



Materials Declaration Form

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

** : Required Field*

Supplier Information			
Company Name *	STMicroelectronics	Response Date *	2018-09-17
Contact Name *	Refer to Supplier Comment section		Refer to Supplier Comment section
Authorized Representative *	Rossana Bonaccorso	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


While STMicroelectronics has endeavored to provide information which is accurate and up to date, this document and its contents are provided on a strict 'as is' and 'as available' basis. STMicroelectronics disclaims all warranties, express or implied related to this document and its contents, including but not limited to implied warranties of completeness, truth, accuracy, merchantability, fitness for a particular purpose and non-infringement. ST shall have no responsibility and assumes no liability for any cost, loss or damage of any kind which could arise, directly or indirectly, from the use or inability to use this document and/or its contents.

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
STW88N65M5-4	TSTM*M5F9B5F	A	998G	2018-09-17
	Amount	UoM	Unit type	ST ECOPACK Grade
	4430.00	mg	Each	ECOPACK2

Manufacturing information				
J-STD-020 MSL Rating	Classification Temp	Nbr of Reflow Cycles		 life.augmented
NA	NA	NA		
bulk Solder Termination	Terminal Plating	Terminal Base Alloy	Comment	
NA	Tin (Sn), matte	Copper Alloy		

Package Designator	Size	Nbr of instances	Shape	
SIP	15.75-20.15-5.15	3	Through hole	
Comment	TO247-4			

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 25th May 2018			
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	11.64	Die - Leadframe	2627

QueryList : REACH-27th June 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
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

Material Composition Declaration : note : Substance present with less 0.001mg will not be declared in this document						Mfr Item Name	TSTM*M5F9B5F					
Homogeneous Material	Material Group	Mass	UoM	Level	Substance Category	Substance	CAS	Exempt	Mass	UoM	Concentration in homogeneous material (ppm)	Concentration in product (ppm)
Die	Other inorganic materials	48.238	mg	supplier	die	Silicon (Si)	7440-21-3		46.250	mg	958788	10440
				supplier	metallization	Aluminium (Al)	7429-90-5		0.861	mg	17849	194
				supplier	metallization	Copper (Cu)	7440-50-8		0.318	mg	6592	72
				supplier	metallization	Silver (Ag)	7440-22-4		0.112	mg	2322	25
				supplier	metallization	Titanium (Ti)	7440-32-6		0.032	mg	663	7
				supplier	Passivation	Silicon Nitride	12033-89-5		0.199	mg	4125	45
				supplier	Passivation	Silicon Oxide	7631-86-9		0.016	mg	332	4
				supplier	back side metallization	Titanium (Ti)	7440-32-6		0.022	mg	456	5
				supplier	back side metallization	Nickel (Ni)	7440-02-0		0.316	mg	6551	71
				supplier	back side metallization	Silver (Ag)	7440-22-4		0.112	mg	2322	25
Leadframe	Copper & its alloys	2836.516	mg	supplier	alloy	Copper (Cu)	7440-50-8		2821.522	mg	994714	636912
				supplier	alloy	Iron (Fe)	7439-89-6		1.300	mg	458	293
				supplier	alloy	Iron Phosphide (FeP)	26508-33-8		2.373	mg	837	536
				supplier	metallization	Nickel (Ni)	7440-02-0		11.321	mg	3991	2556
Soft solder	Solder	40.864	mg	supplier	solder	Tin (Sn)	7440-31-5		26.562	mg	650010	5996
				supplier	solder	Silver (Ag)	7440-22-4		10.216	mg	250000	2306
				supplier	solder	Antimony (Sb)	7440-36-0		4.086	mg	99990	922
Bonding wires	Other inorganic materials	9.645	mg	supplier	wire	Aluminium (Al)	7429-90-5		9.645	mg	1000000	2177
				supplier	alloy	Iron (Fe)	7439-89-6		1.300	mg	458	293
Encapsulation	Other Organic Materials	1485.441	mg	supplier	mold compound	Silica, vitreous	60676-86-0		1114.081	mg	750000	251486
				supplier	mold compound	epoxy resin	29690-82-2		103.981	mg	70000	23472
				supplier	mold compound	phenol resin	9003-35-4		37.136	mg	25000	8384
				supplier	mold compound	metal hydroxide	21645-51-2		222.816	mg	150000	50297
				supplier	mold compound	Carbon black	1333-86-4		7.427	mg	5000	1677
Connections coating	Solder	9.296	mg	supplier	solder alloy	Tin (Sn)	7440-31-5		9.296	mg	1000000	2098