



Package Material Composition and Mass Calculation

Customer: GSI
 Package: : LPGA 15x17 165L
 Device Type: : GS81302xxxGE
 Die Size: : 12110X14140
 Total Pck. Weight (g): 0.55781

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	28.34	283,376
		Epoxy resin	Trade Secret	1-10%	8.69		1.56	15,586
		Phenolic resin	Trade Secret	2-7%	7.11		1.28	12,752
Substrate	BT-substrate	SiO2	60676-86-0	10-12	23.35	211.26	37.87	378,731
		Acrylic	Trade Secret	9-11	21.13		4.19	41,869
		Epoxy	29690-82-2, 68541-56-0, 25068-38-6	6-10	16.90		3.79	37,873
		Bisphenol	13676-54-5	10-20	31.69		3.03	30,298
		Triazol	25722-66-1	15-20	36.97		5.68	56,810
		Cu	7440-50-8	30-40	76.89		6.63	66,278
		Ni	7440-02-0	1-2	3.17		13.78	137,839
		Au	7440-57-5	0.2-0.9	1.16		0.57	5,681
							0.21	2,083
Die	Silicon	Silicon	7440-21-3		82.07	82.07	14.71	147,129
Die Attach	ATB-125	Cresol-epichlorohydrin-formaldehyde polymer	37382-79-9	35-50	10.10	23.77	4.26	42,613
		Rubber modified epoxy	Trade Secret	20-35	6.54		1.81	18,111
		Aromatic amine	Trade Secret	5-10	1.78		1.17	11,719
		Silica, hydrophobic amorphous-fumed	67762-90-7	1-5	0.71		0.32	3,196
		Silica-based glycidyl ether	2530-83-8	1-5	0.71		0.13	1,278
		4,4'-isopropylidenediphenol	80-05-7	<0.5	0.06		0.13	1,278
				0.01	107			
Golden Wire	25um	Au	7440-57-5	99.99	2.82	2.82	0.51	5,055
		Ion Impurities	Trade Secret	0.01	0.00		0.51	5,055
External Plating	Solder Ball (96.5Sn3.0Ag0.5Cu)					79.82	0.00	1
		Tin (Sn)	7440-31-5	96.5	77.03		14.31	143,095
		Silver (Ag)	7440-22-4	3.0	2.39		0.43	4,293
		Cu	7440-50-8	0.5	0.40			
Total						557.81	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 Compounds	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