



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 *	2018-09-14
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 *	Giovanni Giapello	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		

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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
TESEO-LIV3F	A09C*VB18BFV	A	996G	2018-09-14
	Amount	UoM	Unit type	ST ECOPACK Grade
	474.00	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		 life.augmented
Not Applicable	Not Applicable	Not Applicable		
Bulk Solder Termination	Terminal Plating	Terminal Base Alloy	Comment	
Not Applicable	Not Applicable	Not Applicable		

Package Designator	Size	Nbr of instances	Shape	
Mounted BOARD	100 - 95 - 2	Not Applicable	flat	
Comment				

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	40.72	Total content in all homogeneous materials	85905	

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
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	A09C*VB188FV					
Homogeneous Material	Material Group	Mass	UoM	Level	Substance Category	Substance	CAS	Exempt	Mass	UoM	Concentration in homogeneous material (ppm)	Concentration in product (ppm)
PCB	M-011 Other inorganic materials	204.489	mg	supplier	alloy	Copper (Cu)	7440-50-8		57.183	mg	279639	120639
				supplier	substrate	Epoxy resin	25068-38-6		58.308	mg	285140	123013
				supplier	substrate	Fiber glass	65997-17-3		65.469	mg	320159	138120
				supplier	substrate	Barium sulfate	7727-43-7		6.138	mg	30016	12949
				supplier	substrate	Acrylated epoxy resin	proprietary		14.322	mg	70038	30215
				supplier	metallization	Nickel (Ni)	7440-02-0		1.022	mg	4998	2156
				supplier	metallization	Gold (Au)	7440-57-5		2.047	mg	10010	4319
				supplier	alloy	Nickel (Ni)	7440-02-0		0.616	mg	134000	1300
				supplier	alloy	Cobalt (Co)	7440-48-4		0.361	mg	78529	762
				supplier	alloy	Iron (Fe)	7439-89-6		0.217	mg	47205	458
Crystal 1	M-011 Other inorganic materials	4.597	mg	supplier	alloy	Manganese	7439-96-5		0.006	mg	1307	19
				supplier	ceramic	Aluminum oxide	1344-28-1		1.975	mg	429628	4167
				supplier	ceramic	Manganese oxide	1317-34-6		0.070	mg	15227	148
				supplier	ceramic	Silicon dioxide	14808-60-7		0.070	mg	15227	148
				supplier	ceramic	Molybdenum oxide	1313-27-5		0.010	mg	2175	21
				supplier	metallization	Molybdenum	7439-98-7		0.571	mg	124211	1205
				supplier	metallization	Nickel (Ni)	7440-02-0		0.130	mg	28279	274
				supplier	plating	Gold (Au)	7440-57-5		0.040	mg	8701	84
				supplier	solder alloy	Silver (Ag)	7440-22-4		0.281	mg	61127	593
				supplier	solder alloy	Copper (Cu)	7440-50-8		0.050	mg	10877	105
				supplier	adhesive	Silver (Ag)	7440-22-4		0.174	mg	37851	367
				supplier	adhesive	Silicon dioxide	7631-86-9		0.026	mg	5656	55
				supplier	Die	Silicon (Si)	7440-21-3		2.233	mg	855228	4711
				supplier	polymer	Y-Butyrolactone	96-48-0		0.022	mg	8426	46
				supplier	polymer	1-Methoxy-2-propyl acetate	108-65-6		0.002	mg	766	4
				supplier	RDL metallization	Titanium (Ti)	7440-32-6		0.011	mg	4213	23
				supplier	RDL metallization	Tungsten (W)	7440-33-7		0.002	mg	766	4
				supplier	RDL metallization	Copper (Cu)	7440-50-8		0.122	mg	46725	257
supplier	solder	Tin (Sn)	7440-32-6		0.210	mg	80429	443				
supplier	solder	Silver (Ag)	7440-22-4		0.008	mg	3064	17				
supplier	solder	Copper (Cu)	7440-50-8		0.001	mg	383	2				
Crystal 2	M-011 Other inorganic materials	9.958	mg	supplier	alloy	Nickel (Ni)	7440-02-0		0.830	mg	83350	1751
				supplier	alloy	Cobalt (Co)	7440-48-4		0.480	mg	48202	1013
				supplier	alloy	Iron (Fe)	7439-89-6		1.538	mg	154449	3245
				supplier	alloy	Manganese	7439-96-5		0.006	mg	603	13
				supplier	ceramic	Aluminum oxide	1344-28-1		4.310	mg	432818	9093
				supplier	ceramic	Manganese oxide	1317-34-6		0.160	mg	16067	338
				supplier	ceramic	Silicon dioxide	14808-60-7		0.150	mg	15063	316
				supplier	ceramic	Molybdenum oxide	1313-27-5		0.020	mg	2008	42
				supplier	metallization	Molybdenum	7439-98-7		0.842	mg	84555	1776
				supplier	metallization	Nickel (Ni)	7440-02-0		0.160	mg	16067	338
				supplier	plating	Gold (Au)	7440-57-5		0.060	mg	6028	127
				supplier	solder alloy	Silver (Ag)	7440-22-4		0.361	mg	36252	762
				supplier	solder alloy	Copper (Cu)	7440-50-8		0.077	mg	7732	162
				supplier	Die	Silicon (Si)	7440-21-3		0.344	mg	34545	726
				supplier	metallization	Aluminum (Al)	7429-90-5		0.001	mg	100	2
				supplier	metallization	Copper (Cu)	7440-50-8		0.001	mg	100	2
				supplier	resin	Epoxy resin	9003-36-5		0.338	mg	33943	713
				supplier	resin	4,4'-Methylene-bis(2-ethyl-aniline)	19900-65-3		0.067	mg	6728	141
supplier	resin	Silicon dioxide	7631-86-9		0.036	mg	3615	76				
supplier	quartz	Silicon dioxide	14808-60-7		0.177	mg	17775	373				
STAB090WG	M-011 Other inorganic materials	20.044	mg	supplier	die	Silicon (Si)	7440-21-3		10.198	mg	508781	21515
				supplier	metallisation	Aluminium (Al)	7429-90-5		0.030	mg	1497	63
				supplier	metallisation	Copper (Cu)	7440-50-8		0.179	mg	8930	378
				supplier	metallisation	Nickel (Ni)	7440-02-0		0.001	mg	51	2
				supplier	metallisation	Tantalum (Ta)	7440-25-7		0.030	mg	1497	63
				supplier	metallisation	Titanium (Ti)	7440-32-6		0.008	mg	399	17
				supplier	metallisation	Tungsten (W)	7440-33-7		0.001	mg	50	2
				supplier	Passivation	Silicon Nitride (SiN)	12033-89-5		0.041	mg	2045	86

