



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 *	2017-11-13
Contact Name *	Refer to Supplier Comment section		Refer to Supplier Comment section
Authorized Representative *	Floriana SAN BIAGIO	Representative Title	AMG 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
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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.

Product				
Mfr Item Number	Mfr Item Name	Version	Mfr Site	Date
	HBBC*BT2C157	A	ASE KR	2017-11-13
Amount	UoM	Unit type	ST ECOPACK Grade	
509.00	mg	Each	ECOPACK® 2	

Manufacturing information				
J-STD-020 MSL Rating	Classification Temp	Nbr of Reflow Cycles		 life.augmented
NAC	NAC	NAC		
bulk Solder Termination	Terminal Plating	Terminal Base Alloy	Comment	
NAC	NAC	NAC		

Package Designator	Size	Nbr of instances	Shape	
Mounted BOARD	13x11x1	NAC	flat	
Comment	MDF valid for SPBTLE-RFTR			

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	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
5 - Product(s) is obsolete, no information is available	false
6 - Product(s) is unknown, no information is available	false
Exemption Id.	Description
7c-1	Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectric devices, or in a glass or ceramic matrix compound

QueryList : REACH-7th July 2017				
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
Lead monoxide (lead oxide)	1000 ppm	3.233		6352
Diboron trioxide	1000 ppm	7.101		13951

Material Composition Declaration						Mfr Item Name	HBBC*8T2C157						
Homogeneous Material	Material Group	Mass	UoM	Level	Substance Category	Substance	CAS	Exempt	Mass	UoM	Concentration in homogeneous material (ppm)	Concentration in product (ppm)	
PCB	Other inorganic materials	284.419	mg	supplier	alloy	Copper (Cu)	7440-50-8		79.526	mg	279609	156240	
				supplier	substrate	Barium sulfate	7727-43-7		8.537	mg	30016	16772	
				supplier	substrate	Acrylated epoxy resin	19.920	mg	70038	39136			
				supplier	metallization	Nickel (Ni)	7440-02-0		1.422	mg	5000	2794	
				supplier	metallization	Gold (Au)	7440-57-5		2.846	mg	10004	5591	
				supplier	die	Silicon (Si)	7440-21-3		4.610	mg	614667	9057	
				supplier	metallisation	Aluminium (Al)	7429-90-5		0.011	mg	1467	22	
				supplier	metallisation	Copper (Cu)	7440-50-8		0.370	mg	49333	727	
				supplier	metallisation	Tantalum (Ta)	7440-25-7		0.031	mg	4133	61	
				supplier	metallisation	Titanium (Ti)	7440-32-6		0.003	mg	400	6	
supplier	metallisation	Tungsten (W)	7440-33-7		0.001	mg	133	2					
supplier	Passivation	Silicon Nitride (SiN)	12033-89-5		0.025	mg	3333	49					
supplier	passivation	Silicon Oxide	7631-86-9		0.064	mg	8533	126					
supplier	die polymer coating	4-Butyrolactone	96-48-0		0.091	mg	12133	179					
supplier	die polymer coating	1-Methoxy-2-propyl acetate	108-65-6		0.010	mg	1333	20					
