ASE ADVANCED SEMICONDUCTOR ENGINEERING,INC.

Package Material Composition and Mass Calculation

ASECL Confidential / Security-C

Customer : NVL
Package : WLCSP
Device Type : nPM1100-CAAB-F-R
Die Size(mm) : 2.04x2.04
Total Pkg. Wt (mg): **3.62**

Provided By : ASECL
Date : 06/02/2023
Rev. :

	name	material composition	CAS No.	%	mg.(ave)	mg.	%	PPM
Silicon	Silicon	Silicon	7440-21-3	100%		2.44934	67.747%	677,467
Polymer 1/2	PBO (HD8820)					0.03589	0.993%	9,928
		γ-Butyrolactone (γ-Butyrolact	96-48-0	45-55%	0.01795		0.496%	4,964
		1-Methoxy-2-propyl acetate (1-Methoxy-2-propyl	108-65-6	1-10%	0.00197		0.055%	546
		N-Methyl-2-pyrrolidone (N-Me	872-50-4	<1%	0.00001		0.000%	1
		Ethanol (Ethanol)	64-17-5	<1%	0.00018		0.005%	50
		Non regulated ingredients (N	Trade secret	<=45%	0.01579		0.437%	4,367
RDL	RDL					0.00000	0.000%	0
		Titanium (Ti)	7440-32-6	100%	0.00000		0.000%	0
		Copper (Cu)	7440-50-8	100%	0.00000		0.000%	0
UBM	UBM					0.06104	1.688%	16,882
		Titanium (Ti)	7440-32-6	100%	0.00035		0.010%	98
		Copper (Cu)	7440-50-8	100%	0.06068		1.678%	16,784
Solder Ball	SnAgCu405					0.90270	24.968%	249,680
		Tin	7440-31-5	90-100%	0.86208		23.844%	238,445
		Silver	7440-22-4	4%	0.03611		0.999%	9,987
		Copper	7440-50-8	0.1-3%	0.00451		0.125%	1,248
BSC Film	LC-2850					0.16646	4.604%	46,043
		Silica	60676-86-0	60%	0.09988		2.763%	27,626
		Epoxy Resin	Trade secret	12%	0.01998		0.553%	5,525
		Acrylic ester co-polymer	Trade secret	12%	0.01998		0.553%	5,525
		Additive	Trade secret	12%	0.01998		0.553%	5,525
		Carbon black	1333-86-4	4%	0.00666		0.184%	1,842
Total						**3.62**	**100%**	**1000000**

DISCLAIMER
- The above material declaration be able to use only as reference in identifying the Hazardous material content of the product and the estimated weight of IC package.
- ASECL verify the content substances based on the SDS report provided by each raw material vendor, not the material composition of the final product.
- ASECL's suppliers consider certain information proprietary, thus, CAS numbers and other limited information may not be available for release.