				supplier	passivation	Silicon Oxide	7631-86-9		0.139	mg	6935	293
				supplier	die polymer coating	PIX1 Gamma-butyrolactone	96-48-0		1.484	mg	74037	3131
				supplier	UBM	Copper (Cu)	7440-50-8		0.076	mg	3792	160
				supplier	UBM	Titanium (Ti)	7440-32-6		0.001	mg	50	2
				supplier	RDL	Copper (Cu)	7440-50-8		0.533	mg	26591	1124
				supplier	resin	silica vitreous	60676-86-0		0.494	mg	24646	1042
				supplier	resin	Epoxy resin	Proprietary		0.178	mg	8880	376
				supplier	resin	Acrylic polymer	Proprietary		0.178	mg	8880	376
				supplier	resin	Bis-phenol A diglycidyl ether	25036-25-3		0.061	mg	3043	129
				supplier	resin	carbon black	1333-86-4		0.005	mg	249	11
				supplier	resin	Iron compound	7439-89-6		0.051	mg	2544	108
				supplier	resin	Zinc compound	7440-66-6		0.051	mg	2544	108
				supplier	solder alloy	Tin (Sn)	7440-31-5		6.026	mg	300639	12713
				supplier	solder alloy	Silver (Ag)	7440-22-4		0.240	mg	11974	506
				supplier	solder alloy	Copper (Cu)	7440-50-8		0.038	mg	1896	80
				JIG - R	solder alloy	Lead (Pb)	7439-92-1		0.001	mg	50	2
Resistor	M-011 Other inorganic materials	0.166	mg	supplier	Ceramics	Aluminium oxide	1344-28-1		0.131	1.572	789157	276
				supplier	Ceramics	Silicon dioxide	7631-86-9		0.002	0.024	12048	4
				supplier	Ceramics	Magnesium oxide	1309-48-4		0.002	0.024	12048	4
				supplier	Ceramics	Silver (Ag)	7440-22-4		0.002	0.024	12048	4
				supplier	Paste	Silver (Ag)	7440-22-4		0.003	0.036	18072	6
				supplier	Resistive Element	Ruthenium dioxide	12036-10-1		0.001	0.012	6025	2
				supplier	Nickel Plating	Nickel (Ni)	7440-02-0		0.013	0.156	78313	27
				supplier	Tin Plating	Tin (Sn)	7440-31-5		0.007	0.084	42169	15
				JIG-R & California 65	Overcoat	Glass frit	65997-18-4		0.001	0.012	6024	2
				supplier	Overcoat	Texanol	25265-77-4		0.001	0.012	6024	2
				supplier	Overcoat	Epoxy resin	25068-38-6		0.003	0.036	18072	6
Inductor 1	M-011 Other inorganic materials	5.925	mg	supplier	ceramic element	Iron oxide	1309-37-1		2.229	mg	376203	4703
				supplier	ceramic element	Zinc oxide	1314-13-2		0.705	mg	118987	1487
				supplier	ceramic element	Nickel oxide	1313-99-1		0.362	mg	61097	764
				supplier	ceramic element	Copper oxide	1317-38-0		0.324	mg	54684	684
				supplier	ceramic element	Tin dioxide	18282-10-5		0.362	mg	61097	764
				supplier	ceramic element	Manganese oxide	1317-34-6		0.038	mg	6413	80
				supplier	electrode	Silver (Ag)	7440-22-4		1.544	mg	260591	3257
				supplier	electrode passivation	Silicon Oxide	7631-86-9		0.057	mg	9620	120
				supplier	electrode metallisation	Nickel (Ni)	7440-02-0		0.133	mg	22447	281
				supplier	electrode metallisation	Tin	7440-31-5		0.171	mg	28861	361
Inductor 2	M-011 Other inorganic materials	1.302	mg	supplier	ceramic element	Aluminium oxide	1344-28-1		0.986	mg	757296	2080
				supplier	ceramic element	Silicon Oxide	7631-86-9		0.122	mg	93703	257
				supplier	ceramic element	Calcium oxide	1305-78-8		0.060	mg	46083	127
				supplier	electrode	Copper (Cu)	7440-50-8		0.104	mg	79877	219
				supplier	electrode metallisation	Silver (Ag)	7440-22-4		0.030	mg	23041	63
NSR05F30NXT5G	M-011 Other inorganic materials	0.446	mg	supplier	die	Silicon (Si)	7440-21-3		0.424	mg	950673	895
				supplier	metallisation	Nickel (Ni)	7440-02-0		0.021	mg	47085	44
				supplier	metallisation	Gold (Au)	7440-57-5		0.001	mg	2242	2
BAT30F4	M-011 Other inorganic materials	0.261	mg	supplier	die	Silicon (Si)	7440-21-3		0.241	mg	923372	508
				supplier	metallisation	Aluminium (Al)	7429-90-5		0.010	mg	38314	21
				supplier	metallisation	Nickel (Ni)	7440-02-0		0.002	mg	7663	4
				supplier	passivation	Silicon Oxide	7631-86-9		0.002	mg	7663	4
				supplier	die polymer coating	Durimide	proprietary		0.004	mg	15326	8
				supplier	UBM	Copper (Cu)	7440-50-8		0.001	mg	3831	2
				supplier	UBM	Nickel (Ni)	7440-02-0		0.001	mg	3831	2
Capacitors 1	M-011 Other inorganic materials	6.209	mg	supplier	Ceramics	Barium oxide, obtain	1304-28-5		2.756	mg	443872	5814
				supplier	Ceramics	Titanium dioxide	13463-67-7		1.295	mg	208568	2732
				supplier	Copper alloys	Copper	7440-50-8		1.087	mg	175068	2293
				SVHC	Glass	diaboron trioxide, bor	1303-86-2		0.030	mg	4833	63
				supplier	Glass	Silicon dioxide	7631-86-9		0.095	mg	15300	200
				supplier	metallization	Nickel	7440-02-0		0.111	mg	17877	234
				supplier	plating	Nickel	7440-02-0		0.533	mg	85843	1124
				supplier	Tin plating	Tin	7440-31-5		0.302	mg	48639	637
Capacitors 2	M-011 Other inorganic materials	1.554	mg	supplier	Ceramics	Zirconium oxide	1314-23-4		0.548	mg	352638	1156

