



## 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>	2015-07-14
<b>Contact Name *</b>	Refer to "Supplier Comment" section	<b>Contact Title</b>	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>	Giovanni Giacobello	<b>Representative Title</b>	IPD Materials Declaration 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/internet/com/support/online_tech_support.jsp">http://www.st.com/internet/com/support/online_tech_support.jsp</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
	HVSA*S431BR6	A	Z4XA	2015-07-14
Amount	UoM	Unit type	ST ECOPACK Grade	
220.00	mg	Each	ECOPACK® 2	

Manufacturing information				
J-STD-020 MSL Rating	Classification Temp	Nbr of Reflow Cycles		 life.augmented
NAC	NAC	NAC		
bulk Solder Termination	Terminal Plating	Terminal Base Alloy	Comment	
Not Applicable ; if coating is used c	Tin (Sn), matte	Copper Alloy		

Package Designator	Size	Nbr of instances	Shape	
SIP	4.6X4.6X3.5	3	Through-hole	
Comment	Package: TO 92 Epoxy; MDF valid for TS431AIZ; TS431AIZ-AP; TS431AIZT; TS431IZ; TS431IZ-AP; TS431IZT			

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 2014				
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	HVSA*5431BR6						
Homogeneous Material	Material Group	Mass	UoM	Level	Substance Category	Substance	CAS	Exempt	Mass	UoM	Concentration in homogeneous material (ppm)	Concentration in product (ppm)	
Silicon die	Other inorganic materials	0.798	mg	supplier	die	Silicon (Si)	7440-21-3		0.791	mg	991228	3595	
Silicon die				supplier	metallization	Aluminium (Al)	7429-90-5		0.003	mg	3759	14	
Silicon die				supplier	Passivation	Silicon Nitride	12033-89-5		0.002	mg	2506	9	
Die Attach				supplier	Passivation	Silicon Oxide	7631-86-9		0.002	mg	2506	9	
Die Attach	Copper and its alloy	101.268	mg	supplier	alloy	Copper(Cu)	7440-50-8		101.165	mg	998983	459841	
Lead frame				supplier	alloy	Phosphorus(P)	12185-10-3		0.031	mg	306	141	
Lead frame				supplier	alloy	Iron(Fe)	7439-89-6		0.072	mg	711	327	
Die attach	Other organic materials	0.176	mg	supplier	glue	Silver(Ag)	7440-22-4		0.124	mg	704545	564	
Die attach				supplier	glue	Bisphenol F type epoxy resin	9003-36-5		0.036	mg	204545	164	
Die attach				supplier	glue	Phenol derivative	proprietary		0.008	mg	45455	36	
Die attach				supplier	glue	Di propylene glycol mono methyl ether	34590-94-8		0.008	mg	45455	36	
Bonding wire	Precious metals	1.074	mg	supplier	Bonding wire	Gold (Au)	7440-57-5		1.074	mg	1000000	4882	
Encapsulation	Other organic materials	114.381	mg	supplier	Moulding Compound	Silica Crystal	14808-60-7		97.222	mg	849984	441918	
Encapsulation				supplier	Moulding Compound	Epoxy Resin	29690-82-2		11.439	mg	100008	51995	
Encapsulation				supplier	Moulding Compound	Phenol Resin	9003-35-4		5.152	mg	45042	23418	
Encapsulation				supplier	Moulding Compound	Carbon Black	1333-86-4		0.568	mg	4966	2582	
Finishing	Solder	2.303	mg	supplier	Connections coating	Tin(Sn)	7440-31-5		2.303	mg	1000000	10468	