



## 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>	2017-10-19
<b>Contact Name *</b>	Refer to Supplier Comment section		Refer to Supplier Comment section
<b>Authorized Representative *</b>	Floriana SAN BIAGIO	<b>Representative Title</b>	AMG 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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<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
	RVWX*V431A46	A	ZS1A	2017-10-19
Amount	UoM	Unit type	ST ECOPACK Grade	
10.00	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		

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	
tin is used or other bulk terminat	Tin (Sn), matte	Copper Alloy		

Package Designator	Size	Nbr of instances	Shape	
SOT	2.8x1.5x0.9	3	gull wing	
Comment	Package: WX SOT 23 3 LDS; MDF valid for TLVH431MIL3T			

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-7th July 2017				
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						Mfr Item Name	RVWX*V431A46					
Homogeneous Material	Material Group	Mass	UoM	Level	Substance Category	Substance	CAS	Exempt	Mass	UoM	Concentration in homogeneous material (ppm)	Concentration in product (ppm)
Die	Other inorganic materials	0.438	mg	supplier	die	Silicon (Si)	7440-21-3		0.433	mg	988584	43300
				supplier	metallization	Aluminium (Al)	7429-90-5		0.002	mg	4566	200
				supplier	Passivation	Silicon Nitride	12033-89-5		0.002	mg	4566	200
				supplier	Passivation	Silicon Oxide	7631-86-9		0.001	mg	2283	100
Leadframe	Copper & its alloys	2.238	mg	supplier	alloy	Copper (Cu)	7440-50-8		2.161	mg	965594	216100
				supplier	alloy	Iron (Fe)	7439-89-6		0.051	mg	22788	5100
				supplier	alloy	Phosphorus (P)	12185-10-3		0.001	mg	447	100
				supplier	alloy	Zinc (Zn)	7440-66-6		0.003	mg	1340	300
Die attach	Other Organic Materials	0.028	mg	supplier	metallization	Silver (Ag)	7440-22-4		0.022	mg	9830	2200
				supplier	glue	Silver (Ag)	7440-22-4		0.022	mg	785714	2200
				supplier	glue	Carbocyclic Acrylates	proprietary		0.003	mg	107143	300
				supplier	glue	Bismaleimide resin	35325-39-4		0.001	mg	35714	100
Bonding wires	Other inorganic materials	0.028	mg	supplier	glue	2-preponic acid, 2-methyl	68586-19-6		0.001	mg	35714	100
				supplier	glue	Additive	proprietary		0.001	mg	35714	100
				supplier	wire	Copper (Cu)	7440-50-8		0.027	mg	964286	2700
				supplier	wire	Palladium (Pd)	7440-05-3		0.001	mg	35714	100
Encapsulation	Other Organic Materials	7.076	mg	supplier	mold compound	Epoxy Resin-1	Proprietary		0.212	mg	29960	21200
				supplier	mold compound	Epoxy Resin-2	25068-38-6		0.212	mg	29960	21200
				supplier	mold compound	Phenol resin	29690-82-2		0.318	mg	44941	31800
				supplier	mold compound	Silica	60676-86-0		6.320	mg	893160	632000
Finishing	Other inorganic materials	0.191	mg	supplier	mold compound	Carbon Black	1333-86-4		0.014	mg	1979	1400
				supplier	Connection coating	Tin (Sn)	7440-31-5		0.191	mg	1000000	19100