



Package Material Composition and Mass Calculation

Customer : NVL
 Package : VFQFN 48L 6x6PKG
 Device Type : nRF52811-QFAA#1Y
 Die Size(mm) : 2.499x2.481
 Total Pkg. Wt (g): 0.10787

Provided By : Sara Chang
 Date : 11/8/2018
 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	46.80	43.386%	433,859
			Phenol Resin	Trade secret	1-5%	1.40400		3.254%	32,539
			Silica(Amorphous) A	60676-86-0	70-80%	35.10000		1.302%	13,016
			Silica(Amorphous) B	7631-86-9	10-20%	6.64560		32.539%	325,394
			Carbon black	1333-86-4	0.1 - 1%	0.14040		6.161%	61,608
								0.130%	1,302
Leadframe	C194_Ag	MITSU(MJA)	Copper(Cu)	7440-50-8	0.9722	53.74810	55.29	51.252%	512,519
			Iron(Fe)	7439-89-6	2.29%	1.26603		49.827%	498,271
			Zinc(Zn)	7440-66-6	0.15%	0.08293		1.174%	11,737
			Phosphorus(P)	7723-14-0	0.03%	0.01659		0.077%	769
			Silver(Ag)	7440-22-4	0.31%	0.17138		0.015%	154
								0.159%	1,589
Die_1	Silicon		Silicon	7440-21-3	100%		3.02	2.803%	28,030
Die Attach 1	EN-4900G*	HITACHI	Silver(Ag)	7440-22-4	72-82%	0.39622	0.54	0.496%	4,964
			Acrylic resin	Trade secret	6-11%	0.04819		0.367%	3,673
			Polybutadiene derivative	Trade secret	2-9%	0.02677		0.045%	447
			Butadiene copolymer	Trade secret	< 2.0 %	0.00803		0.025%	248
			Acrylate	Trade secret	3-8%	0.03213		0.007%	74
			Epoxy resin	Trade secret	1-4%	0.01339		0.030%	298
			Peroxide	Trade secret	< 1.0%	0.00268		0.012%	124
			Additive	Trade secret	< 2.0%	0.00803		0.002%	25
								0.007%	74
Wire_1	Cu wire	NIPPON	Copper(Cu)	7440-50-8	≥96.55%	0.36687	0.37	0.342%	3,415
			Palladium(Pd)	7440-05-3	≤3.1%	0.00044		0.3401%	3,401
			Gold(Au)	7440-57-5	≤0.35%	0.00111		0.0004%	4
								0.0010%	10
External Plating	Sn plating	SHENMAO	Tin(Sn)	7440-31-5	>99.97%	1.85674	1.86	1.721%	17,213
								1.721%	17,213
Total							107.87	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 SDS