



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 *	16-02-2018
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 *	MDG MD CHAMPION	Representative Title	MDG 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	
<p>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.</p>	
Legal Statement	
Supplier Acceptance *	true
Legal Declaration *	Standard
Legal Statement	<p>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.</p>

Product				
Mfr Item Number	Mfr Item Name	Version	Mfr Site	Date
STM32F446VCT7	P41L*421XXXA	A	9998	16-02-2018
	Amount	UoM	Unit type	ST ECOPACK Grade
	681.44	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
3	260	3		
bulk Solder Termination	Terminal Plating	Terminal Base Alloy	Comment	
Not Applicable; if coating is used or other bulk termination	Nickel/Palladium/Gold (Ni/Pd/Au)	Copper Alloy		

Package Designator	Size	Nbr of instances	Shape	
QFP	14x14x1.4	100	L Bend	
Comment	Package : 1L LQFP 100 14x14x1.4 1 0086901			

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	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 : REACH-12th January 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

Material Composition Declaration : note : Substance present with less 0.001mg will not be declared in this document						Mfr Item Name	P41L*421XXA				6000000.0	1000000.0
Homogeneous Material	Material Group	Mass	UoM	Level	Substance Category	Substance	CAS	Exempt	Mass	UoM	Concentration in homogeneous material (ppm)	Concentration in product (ppm)
Die or dies	M-011 Other inorganic materials	13.206	mg	supplier	die	Silicon (Si)	7440-21-3		12.541	mg	949644	18404
				supplier	metallization	Aluminium (Al)	7429-90-5		0.047	mg	3559	69
				supplier	metallization	Copper (Cu)	7440-50-8		0.302	mg	22868	443
				supplier	metallization	Cobalt (Co)	7440-48-4		0.001	mg	76	1
				supplier	metallization	Tantalum (Ta)	7440-25-7		0.042	mg	3180	62
				supplier	metallization	Tungsten (W)	7440-33-7		0.136	mg	10298	200
				supplier	Passivation	Silicon Nitride	12033-89-5		0.035	mg	2650	51
				supplier	Passivation	Silicon Oxide	7631-86-9		0.102	mg	7724	150
				supplier	ALLOY	Copper (Cu)	7440-50-8		127.215	mg	958334	186686
				supplier	ALLOY	Chromium (Cr)	7440-47-3		0.385	mg	2900	565
LEADFRAME	M-011 Other inorganic materials	132.746	mg	supplier	ALLOY	Tin (Sn)	7440-31-5		0.320	mg	2411	470
				supplier	ALLOY	Zinc (Zn)	7440-66-6		0.256	mg	1928	376
				supplier	COATING	Nickel (Ni)	7440-02-0		4.431	mg	33380	6502
				supplier	COATING	Palladium (Pd)	7440-05-3		0.094	mg	708	138
				supplier	COATING	Gold (Au)	7440-57-5		0.045	mg	339	66
				supplier	GLUE	Silver(Ag)	7440-22-4		1.315	mg	700213	1930
				supplier	GLUE	Epoxy resin A	9003-36-5		0.047	mg	25027	69
				supplier	GLUE	Epoxy resin B	Proprietary		0.094	mg	50053	138
				supplier	GLUE	Allyl compound	Proprietary		0.150	mg	79872	220
				supplier	GLUE	Silica	Proprietary		0.141	mg	75080	207
BONDING WIRE	M-011 Other inorganic materials	1.534	mg	supplier	BONDING WIRE	Diluent	Proprietary		0.131	mg	69755	192
				supplier	BONDING WIRE	Gold (Au)	7440-57-5		1.519	mg	990222	2229
				supplier	BONDING WIRE	Palladium (Pd)	7440-05-3		0.015	mg	9778	22
ENCAPSULATION	M-011 Other inorganic materials	531.317	mg	supplier	MOLDING COMPOUND	Epoxy resin	Proprietary		53.599	mg	100880	78655
				supplier	MOLDING COMPOUND	Silica (SiO3)	60676-86-0		445.559	mg	838594	653849
				supplier	MOLDING COMPOUND	Carbon Black	1333-86-4		2.680	mg	5044	3933
FINISHING	M-011 Other inorganic materials	0.759	mg	supplier	MOLDING COMPOUND	Phenol Resin	Proprietary		29.479	mg	55483	43260
				supplier	CONNECTION COATING	Nickel (Ni)	7440-02-0		0.739	mg	973650	1084
				supplier	CONNECTION COATING	Palladium (Pd)	7440-05-3		0.016	mg	21080	23
				supplier	CONNECTION COATING	Gold (Au)	7440-57-5		0.004	mg	5270	6