



## 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>	2015-08-13
<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**


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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
	TLDZ*M5F5B51	A	BO2A	2015-08-13
Amount	UoM	Unit type	ST ECOPACK Grade	
1900.00	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	Tin (Sn), matte, annealed	Copper Alloy		

Package Designator	Size	Nbr of instances	Shape	
SIP	10X9.1X4.5	3	Through-hole	
Comment	Package: TO 220 AB NON ISOL; MDF valid for STP21N65M5; STP31N65M5			

QueryList : ROHS directive 2011/65/EU _ July 2011	
Query	Response
Product(s) meets EU RoHS requirement without any exemptions	false
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)	true
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
7a	Lead in high melting temperature type solders (i.e. lead- based alloys containing 85 % by weight or more lead)

QueryList : REACH-15th June 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	TLD2*MSF5851					
Homogeneous Material	Material Group	Mass	UoM	Level	Substance Category	Substance	CAS	Exempt	Mass	UoM	Concentration in homogeneous material (ppm)	Concentration in product (ppm)
die (s)	Other inorganic materials	11.005	mg	supplier	die	Silicon (Si)	7440-21-3		10.569	mg	960382	5563
die (s)				supplier	metallization	Aluminum (Al)	7429-90-5		0.21	mg	19082	111
die (s)				supplier	passivation	Silicon Nitride (SiN)	68034-42-4		0.05	mg	4543	26
die (s)				supplier	passivation	Silicon Oxide(SiO2)	7631-86-9		0.074	mg	6724	39
die (s)				supplier	back side metallization	Titanium (Ti)	7440-32-6		0.005	mg	454	3
die (s)				supplier	back side metallization	Nickel (Ni)	7440-02-0		0.072	mg	6542	38
die (s)				supplier	back side metallization	Silver (Ag)	7440-22-4		0.025	mg	2272	13
Leadframe	Copper & its alloys	1211.029	mg	supplier	alloy	Copper (Cu)	7440-50-8		1209.441	mg	998689	636548
Leadframe				supplier	alloy	Iron (Fe)	7439-89-6		0.557	mg	460	293
Leadframe				supplier	alloy	Iron Phosphide (Fe2P)	1310-43-6		1.017	mg	840	535
Leadframe				supplier	metallization	Nickel (Ni)	7440-02-0		0.013	mg	11	7
Leadframe				supplier	metallization	Phosphorus (P)	12185-10-3		0.001	mg	1	1
Soft solder	Other Organic Materials	7.602	mg	JIG R	solder	Lead (Pb)	7439-92-1	7a-Lead in high me	7.26	mg	955012	3821
Soft solder				supplier	solder	Silver (Ag)	7440-22-4		0.19	mg	24993	100
Soft solder				supplier	solder	Tin (Sn)	7440-31-5		0.152	mg	19995	80
Bonding wire	Other inorganic materials	0.615	mg	supplier	wire	Aluminium (Al)	7429-90-5		0.614	mg	998374	323
Bonding wire				supplier	wire	Magnesium (Mg)	7439-95-4		0.001	mg	1626	1
encapsulation	Other Organic Materials	661.948	mg	supplier	mold compound	Silica, vitreous	60676-86-0		575.894	mg	869999	303102
encapsulation				supplier	mold compound	Epoxy resin	25068-38-6		66.195	mg	100000	34839
encapsulation				supplier	mold compound	Phenol resin	29690-82-2		16.549	mg	25000	8710
encapsulation				supplier	mold compound	Carbon Black	1333-86-4		3.31	mg	5000	1742
connections coating	Solder	6.362	mg	supplier	solder alloy	Tin (Sn)	7440-31-5		6.362	mg	1000000	3348