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 ***	19-04-2023
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 *	Material Declaration champion	**Representative Title**	Material Declaration 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 omprehensive 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.

Signature Not Verified

Digitally signed by MDF Champion
Date: 2023.04.19 09:26:45 +08:00

Product

Mfr Item Number	Mfr Item Name	Version	Mfr Site	Date
STM32L451VEI6	23MJ*462XXXY	A	9991	19-04-2023
	Amount	UoM	**Unit type**	**ST ECOPACK Grade**
	64.00	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	
3	260	3	
bulk Solder Termination	**Terminal Plating**	**Terminal Base Alloy**	**Comment**
Not Applicable ; if coating is used or other bulk termaination : add in comments	NAC	Copper Alloy	**96.5Sn/3.5Ag**

Package Designator	Size	Nbr of instances	Shape	
BGA	7x7	100	bulk solder	
Comment	Package : A0C2 UFBGA 7x7x0.60 100L R12sq P0.5 8219030			

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	**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 : REACH-10 Jun 2022				
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 : note : Substance present with less 0.001mg will not be declared in this document						**Mfr Item Name**	**23MJ*462XXXY**				6000000.0	1000000.9
Homogeneous Material	**Material Group**	**Mass**	**UoM**	**Level**	**Substance Category**	**Substance**	**CAS**	**Exempt**	**Mass**	**UoM**	**Concentration in homogeneous material (ppm)**	**Concentration in product (ppm)**
Die or dies	M-011 Other inorganic materials	2.189	mg	supplier	die	Silicon (Si)	7440-21-3		1.765	mg	806304	27578
				supplier	metallization	Aluminium (Al)	7429-90-5		0.020	mg	9137	313
				supplier	metallization	Copper (Cu)	7440-50-8		0.180	mg	82229	2813
				supplier	metallization	Tantalum (Ta)	7440-25-7		0.058	mg	26496	906
				supplier	metallization	Titanium (Ti)	7440-32-6		0.002	mg	914	31
				supplier	metallization	Tungsten (W)	7440-33-7		0.002	mg	914	31
				supplier	Passivation	Silicon Nitride	12033-89-5		0.046	mg	21014	719
				supplier	Passivation	Silicon Oxide	7631-86-9		0.116	mg	52992	1813
Substrate (A286800)	M-011 Other inorganic materials	19.675	mg	supplier	BT-substrate	Thermosetting resin (Inorganic filler)	Non-disclosure		1.181	mg	60000	18445
				supplier	BT-substrate	Glass cloth	65997-17-3		7.299	mg	371000	114054
				supplier	BT-substrate	Copper foil	7440-50-8		8.991	mg	457000	140492
				supplier	Solder mask	2-benzyl-2-dimethylamino-4-morpholinobutyr	119313-12-1		0.698	mg	35500	10913
				supplier	Solder mask	Naphtha (petroleum), heavy aromatic	64742-94-5		0.718	mg	36500	11221
				supplier	Solder mask	TALC (CONTAINING NO ASBESTOS FIBRES)	14807-96-6		0.659	mg	33500	10299
				supplier	Solder mask	1,3,5-Triazine-2,4,6-triamine	108-78-1		0.128	mg	6500	1998
DAF (ATB-125-12)	M-011 Other inorganic materials	3.201	mg	supplier	film	Butadiene, acrylonitrile polymer, carboxy-termi	68610-41-3		2.197	mg	686250	34323
				supplier	film	Formaldehyde, polymer with (chloromethyl)ox	37382-79-9		0.822	mg	256850	12847
				supplier	film	Dapsone	80-08-0		0.118	mg	36900	1846
				supplier	film	[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane	2530-83-8		0.032	mg	10000	500
				supplier	film	Reaction product: bisphenol-A-(epichlorhydrin)	25068-38-6		0.032	mg	10000	500
Bonding wire (CuPd)	Precious metals	0.401	mg	supplier	Bonding wire	Gold (Au)	7440-57-5		0.001	mg	3500	22
				supplier	Bonding wire	Copper (Cu)	7440-50-8		0.387	mg	965500	6049
				supplier	Bonding wire	Palladium (Pd)	7440-05-3		0.012	mg	31000	194
Encapsulation (G1250AAS)	M-011 Other inorganic materials	36.102	mg	supplier	Molding Compound	Epoxy resin	Trade secret		1.444	mg	40000	22564
				supplier	Molding Compound	Silica(Fused)	60676-86-0,7631-86-9		32.492	mg	900000	507684
				supplier	Molding Compound	Phenol resin	Trade secret		2.022	mg	56000	31589
				supplier	Molding Compound	Carbon Black	1333-86-4		0.144	mg	4000	2256
Solderballs (96.5Sn 3.5Ag)	Solder	2.432	mg	supplier	Solder	Tin (Sn)	7440-31-5		2.346	mg	964500	36651