



## Materials Declaration Form

<b>IPC</b>	<b>1752</b>	<b>Version</b>	<b>2</b>
<b>Form Type *</b>	<b>Distribute</b>		
<b>Sectionals *</b>	<b>Material Info</b> <b>Manufacturing Info</b>	<b>Subsectionals *</b>	<b>A-D</b>

\*: Required Field

Supplier Information			
<b>Company Name *</b>	<b>STMicroelectronics</b>	<b>Response Date *</b>	<b>2018-05-02</b>
<b>Contact Name *</b>	Refer to Supplier Comment section	<b>Contact Email *</b>	Refer to Supplier Comment section
<b>Contact Phone *</b>	Refer to Supplier Comment section	<b>Authorized Representative *</b>	Refer to Supplier Comment section
<b>Authorized Representative *</b>	<b>Rossana Bonaccorso</b>	<b>Representative Title</b>	<b>ADG MD Champion</b>
<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**

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**Legal Statement**

<b>Supplier Acceptance *</b>	<b>true</b>	<b>Legal Declaration *</b>	<b>Standard</b>
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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
		A	998G	2018-05-02
Amount	UoM	Unit type	ST ECOPACK Grade	
4430	mg	Each	ECOPACK2	
	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
NA	NA	NA		
bulk Solder Termination	Terminal Plating	Terminal Base Alloy	Comment	
NA	Tin (Sn), matte	Copper Alloy		

Package Designator	Size	Nbr of instances	Shape	
QFN	15.75-20.15-5.15	3	Through-hole	
Comment	Package: TO 247 - MDF valid for BOM: 1F134509 - RLS: HFLW*W05B102 - HFLW*W21B102 - JFLW*W21B102			

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	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 : California Prop65 list, dated 15th December 2017			
Query			Response
1 - The product does not contain identified substance from California Prop 65 List, no exposure to consumers is foreseen			FALSE
2 - The product is containing below substance(s) from California Prop 65 List, no exposure to consumers is foreseen			TRUE
Substance	amount in product (mg)	Application	ppm in product
Nickel	1.08	Die - Leadframe	244
Lead	21.30	Soft solder	4808

QueryList : REACH-15th January 2018				
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
2 - Product(s) does not contain REACH Substances Of Very High Concern in any Embedded article nor Homogeneous Material above the limits per the definition within REACH				true
CategoryLevel_Name	CategoryLevel_Threshold	Amount in Embedded Article / Homogeneous Material (mg)	Application - Article / Homogeneous Material	ppm in Article /Homogeneous Material

Material Composition Declaration : note : Substance present with less 0.001mg will not be declared in this document						Mfr Item Name	HFLW*W05B102					
Homogeneous Material	Material Group	Mass	UoM	Level	Substance Category	Substance	CAS	Exempt	Mass	UoM	Concentration in homogeneous material (ppm)	Concentration in product (ppm)
Die	M-011 Other inorganic materials	35.951	mg	supplier	die	Silicon (Si)	7440-21-3		34.857	mg	969570	7868
				supplier	metallization	Aluminium (Al)	7429-90-5		0.505	mg	14047	114
				supplier	Passivation	Silicon Oxide	7631-86-9		0.099	mg	2754	22
				supplier	back side metallization	Titanium (Ti)	7440-32-6		0.012	mg	334	3
				supplier	back side metallization	Gold (Au)	7440-57-5		0.036	mg	1001	8
				supplier	back side metallization	Nickel (Ni)	7440-02-0		0.166	mg	4617	37
				supplier	polymer die coating	Propimide	Proprietary		0.276	mg	7677	62
Leadframe	M-004 Copper and its alloys	2826.183	mg	supplier	alloy	Copper (Cu)	7440-50-8		2821.521	mg	998350	636912
				supplier	alloy	Iron (Fe)	7439-89-6		2.825	mg	1000	638
				supplier	alloy	Iron Phosphide (FeP)	26508-33-8		0.848	mg	300	191
				supplier	metallization	Nickel (Ni)	7440-02-0		0.915	mg	324	207
				supplier	metallization	Phosphorus (P)	7723-14-0		0.074	mg	26	17
Soft solder	Solder	22.302	mg	JIG - R	solder	Lead (Pb)	7439-92-1	7a-Lead in high mel	21.298	mg	954982	4808
				supplier	solder	Silver (Ag)	7440-22-4		0.558	mg	25020	127
				supplier	solder	Tin (Sn)	7440-31-5		0.446	mg	19998	101
Bonding wires	M-011 Other inorganic materials	10.288	mg	supplier	wire	Aluminium (Al)	7429-90-5		10.288	mg	1000000	2322
Encapsulation	M-011 Other inorganic materials	1525.980	mg	supplier	mold compound	Silica, vitreous	60676-86-0		1327.602	mg	870000	299684
				supplier	mold compound	Epoxy resin	25068-38-6		152.598	mg	100000	34447
				supplier	mold compound	Phenol resin	29690-82-2		38.150	mg	25000	8612
				supplier	mold compound	Carbon Black	1333-86-4		7.630	mg	5000	1722
Connections coating	Solder	9.296	mg	supplier	solder alloy	Tin (Sn)	7440-31-5		9.296	mg	1000000	2098