.00	basis	0.681119	
C4 Bump					<b>0.193264</b>	<b>0.331%</b>
	Copper	7440-50-8	70.73	metal	0.136699	
	Tin	7440-31-5	28.53	metal	0.055134	
	Silver	7440-22-4	0.74	metal	0.001430	
Solder Paste					<b>0.130757</b>	<b>0.224%</b>
	Tin	7440-31-5	96.50	Main material	0.126180	
	Silver	7440-22-4	3.00	Main material	0.003923	
	Copper	7440-50-8	0.50	Main material	0.000654	
C4 Underfill					<b>1.918590</b>	<b>3.282%</b>
	Bisphenol F/ epichlorohydrin copolymer	9003-36-5	24.00	basis	0.460462	
	Phenolic resin	trade secret	19.00	basis	0.364532	
	Bisphenol A type liquid epoxy resin	25068-38-6	4.00	basis	0.076744	
	Amine type accelerator	trade secret	5.00	basis	0.095929	
	Silicon dioxide	60676-86-0	44.10	basis	0.846098	
	Carbon black	1333-86-4	0.90	basis	0.017267	
	Additives	trade secret	3.00	Additive	0.057558	
Stiffener Ring					<b>22.160260</b>	<b>37.904%</b>
	Nickel	7440-02-0	10.50	Stiffener ring	2.326827	
	Manganese	7439-96-5	2.00	Stiffener ring	0.443205	
	Chromium	7440-47-3	20.00	Stiffener ring	4.432052	
	Iron	7439-89-6	66.34	Stiffener ring	14.701116	
	Other	--	1.16	Stiffener ring	0.257059	
					<b>0.480237</b>	<b>0.821%</b>
Adhesive					<b>3.096435</b>	<b>5.296%</b>
	Silicone	Confidential	80.00	Main material	0.384189	
	Others	Confidential	20.00	Main material	0.096047	
Solder Ball					<b>0.385678</b>	<b>0.660%</b>
	Tin	7440-31-5	96.50	Main material	2.988060	
	Silver	7440-22-4	3.00	Main material	0.092893	
	Copper	7440-50-8	0.50	Main material	0.015482	
Capacitor 1					<b>0.714860</b>	<b>1.223%</b>
	BaTiO3 type	12047-27-7	49.20	Ceramic	0.189754	
	Copper	7440-50-8	28.50	Inner electrode	0.109918	
	Nickel	7440-02-0	17.30	Out electrode	0.066722	
	Nickel	7440-02-0	2.00	Plating1	0.007714	
	Tin	7440-31-5	3.00	Plating2	0.011570	
Capacitor 2					<b>0.080258</b>	<b>0.137%</b>
	BaTiO3 type	12047-27-7	51.50	Ceramic	0.368153	
	Copper	7440-50-8	26.50	Inner electrode	0.189438	
	Nickel	7440-02-0	16.00	Out electrode	0.114378	
	Nickel	7440-02-0	2.90	Plating1	0.020731	
	Tin	7440-31-5	3.10	Plating2	0.022161	
Capacitor 3					<b>25.235790</b>	<b>43.164%</b>
	BaTiO3 type	12047-27-7	51.10	Ceramic	0.041012	
	Copper	7440-50-8	27.00	Inner electrode	0.021670	
	Nickel	7440-02-0	16.90	Out electrode	0.013564	
	Nickel	7440-02-0	2.00	Plating1	0.001605	
	Tin	7440-31-5	3.00	Plating2	0.002408	
Substrate					<b>25.235790</b>	<b>43.164%</b>
	Copper	7440-50-8	37.39	Plating	9.437761	
	Tin	7440-31-5	0.20	Plating	0.050999	
	Silver	7440-22-4	0.02	Plating	0.001210	
	Core	N/A	46.98	Core	11.858000	
	Plugging	N/A	0.75	Via Plugging	0.189751	
	ABF	N/A	13.59	Build Up	3.430000	
	Solder Mask	N/A	1.06	Solder Mask	0.268069	

## Revision History

Date	Version	Description of Revisions
3/21/2024	1.0	Initial AMD Release.

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