Package Material Composition and Mass Calculation

Customer : Nordic
Package : QFN 36L 6x6PKG
Device Type : nRF24Z1-D
Die Size(mm) :

Total Pkg. Wt (g): **0.11**

Provided By : Joel Cheng
Date : 2010/10/5
Rev. :

	name	material composition	CAS No.	%	mg.(ave)	mg.	%	PPM	SGS Report	Due date (calibration within 1 year)	MSDS Report	Due date (calibration within 3 year)
Mold Compound	CEL-9240					47.2824	43.550%	435,504				
		Epoxy Resin#1	Trade Secret	0.4-2.4%	0.66195		0.610%	6,097				
		Epoxy Resin#2	Trade Secret	0.1-0.6%	0.18913		0.174%	1,742				
		Epoxy resin#3	Trade Secret	2-6%	1.89130		1.742%	17,420				
		Carbon black	1333-86-4	Approx 0.2%	0.09456		0.087%	871				
		Silica	60676-86-0	82-94%	42.79057		39.413%	394,131				
		Hardener	Trade Secret	2-5%	1.65488		1.524%	15,243				
		0	0	0	0.00000		0.000%	0				
		0	0	0	0.00000		0.000%	0				
Leadframe	C194_Silver					55.35	50.979%	509,786				
		Copper (Cu)	7440-50-8	90~98%	53.40999		49.194%	491,944				
		Others	Trade Secret	<1%	0.55347		0.510%	5,098				
		Plated Silver (Ag)	7440-22-4	0.120-12.480%	1.38368		1.274%	12,745				
		0	0	0	0.00000		0.000%	0				
		0	0	0	0.00000		0.000%	0				
		0	0	0	0.00000		0.000%	0				
		0	0	0	0.00000		0.000%	0				
		0	0	0	0.00000		0.000%	0				
Die_1	Silicon	Silicon	7440-21-3	100%		4.45	4.099%	40,994				
Die Attach_1	EN4900G					0.57	0.527%	5,268				
		Silver	7440-22-4	72-82%	0.42611		0.392%	3,925				
		Acrylic resin	Trade Secret	6-11%	0.04862		0.045%	448				
		Polybutadiene derivative	Trade Secret	2-9%	0.02288		0.021%	211				
		Butadiene copolymer	Trade Secret	<2%	0.01144		0.011%	105				
		Epoxy resin	Trade Secret	1-4%	0.01430		0.013%	132				
		Acrylate	Trade Secret	3-8%	0.03146		0.029%	290				
		Peroxide	Trade Secret	<1%	0.00572		0.005%	53				
		Additive	Trade Secret	<2%	0.01144		0.011%	105				
Die_2	Silicon	Silicon	7440-21-3	100%		0.00	0.000%	0				
Die Attach_2	EN4900G					0.00	0.000%	0				
		Silver	7440-22-4	72-82%	0.00000		0.000%	0				
		Acrylic resin	Trade Secret	6-11%	0.00000		0.000%	0				
		Polybutadiene derivative	Trade Secret	2-9%	0.00000		0.000%	0				
		Butadiene copolymer	Trade Secret	<2%	0.00000		0.000%	0				
		Epoxy resin	Trade Secret	1-4%	0.00000		0.000%	0				
		Acrylate	Trade Secret	3-8%	0.00000		0.000%	0				
		Peroxide	Trade Secret	<1%	0.00000		0.000%	0				
		Additive	Trade Secret	<2%	0.00000		0.000%	0				
Die_3	Silicon	Silicon	7440-21-3	100%		0.00	0.000%	0				
Die Attach_3	EN4900G					0.00	0.000%	0				
		Silver	7440-22-4	72-82%	0.00000		0.000%	0				
		Acrylic resin	Trade Secret	6-11%	0.00000		0.000%	0				
		Polybutadiene derivative	Trade Secret	2-9%	0.00000		0.000%	0				
		Butadiene copolymer	Trade Secret	<2%	0.00000		0.000%	0				
		Epoxy resin	Trade Secret	1-4%	0.00000		0.000%	0				
		Acrylate	Trade Secret	3-8%	0.00000		0.000%	0				
		Peroxide	Trade Secret	<1%	0.00000		0.000%	0				
		Additive	Trade Secret	<2%	0.00000		0.000%	0				
Wire	Au wire					0.64983	0.599%	5,985				
		Au	7440-57-5	99.99%	0.64976		0.5985%	5,985				
		Ion Impurities	Trade Secret	0.01%	0.00006		0.0001%	1				
		0	0	0.00%	0.00000		0.0000%	0				
External Plating	Sn plating					0.26737	0.246%	2,463				
		Sn	7440-31-5	100%	0.26737		0.246%	2,463				
		0	0	0	0.00000		0.000%	0				
Solder Ball	SnAgCu105					0.00000	0.000%	0				
		Tin (Sn)	7440-31-5	>90%	0.00000		0.0000%	0				
		Silver (Ag)	7440-22-4	<2%	0.00000		0.0000%	0				
		Cu	7440-50-8	<1%	0.00000		0.0000%	0				
Total						**108.57**	**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 MSDS