



ALLIANCE MEMORY MDS REPORT

Part Number		AS4C512M16D3L-12BCN/AS4C512M16D3L-12BIN								
Part Weight:		0.248g								
No.	Subdiscrete Category	Subdiscrete	Subdiscrete Type	Subdiscrete Weight (g)	Subdiscrete Wt% of Discrete	Constituent	CAS #	Constituent Wt% (of the Subdiscrete)	Mass(g)	Mass(mg)
1	Bond Wire	Gold	Mixed 1	0.0001736	0.07	gold	7440-57-5	99.9	0.000173426	0.1734264
						Ionic Impurity	0	0.1	1.736E-07	0.0001736
2	Die	-	Aluminum_Copper	0.0465496	18.77	aluminium	7429-90-5	0.0001	4.65496E-08	4.65496E-05
						copper	7440-50-8	0.0055	2.56023E-06	0.002560228
						silicon	7440-21-3	99.9944	0.046546993	46.54699322
3	Die Attach	BMI/Epoxy Paste	Silica/Rubber	0.0115072	4.64	1,1'-(methylenedi-p-phenylene)bismaleimide	13676-54-5	20	0.00230144	2.30144
						bisphenol A	80-05-7	20	0.00230144	2.30144
						Phenolic epoxy resin F-44	9003-36-5	20	0.00230144	2.30144
						Silica, vitreous	60676-86-0	40	0.00460288	4.60288
4	Encapsulant	Epoxy Mold Compound	Green	0.1040112	41.94	4,4'-Dihydroxy-3,3',5,5'-tetramethyldiphenylmethane diglycidyl ether	93705-66-9	8	0.008320896	8.320896
						aluminium hydroxide	21645-51-2	3	0.003120336	3.120336
						Benzaldehyde, hydroxy-, polymer with phenol	106466-55-1	5	0.00520056	5.20056
						Carbon black	1333-86-4	1	0.001040112	1.040112
						Silica, vitreous	60676-86-0	83	0.086329296	86.329296
5	Internal Plating	Pad	Nickel Gold	0.0006696	0.27	gold	7440-57-5	10	0.0006696	0.06696
						nickel	7440-02-0	90	0.00060264	0.60264
						1,1'-(methylenedi-p-phenylene)bismaleimide	13676-54-5	11.5	0.002954672	2.954672
6	Interposer Core	BT Substrate	Green	0.0256928	10.36	Cyanic acid, (1-methylethylidene)di-4,1-phenylene ester, homopolymer	25722-66-1	8.5	0.002183888	2.183888
						Formaldehyde, polymer with (chloromethyl)oxirane and 2-methylphenol	29690-82-2	9.3	0.00238943	2.3894304
						glass, oxide, chemicals	65997-17-3	53.5	0.013745648	13.745648
						magnesium silicate	13776-74-4	1	0.000256928	0.256928
						Phenolic epoxy resin F-44	9003-36-5	9	0.002312352	2.312352
						silicon dioxide	7631-86-9	7.2	0.001849882	1.8498816
7	Interposer SolderMask	Ink	Epoxy	0.0081096	3.27	Oxirane, 2,2'-[[[(oxiranylmethoxy)phenyl]methylene]bis[[1,1-dimethylethyl)methylphenylene]oxymethylene]]bis-	129915-35-1	99.5	0.008069052	8.069052
						polychloro copper phthalocyanine	1328-53-6	0.5	0.000040548	0.040548
8	Interposer Surface Finish	Surface Finish	Gold	0.0000248	0.01	gold	7440-57-5	100	0.0000248	0.0248
9	Interposer Surface Finish 2	Surface Finish	Nickel	0.0000992	0.04	nickel	7440-02-0	100	0.0000992	0.0992
10	Interposer Surface Finish 3	Surface Finish	Copper	0.0025792	1.04	copper	7440-50-8	100	0.0025792	2.5792
11	Solder	Balls	SAC 302	0.0485832	19.59	copper	7440-50-8	0.2	9.71664E-05	0.0971664
						silver	7440-22-4	3	0.001457496	1.457496
						tin	7440-31-5	96.8	0.047028538	47.0285376
						Total Weight			0.248	248

Note on Bismuth:

A) May be present as trace contaminant not required for product functionality.

B) MSDS for solder products often generic & may include bismuth but not present in materials we use.