



Package Material Composition and Mass Calculation

Customer: GSI
 Package: LQFP 14X20 (L MATRIX) 100L
 Device Type: GS816xxxDGT
 Die Size: 5522X4927 um
 Total Pkg. Wt (g): **0.9415**

Provided By: Aslan Chen
 Date: 2013/07/24

	name	material composition	CAS No.	%	mg.(ave)	mg.	%	PPM
Mold Compound	CEL-9510HFL-U	Epoxy Resin-1	Trade secret	2~4	15.5148	<u>554.1</u>	<u>58.85</u>	<u>588,529</u>
		Epoxy Resin-2	Trade secret	1~3	11.082		1.65	16,479
		Hardener2	Trade secret	2~5	16.623		1.18	11,771
		Carbon Black	1333-86-4	Approx. 0.2	1.1082		1.77	17,656
		Silica	60676-86-0	86~93	509.772		0.12	1,177
							54.14	541,447
Leadframe	C7025	Copper (Cu)	7440-50-8	94.30	330.05	<u>350.0</u>	<u>37.17</u>	<u>371,747</u>
		Nickel (Ni)	7440-02-0	2.20 ~ 4.20	8.75		35.06	350,558
		Silicon (Si)	7440-21-3	0.25 ~1.2	1.75		0.93	9,294
		Magnesium (Mg)	7439-95-4	0.05 ~ 0.3	0.35		0.19	1,859
		Silver (Ag)	7440-22-4	5.0 Max.	9.10		0.04	372
Die	Silicon	Silicon	7440-21-3	100%	14.3	<u>14.3</u>	<u>1.52</u>	<u>15,189</u>
Die Attach	Hitachi FH-900-25-HR9004	Epoxy Resin	Trade Secret	10-20	0.67	<u>4.8</u>	<u>0.51</u>	<u>5,098</u>
		Phenol Resin	Trade Secret	10-20	0.67		0.07	714
		SiO2 Filler	Trade Secret	1-10	0.19		0.07	714
		Acrylic Copolymer	Trade Secret	65-75	3.26		0.02	204
							0.35	3,467
Wire	Au	Au	7440-57-5	99.9-100	1.70	<u>1.7</u>	<u>0.18</u>	<u>1,806</u>
							0.18	1,805
External Plating	Matte Sn	Tin	7440-31-5	100	16.6	<u>16.6</u>	<u>1.76</u>	<u>17,631</u>
							1.76	17,631
Total						941.5	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