



Package Material Composition and Mass Calculation

Customer : NVL
 Package : VFQFN 48L 7x7x0.9PKG
 Device Type : nRF24LE1-O17Q48#9X
 Die Size(mm) : 2.609x2.669
 Total Pkg. Wt (mg): 146.60

Provided By : Doris Chao
 Date : 10/26/2020
 Rev. :

	name	vendor	material composition	CAS No.	%	mg.(ave)	mg.	%	PPM
Mold Compound	EME-G700LA TypeL-A	SUMITOMO	Epoxy Resin	Trade secret	5-10%	5.73300	63.70	43.451%	434,510
			Phenol Resin	Trade secret	1-5%	1.91100		3.911%	39,106
			Silica(Amorphous) A	60676-86-0	70-80%	50.13190		1.304%	13,035
			Silica(Amorphous) B	7631-86-9	5-10%	5.73300		34.196%	341,960
			Carbon black	1333-86-4	0.1 - 1%	0.19110		3.911%	39,106
								0.130%	1,304
Leadframe	C194_Ag	HDS	Iron(Fe)	7439-89-6	2.097~2.276%	1.59799	76.09	51.906%	519,056
			Phosphorus(P)	7723-14-0	0.015~0.131%	0.07609		1.090%	10,900
			Zinc(Zn)	7440-66-6	0.050~0.175%	0.07609		0.052%	519
			Copper(Cu)	7440-50-8	84.929~97.718'	73.96010		0.052%	519
			Silver(Ag)	7440-22-4	0.120~12.48%	0.38047		50.450%	504,497
			Lead(Pb)	7439-92-1	0.000~0.009%	0.00380		0.260%	2,595
								0.003%	26
Die_1	Silicon		Silicon	7440-21-3	100%		4.24	2.896%	28,955
Die Attach_1	EN-4900G*	Showa Denko	Silver(Ag)	7440-22-4	72-82%	0.44501	0.60	0.410%	4,102
			Acrylic resin	Trade secret	6-11%	0.05412		0.304%	3,035
			Polybutadiene derivative	Trade secret	2-9%	0.03007		0.037%	369
			Butadiene copolymer	Trade secret	< 2.0 %	0.00902		0.021%	205
			Acrylate	Trade secret	3-8%	0.03608		0.006%	62
			Epoxy resin	Trade secret	1-4%	0.01503		0.025%	246
			Peroxide	Trade secret	< 1.0%	0.00301		0.010%	103
			Additive	Trade secret	< 2.0%	0.00902		0.002%	21
								0.006%	62
Wire_1	Cu wire	NIPPON	Copper(Cu)	7440-50-8	≥96.55%	0.41441	0.42	0.284%	2,839
			Palladium(Pd)	7440-05-3	≤3.1%	0.00050		0.2827%	2,827
			Gold(Au)	7440-57-5	≤0.35%	0.00125		0.0003%	3
								0.0009%	9
External Plating	Sn plating	SHENMAO	Tin(Sn)	7440-31-5	>99.97%	1.54481	1.54	1.054%	10,537
								1.054%	10,537
Total							146.60	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