



Materials Declaration Form

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

Supplier Information			
Company Name *	STMicroelectronics	Response Date *	2018-07-30
Company Unique ID	NL 008751171B01		
Contact Name *	BELIGNI ROBERTA	Contact Title	DMA Material Declaration Champion
Supplier Comment	Online Technical Support - STMicroelectronics : http://www.st.com/web/en/support/support.html		

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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
SPEAR310-2	8H4L*V590BCQ	B	9991	2018-07-30
	Amount	UoM	Unit type	ST ECOPACK Grade
	588.0	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			

Manufacturing information			
J-STD-020 MSL Rating	Classification Temp	Nbr of Reflow Cycles	
3	260	3	
bulk Solder Termination	Terminal Plating	Terminal Base Alloy	Comment
Tin/Silver (Sn96.5/Ag3.5)	Not Applicable	Copper Alloy	1F135897



Package Designator	Size	Nbr of instances	Shape
BGA	155QX1.7	289	bulk solder
Comment	4L LFBGA 155QX1.7 289 F17 P0.8 B0.5		

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 requirement without any exemptions	TRUE
2 - Product(s) meets EU ELV requirements by application of the selected exemption(s)	FALSE
Exemption Id.	Description

QueryList : California Prop65 list, dated 25th May 2018			
Query			Response
1 - The product does not contain identified substance from California Prop 65 List, no exposure to consumers is foreseen			TRUE
2 - The product is containing below substance(s) from California Prop 65 List, no exposure to consumers is foreseen			FALSE
Substance	amount in product (mg)	Application	ppm in product
Nickel	0.001	METALLISATION	2

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
;		0		
;				
2 - Product(s) does not contain REACH Substances Of Very High Concern in any Homogeneous Material above the limits per the definition within REACH				TRUE
CategoryLevel_Name	CategoryLevel_Threshold	Amount in Homogeneous Material (mg)	Application - Homogeneous Material	ppm in 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 present in device Homogeneous Material				
Substance	Homogeneous Material impacted	Concentration in the material(%)	Application Purpose	

Material Composition Declaration						Mfr Item Name	8H4L*V590BCQ		sub cat	subcat n	subcat n					
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	7.703	mg	supplier	die	Silicon (Si)	7440-21-3		7.261	mg	942620	12348				
				supplier	metallisation	Aluminium (Al)	7429-90-5		0.031	mg	4024	53				
				supplier	metallisation	Copper (Cu)	7440-50-8		0.185	mg	24017	315				
				supplier	metallisation	Nickel (Ni)	7440-02-0		0.001	mg	130	2				
				supplier	metallisation	Tantalum (Ta)	7440-25-7		0.031	mg	4024	53				
				supplier	metallisation	Titanium (Ti)	7440-32-6		0.008	mg	1039	14				
				supplier	metallisation	Tungsten (W)	7440-33-7		0.001	mg	130	2				
				supplier	Passivation	Silicon Nitride (SiN)	12033-89-5		0.042	mg	5452	71				
				supplier	passivation	Silicon Oxide	7631-86-9		0.143	mg	18564	243				
				substrate	M-015 Other organic materials	148.060	mg	supplier	BT-substrate	Continuous filament fiber glass	65997-17-3		50.570	mg	341551	85997
supplier	BT-substrate	Epoxy	7328-97-4						13.310	mg	89896	22634				
supplier	BT-substrate	Flame Resistant Epoxy Resin	Trade Secret						4.660	mg	31474	7925				
supplier	BT-substrate	Heat Resistant Resin	Trade Secret						2.660	mg	17966	4523				
supplier	BT-substrate	Inorganic Filler	Trade Secret						5.320	mg	35931	9047				
supplier	BT-substrate	Cu	7440-50-8						53.900	mg	364042	91660				
supplier	BT-substrate	Ni	7440-02-0						1.600	mg	10806	2721				
supplier	BT-substrate	Au	7440-57-5						1.060	mg	7159	1803				
supplier	Solder mask	Talc containing no asbestiform fiber	14807-96-6						12.140	mg	81994	20645				
supplier	Solder mask	Morpholine derivative	Trade Secret						1.200	mg	8105	2041				
supplier	Solder mask	Barium Sulfate	7727-43-7						0.550	mg	3715	935				
supplier	Solder mask	Silica, amorphous	7631-86-9						0.540	mg	3647	918				
supplier	Solder mask	Dipropylene glycol monomethyl ether	34590-94-8						0.550	mg	3715	935				
Die attach	M-015 Other organic materials	0.518	mg					supplier	Glue	Silver	7440-22-4		0.424	mg	820000	722
								supplier	Glue	Bismaleimide monomer	13676-54-5		0.052	mg	100000	88
								supplier	Glue	Epoxy resin	Trade Secret		0.026	mg	50000	44
								supplier	Glue	Additive	Trade Secret		0.010	mg	20000	18
				supplier	Glue	Silane	Trade Secret		0.005	mg	10000	9				
Bonding wire		4.500	mg	supplier	Bonding wire	Gold (Au)	7440-57-5		4.380	mg	973333	7448				
				supplier	Bonding wire	Palladium(Pd)	7440-05-3		0.120	mg	26667	204				
encapsulation	M-015 Other organic materials	316.470	mg	supplier	Molding Compou	Silica(Fused)	60676-86-0		284.830	mg	900022	484371				
				supplier	Molding Compou	Epoxy resin	Trade Secret		15.820	mg	49989	26903				
				supplier	Molding Compou	Phenol resin	Trade Secret		9.490	mg	29987	16138				
				supplier	Molding Compou	Carbon Black	1333-86-4		6.330	mg	20002	10765				
solder balls	Solder	110.790	mg	supplier	Solder ball	Tin (Sn)	7440-31-5		106.910	mg	964979	181807				
				supplier	Solder ball	Silver (Ag)	7440-22-4		3.880	mg	35021	6598				