



Material Declaration Sheet

Device Code : AS4C512M32MD4V-0xxBIN
 Device Description : 16Gb LPDDR4x x32
 Package Type : FBGA 200B 10.0x15.0 mm
 Weight (Unit : mg) : 268.682



Material	Vendor	Model	Substances	Purpose	CAS No.	Weight (mg)	Element wt (%)	wt % of Total unit wt	PPM (mg/kg)		
Silicon Chip (1st)	SEC	8Gb LPDDR4x x16	Silicon (Si)	Circuit	-	15.717	100.00%	5.85%	58497		
Silicon Chip (2nd)	SEC	8Gb LPDDR4x x16	Silicon (Si)	Circuit	-	15.717	100.00%	5.85%	58497		
Substrate	Fastprint FWB-00245	Prepreg	Glass cloth	Prepreg (DS-7409HG BS)	65997-17-3	12.948	40.00%	4.82%	48192		
			Resistant Epoxy Resin	Prepreg (DS-7409HG BS)	223769-10-6	3.237	10.00%	1.20%	12048		
			Heat Resistant Resin (C.E)	Prepreg (DS-7409HG BS)	25722-66-1	3.237	10.00%	1.20%	12048		
			Silica Filler	Prepreg (DS-7409HG BS)	7631-86-9	8.093	25.00%	3.01%	30120		
			Boehmite	Prepreg (DS-7409HG BS)	1318-23-6	4.856	15.00%	1.81%	18072		
									100.00%		
		Copper	Copper, Cu	Copper foil	7440-50-8	0.235	99.882%	0.09%	876		
			Zinc, Zn	Copper foil	7440-66-6	0.0001	0.022%	0.00%	0		
			Nickel, Ni	Copper foil	7440-02-0	0.0002	0.090%	0.00%	1		
			Chromium, Cr	Copper foil	7440-47-3	0.00001	0.006%	0.00%	0		
									100.00%		
		Solder Mask	2-benzyl-2-dimethylamino-4-morpholinobutyrophenone	Solder mask (PSR-4000 AUS308)	119313-12-1	0.134	3.00%	0.05%	500		
			Naphtha (petroleum), heavy aromatic	Solder mask (PSR-4000 AUS308)	64742-94-5	0.224	5.00%	0.08%	833		
			TALC (CONTAINING NO ASBESTOS)	Solder mask (PSR-4000 AUS308)	14807-96-6	0.224	5.00%	0.08%	833		
			1,3,5-Triazine-2,4,6-triamine	Solder mask (PSR-4000 AUS308)	108-78-1	0.036	0.80%	0.01%	133		
			Naphthalene	Solder mask (PSR-4000 AUS308)	91-20-3	0.009	0.20%	0.00%	33		
			Other components below reportable levels	Solder mask (PSR-4000 AUS308)	Trade Secret	3.852	86.00%	1.43%	14335		
									100.00%		
		Solder Mask	FORMALDEHYDE, OLIGOMERIC REACTION PRODUCTS WITH 1-CHLORO-2,3-EPOXYPROPANE AND PHENOL	Solder mask (CA-40 AUS308)	9003-36-5	0.291	10.00%	0.11%	1082		
			2-[[3-[(1-Oxoallyl)oxy]-2,2-bis[[1-oxoallyl)oxy]methyl]propoxy]methyl]-2-[[1-oxoallyl)oxy]methyl]-1,3-propanedioldiacrylate	Solder mask (CA-40 AUS308)	29570-58-9	0.233	8.00%	0.09%	866		
			2-[[3-Hydroxy-2,2-bis[[1-oxoallyl)oxy]methyl]propoxy]methyl]-2-[[1-oxoallyl)oxy]methyl]-1,3-propanedioldiacrylate	Solder mask (CA-40 AUS308)	60506-81-2	0.116	4.00%	0.04%	433		
			Other components below reportable levels	Solder mask (CA-40 AUS308)	Trade Secret	2.268	78.00%	0.84%	8439		
									100.00%		
		Ni plating	Nickel	Metal plating	7440-02-0	0.978	100.00%	0.36%	3639		
									100.00%		
		Au plating	Potassium dicyanoaurate(I)	Metal plating	13967-50-5	0.105	100.00%	0.04%	390		
									100.00%		

		Cu plating	CuO	Copper plating	1317-38-0	46.234	100.00%	17.21%	172077
Die Attach Material (1st)	INNOX	IDU3B3M-20T	Silicon dioxide	Adhesive materials for die to die, die to sub UV Cure type dicing tape	7631-86-9	0.615	70.0%	0.23%	2289
			Formaldehyde polymer with(chloromethyl)oxirane and 2-methylphenol		29690-82-2	0.176	20.0%	0.07%	654
			Formaldehyde polymer with 2-methylphenol		25053-96-7	0.044	5.0%	0.02%	164
			Silane, trimethoxy[3-(oxiranylmethoxy)propyl]-		2530-83-8	0.044	5.0%	0.02%	164
							100.00%		
Die Attach Material (2nd)	INNOX	IDU3B3M-20T	Silicon dioxide	Adhesive materials for die to die, die to sub UV Cure type dicing tape	7631-86-9	0.615	70.0%	0.23%	2289
			Formaldehyde polymer with(chloromethyl)oxirane and 2-methylphenol		29690-82-2	0.176	20.0%	0.07%	654
			Formaldehyde polymer with 2-methylphenol		25053-96-7	0.044	5.0%	0.02%	164
			Silane, trimethoxy[3-(oxiranylmethoxy)propyl]-		2530-83-8	0.044	5.0%	0.02%	164
							100.00%		
Mold Compound	Sumitomo	G750C 16x7.0g	Epoxy resin		85954-11-6	12.645	10.0%	4.71%	47063
			Silica(Amorphous) A	Filler for molding	60676-86-0	98.631	78.0%	36.71%	367092
			Silica(Amorphous) B	Filler for molding	7631-86-9	8.852	7.0%	3.29%	32944
			Aluminum Hydroxide		21645-51-2	5.058	4.0%	1.88%	18825
			Carbon Black	Carbon for marking	1333-86-4	1.265	1.0%	0.47%	4706
							100.00%		
Wire	LT Metal	0.65MIL AuAg (MRS)	Gold	Gold for bonding	7440-57-5	0.723	80.00%	0.27%	2692
			Silver		7440-22-4	0.172	19.00%	0.06%	639
			Palladium		7440-05-3	0.009	0.99%	0.00%	33
			Others		-	0.0001	0.01%	0.00%	0
							100.00%		
Solder Ball	Duksan	0.30MM LAED-FREE 96.5Sn/3.0Ag/0.5Cu	Tin	Main metal for solder ball	7440-31-5	20.099	96.50%	7.48%	74806
			Silver	Additive metal to improve character	7440-22-4	0.625	3.0%	0.23%	2326
			Copper		7440-50-8	0.104	0.5%	0.04%	388
					Total	268.682		100.0%	1000000