



## 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*

Supplier Information			
<b>Company Name *</b>	STMicroelectronics	<b>Response Date *</b>	2017-02-14
<b>Contact Name *</b>	Refer to Supplier Comment section		Refer to Supplier Comment section
<b>Authorized Representative *</b>	Antonella Lanzafame	<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**


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.

Legal Statement			
<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
TS431IYLT	HVWY*S431BS6	A	ZS1A	2017-02-14
	Amount	UoM	Unit type	ST ECOPACK Grade
	17.10	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	
NAC	Tin (Sn), matte	Copper Alloy		

Package Designator	Size	Nbr of instances	Shape	
SOT	1.60,2.90,1.15	5	gull wing	
Comment				

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

ELV directive : 2000/53/EC amended 2016/774 _May 2016	
Query	Response
1 - Product(s) meets EU ELV requirements without any exemptions	TRUE
2 - Product(s) meets EU RoHS requirements by application of the selected exemption(s)	FALSE
Exemption Id.	Description

QueryList : REACH-12th January 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		HWVY*5431B5G					
note : Substance present with less 0.001mg will not be declared in this document													
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	0.776	mg	supplier	die	Silicon (Si)	7440-21-3		0.769	mg	991094	45556	
				supplier	metallization	Aluminium (Al)	7429-90-5		0.003	mg	3817	175	
				supplier	Passivation	Silicon Nitride	12033-89-5		0.002	mg	2545	117	
Leadframe	Copper & its alloys	7.108	mg	supplier	Passivation	Silicon Oxide	7631-86-9		0.002	mg	2545	117	
				supplier	Alloy	Copper(Cu)	7440-50-8		6.866	mg	965900	406695	
				supplier	Alloy	Iron(Fe)	7439-89-6		0.160	mg	22560	9499	
0				supplier	Alloy	Lead(Pb)	7439-92-1		0.000	mg	30	13	
Leadframe				supplier	Alloy	Phosphorus	7723-14-0		0.002	mg	240	101	
				supplier	Alloy	Zinc	7440-66-6		0.009	mg	1270	535	
				supplier	Alloy	Silver(Ag)	7440-22-4		0.071	mg	10000	4211	
Die attach	Other Organic Materials	0.069	mg	supplier	Adhesive	Silver (Ag)	7440-22-4		0.059	mg	850000	3480	
				supplier	Adhesive	Carbocyclic acrylate	Proprietary		0.007	mg	100000	409	
				supplier	Adhesive	2-Propenoic acid, 2-methyl-, 2-[[2,3,3a,4,7,7a]]	68586-19-6		0.003	mg	45000	184	
				supplier	Adhesive	2-(3,4-Epoxy cyclohexyl)ethyltrimethoxysilane	3388-04-3		0.000	mg	5000	20	
Bonding wire Au	Other inorganic materials	0.156	mg	supplier	Bonding wire	Gold (Au)	7440-50-8		0.156	mg	1000000	9246	
Encapsulation	Other Organic Materials	8.307	mg	supplier	Mold compound	Solid Epoxy Resin-1	Proprietary		0.166	mg	20000	9840	
				supplier	Mold compound	Solid Epoxy Resin-2	Proprietary		0.166	mg	20000	9840	
				supplier	Mold compound	Phenol resin	29690-82-2		0.332	mg	40000	19680	
				supplier	Mold compound	Amorphous Silica	60676-86-0		7.393	mg	890000	437885	
				supplier	Mold compound	Carbon Black	1333-86-4		0.042	mg	5000	2460	
Finishing	Other inorganic materials	0.684	mg	supplier	Mold compound	Crystalline silica	14808-60-7		0.208	mg	25000	12300	
				supplier	Connection coating	Tin(Sn)	7440-31-5		0.684	mg	1000000	40505	