



Package Material Composition and Mass Calculation

Customer: MAXIM
 Package: 23x23 HSBGA
 Device Type: 87-45200+004 (PB Free)
 Die Size: 7100 x 7300 um
 Total Pck. Weight (mg): 2869.34754

Provided By: Barry M.
 Date: 2008/10/21

	name	composition	CAS No.	%	mg.(ave)	mg.	%	PPM
Mold Compound	Sumitomo G770J					<u>717.2264</u>	<u>25.00</u>	<u>249.961</u>
		Silica (fused)	60676-86-0	75-95%	639.765949		22.30	222,966
		Epoxy resinA	Trade Secret	1% - 5%	21.516792		0.75	7,499
		Epoxy resinB	Trade Secret	1% - 5%	21.517		0.75	7,499
		Phenolic resin	Trade Secret	1% - 5%	21.516792		0.75	7,499
		Metal Hydroxide	Trade Secret	0.5% - 2.5%	10.758396		0.37	3,749
		Carbon Black	1333-86-4	0.1-0.5%	2.1516792		0.07	750
Substrate	BT-substrate					<u>754.323000</u>	<u>26.29</u>	<u>262.890</u>
		SiO2	60676-86-0	10-12	45.26		1.58	15,773
		Acrylic	Trade Secret	9-11	75.43		2.63	26,289
		Epoxy	29690-82-2, 68541-56-0, 25068-38-6	6-10	60.35		2.10	21,031
		Bisphenol	13676-54-5	10-20	123.67		4.31	43,101
		Triazol	25722-66-1	15-20	132.42		4.62	46,150
		Cu	7440-50-8	30-40	301.73		10.52	105,156
		Ni	7440-02-0	1-2	11.31		0.39	3,943
		Au	7429-90-5	0.2-0.9	4.15		0.14	1,446
		Die	Silicon	Silicon	7440-21-3		51.476	<u>51.476</u>
Die Attach	ABL-2100A					<u>8.780</u>	<u>0.31</u>	<u>3,060</u>
		Silver	7440-22-4	70-90	6.94		0.24	2,417
		Epoxy Resin	Trade Secret	1-10	0.48		0.02	168
		Functionalized Ester	Trade Secret	1-10	0.48		0.02	168
		Diester	Trade Secret	5-20	0.88		0.03	306
Wire	20_um (99.99% Au)					<u>6.179</u>	<u>0.22</u>	<u>2,153</u>
		Au	7429-90-5	99.99	6.178		0.22	2,153
		Ion Impurities	Trade Secret	0.01	0.0006		0.00	0
External Plating	Solder Ball (96.5Sn3.0Ag0.5Cu)_0.6mm					<u>532.37184</u>	<u>18.55</u>	<u>185.538</u>
		Tin (Sn)	7440-31-5	96.5	513.74		17.90	179,044

		Silver (Ag)	7440-22-4	3.0	15.97	0.56	5,566	
		Cu	7440-50-8	0.5	2.66	0.09	928	
Heatslug	(Copper/Nickel/Chrome)					798.9913		
		Copper	7440-50-8	99.4	794.20	<u>27.8457</u>	<u>278,457</u>	
		Nickel	7440-02-0	0.5-0.7	4.47	0.1559	1,559	
		Chrome	-	0.04-0.06	0.32	0.0111	111	
Total						2869.34754	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