ASE ADVANCED SEMICONDUCTOR ENGINEERING,INC.

Package Material Composition and Mass Calculation

Customer : NVL
Package : WLCSP
Device Type : nPM1100
Die Size(mm) : 2.075x2.075
Total Pkg. Wt (mg): **3.71**

Provided By : ASECL
Date : 7/14/2020
Rev. :

	name	material composition	CAS No.	%	mg.(ave)	mg.	%	PPM
Silicon	Silicon	Silicon	7440-21-3	100%		2.53411	68.248%	682,479
Polymer 1/2	PBO (HD8820)					0.03552	0.957%	9,567
		γ-Butyrolactone (γ-Butyrolact	96-48-0	45 - 55%	0.01793		0.483%	4,830
		1-Methoxy-2-propyl acetate (	108-65-6	1 - 10%	0.00178		0.048%	478
		Ethanol (Ethanol)	64-17-5	<1%	0.00018		0.005%	48
		N-Methyl-2-pyrrolidone (N-M	872-50-4	<1%	0.00000		0.000%	1
		Non regulated ingredients (N	Trade secret	<45%	0.01563		0.421%	4,209
UBM	UBM					0.06207	1.672%	16,718
		Titanium (Ti)	7440-32-6	100%	0.00035		0.010%	95
		Copper (Cu)	7440-50-8	100%	0.06172		1.662%	16,622
Solder Ball	SnAgCu405					0.90270	24.311%	243,114
		Tin (Sn)	7440-31-5	95.50%	0.86208		23.217%	232,174
		Silver (Ag)	7440-22-4	4%	0.03611		0.972%	9,725
		Copper(Cu)	7440-50-8	0.50%	0.00451		0.122%	1,216
BSC Film	LC-2850					0.17868	4.812%	48,123
		Silica	60676-86-0	60%	0.10721		2.887%	28,874
		Epoxy Resin	Trade secret	12%	0.02144		0.577%	5,775
		Acrylic ester co-polymer	Trade secret	12%	0.02144		0.577%	5,775
		Additive	Trade secret	12%	0.02144		0.577%	5,775
		Carbon black	1333-86-4	4%	0.00715		0.192%	1,925
Total						**3.71**	**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.