



## Materials Declaration Form

<b>IPC Form Type *</b>	1752 Distribute	<b>Version</b>	2
<b>Sectionals *</b>	Material Info Manufacturing Info	<b>Subsectionals *</b>	A-D  * : Required Field

<b>Supplier Information</b>			
<b>Company Name *</b>	STMicroelectronics	<b>Response Date *</b>	2019-04-30
<b>Company Unique ID</b>	NL 008751171801		
<b>Contact Name *</b>	Refer to Supplier Comment section		Refer to Supplier Comment section
<b>Contact Phone *</b>	Refer to Supplier Comment section	<b>Contact Email *</b>	Refer to Supplier Comment section
<b>Authorized Representative *</b>	Rossana Bonaccorso	<b>Representative Title</b>	ADG MD Champion
<b>Representative Phone *</b>	Refer to Supplier Comment section	<b>Representative Email *</b>	Refer to Supplier Comment section
<b>Supplier Comment</b>	Online Technical Support - STMicroelectronics : <a href="http://www.st.com/web/en/support/support.html">http://www.st.com/web/en/support/support.html</a>		

**Uncertainty Statement**

While STMicroelectronics has endeavored to provide information which is accurate and up to date, this document and its contents are provided on a strict 'as is' and 'as available' basis. STMicroelectronics disclaims all warranties, express or implied related to this document and its contents, including but not limited to implied warranties of completeness, truth, accuracy, merchantability, fitness for a particular purpose and non-infringement. ST shall have no responsibility and assumes no liability for any cost, loss or damage of any kind which could arise, directly or indirectly, from the use or inability to use this document and/or its contents.

<b>Legal Statement</b>			
<b>Supplier Acceptance *</b>	true	<b>Legal Declaration *</b>	Standard

**Legal Statement**

Supplier certifies that it gathered the provided information and such information is true and correct to the best of its knowledge and belief, as of the date that Supplier completes this form. Supplier acknowledges that Company will rely on this certification in determining the compliance of its products. Company acknowledges that Supplier may have relied on information provided by others in completing this form, and that Supplier may not have independently verified such information. However, in situations where Supplier has not independently verified information provided by others, Supplier agrees that, at a minimum, its suppliers have provided certifications regarding their contributions to the part(s), and those certifications are at least as comprehensive as the certification in this paragraph. If the Company and the Supplier enter into a written agreement with respect to the identified part(s), the terms and conditions of that agreement, including any warranty rights and/or remedies provided as part of that agreement, will be the sole and exclusive source of the Supplier's liability and the Company's remedies for issues that arise regarding information the Supplier provides in this form.

Product				
Mfr Item Number	Mfr Item Name	Version	Mfr Site	Date
STW18N65M5	TSLW*M5F3B52	A	3068	2019-04-30
Amount	UoM	Unit type	ST ECOPACK Grade	
4430.00	mg	Each	ECOPACK2	
	Comment	ECOPACK® 2 is STMicroelectronics trade name for ROHS compliant device without Brominated and Chlorinated compound (900ppm) and without Antimony oxide flame retardant ( in each organic material)		

Manufacturing information				
J-STD-020 MSL Rating	Classification Temp	Nbr of Reflow Cycles	 life.augmented	
NA	NA	NA		
bulk Solder Termination	Terminal Plating	Terminal Base Alloy		
NA	Tin (Sn), matte	Copper Alloy		

Package Designator	Size	Nbr of instances	Shape
QFN	15.75-20.15-5.15	3	Through-hole
Comment	TO 247		

QueryList : RoHS Directive 2011/65/EU-July 2011 – Annex II amended by Directive 2015/863-March 2015	
Query	Response
1 - Product(s) meets EU RoHS requirement without any exemptions	FALSE
2 - Product(s) meets EU RoHS requirements except lead in solder and this usage may qualify under the lead in solder '7b' exemption (other selected exemptions may apply)	FALSE
3 - Product(s) meets EU RoHS requirements by application of the selected exemption(s)	TRUE
4 - Product(s) does not meet EU RoHS requirements and is not under exemptions	FALSE
Exemption Id.	Description
7a	Lead in high melting temperature type solders (i.e. lead- based alloys containing 85 % by weight or more lead)

QueryList : ELV directive : 2000/53/EC amended 2017/2096 _November 2017	
Query	Response
1 - Product(s) meets EU ELV requirements without any exemptions	FALSE
2 - Product(s) meets EU RoHS requirements by application of the selected exemption(s)	TRUE
Exemption Id.	Description
8e	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead)

