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Materials Declaration Form

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

Supplier Information			
Company Name *	STMicroelectronics	Response Date *	2016-03-21
Contact Name *	Refer to "Supplier Comment" section	Contact Title	Refer to "Supplier Comment" section
Contact Phone *	Refer to "Supplier Comment" section	Contact Email *	Refer to "Supplier Comment" section
Authorized Representative *	Floriana San Biagio	Representative Title	AMG MD Champion
Representative Phone *	Refer to "Supplier Comment" section	Representative Email *	Refer to "Supplier Comment" section
Supplier Comment	Online Technical Support - STMicroelectronics : http://www.st.com/internet/com/support/online_tech_support.jsp		

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
	HYWY*V331AAL	A	ZS1A	2016-03-21
Amount	UoM	Unit type	ST ECOPACK Grade	
16.37	mg	Each	ECOPACK® 3	

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 ; if coating is used o	Nickel/Palladium/Gold (Ni/Pd/Au)	Alloy 42		

Package Designator	Size	Nbr of instances	Shape	
SOT	2.9x 1.6x 1.05	5	gull wing	
Comment	Package: WY SOT 23-5; MDF valid for TS331ILT			

QueryList : ROHS directive 2011/65/EU _ July 2011	
Query	Response
Product(s) meets EU RoHS requirement without any exemptions	true
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
Product(s) meets EU RoHS requirements by application of the selected exemption(s)	false
Product(s) does not meet EU RoHS requirements and is not under exemptions	false
Product(s) is obsolete, no information is available	false
Product(s) is unknown, no information is available	false
Exemption Id.	Description

QueryList : REACH-17th December 2015				
Query				Response
The product 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	HYWY*V331AAL					
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	0.290	mg	supplier	die	Silicon (Si)	7440-21-3		0.277	mg	955172	16921
Die				supplier	metallization	Aluminium (Al)	7429-90-5		0.004	mg	13793	244
Die				supplier	Passivation	Silicon Nitride	12033-89-5		0.001	mg	3448	61
Die				supplier	Passivation	Silicon Oxide	7631-86-9		0.008	mg	27586	489
Leadframe	Copper & its alloys	6.908	mg	supplier	alloy	Copper (Cu)	7440-50-8		6.636	mg	960625	405376
Leadframe				supplier	alloy	Iron (Fe)	7439-89-6		0.167	mg	24175	10202
Leadframe				supplier	alloy	Iron Phosphide (FeP)	26508-33-8		0.002	mg	290	122
Leadframe				supplier	alloy	Zinc (Zn)	7440-66-6		0.009	mg	1303	550
Leadframe	Nickel (Ni)			supplier	metallization	Nickel (Ni)	7440-02-0		0.086	mg	12449	5254
Leadframe	Precious metals			supplier	metallization	Palladium (Pd)	7440-05-3		0.007	mg	1013	428
Leadframe	Precious metals			supplier	metallization	Gold (Au)	7440-57-5		0.001	mg	145	61
Die attach	Other inorganic materials	0.079	mg	supplier	glue	Silver (Ag)	7440-22-4		0.057	mg	721519	3482
Die attach				supplier	glue	methylene diacrylate	42594-17-2		0.013	mg	164557	794
Die attach				supplier	glue	Dicyclopentenloxyethyl methacrylate	68586-19-6		0.003	mg	37975	183
Die attach				supplier	glue	Bismaleimide resin	Proprietary		0.003	mg	37975	183
Die attach				supplier	glue	Palladium (Pd)	7440-05-3		0.001	mg	12658	61
Die attach				supplier	glue	Dicumyl peroxide	80-43-3		0.002	mg	25316	122
Bonding wire	Precious metals	0.156	mg	supplier	wire	Gold (Au)	7440-57-5		0.156	mg	1000000	9530
encapsulation	Other inorganic materials	8.935	mg	supplier	mold compound	Epoxy Resin	Proprietary		0.354	mg	39619	21625
encapsulation				supplier	mold compound	Biphenyl epoxy resin	85954-11-6		0.133	mg	14885	8125
encapsulation				supplier	mold compound	Phenol resin	Proprietary		0.369	mg	41298	22541
encapsulation				supplier	mold compound	Silica	60676-86-0		7.162	mg	801567	437508
encapsulation				supplier	mold compound	Carbon Black	1333-86-4		0.016	mg	1791	977
encapsulation				supplier	mold compound	Zinc hydroxide	20427-58-1		0.164	mg	18355	10018
encapsulation				supplier	mold compound	Magnesium hydroxide	1309-42-8		0.737	mg	82485	45021