supplier	resin	silica vitreous	60676-86-0		0.127	mg	16933	250					
supplier	resin	Epoxy resin	Proprietary		0.048	mg	6400	94					
supplier	resin	Acrylic polymer	Proprietary		0.048	mg	6400	94					
supplier	resin	Bis-phenol A diglycidyl ether	25036-25-3		0.014	mg	1867	28					
supplier	resin	carbon black	1333-86-4		0.001	mg	136	2					
supplier	solder alloy	Tin (Sn)	7440-31-5		2.011	mg	268133	3951					
supplier	solder alloy	Silver (Ag)	7440-22-4		0.024	mg	3200	47					
supplier	solder alloy	Copper (Cu)	7440-50-8		0.010	mg	1333	20					
supplier	solder alloy	Nickel (Ni)	7440-02-0		0.001	mg	133	2					
supplier	die	Aluminium (Al)	7429-90-5		0.004	mg	3433	8					
supplier	die	Copper (Cu)	7440-50-8		0.084	mg	72103	165					
supplier	die	Gold (Au)	7440-57-5		0.003	mg	2575	6					
supplier	die	Tantalum (Ta)	7440-25-7		0.005	mg	4292	10					
supplier	die	Titanium (Ti)	7440-32-6		0.001	mg	861	2					
supplier	die	Borosilicate glass	65997-17-3		0.778	mg	667811	1528					
supplier	metallization	Glass: Silicon Dioxide	7631-86-9		0.003	mg	2575	6					
supplier	metallization	PBO polybenzoxazol	29791-96-6		0.015	mg	12876	29					
supplier	coating	Polyethylene terephthalate	25038-59-9		0.022	mg	18884	43					
supplier	coating	Silica, vitreous	60676-86-0		0.022	mg	18884	43					
supplier	coating	Epoxy resin	25068-38-6		0.004	mg	3433	8					
supplier	coating	Acrylic polymer	9003-01-4		0.004	mg	3433	8					
supplier	coating	Carbon black	1333-86-4		0.001	mg	858	2					
supplier	bump	Tin (Sn)	7440-31-5		0.215	mg	184549	422					
supplier	bump	Silver (Ag)	7440-22-4		0.003	mg	2575	6					
supplier	bump	Copper (Cu)	7440-50-8		0.001	mg	858	2					
supplier	Ceramic	Aluminium oxide	1344-28-1		8.623	mg	421086	16941					
supplier	Ceramic	Silicon dioxide	7631-86-9		4.312	mg	210567	8472					
SVHC	Ceramic	Lead oxide	1317-36-8		3.233	mg	157877	6352					
supplier	Ceramic	Calcium Oxide	1305-78-8		2.155	mg	105235	4234					
supplier	Electrode termination	Silver (Ag)	7440-22-4		2.155	mg	105235	4234					
supplier	Cover	Iron	7439-89-6		0.618	mg	111191	1214					
supplier	Cover	Nickel	7440-02-0		0.361	mg	64951	709					
supplier	Cover	Cobalt	7440-48-4		0.217	mg	39043	426					
supplier	Cover	Manganese	7439-96-5		0.006	mg	1080	12					
supplier	Cover	Silicon	7440-21-3		0.002	mg	360	4					
supplier	Cover	Nickel	7440-02-0		0.160	mg	28787	314					
supplier	Base	Aluminium oxide	1344-28-1		1.978	mg	355883	3886					
supplier	Base	Manganese oxide	1313-13-9		0.070	mg	12594	138					
supplier	Base	Silicon dioxide	7631-86-9		0.070	mg	12594	138					
supplier	Base	Molybdenum oxide	1313-27-5		0.010	mg	1799	20					
supplier	Base	Magnesium Oxide	1309-48-4		0.010	mg	1799	20					
supplier	Base	Molybdenum	7439-98-7		0.573	mg	103095	1126					
supplier	Base	Nickel	7440-02-0		0.130	mg	23390	255					
supplier	Base	Cobalt	7440-48-4		0.030	mg	5398	59					

