



## 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

<b>Supplier Information</b>			
<b>Company Name *</b>	STMicroelectronics	<b>Response Date *</b>	2015-08-03
<b>Contact Name *</b>	Refer to Supplier Comment section		Refer to Supplier Comment section
<b>Authorized Representative *</b>	Giovanni Giacopello	<b>Representative Title</b>	IPD 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.

<b>Legal Statement</b>			
<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
	TS4L*VJ86B52	A	SH1A	2015-08-03
Amount	UoM	Unit type	ST ECOPACK Grade	
1640.00	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	
NAC	Tin (Sn), matte, annealed	Copper Alloy		

Package Designator	Size	Nbr of instances	Shape	
DIP	10.2 - 16.15 - 4.5	3	Through-hole	
Comment	Package: TO220 FP ULTRA NARROW LEAD; MDF valid for STFU15N80K5			

QueryList : ROHS directive 2011/65/EU _ July 2011	
Query	Response
1 - Product(s) meets EU RoHS requirement without any exemptions	false
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)	true
4 - Product(s) does not meet EU RoHS requirements and is not under exemptions	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
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	TS4L*VJ86852					
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	16.437	mg	supplier	die	Silicon (Si)	7440-21-3		15.752	mg	958326	9605
				supplier	metallization	Aluminium (Al)	7429-90-5		0.222	mg	13506	135
				supplier	Passivation	Silicon Nitride	12033-89-5		0.074	mg	4502	45
				supplier	Passivation	Silicon Oxide	7631-86-9		0.118	mg	7179	72
				supplier	back side metallization	Titanium (Ti)	7440-32-6		0.008	mg	487	5
				supplier	back side metallization	Nickel (Ni)	7440-02-0		0.107	mg	6510	65
				supplier	back side metallization	Silver (Ag)	7440-22-4		0.038	mg	2312	23
				supplier	glass coating	Glass: Silicon Dioxide	7631-86-9		0.118	mg	7179	72
Leadframe	Copper & its alloys	583.782	mg	supplier	alloy	Copper (Cu)	7440-50-8		580.206	mg	993874	353784
				supplier	alloy	Iron (Fe)	7439-89-6		0.581	mg	995	354
				supplier	alloy	Iron Phosphide (FeP)	26508-33-8		0.174	mg	298	106
				supplier	metallization	Nickel (Ni)	7440-02-0		2.804	mg	4803	1710
				supplier	metallization	Phosphorus (P)	12185-10-3		0.017	mg	29	10
				supplier	metallization	Lead (Pb)	7439-92-1	7a-Lead in high mel	13.918	mg	955054	8487
Soft solder	Solder	14.573	mg	JIG - R	solder	Lead (Pb)	7439-92-1	7a-Lead in high mel	13.918	mg	955054	8487
				supplier	solder	Silver (Ag)	7440-22-4		0.364	mg	24978	222
				supplier	solder	Tin (Sn)	7440-31-5		0.291	mg	19968	177
Bonding wires	Other Organic Materials	1.228	mg	supplier	wire	Aluminium (Al)	7429-90-5		1.227	mg	999186	748
				supplier	wire	Magnesium (Mg)	7439-95-4		0.001	mg	814	1
Encapsulation	Other Organic Materials	1018.928	mg	supplier	mold compound	Quartz	14808-60-7		713.250	mg	700000	434909
				supplier	mold compound	Silica, vitreous	60676-86-0		76.419	mg	74999	46597
				supplier	mold compound	Epoxy resin	25068-38-6		142.650	mg	140000	86982
				supplier	mold compound	phenol resin	29690-82-2		71.325	mg	70000	43491
				supplier	mold compound	metal hydroxide	Proprietary		10.189	mg	10000	6213
				supplier	mold compound	carbon black	1333-86-4		5.095	mg	5000	3107
connections coating	Solder	5.052	mg	supplier	solder alloy	Tin (Sn)	7440-31-5		5.052	mg	1000000	3080