QueryList : California Prop65 list, dated 23rd November 2018			
Query			Response
1 - The product does not contain identified substance from California Prop 65 List, no exposure to consumers is foreseen			FALSE
2 - The product is containing below substance(s) from California Prop 65 List, no exposure to consumers is foreseen			TRUE
Substance	amount in product (mg)	Application	ppm in product
Nickel	1.27	Die - Leadframe	287
Lead	6.82	Soft solder	1540

QueryList : REACH-15th January 2019				
Query				Response
1 - Product(s) does not contain REACH Substances Of Very High Concern above the limits per the definition within REACH				FALSE
CategoryLevel_Name	CategoryLevel_Threshold	amount in product (mg)	Application	ppm in product
Lead	1000 ppm	6.82	Soft solder	1540
2 - Product(s) does not contain REACH Substances Of Very High Concern in any Embedded article nor Homogeneous Material above the limits per the definition within REACH				FALSE
CategoryLevel_Name	CategoryLevel_Threshold	Amount in Embedded Article / Homogeneous Material (mg)	Application - Article / Homogeneous Material	ppm in Article /Homogeneous Material
Lead	1000 ppm	6.82	Soft solder	954921

Material Composition Declaration : note : Substance present with less 0.001mg will not be declared in this document						Mfr Item Name	TSLW*M5F3B52									
Homogeneous Material	Material Group	Mass	UoM	Level	Substance Category	Substance	CAS	Exempt	Mass	UoM	Concentration in homogeneous material (ppm)	Concentration in product (ppm)				
Die	M-011 Other inorganic materials	8.098	mg	supplier	die	Silicon (Si)	7440-21-3		7.471	mg	922573	1686				
				supplier	metallization	Aluminium (Al)	7429-90-5		0.139	mg	17165	31				
				supplier	metallization	Copper (Cu)	7440-50-8		0.051	mg	6298	12				
				supplier	metallization	Nickel (Ni)	7440-02-0		0.306	mg	37787	69				
				supplier	metallization	Silver (Ag)	7440-22-4		0.018	mg	2223	4				
				supplier	metallization	Titanium (Ti)	7440-32-6		0.005	mg	617	1				
				supplier	Passivation	Silicon Nitride	12033-89-5		0.032	mg	3952	7				
				supplier	Passivation	Silicon Oxide	7631-86-9		0.003	mg	370	1				
				supplier	back side metallization	Titanium (Ti)	7440-32-6		0.004	mg	494	1				
				supplier	back side metallization	Nickel (Ni)	7440-02-0		0.051	mg	6298	12				
				supplier	back side metallization	Silver (Ag)	7440-22-4		0.018	mg	2223	4				
				Leadframe	M-004 Copper and its alloys	2826.184	mg	supplier	alloy	Copper (Cu)	7440-50-8		2821.522	mg	998350	636912
								supplier	alloy	Iron (Fe)	7439-89-6		2.825	mg	1000	638
supplier	alloy	Iron Phosphide (FeP)	26508-33-8						0.848	mg	300	191				
supplier	metallization	Nickel (Ni)	7440-02-0						0.915	mg	324	207				
supplier	metallization	Phosphorus (P)	7723-14-0						0.074	mg	26	17				
supplier	metallization	Lead (Pb)	7439-92-1					7a-Lead in high mel	6.821	mg	954921	1540				
Soft solder	Solder	7.143	mg	JIG - R	solder	Lead (Pb)	7439-92-1	7a-Lead in high mel	6.821	mg	954921	1540				
				supplier	solder	Silver (Ag)	7440-22-4		0.179	mg	25059	40				
				supplier	solder	Tin (Sn)	7440-31-5		0.143	mg	20020	32				
Bonding wires	M-011 Other inorganic materials	0.804	mg	supplier	wire	Aluminium (Al)	7429-90-5		0.801	mg	996269	181				
				supplier	wire	Magnesium (Mg)	7439-95-4		0.003	mg	3731	1				
				supplier	mold compound	Silica, vitreous	60676-86-0		1373.273	mg	870000	309994				
				supplier	mold compound	Epoxy resin	25068-38-6		157.848	mg	100000	35632				
Encapsulation	M-011 Other inorganic materials	1578.475	mg	supplier	mold compound	Phenol resin	29690-82-2		39.462	mg	25000	8908				
				supplier	mold compound	Carbon Black	1333-86-4		7.892	mg	5000	1781				
				supplier	solder alloy	Tin (Sn)	7440-31-5		9.296	mg	1000000	2098				
Connections coating	Solder	9.296	mg	supplier	solder alloy	Tin (Sn)	7440-31-5		9.296	mg	1000000	2098				