				supplier	Base	Gold	7440-57-5		0.040	mg	7197	79
				supplier	Base	Iron	7439-89-6		0.351	mg	63152	690
				supplier	Base	Nickel	7440-02-0		0.191	mg	34365	375
				supplier	Base	Cobalt	7440-48-4		0.110	mg	19791	216
				supplier	Base	Silver	7440-22-4		0.281	mg	50558	552
				supplier	Base	Copper	7440-50-8		0.050	mg	8996	98
				supplier	Electro conductive adhesive	Silver	7440-22-4		0.175	mg	31486	344
				supplier	Electro conductive adhesive	Silicon dioxide	7631-86-9		0.026	mg	4678	51
				supplier	Electro conductive adhesive	Quartz	14808-60-7		0.078	mg	14034	153
				supplier	Evaporation	Gold	7440-57-5		0.020	mg	3598	39
				supplier	Evaporation	Chromium	7440-47-3		0.001	mg	181	2
Crystal 2	Other inorganic materials	5.993	mg	supplier	Cover	Silicon	7440-21-3		0.001	mg	167	2
				supplier	Cover	Manganese	7439-96-5		0.005	mg	834	10
				supplier	Cover	Nickel	7440-02-0		0.318	mg	53062	625
				supplier	Cover	Cobalt	7440-48-4		0.185	mg	30869	363
				supplier	Cover	Iron	7439-89-6		0.584	mg	97447	1147
				supplier	Cover	Nickel	7440-02-0		0.171	mg	28533	336
				supplier	Base	Aluminum Oxide	1344-28-1		2.242	mg	374103	4405
				supplier	Base	Manganese Oxide	1313-13-9		0.082	mg	13683	161
				supplier	Base	Silicon Dioxide	14808-60-7		0.078	mg	13015	153
				supplier	Base	Molybdenum Oxide	1313-27-5		0.012	mg	2002	24
				supplier	Base	Magnesium oxide	1309-48-4		0.007	mg	1168	14
				supplier	Base	Molybdenum	7439-98-7		0.584	mg	97447	1147
				supplier	Base	Iron	7439-89-6		0.410	mg	68413	806
				supplier	Base	Nickel	7440-02-0		0.108	mg	18021	212
				supplier	Base	Cobalt	7440-48-4		0.129	mg	21525	253
				supplier	Base	Silver	7440-22-4		0.320	mg	53396	629
				supplier	Base	Copper	7440-50-8		0.056	mg	9344	110
				supplier	Base	Nickel	7440-02-0		0.221	mg	36876	434
				supplier	Base	Cobalt	7440-48-4		0.027	mg	4505	53
				supplier	Base	Gold	7440-57-5		0.037	mg	6174	73
				supplier	Electro Conductive Adhesive	Silver	7440-22-4		0.076	mg	12681	149
				supplier	Electro Conductive Adhesive	Silicon	7440-21-3		0.025	mg	4172	49
				supplier	Crystal Blank	Silicon Dioxide	14808-60-7		0.284	mg	47389	558
				supplier	Evaporation	Gold	7440-57-5		0.030	mg	5006	59
				supplier	Evaporation	Chromium	7440-47-3		0.001	mg	168	2
Inductor 1	Other inorganic materials	1.130	mg	supplier	Other special metals	Nickel (Ni)	7440-02-0		0.002	mg	1770	4
				supplier	Other special metals	Copper (Cu)	7440-50-8		0.002	mg	1770	4
				supplier	Other special metals	Nickel (Ni)	7440-02-0		0.002	mg	1770	4
				supplier	Other special metals	Polymide	25036-53-7		0.441	mg	390265	866
				supplier	Other special metals	Tin (Sn)	7440-31-5		0.028	mg	24779	55
				supplier	Glass	Cristobalite	14464-46-1		0.018	mg	15929	35
				supplier	Glass	Aluminum Oxide	1344-28-1		0.637	mg	563717	1251
Inductor 2	Other inorganic materials	10.026	mg	supplier	Core material	Zinc Oxide	1314-13-2		0.843	mg	84081	1656
				supplier	Core material	Silver	7440-22-4		0.168	mg	16756	330
				supplier	Core material	Tin	7440-31-5		0.056	mg	5585	110
				supplier	Core material	Nickel (Ni)	7440-02-0		0.731	mg	72910	1436
				supplier	Core material	Copper	7440-50-8		0.225	mg	22442	442
				supplier	Core material	Nickel	7440-02-0		0.056	mg	5585	110
				SVHC	Core material	diboron trioxide	1303-86-2		3.542	mg	353281	6959
				supplier	Solder	Tin	7440-31-5		0.136	mg	13565	267
				supplier	Solder	Silver	7440-22-4		0.004	mg	401	8
				supplier	Solder	Copper	7440-50-8		0.001	mg	100	2
				supplier	Powder Mix	Polymer	9003-35-4		0.312	mg	31119	613
				supplier	Powder Mix	Zin stearate	557-05-1		0.035	mg	3491	69
				supplier	Powder Mix	Iron	7439-89-6		2.849	mg	284161	5597
				supplier	Powder Mix	Chromium	7440-47-3		0.139	mg	13864	273
				supplier	Wire	Copper	7440-50-8		0.929	mg	92659	1825
Inductor 3	Other Organic Materials	10.026	mg	supplier	Core material	Zinc Oxide	1314-13-2		0.843	mg	84081	1656
				supplier	Core material	Silver	7440-22-4		0.168	mg	16756	330
				supplier	Core material	Tin	7440-31-5		0.056	mg	5585	110

