



## 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 <i>* : Required Field</i>

Supplier Information			
<b>Company Name *</b>	STMicroelectronics	<b>Response Date *</b>	2018-11-27
<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>	Floriana SAN BIAGIO	<b>Representative Title</b>	AMS 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**

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**Legal Statement**

<b>Supplier Acceptance *</b>	true	<b>Legal Declaration *</b>	Standard
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**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
	VRWV*KN05FC1	A	ZS1A	2018-11-27
Amount	UoM	Unit type	ST ECOPACK Grade	
16	mg	Each	ECOPACK® 2	
	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
1	260	3		
bulk Solder Termination	Terminal Plating	Terminal Base Alloy	Comment	
Not Applicable	Nickel/Palladium/Gold (Ni/Pd/Au)	Copper Alloy		

Package Designator	Size	Nbr of instances	Shape	
DSO	2.8x1.5x0.9	5	gull wing	
Comment	WV SOT 23 5L; MDF valid for LK112M50TR			

QueryList : RoHS Directive 2011/65/EU-July 2011 – Annex II amended by Directive 2015/863-April 2015	
Query	Response
1 - Product(s) meets EU RoHS requirement without any exemptions	TRUE
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)	FALSE
4 - Product(s) does not meet EU RoHS requirements and is not under exemptions	FALSE
Exemption Id.	Description

QueryList : REACH-27th June 2018				
Query				Response
1 - Product(s) does not contain REACH Substances Of Very High Concern above the limits per the definition within REACH				true
CategoryLevel_Name	CategoryLevel_Threshold	amount in product (mg)	Application	ppm in product

Material Composition Declaration : note : Substance present with less 0.001mg will not be declared in this document						Mfr Item Name	VRWV*KN05FC1				5000000.0	1000068.0
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	0.959	mg	supplier	die	Silicon (Si)	7440-21-3		0.932	mg	971846	58250
				supplier	metallization	Aluminium (Al)	7429-90-5		0.015	mg	15641	938
				supplier	Passivation	Silicon Nitride	12033-89-5		0.004	mg	4171	250
				supplier	Passivation	Silicon Oxide	7631-86-9		0.008	mg	8342	500
Leadframe	M-004 Copper and its alloys	6.711	mg	supplier	alloy	Copper (Cu)	7440-50-8		6.465	mg	963344	404063
				supplier	alloy	Iron (Fe)	7439-89-6		0.151	mg	22500	9438
				supplier	alloy	Phosphorus (P)	12185-10-3		0.002	mg	298	125
				supplier	alloy	Zinc (Zn)	7440-66-6		0.008	mg	1192	500
				supplier	metallization	Nickel (Ni)	7440-02-0		0.077	mg	11474	4813
				supplier	metallization	Palladium (Pd)	7440-05-3		0.007	mg	1043	438
	M-008 Precious metals			supplier	metallization	Gold (Au)	7440-57-5		0.001	mg	149	63
Die Attach	M-015 Other organic materials	0.065	mg	supplier	glue	Silver (Ag)	7440-22-4		0.052	mg	800000	3250
				supplier	glue	Carbocyclic Acrylates	proprietary		0.007	mg	107692	438
				supplier	glue	Bismaleimide resin	35325-39-4		0.002	mg	30769	125
				supplier	glue	2-preponic acid, 2-methyl	68586-19-6		0.002	mg	30769	125
				supplier	glue	Additive	proprietary		0.002	mg	30769	125
Bonding wires	M-008 Precious metals	0.112	mg	supplier	wire	Gold (Au)	7440-57-5		0.112	mg	1000000	7000
Encapsulation	M-015 Other organic materials	8.154	mg	supplier	mold compound	Epoxy Resin A	25068-38-6		0.245	mg	30047	15313
				supplier	mold compound	Epoxy Resin B	Proprietary		0.245	mg	30047	15313
				supplier	mold compound	Phenol Resin	29690-82-2		0.367	mg	45009	22938
				supplier	mold compound	Silica	60676-86-0		7.118	mg	872946	444875
				supplier	mold compound	Carbon Black	1333-86-4		0.016	mg	1962	1000
				supplier	mold compound	Others	Proprietary		0.163	mg	19990	10188