



### Package Material Composition and Mass Calculation

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Customer : NVL  
 Package : VFQFN 48L 6x6x0.9PKG  
 Device Type : nRF52840-QFAA-T#1X  
 Die Size(mm) : 3.561x3.624  
 Total Pkg. Wt (mg): **111.62**

Provided By : Doris Chao  
 Date : 3/8/2021  
 Rev. :

	name	vendor	material composition	CAS No.	%	mg.(ave)	mg.	%	PPM
Mold Compound	EME-G700LA TypeL-A	SUMITOMO	Epoxy Resin	Trade secret	5-10%	4.21200	46.80	41.928%	419,281
			Phenol Resin	Trade secret	1-5%	1.40400		3.774%	37,735
			Silica(Amorphous) A	60676-86-0	70-80%	36.83160		1.258%	12,578
			Silica(Amorphous) B	7631-86-9	5-10%	4.21200		32.997%	329,974
			Carbon black	1333-86-4	0.1 - 1%	0.14040		3.774%	37,735
								0.126%	1,258
Leadframe	C194_Ag	MITSUMI(MJA)	Copper(Cu)	7440-50-8	97.22%	53.74810	55.29	49.530%	495,298
			Iron(Fe)	7439-89-6	2.29%	1.26603		48.153%	481,529
			Zinc(Zn)	7440-66-6	0.15%	0.08293		1.134%	11,342
			Phosphorus(P)	7723-14-0	0.03%	0.01659		0.074%	743
			Silver(Ag)	7440-22-4	0.31%	0.17138		0.015%	149
Die_1	Silicon		Silicon	7440-21-3	100%		6.29	5.638%	56,384
Die Attach_1	EN-4900G*	Showa Denko	Silver(Ag)	7440-22-4	72-82%	0.82472	1.11	0.998%	9,985
			Acrylic resin	Trade secret	6-11%	0.10030		0.739%	7,389
			Polybutadiene derivative	Trade secret	2-9%	0.05572		0.090%	899
			Butadiene copolymer	Trade secret	< 2.0 %	0.01672		0.050%	499
			Acrylate	Trade secret	3-8%	0.06687		0.015%	150
			Epoxy resin	Trade secret	1-4%	0.02786		0.060%	599
			Peroxide	Trade secret	< 1.0%	0.00557		0.025%	250
			Additive	Trade secret	< 2.0%	0.01672		0.005%	50
								0.015%	150
Wire_1	Cu wire	NIPPON	Copper(Cu)	7440-50-8	≥96.55%	0.26876	0.27	0.242%	2,418
			Palladium(Pd)	7440-05-3	≤3.1%	0.00032		0.2408%	2,408
			Gold(Au)	7440-57-5	≤0.35%	0.00081		0.0003%	3
								0.0007%	7
External Plating	Sn plating	SHENMAO	Tin(Sn)	7440-31-5	>99.97%	1.85674	1.86	1.663%	16,635
								1.663%	16,635
<b>Total</b>							<b>111.62</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.
- Due to Leadframe and substrate is belong "re-make product" by other homogeneous material , so it's composition will be different with SDS