				supplier	Core material	Nickel	7440-02-0		0.731	mg	72910	1436
				supplier	Core material	Copper	7440-50-8		0.225	mg	22442	442
				supplier	Core material	Nickel	7440-02-0		0.056	mg	5585	110
				SVHC	Core material	diboron trioxide	1303-86-2		3.542	mg	353281	6959
				supplier	Solder	Tin	7440-31-5		0.136	mg	13565	267
				supplier	Solder	Silver	7440-22-4		0.004	mg	399	8
				supplier	Solder	Copper	7440-50-8		0.001	mg	102	2
				supplier	Powder Mix	Polymer	9003-35-4		0.312	mg	31119	613
				supplier	Powder Mix	Zn stearate	557-05-1		0.035	mg	3491	69
				supplier	Powder Mix	Iron	7439-89-6		2.849	mg	284161	5597
				supplier	Powder Mix	Chromium	7440-47-3		0.139	mg	13864	273
				supplier	Wire	Copper	7440-50-8		0.929	mg	92659	1825
Inductor 4	Other Organic Materials	4.647	mg	supplier	Outer electrode	Silver (Ag)	7440-22-4		0.240	mg	51646	472
				SVHC	Outer electrode	diboron trioxide	1303-86-2		0.003	mg	645	6
				supplier	Outer electrode	Silicon dioxide	7631-86-9		0.024	mg	5165	47
				supplier	Ceramic element	Iron	7439-89-6		2.349	mg	505487	4615
				supplier	Ceramic element	Zinc oxide	1314-13-2		0.796	mg	171293	1564
				supplier	Ceramic element	Nickel	7440-02-0		0.398	mg	85647	782
				supplier	Ceramic element	Copper	7440-50-8		0.398	mg	85647	782
				supplier	Ceramic element	Bismuth oxide	1304-76-3		0.040	mg	8608	79
				supplier	Inner electrode	Silver (Ag)	7440-22-4		0.291	mg	62621	572
				supplier	Nickel Plating Layer	Nickel	7440-02-0		0.048	mg	10329	94
				supplier	Tin Plating Layer	Tin	7440-31-5		0.060	mg	12912	118
Inductor 5	Other Organic Materials	0.112	mg	supplier	Plating	Gold	7440-57-5		0.001	mg	8927	2
				supplier	Outer electrode	Silver (Ag)	7440-22-4		0.019	mg	169643	37
				SVHC	Outer electrode	diboron trioxide	1303-86-2		0.001	mg	8929	2
				supplier	Outer electrode	Silicon dioxide	7631-86-9		0.019	mg	169643	37
				supplier	Inner electrode	Silver (Ag)	7440-22-4		0.001	mg	8929	2
				supplier	Inner electrode	Nickel	7440-02-0		0.011	mg	98214	22
				supplier	Inner electrode	Cristobalite	14464-46-1		0.001	mg	8929	2
				supplier	Inner electrode	Aluminum Oxide	1344-28-1		0.055	mg	491071	108
				SVHC	Glass	diboron trioxide	1303-86-2		0.001	mg	8929	2
				supplier	Glass	Silicon dioxide	7631-86-9		0.003	mg	26786	6
Inductor 6	Other Organic Materials	0.161	mg	supplier	Outer electrode/Other special metals	Silver (Ag)	7440-22-4		0.020	mg	124224	39
				supplier	Outer electrode/Glass	Silicon dioxide	7631-86-9		0.002	mg	12422	4
				supplier	Inner electrode/Other special metals	Silver (Ag)	7440-22-4		0.010	mg	62112	20
				supplier	Nickel Plating Layer/Nickel plating	Nickel	7440-02-0		0.006	mg	37267	12
				supplier	Tin Plating Layer/Tin plating	Tin	7440-31-5		0.007	mg	43478	14
				supplier	Substrate/Glass	Cristobalite	14464-46-1		0.002	mg	12422	4
				supplier	Substrate/Glass	Aluminium Oxide	1344-28-1		0.056	mg	347826	110
				SVHC	Coating/Glass	diboron trioxide; boric oxide	1303-86-2		0.001	mg	6211	2
				supplier	Coating/Glass	Silica	7631-86-9		0.004	mg	24845	8
				supplier	Insulation Layer/Glass	Silica	7631-86-9		0.042	mg	260870	83
				SVHC	Insulation Layer/Glass	diboron trioxide	1303-86-2		0.011	mg	68323	22
Resistor	Other Organic Materials	0.160	mg	supplier	Ceramic	Aluminum Oxide	1344-28-1		0.127	mg	793750	250
				supplier	Ceramic	Silicon dioxide	7631-86-9		0.002	mg	12500	4
				supplier	Ceramic	Magnesium oxide	1309-48-4		0.002	mg	12500	4
				supplier	Inner electrode/Other special metals	Silver (Ag)	7440-22-4		0.005	mg	31250	10
				supplier	Resistive layer	Ruthenium oxide	12036-10-1		0.001	mg	6250	2
				supplier	Termination	Nickel (Ni)	7440-02-0		0.013	mg	81250	26
				supplier	Termination	Tin (Sn)	7440-31-5		0.007	mg	43750	14
				supplier	Glass	Lead-Borate Glass	65997-18-4		0.001	mg	6250	2
				supplier	Overcoat	Epoxy resin	25068-38-6		0.002	mg	12500	4
Shield	Other Organic Materials	157.625	mg	supplier	alloy	Copper (Cu)	7440-50-8		99.619	mg	632000	195715
				supplier	alloy	Zinc (Zn)	7440-66-6		31.099	mg	197298	61098
				supplier	alloy	Nickel (Ni)	7440-02-0		26.639	mg	169002	52336