



## 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>	2019-01-07
<b>Company Unique ID</b>	NL 008751171B01		
<b>Contact Name *</b>	Refer to Supplier Comment section		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 Giapello	<b>Representative Title</b>	ADG 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**


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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
VND5E004A-E	APVN*VH21AAZ	A	996G	2019-01-07
	Amount	UoM	Unit type	ST ECOPACK Grade
	835	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
3	260	3		
Bulk Solder Termination	Terminal Plating	Terminal Base Alloy	Comment	
Not Applicable	Tin (Sn), matte, annealed	Copper Alloy		

Package Designator	Size	Nbr of instances	Shape	
QFP	12 -12 - 2.1	24	gull wing	
Comment	Package: QFPN Power 12x12x2.1 24L Pth 0.9			

QueryList : RoHS Directive 2011/65/EU-July 2011 – Annex II amended by Directive 2015/863-March 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 : ELV directive : 2000/53/EC amended 2017/2096 _November 2017	
Query	Response
1 - Product(s) meets EU ELV requirements without any exemptions	FALSE
2 - Product(s) meets EU RoHS requirements by application of the selected exemption(s)	TRUE
Exemption Id.	Description
8e	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead)

QueryList : California Prop65 list, dated 28th June 2019			
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	0.16	Die	196
Lead	8.50	Soft solder	10183

QueryList : REACH-16th July 2019				
Query				Response
1 - Product(s) does not contain REACH Substances Of Very High Concern above the limits per the definition within REACH				FALSE
CategoryLevel_Name	CategoryLevel_Threshold	amount in product (mg)	Application	ppm in product
Lead	1000 ppm	8.50	Soft solder	10183
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				FALSE
CategoryLevel_Name	CategoryLevel_Threshold	Amount in Embedded Article / Homogeneous Material (mg)	Application - Article / Homogeneous Material	ppm in Article /Homogeneous Material
Lead	1000 ppm	8.50	Soft solder	955071

Material Composition Declaration : note : Substance present with less 0.001mg will not be declared in this document						Mfr Item Name	APVN*VH21AAZ					
Homogeneous Material	Material Group	Mass	UoM	Level	Substance Category	Substance	CAS	Exempt	Mass	UoM	Concentration in homogeneous material (ppm)	Concentration in product (ppm)
Dies	M-011 Other inorganic materials	25.689	mg	supplier	die	Silicon (Si)	7440-21-3		24.082	mg	937444	28841
				supplier	metallization	Aluminium (Al)	7429-90-5		0.148	mg	5761	177
				supplier	metallization	Copper (Cu)	7440-50-8		0.198	mg	7708	237
				supplier	metallization	Titanium (Ti)	7440-32-6		0.628	mg	24446	752
				supplier	Passivation	Silicon Nitride	12033-89-5		0.114	mg	4438	137
				supplier	Passivation	Silicon Oxide	7631-86-9		0.308	mg	11990	369
				supplier	back side metallization	Titanium (Ti)	7440-32-6		0.012	mg	467	14
				supplier	back side metallization	Gold (Au)	7440-57-5		0.035	mg	1362	42
				supplier	back side metallization	Nickel (Ni)	7440-02-0		0.164	mg	6384	196
				Leadframe	M-004 Copper and its alloys	316.124	mg	supplier	alloy	Copper (Cu)	7440-50-8	
supplier	alloy	Iron (Fe)	7439-89-6						7.430	mg	23502	8898
supplier	alloy	Iron Phosphide (FeP)	26508-33-8						0.261	mg	826	313
supplier	alloy	Zinc (Zn)	7440-66-6						0.395	mg	1250	473
supplier	metallization	Silver (Ag)	7440-22-4						3.275	mg	10360	3922
supplier	glue	Silver (Ag)	7440-22-4						0.604	mg	798942	723
Die attach		0.756	mg	supplier	glue	Bisphenol F type epoxy resin	9003-36-5		0.060	mg	79366	72
				supplier	glue	Epoxy resin	68475-94-5		0.023	mg	30423	28
				supplier	glue	2,6-Diglycidyl phenyl allyl ether	EC 417-470-1		0.023	mg	30423	28
				supplier	glue	Gamma Butyrolactone	96-48-0		0.023	mg	30423	28
				supplier	glue	Polyoxypropylenediamine	9046-10-0		0.023	mg	30423	28
				Soft solder	Solder	8.903	mg	SVHC	solder	Lead (Pb)	7439-92-1	7a-Lead in high mel
supplier	solder	Silver (Ag)	7440-22-4						0.222	mg	24935	266
supplier	solder	Tin (Sn)	7440-31-5						0.178	mg	19994	211
supplier	wire	Gold (Au)	7440-57-5						0.406	mg	1000000	486
Bonding wires 1	M-008 Precious metals	0.406	mg	supplier	wire	Aluminium (Al)	7429-90-5		7.596	mg	1000000	9097
Bonding wires 2	M-003 Aluminum and its alloys	7.596	mg	supplier	wire	Aluminium (Al)	7429-90-5		7.596	mg	1000000	9097
Encapsulation	M-011 Other inorganic materials	468.676	mg	supplier	mold compound	Silica Fused	60676-86-0		434.463	mg	927001	520315
				supplier	mold compound	Epoxy Resin	Proprietary		23.434	mg	50000	28065
				supplier	mold compound	Phenol Resin	Proprietary		9.373	mg	19999	11225
				supplier	mold compound	Carbon Black	1333-86-4		1.406	mg	3000	1684
connections coating	Solder	6.850	mg	supplier	solder alloy	Tin (Sn)	7440-31-5		6.850	mg	1000000	8204