



Package Material Composition and Mass Calculation

Customer : NVL
 Package : VFQFN 32L 5x5PKG
 Device Type : nRF52810-QCAA#3
 Die Size(mm) : 2.499x2.481
 Total Pkg. Wt (g): **0.07582**

Provided By : Sara
 Date : 7/16/2018
 Rev. :

	name	vendor	material composition	CAS No.	%	mg.(ave)	mg.	%	PPM	
Mold Compound	EME-G700LA TypeLA	SUMITOMO	Epoxy Resin	Trade secret	5-10%	2.43750	<u>32.50</u>	<u>42.864%</u>	<u>428.636</u>	
			Phenol Resin	Trade secret	1-5%	0.97500		3.215%	32,148	
			Silica(Amorphous) A	60676-86-0	70-80%	24.37500		32.148%	321,477	
			Silica(Amorphous) B	7631-86-9	10-20%	4.61500		6.087%	60,866	
			Carbon black	1333-86-4	0.1 - 1%	0.09750		0.129%	1,286	
Leadframe	C194_Ag	SHINKO	Copper(Cu)	7440-50-8	97.23%	37.37085	<u>38.44</u>	<u>50.692%</u>	<u>506.918</u>	
			Iron(Fe)	7439-89-6	2.07%	0.79562		49.288%	492,877	
			Phosphorus(P)	7723-14-0	0.01%	0.00384		1.049%	10,493	
			Zinc(Zn)	7440-66-6	0.08%	0.03075		0.005%	51	
			Silver(Ag)	7440-22-4	0.61%	0.23446		0.041%	406	
									0.309%	3,092
Die_1	Silicon		Silicon	7440-21-3	100%		<u>3.02</u>	<u>3.988%</u>	<u>39.878</u>	
Die Attach_1	EN-4900G*	HITACHI	Silver(Ag)	7440-22-4	72-82%	0.39622	<u>0.54</u>	<u>0.706%</u>	<u>7.062</u>	
			Acrylic resin	Trade secret	6-11%	0.04819		0.523%	5,226	
			Polybutadiene derivative	Trade secret	2-9%	0.02677		0.064%	636	
			Butadiene copolymer	Trade secret	< 2.0 %	0.00803		0.035%	353	
			Acrylate	Trade secret	3-8%	0.03213		0.011%	106	
			Epoxy resin	Trade secret	1-4%	0.01339		0.042%	424	
			Peroxide	Trade secret	< 1.0%	0.00268		0.018%	177	
			Additive	Trade secret	< 2.0%	0.00803		0.004%	35	
									0.011%	106
Wire_1	3N_Cu wire	TANAKA	Copper(Cu)	7440-50-8	Min96.49 wt%	0.17627	<u>0.18</u>	<u>0.237%</u>	<u>2,372</u>	
			Palladium(Pd)	7440-05-3	1.2 - 3.0 wt%	0.00324		0.2325%	2,325	
			Gold(Au)	7440-57-5	0.01 - 0.5 wt%	0.00036		0.0043%	43	
									0.0005%	5
External Plating	Sn plating	SHENMAO	Tin(Sn)	7440-31-5	>99.97%	1.14747	<u>1.15</u>	<u>1.513%</u>	<u>15.134</u>	
Total							75.82	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