



Materials Declaration Form

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

Supplier Information			
Company Name *	STMicroelectronics	Response Date *	2019-07-03
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 *	Giovanni Giacopello	Representative Title	ADG 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
STF46N60M6	X2FP*BQ6LB6F	A	998G	2019-07-03
	Amount	UoM	Unit type	ST ECOPACK Grade
	1900	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
Not Applicable	Not Applicable	3		
Bulk Solder Termination	Terminal Plating	Terminal Base Alloy	Comment	
Not Applicable	Nickel/Palladium/Gold (Ni/Pd/Au)	Copper Alloy	DM00611551	

Package Designator	Size	Nbr of instances	Shape	
SIP	10,2,16,15,4,5	3	0	
Comment	TO 220 ISO FULL PACK IN LINE			

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	2.00	Die - Leadframe	1052
Lead	10.53	Soft solder	5541

QueryList : REACH-15th January 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	10.53	Soft solder	5541
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	10.527	Soft solder	920273

Material Composition Declaration : note : Substance present with less 0.001mg will not be declared in this document						Mfr Item Name	X2FP*BG6L86F					
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	18.121	mg	supplier	die	Silicon(Si)	7440-21-3		16.216	mg	894873	8535
				supplier	metallisation	Aluminium(Al)	7429-90-5		0.423	mg	23343	223
				supplier	metallisation	Copper(Cu)	7440-50-8		0.156	mg	8610	82
				supplier	metallisation	Nickel(Ni)	7440-02-0		1.084	mg	59820	571
				supplier	metallisation	Silver(Ag)	7440-22-4		0.110	mg	6070	58
				supplier	metallisation	Titanium(Ti)	7440-32-6		0.027	mg	1490	14
				supplier	Passivation	Silicon nitride(SiN)	12033-89-5		0.097	mg	5353	51
				supplier	passivation	Silicon oxide	7631-86-9		0.008	mg	441	4
Leadframe	M-004 Copper and its alloys	606.170	mg	supplier	alloy & coating	Copper(Cu)	7440-50-8		604.468	mg	997192	318141
				supplier	alloy & coating	Nickel(Ni)	7440-02-0		0.915	mg	1509	482
				supplier	alloy & coating	Iron(Fe)	7439-89-6		0.605	mg	999	318
				supplier	alloy & coating	Iron Phosphide(FeP)	26508-33-8		0.182	mg	300	96
Soft solder	Solder	11.439	mg	SVHC	solder	Lead(Pb)	7439-92-1	7a-Lead in high melting temper	10.527	mg	920273	5540
				supplier	solder	Silver(Ag)	7440-22-4		0.570	mg	49830	300
				supplier	solder	Tin(Sn)	7440-31-5		0.285	mg	24914	150
				supplier	solder	Flux residue	proprietary		0.057	mg	4983	30
Bonding wires	M-003 Aluminum and its alloys	3.661	mg	supplier	wire	Aluminium (Al)	7429-90-5		3.661	mg	1000000	1927
Bonding wires 2	M-003 Aluminum and its alloys	0.152	mg	supplier	wire	Aluminium (Al)	7429-90-5		0.152	mg	1000000	80
Encapsulation	M-011 Other inorganic materials	1254.591	mg	supplier	mold compound	Quartz	14808-60-7		940.943	mg	750000	495233
				supplier	mold compound	Silica vitreous	60676-86-0		69.003	mg	55000	36317
				supplier	mold compound	Epoxy type resin	proprietary		125.459	mg	100000	66031
				supplier	mold compound	Phenol type resin	proprietary		87.821	mg	70000	46222
				supplier	mold compound	Metal hydroxide	proprietary		25.092	mg	20000	13206
connections coating	Solder	5.866	mg	supplier	mold compound	Carbon black	1333-86-4		6.273	mg	5000	3302
				supplier	solder alloy	Tin (Sn)	7440-31-5		5.866	mg	1000000	3087