



Materials Declaration Form

IPC Form Type *	1752 Distribute	Version	2
Sectionals *	Material Info Manufacturing Info	Subsectionals *	A-D <i>* : Required Field</i>

Supplier Information			
Company Name *	STMicroelectronics	Response Date *	2020-02-14
Company Unique ID	NL 008751171B01		
Contact Name *	Refer to Supplier Comment section		Refer to Supplier Comment section
Contact Phone *	Refer to Supplier Comment section	Contact Email *	Refer to Supplier Comment section
Authorized Representative *	Floriana SAN BIAGIO	Representative Title	AMS MD CHAMPION
Representative Phone *	Refer to Supplier Comment section	Representative Email *	Refer to Supplier Comment section
Supplier Comment	Online Technical Support - STMicroelectronics : http://www.st.com/web/en/support/support.html		

Uncertainty Statement


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Legal Statement	
Supplier Acceptance *	true
Legal Declaration *	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
	RFL*U1N4AA5	A	Z8GA	2020-02-14
Amount	UoM	Unit type	ST ECOPACK Grade	
123.7	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
1	260	3		
Bulk Solder Termination	Terminal Plating	Terminal Base Alloy	Comment	
Not Applicable	Tin (Sn), matte, annealed	Copper Alloy	0	

Package Designator	Size	Nbr of instances	Shape	
SOT	6.5 x 3.5	3	gull wing	
Comment	LL SOT 223; MDF is valid for LDL1117512R			

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	TRUE
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)	FALSE
4 - Product(s) does not meet EU RoHS requirements and is not under exemptions	FALSE
Exemption Id.	Description

QueryList : ELV directive : 2000/53/EC amended 2017/2096 _November 2017	
Query	Response
1 - Product(s) meets EU ELV requirements without any exemptions	TRUE
2 - Product(s) meets EU RoHS requirements by application of the selected exemption(s)	FALSE
Exemption Id.	Description

QueryList : California Prop65 list, dated 3rd January 2020			
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
Lead	0.01	leadframe	105

QueryList : REACH-16th January 2020				
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
,			,	

QueryList : Korea Chemical Control Act_ 27 Dec 2017 update				
Query				Response
The Product does contain at least one of the substances listed in Chemical Control Act				NO
Substance	Homogeneous Material impacted	Content in Homogeneous Material (mg)	Concentration in the material(%)	Application Purpose

Material Composition Declaration : note : Substance present with less 0.001mg will not be declared in this document						Mfr Item Name	RFL*U1N4AAS				6998810.0	999379.0
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	0.523	mg	supplier	die	Silicon(Si)	7440-21-3		0.498	mg	952199	4026
				supplier	metallisation	Aluminium(Al)	7429-90-5		0.005	mg	9560	40
				supplier	metallisation	Tungsten(W)	7440-33-7		0.004	mg	7648	32
				supplier	Passivation	Silicon nitride(SiN)	12033-89-5		0.001	mg	1912	8
				supplier	passivation	Silicon oxide	7631-86-9		0.009	mg	17208	73
				supplier	polymer coating	polyimide	proprietary		0.006	mg	11472	49
Leadframe	M-002 Other ferrous alloys, non-stainless steels	67.203	mg	supplier	alloy & coating	Copper(Cu)	7440-50-8		65.368	mg	972695	528440
				supplier	alloy & coating	Iron(Fe)	7439-89-6		1.681	mg	25014	13589
				supplier	alloy & coating	Zinc(Zn)	7440-66-6		0.067	mg	997	542
				supplier	alloy & coating	Silver (Ag)	7440-22-4		0.007	mg	104	57
Die attach	M-015 Other organic materials	0.078	mg	supplier	glue	Aluminum oxide, fibrous	1344-28-1		0.039	mg	500000	315
				supplier	glue	Diethylene glycol monoethyl ether acetate	112-15-2		0.017	mg	217949	137
				supplier	glue	Epoxy resin-1	29690-82-2		0.008	mg	102564	65
				supplier	glue	Epoxy resin-2	Proprietary		0.008	mg	102564	65
				supplier	glue	Epoxy resin-3	Proprietary		0.004	mg	51282	32
				supplier	glue	Dapsone	80-08-0		0.002	mg	25641	16
Die attach 2	M-015 Other organic materials	0.077	mg	supplier	glue	Silica, vitreous	60676-86-0		0.046	mg	597403	372
				supplier	glue	Epoxy resin	29690-82-2		0.015	mg	194805	121
				supplier	glue	Epoxy resin modifier	Proprietary		0.015	mg	194805	121
				supplier	glue	Guanidine derivative	Proprietary		0.001	mg	12987	8
Bonding wires	M-004 Copper and its alloys	0.117	mg	supplier	wire	Copper (Cu)	7440-50-8		0.117	mg	1000000	946
Encapsulation	M-015 Other organic materials	52.832	mg	supplier	mold compound	Epoxy Resin A	29690-82-2		0.793	mg	15010	6411
				supplier	mold compound	Epoxy Resin B	Proprietary		0.793	mg	15010	6411
				supplier	mold compound	Phenol Resin	25068-38-6		2.113	mg	39995	17082
				supplier	mold compound	Catalyst	Proprietary		0.265	mg	5016	2142
				supplier	mold compound	Carbon Black	1333-86-4		0.106	mg	2006	857
				supplier	mold compound	Amorphous silica	60676-86-0		46.649	mg	882969	377114
connections coating	Solder	2.873	mg	supplier	mold compound	Crystal silica	14808-60-7		2.113	mg	39995	17082
				supplier	solder alloy	Tin (Sn)	7440-31-5		2.873	mg	1000000	23226