



Package Material Composition and Mass Calculation

Customer : Nordic
 Package : QFN 32L 5x5PKG
 Device Type : nRF24LU1P-O
 Die Size(mm) :

Provided By : Joel Cheng
 Date : 2011/1/25
 Rev. :

Total Pkg. Wt (g): **0.08**

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				<u>32.3375</u>	<u>42.166%</u>	<u>421.663</u>				
	Epoxy Resin#1	Trade Secret	0.4-2.4%	0.45273		0.590%	5,903				
	Epoxy Resin#2	Trade Secret	0.1-0.6%	0.12935		0.169%	1,687				
	Epoxy resin#3	Trade Secret	2-6%	1.29350		1.687%	16,867				
	Carbon black	1333-86-4	Approx 0.2%	0.06468		0.084%	843				
	Silica	60676-86-0	82-94%	29.26544		38.160%	381,605				
	Hardener	Trade Secret	2-5%	1.13181		1.476%	14,758				
Leadframe	C194_Silver				<u>38.44</u>	<u>50.118%</u>	<u>501.177</u>				
	Copper (Cu)	7440-50-8	90-98%	37.09027		48.364%	483,636				
	Others	Trade Secret	<1%	0.38436		0.501%	5,012				
	Plated Silver (Ag)	7440-22-4	0.120-12.480%	0.96089		1.253%	12,529				
Die_1	Silicon	Silicon	7440-21-3	100%	<u>4.13</u>	<u>5.382%</u>	<u>53.825</u>				
Die Attach_1	EN4900G				<u>0.59</u>	<u>0.775%</u>	<u>7.747</u>				
	Silver	7440-22-4	72-82%	0.44263		0.577%	5,772				
	Acrylic resin	Trade Secret	6-11%	0.05050		0.066%	659				
	Polybutadiene derivative	Trade Secret	2-9%	0.02377		0.031%	310				
	Butadiene copolymer	Trade Secret	<2%	0.01188		0.015%	155				
	Epoxy resin	Trade Secret	1-4%	0.01485		0.019%	194				
	Acrylate	Trade Secret	3-8%	0.03268		0.043%	426				
	Peroxide	Trade Secret	<1%	0.00594		0.008%	77				
	Additive	Trade Secret	<2%	0.01188		0.015%	155				
Wire	Cu wire				<u>0.14897</u>	<u>0.194%</u>	<u>1.943</u>				
	Cu	7440-50-8	99.99%	0.14896		0.1942%	1,942				
	Ion Impurities	Trade Secret	0.01%	0.00001		0.0000%	0				
External Plating	Sn plating				<u>1.04646</u>	<u>1.365%</u>	<u>13.645</u>				
	Sn	7440-31-5	100%	1.04646		1.365%	13,645				
Total					76.69	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