



Package Material Composition and Mass Calculation

Customer: GSI
 Package: : LBGA 13x15 165L
 Device Type: : GS88xxxxCGD
 Die Size: : 5871X4458
 Total Pck. Weight (g): 0.43846

Provided By: TW Sun
 Date: 2015/08/12

	name	composition	CAS No.	%	mg.(ave)	mg.	%	PPM
Mold Compound	KE-G2250LKDS Kyocera	Silica	60676-86-0	75-95%	142.26	158.07	36.05	360,512
		Epoxy resin	Trade Secret	1-10%	8.69		1.98	19,828
		Phenolic resin	Trade Secret	2-7%	7.11		1.62	16,223
Substrate	BT-substrate	SiO2	60676-86-0	10-12	17.83	161.27	36.78	367,810
		Acrylic	Trade Secret	9-11	16.13		4.07	40,661
		Epoxy	29690-82-2, 68541-56-0, 25068-38-6	6-10	12.90		3.68	36,781
		Bisphenol	13676-54-5	10-20	24.19		2.94	29,425
		Triazol	25722-66-1	15-20	28.22		5.52	55,172
		Cu	7440-50-8	30-40	58.69		6.44	64,367
		Ni	7440-02-0	1-2	2.42		13.39	133,864
		Au	7440-57-5	0.2-0.9	0.89		0.55	5,517
							0.20	2,023
Die	Silicon	Silicon	7440-21-3		13.39	13.39	3.05	30,539
Die Attach	ATB-125	Cresol-epichlorohydrin-formaldehyde polymer	37382-79-9	35-50	10.10	23.77	5.42	54,212
		Rubber modified epoxy	Trade Secret	20-35	6.54		2.30	23,040
		Aromatic amine	Trade Secret	5-10	1.78		1.49	14,908
		Silica, hydrophobic amorphous-fumed	67762-90-7	1-5	0.71		0.41	4,066
		Silica-based glycidyl ether	2530-83-8	1-5	0.71		0.16	1,626
		4,4'-isopropylidenediphenol	80-05-7	<0.5	0.06		0.16	1,626
							0.01	136
Golden Wire	25um	Au	7440-57-5	99.99	2.14	2.14	0.49	4,881
		Ion Impurities	Trade Secret	0.01	0.00		0.49	4,880
External Plating	Solder Ball (96.5Sn3.0Ag0.5Cu)					79.82	0.00	0
		Tin (Sn)	7440-31-5	96.5	77.03		18.20	182,046
		Silver (Ag)	7440-22-4	3.0	2.39		17.57	175,675
		Cu	7440-50-8	0.5	0.40		0.55	5,461
Total						438.46	100	1000000

DISCLAIMER

- The above material declaration can be used only as reference in identifying the Hazardous material content of the product.
- ASE does not guarantee the Material composition accuracy as it is based on the data provided by outside sources and has not been validated.
- This material declaration does not include data from any active and passive component assembled in the package.

Will products contain the following RoHS defined substances?			
Mercury and its Compounds	Yes	No	X
Cadmium and its Compounds	Yes	No	X
Lead and its Componds	Yes	No	X
Hexavalent Chromium and its Compounds	Yes	No	X
Polybrominated biphenyls (PBB)	Yes	No	X
Polybrominated diphenyl ethers (PBDE)	Yes	No	X
Is this Product meet ROHS Compliance?	Yes	X	No