



### Package Material Composition and Mass Calculation

Customer:MAXIM  
 Package:23x23 HSBGA  
 Device Type:87-71580+003 (PB Free)  
 Die Size: 9703 x 9068 um  
 Total Pck. Weight (mg):2862.4163

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

	name	composition	CAS No.	%	mg.(ave)	mg.	%	PPM
Mold Compound	Sumitomo G770J					<u>736.674</u>	<u>25.74</u>	<u>257,361</u>
		Silica (fused)	60676-86-0	75-95%	657.113208		22.96	229,566
		Epoxy resinA	Trade Secret	1% - 5%	22.10022		0.77	7,721
		Epoxy resinB	Trade Secret	1% - 5%	22.100		0.77	7,721
		Phenolic resin	Trade Secret	1% - 5%	22.10022		0.77	7,721
		Metal Hydroxide	Trade Secret	0.5% - 2.5%	11.05011		0.39	3,860
		Carbon Black	1333-86-4	0.1-0.5%	2.210022		0.08	772
Substrate	BT-substrate					<u>756.974000</u>	<u>26.45</u>	<u>264,453</u>
		SiO2	60676-86-0	10-12	45.42		1.59	15,867
		Acrylic	Trade Secret	9-11	75.70		2.64	26,445
		Epoxy	29690-82-2, 68541-56-0, 25068-38-6	6-10	60.56		2.12	21,156
		Bisphenol	13676-54-5	10-20	124.11		4.34	43,357
		Triazol	25722-66-1	15-20	132.89		4.64	46,425
		Cu	7440-50-8	30-40	302.79		10.58	105,781
		Ni	7440-02-0	1-2	11.35		0.40	3,967
		Au	7429-90-5	0.2-0.9	4.16		0.15	1,454
		Die	Silicon	Silicon	7440-21-3		62.488	<u>62.488</u>
Die Attach	ABL-2100A					<u>9.220</u>	<u>0.32</u>	<u>3,221</u>
		Silver	7440-22-4	70-90	7.28		0.25	2,545
		Epoxy Resin	Trade Secret	1-10	0.51		0.02	177
		Functionalized Ester	Trade Secret	1-10	0.51		0.02	177
Diester	Trade Secret	5-20	0.92		0.03	322		
Wire	23_um (99.99% Au)					<u>5.269</u>	<u>0.18</u>	<u>1,841</u>
		Au	7429-90-5	99.99	5.268		0.18	1,841
		Ion Impurities	Trade Secret	0.01	0.0005		0.00	0
External Plating	Solder Ball (96.5Sn3.0Ag0.5Cu)_0.6mm					<u>492.800</u>	<u>17.22</u>	<u>172,162</u>
		Tin (Sn)	7440-31-5	96.5	475.55		16.61	166,137

		Silver (Ag)	7440-22-4	3.0	14.78	0.52	5,165
		Cu	7440-50-8	0.5	2.46	0.09	861
Heatslug	(Copper/Nickel/Chrome)					<b>798.9913</b>	
		Copper	7440-50-8	99.4	794.20	<u>27.9132</u>	<u>279,132</u>
		Nickel	7440-02-0	0.5-0.7	4.47	27.7457	277,457
		Chrome	-	0.04-0.06	0.32	0.1563	1,563
						0.0112	112
<b>Total</b>						<b>2862.4163</b>	<b>100</b>
							<b>1000000</b>

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.

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