



Materials Declaration Form

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

Supplier Information			
Company Name *	STMicroelectronics	Response Date *	2016-11-07
Contact Name *	Refer to Supplier Comment section		Refer to Supplier Comment section
Authorized Representative *	Floriana San Biagio	Representative Title	AMG MD CHAMPION
Representative Phone *	Refer to Supplier Comment section		Refer to Supplier Comment section
Representative Email *	Refer to Supplier Comment section		
Supplier Comment	Online Technical Support - STMicroelectronics : http://www.st.com/web/en/support/support.html		

Uncertainty Statement

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Legal Statement

Supplier Acceptance *	true	Legal Declaration *	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
	VRWY*S431BR6	A	ZS1A	2016-11-07
Amount	UoM	Unit type	ST ECOPACK Grade	
16.37	mg	Each	ECOPACK® 2	

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	
ating is used or other bulk terminati	Tin (Sn), matte, annealed	Copper Alloy		

Package Designator	Size	Nbr of instances	Shape	
DSO	2.9x1.6x1.05	5	gull wing	
Comment	Package: WY SOT 23-5; MDF valid for TS431AILT			

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
5 - Product(s) is obsolete, no information is available	false
6 - Product(s) is unknown, no information is available	false
Exemption Id.	Description

QueryList : REACH-20th June 2016				
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	VRWY*5431BR6					
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	0.573	mg	supplier	die	Silicon (Si)	7440-21-3		0.566	mg	987784	34575
				supplier	metallization	Aluminium (Al)	7429-90-5		0.003	mg	5236	183
				supplier	Passivation	Silicon Nitride	12033-89-5		0.002	mg	3490	122
				supplier	Passivation	Silicon Oxide	7631-86-9		0.002	mg	3490	122
Leadframe	Copper & its alloys	6.423	mg	supplier	alloy	Copper (Cu)	7440-50-8		5.804	mg	903586	354558
				supplier	alloy	Iron (Fe)	7439-89-6		0.136	mg	21195	8317
				supplier	alloy	Zinc (Zn)	7440-66-6		0.007	mg	1116	438
				supplier	alloy	Iron Phosphide (Fe2P)	1310-43-6		0.008	mg	1275	500
				supplier	metallization	Silver (Ag)	7440-22-4		0.468	mg	72829	28577
				supplier	glue	Silver (Ag)	7440-22-4		0.104	mg	689189	6378
Die attach	Other Organic Materials	0.152	mg	supplier	glue	methylene diacrylate	42594-17-2		0.038	mg	250000	2314
				supplier	glue	Dicyclopentenloxyethyl methacrylate	68586-19-6		0.004	mg	27027	250
				supplier	glue	Polymer of Polybutadiene + Anhydride	proprietary		0.004	mg	27027	250
				supplier	glue	Bis(α,α-dimethylbenzyl) peroxide	80-43-3		0.001	mg	6757	63
				supplier	wire	Gold (Au)	7440-57-5		0.020	mg	1000000	1251
Encapsulation	Other inorganic materials	8.699	mg	supplier	mold compound	Silica, vitreous	60676-86-0		7.420	mg	853024	453296
				supplier	mold compound	phenolic resin	Proprietary		0.304	mg	34949	18572
				supplier	mold compound	epoxy resin	Proprietary		0.348	mg	40009	21261
				supplier	mold compound	Biphenyl epoxy resin	85954-11-6		0.174	mg	20005	10630
				supplier	mold compound	carbon black	1333-86-4		0.017	mg	2000	1063
				supplier	mold compound	Zinc hydroxide	20427-58-1		0.087	mg	10002	5315
Finishing	Other inorganic materials	0.503	mg	supplier	mold compound	Magnesium hydroxide	1309-42-8		0.348	mg	40009	21261
				supplier	connection coating	Tin (Sn)	7440-31-5		0.503	mg	1000000	30703