



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 *	2016-11-22
Contact Name *	Refer to "Supplier Comment" section	Contact Title	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 Materials 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/internet/com/support/online_tech_support.jsp		

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
BTA16-800BRG	7BVT*168VHL1	A	SH1A	2016-11-22
	Amount	UoM	Unit type	ST ECOPACK Grade
	1900.00	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	
Not Applicable ; if coating is used o	Tin (Sn), matte, annealed	Copper Alloy		

Package Designator	Size	Nbr of instances	Shape	
SIP	10,15,5,4,5	3	Through-hole	
Comment	Package: TO 220 I CLIP			

QueryList : RoHS Directive 2011/65/EU-July 2011 – Annex II amended by Directive 2015/863-April 2015	
Query	Response
Product(s) meets EU RoHS requirement without any exemptions	false
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
Product(s) meets EU RoHS requirements by application of the selected exemption(s)	true
Product(s) does not meet EU RoHS requirements and is not under exemptions	false
Product(s) is obsolete, no information is available	false
Product(s) is unknown, no information is available	false
Exemption Id.	Description
7a	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead)
7c-I	Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectric devices

QueryList : REACH-20th June 2016				
Query				Response
The product 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						Mfr Item Name	7BVT*168VHL1					
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	10.124	mg	supplier	die	Silicon (Si)	7440-21-3		8.927	mg	881766	4698
die				supplier	metallization	Aluminium (Al)	7429-90-5		0.082	mg	8100	43
die				supplier	metallization	Nickel (Ni)	7440-02-0		0.114	mg	11260	60
die				supplier	metallization	Gold (Au)	7440-57-5		0.025	mg	2469	13
die				supplier	passivation	Alumina	1344-28-1		0.072	mg	7112	38
die				supplier	passivation	Lead silicate Glass	65997-18-4	7c-I-Electrical and e	0.65	mg	64204	342
die				supplier	back side metallization	Gold (Au)	7440-57-5		0.011	mg	1087	6
die				supplier	back side metallization	Nickel (Ni)	7440-02-0		0.243	mg	24002	128
Leadframe	Copper & Its alloys	1604.455	mg	supplier	alloy	Copper (Cu)	7440-50-8		1599.069	mg	996643	841615
Leadframe				supplier	alloy	Iron (Fe)	7439-89-6		0.737	mg	459	388
Leadframe				supplier	alloy	Iron Phosphide (FeP)	26508-33-8		1.345	mg	838	708
Leadframe				supplier	metallization	Nickel (Ni)	7440-02-0		3.304	mg	2059	1739
Soft solder	Solder	5.289	mg	JIG R	solder	Lead (Pb)	7439-92-1	7a-Lead in high me	4.893	mg	925128	2575
Soft solder				supplier	solder	Silver (Ag)	7440-22-4		0.264	mg	49915	139
Soft solder				supplier	solder	Tin (Sn)	7440-31-5		0.132	mg	24957	69
Soft solder -2	Solder	4.973		JIG R	solder	Lead (Pb)	7439-92-1	7a-Lead in high me	4.227	mg	849990	2225
Soft solder -2				supplier	solder	Antimony (Sb)	7440-36-0		0.497	mg	99940	262
Soft solder -2				supplier	solder	Tin (Sn)	7440-31-5		0.249	mg	50070	131
Bonding wire	Other inorganic materials	31.625		supplier	Slug + Trigger	Copper (Cu)	7440-50-8		31.625	mg	1000000	16645
encapsulation	Other inorganic materials	148.02	mg	supplier	mold compound	Silica, vitreous	60676-86-0		119.897	mg	810005	63104
encapsulation				supplier	mold compound	Phenol resin	9003-35-4		8.881	mg	59999	4674
encapsulation				supplier	mold compound	Carbon black	1333-86-4		1.184	mg	7999	623
encapsulation				supplier	mold compound	Epoxy Cresol Novolak	29690-82-2		15.098	mg	102000	7946
encapsulation				supplier	mold compound	Metal hydroxide	Proprietary		2.96	mg	19997	1558
connections coating	Solder	6.314	mg	supplier	solder alloy	Tin (Sn)	7440-31-5		6.314	mg	1000000	3323
subelement	Ceramics / Glass	89.2	mg	supplier	Ceramic isolator	Nickel (Ni)	7440-02-0		1.07	mg	11996	563
subelement				supplier	Ceramic isolator	Phosphorus (P)	12185-10-3		0.08	mg	897	42
subelement				supplier	Ceramic isolator	Manganese (Mn)	7439-96-5		3.479	mg	39002	1831
subelement				supplier	Ceramic isolator	Titanium (Ti)	7440-32-6		0.366	mg	4103	193
subelement				supplier	Ceramic isolator	Molybdenum oxide	1313-27-5		4.46	mg	50000	2347
subelement				supplier	Ceramic isolator	Alumina (Al2O3)	1344-28-1		79.745	mg	894002	41971