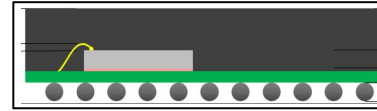




Material Declaration Sheet

Device Code : AS4C512M16MD4V -053BIN
Package Type : FBGA 200 balls 10X15mm
Weight (Unit : mg) : 244.441



Material			Substance			Weight(mg)	Homogeneous Material Level		Product Level		
Type	Vendor	Model	Name	Purpose	CAS No.		Percentage (%)	PPM (mg/kg)	Percentage (%)	PPM (mg/kg)	
Silicon Chip (1st)	SEC	8Gb LPDDR4x	Silicon (Si)	Circuit	7440-21-3	15.717	100.00%	1,000,000	6.43%	64,298	
Substrate	Fastprint FWB-00245	Prepreg	Glass cloth	Prepreg (DS-7409HG BS)	65997-17-3	12.959	40.00%	400,000	5.30%	53,014	
			Resistant Epoxy Resin	Prepreg (DS-7409HG BS)	23769-10-6	3.240	10.00%	100,000	1.33%	13,253	
			Heat Resistant Resin (C.E)	Prepreg (DS-7409HG BS)	25722-66-1	3.240	10.00%	100,000	1.33%	13,253	
			Silica Filler	Prepreg (DS-7409HG BS)	7631-86-9	8.099	25.00%	250,000	3.31%	33,134	
			Boehmite	Prepreg (DS-7409HG BS)	1318-23-6	4.860	15.00%	150,000	1.99%	19,880	
							100.00%	1,000,000			
		Copper	Copper, Cu	Copper foil	7440-50-8	0.236	99.88%	998,820	0.10%	964	
			Zinc, Zn	Copper foil	7440-66-6	0.0001	0.02%	220	0.00002%	0.2	
			Nickel, Ni	Copper foil	7440-02-0	0.0002	0.09%	900	0.0001%	1	
			Chromium, Cr	Copper foil	7440-47-3	0.00001	0.006%	60	0.00001%	0.1	
		Solder Mask					100.00%	1,000,000			
			2-benzyl-2-dimethylamino-4-morpholinobutylprophenone	Solder mask (PSR-4000 AUS308)	119313-12-1	0.134	3.00%	30,000	0.06%	550	
			Naphtha (petroleum), heavy aromatic	Solder mask (PSR-4000 AUS308)	64742-94-5	0.224	5.00%	50,000	0.09%	917	
			TALC (CONTAINING NO ASBESTOS FIBRES)	Solder mask (PSR-4000 AUS308)	14807-96-6	0.224	5.00%	50,000	0.09%	917	
			1,3,5-Triazine-2,4,6-triamine	Solder mask (PSR-4000 AUS308)	108-78-1	0.036	0.80%	8,000	0.01%	147	
			Naphthalene	Solder mask (PSR-4000 AUS308)	91-20-3	0.009	0.20%	2,000	0.004%	37	
			Other components below reportable levels	Solder mask (PSR-4000 AUS308)	Trade Secret	3.855	86.00%	860,000	1.58%	15,769	
		Solder Mask					100.00%	1,000,000			
			FORMALDEHYDE, OLIGOMERIC REACTION PRODUCTS WITH 1-CHLORO-2,3-EPOXYPROPANE AND PHENOL	Solder mask (CA-40 AUS308)	9003-36-5	0.291	10.00%	100,000	0.12%	1,190	
			2-[[[3-[(1-Oxoallyl)oxy]-2,2-bis[[[1-oxoallyl]oxy]methyl]propoxy]methyl]-2-[[[1-oxoallyl]oxy]methyl]-1,3-propanediyl]diacrylate	Solder mask (CA-40 AUS308)	29570-58-9	0.233	8.00%	80,000	0.10%	952	
			2-[[[3-Hydroxy-2,2-bis[[[1-oxoallyl]oxy]methyl]propoxy]methyl]-2-[[[1-oxoallyl]oxy]methyl]-1,3-propanediyl]diacrylate	Solder mask (CA-40 AUS308)	60506-81-2	0.116	4.00%	40,000	0.05%	476	
			Other components below reportable levels	Solder mask (CA-40 AUS308)	Trade Secret	2.269	78.00%	780,000	0.93%	9,284	
							100.00%	1,000,000			
		Ni plating	Nickel	Metal plating	7440-02-0	0.979	100.00%	1,000,000	0.40%	4,003	
		Au plating	Potassium dicyanoaurate(I)	Metal plating	13967-50-5	0.105	100.00%	1,000,000	0.04%	429	
		Cu plating					100.00%	1,000,000			
			CuO	Copper plating	1317-38-0	46.271	100.00%	1,000,000	18.93%	189,293	
Die Attach Material	Innox	IDU3B3M	Silicone dioxide		7631-86-9	0.662	70.00%	700,000	0.27%	2,710	
			Formaldehyde polymer with (chloromethyl)oxirane and 2-Formaldehyde polymer with 2-methylphenol	Adhesive materials for die to die, die to sub UV Cure type dicing tape	29690-82-2	0.189	20.00%	200,000	0.08%	774	
			Silane, trimethoxy(3-(oxiranylmethoxy)propyl)-		25053-96-7	0.047	5.00%	50,000	0.02%	194	
					2530-83-8	0.047	5.00%	50,000	0.02%	194	
Mold Compound	Sumitomo	G750 Type C	Epoxy resin		85954-11-6	9.530	8.00%	80,000	3.90%	38,987	
			Silica(Amorphous) A	Filler for molding	60676-86-0	95.300	80.00%	800,000	38.99%	389,869	
			Silica(Amorphous) B	Filler for molding	7631-86-9	9.530	8.00%	80,000	3.90%	38,987	
			Aluminum Hydroxide		21645-51-2	3.574	3.00%	30,000	1.46%	14,620	
Wire	LT Metal	0.65MIL MRS (AuAg)	Carbon Black	Carbon for marking	1333-86-4	1.191	1.00%	10,000	0.49%	4,873	
							100.00%	1,000,000			
			Gold	Gold for bonding	7440-57-5	0.358	80.04%	800,400	0.15%	1,465	
			Silver		7440-22-4	0.085	19.00%	190,000	0.03%	347.68	
Solder Ball	DSHM	96.5SN/3.0AG/0.5CU	Palladium		7440-05-3	0.004	0.95%	9,500	0.0002%	17.38	
			Others		Trade secret	0.00004	0.01%	100	0.00002%	0.2	
							100.00%	1,000,000			
			Tin	Main metal for solder ball	7440-31-5	20.098	96.50%	965,000	8.22%	82,220	
			Silver		7440-22-4	0.625	3.00%	30,000	0.26%	2,556	
			Copper		7440-50-8	0.104	0.50%	5,000	0.04%	426	
							100.00%	1,000,000			
Total						244.441			100.0%	1,000,000	

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Fax: 425-896-8628 Alliance Memory Inc. reserves the right to change products or specification without notice