



Package Material Composition and Mass Calculation

Customer : Nordic
 Package : VFQFN 73L 7x7PKG
 Device Type : nRF52840-QIAA#3X
 Die Size(mm) : 3.579x3.624
 Total Pkg. Wt (g): 0.12037

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%	4.96125	66.15	54.956%	549,564				
			Phenol Resin	Trade secret	1-5%	1.98450				4.122%	41,217		
			Silica(Amorphous) A	60676-86-0	70-80%	49.61250				41.217%	412,173		
			Silica(Amorphous) B	7631-86-9	10-20%	9.39330				7.804%	78,038		
			Carbon black	1333-86-4	0.1 - 1%	0.19845				0.165%	1,649		
Leadframe	EFTEC64T_PPF	長華	Copper(Cu)	7440-50-8	Balance(89% Iv	45.52475	46.34	38.495%	384,949				
			Chromium(Cr)	7440-47-3	0.25%	0.11584				0.096%	962		
			Tin(Sn)	7440-31-5	0.25%	0.11584				0.096%	962		
			Zinc(Zn)	7440-66-6	0.20%	0.09267				0.077%	770		
			Nickel(Ni)	7440-02-0	0.3-9.0%	0.23168				0.192%	1,925		
			Palladium(Pd)	7440-05-3	0.04-0.8%	0.23168				0.192%	1,925		
			Gold(Au)	7440-57-5	0.001-0.1%	0.02317				0.019%	192		
Die_1	Silicon		Silicon	7440-21-3	100%		6.33	5.255%	52,550				
Die Attach_1	EN-4900G*	HITACHI	Silver(Ag)	7440-22-4	72-82%	0.82888	1.12	0.931%	9,306				
			Acrylic resin	Trade secret	6-11%	0.10081				0.689%	6,886		
			Polybutadiene derivative	Trade secret	2-9%	0.05601				0.084%	838		
			Butadiene copolymer	Trade secret	< 2.0 %	0.01680				0.047%	465		
			Acrylate	Trade secret	3-8%	0.06721				0.014%	140		
			Epoxy resin	Trade secret	1-4%	0.02800				0.056%	558		
			Peroxide	Trade secret	< 1.0%	0.00560				0.023%	233		
			Additive	Trade secret	< 2.0%	0.01680				0.005%	47		
												0.014%	140
Wire_1	2N_Cu wire	NIPPON	Copper(Cu)	7440-50-8	≥96.55%	0.43530	0.44	0.363%	3,632				
			Palladium(Pd)	7440-05-3	≤3.1%	0.00052				0.3616%	3,616		
			Gold(Au)	7440-57-5	≤0.35%	0.00131				0.0004%	4		
										0.0011%	11		
Total							120.37	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