



Package Material Composition and Mass Calculation

Customer : NVL
 Package : VFQFN 48L 6x6PKG
 Device Type : nRF51824-QFAA#2X
 Die Size(mm) : 3.524x3.859
 Total Pkg. Wt (g): **0.11312**

Provided By : Doris
 Date : 2015/11/30
 Rev. :

	name	vendor	material composition	CAS No.	%	mg.(ave)	mg.	%	PPM
Mold Compound	EME-G700LA TypeLA	SUMITOMO	Epoxy Resin	Trade secret	5-10%	3.51000	<u>46.80</u>	<u>41.372%</u>	<u>413,718</u>
			Phenol Resin	Trade secret	1-5%	1.40400		3.103%	31,029
			Silica(Amorphous) A	60676-86-0	70-80%	35.10000		31.029%	310,289
			Silica(Amorphous) B	76361-86-9	10-20%	6.64560		5.875%	58,748
			Carbon black	1333-86-4	0.1 - 1%	0.14040		0.124%	1,241
Leadframe	C194_Ag	MITSUI	Copper(Cu)	7440-50-8	92.05-97.835%	53.26497	<u>54.79</u>	<u>48.433%</u>	<u>484,334</u>
			Iron(Fe)	7439-89-6	2.1-2.6%	1.25465		47.087%	470,869
			Zinc(Zn)	7440-66-6	0.05-0.2%	0.08218		1.109%	11,091
			Phrosphorus(P)	7723-14-0	0.015-0.15%	0.01644		0.073%	727
			Silver(Ag)	7440-22-4	5.0%Max.	0.16984		0.015%	145
Die_1	Silicon		Silicon	7440-21-3	100%		<u>8.29</u>	<u>7.328%</u>	<u>73,285</u>
Die Attach_1	EN-4900G*	HITACHI	Silver(Ag)	7440-22-4	72-82%	0.86907	<u>1.17</u>	<u>1.038%</u>	<u>10,382</u>
			Acrylic resin	Trade secret	6-11%	0.10570		0.768%	7,683
			Polybutadiene derivative	Trade secret	2-9%	0.05872		0.093%	934
			Butadiene copolymer	Trade secret	< 2.0 %	0.01762		0.052%	519
			Acrylate	Trade secret	3-8%	0.07047		0.016%	156
			Epoxy resin	Trade secret	1-4%	0.02936		0.062%	623
			Peroxide	Trade secret	< 1.0%	0.00587		0.026%	260
			Additive	Trade secret	< 2.0%	0.01762		0.005%	52
Wire_1	3N_Cu wire	NIPPON	Copper(Cu)	7440-50-8	≥96.9%	0.21096	<u>0.21</u>	<u>0.187%</u>	<u>1,867</u>
			Palladium(Pd)	7440-05-3	≤3.1%	0.00025		0.1865%	1,865
									2
External Plating	Sn plating	SHENMAO	Tin(Sn)	7440-31-5	>99.97%	1.85674	<u>1.86</u>	<u>1.641%</u>	<u>16,414</u>
Total							113.12	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.
- Due to Leadframe and substrate is belong "re-make product" by other homogeneous material , so it's composition will be different with MSDS