



**Package Material Composition and Mass Calculation**

ASECL Confidential / Security-C

Customer : NVL  
 Package : WLCSP  
 Device Type : NSBACMP75#B / nRF5340-CLAA  
 Die Size(mm) : 4.347x3.9506  
 Total Pkg. Wt (mg): 12.39

Provided By : ASECL  
 Date : 3/16/2021  
 Rev. :

	name	material composition	CAS No.	%	mg.(ave)	mg.	%	PPM
Silicon	Silicon	Silicon	7440-21-3	100%		9.63530	<u>77.770%</u>	<u>777,698</u>
Polymer 1/2	PBO (HD8820)					0.29624	<u>2.391%</u>	<u>23,910</u>
		γ-Butyrolactone (γ-Butyrolact	96-48-0	45-55%	0.14812		1.196%	11,955
		1-methoxy-2-propyl acetate	108-65-6	1-10%	0.01629		0.132%	1,315
		1-Methoxy-2-propanol						
		N-Methyl-2-pyrrolidone (N-Me	872-50-4	<1%	0.00148		0.012%	120
		Ethanol (Ethanol)	64-17-5	<1%	0.00148		0.012%	120
		Non regulated ingredients (N Trade secret		<=45%	0.12886		1.040%	10,401
RDL	RDL					0.64101	<u>5.174%</u>	<u>51,738</u>
		Titanium (Ti)	7440-32-6	100%	0.00773		0.062%	624
		Copper (Cu)	7440-50-8	100%	0.63328		5.111%	51,114
UBM	UBM					0.11365	<u>0.917%</u>	<u>9,173</u>
		Titanium (Ti)	7440-32-6	100%	0.00066		0.005%	53
		Copper (Cu)	7440-50-8	100%	0.11299		0.912%	9,120
Solder Ball	SnAgCu405					1.01638	<u>8.204%</u>	<u>82,035</u>
		Tin	7440-31-5	90-100%	0.97064		7.834%	78,344
		Silver	7440-22-4	4%	0.04066		0.328%	3,281
		Copper	7440-50-8	0.1-3%	0.00508		0.041%	410
BSC Film	LC-2850					0.68693	<u>5.544%</u>	<u>55,445</u>
		Silica	60676-86-0	60%	0.41216		3.327%	33,267
		Epoxy Resin	Trade secret	12%	0.08243		0.665%	6,653
		Acrylic ester co-polymer	Trade secret	12%	0.08243		0.665%	6,653
		Additive	Trade secret	12%	0.08243		0.665%	6,653
		Carbon black	1333-86-4	4%	0.02748		0.222%	2,218
<b>Total</b>						<b>12.39</b>	<b>100%</b>	<b>100000</b>

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.