				supplier	Ceramics	Calcium oxide	1305-78-8		0.439	mg	282497	926
				supplier	Nickel /Other Nickel alloy	Nickel	7440-02-0		0.296	mg	190476	624
				supplier	Copper alloys	Copper	7440-50-8		0.182	mg	117117	384
				SVHC	Glass	ðboron trioxide; bor	1303-86-2		0.016	mg	10296	34
				supplier	Glass	Silicon dioxide	7631-86-9		0.004	mg	2574	8
				supplier	Electrolytic Nickel Plating	Nickel	7440-02-0		0.019	mg	12227	40
				supplier	Electrolytic Tin plating	Tin	7440-31-5		0.050	mg	32175	105
Capacitors 3	M-011 Other inorganic materials	0.930	mg	supplier	Copper alloys	Copper	7440-50-8		0.217	mg	233333	458
				SVHC	Glass	ðboron trioxide; bor	1303-86-2		0.006	mg	6451	13
				supplier	Glass	Silicon dioxide	7631-86-9		0.018	mg	19355	38
				supplier	Nickel plating	Nickel	7440-02-0		0.021	mg	22581	44
				supplier	Nickel and Nickel alloys	Nickel	7440-02-0		0.027	mg	29032	57
				supplier	Tin plating	Tin	7440-31-5		0.060	mg	64516	127
				supplier	Ceramics	Calcium oxide	1305-78-8		0.259	mg	278495	546
				supplier	Ceramics	Zirconium oxide	1314-23-4		0.322	mg	346237	679
Shield	M-011 Other inorganic materials	215.508	mg	supplier	alloy	Copper (Cu)	7440-50-8		136.200	mg	631995	287342
				supplier	alloy	Zinc (Zn)	7440-66-6		42.520	mg	197301	89705
				supplier	alloy	Nickel (Ni)	7440-02-0		36.421	mg	169001	76838
				supplier	alloy	Iron (Fe)	7439-89-6		0.367	mg	1703	774