



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 *	2013-04-09
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 *	Giuseppe Vitali Palma	Representative Title	AMS & IPD 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

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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 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
	ESTR*ECMF20A	A	Z6HA	2013-04-09
Amount	UoM	Unit type	ST ECOPACK Grade	
5.01	mg	Each	ECOPACK® 2	

Manufacturing information				
J-STD-020 MSL Rating	Classification Temp	Nbr of Reflow Cycles		
1	260	3		
bulk Solder Termination	Terminal Plating	Terminal Base Alloy		
Not Applicable ; if coating is used	ium/Gold (Ni/Pd/Au) Tin/Bismuth (S	Copper Alloy		

Package Designator	Size	Nbr of instances	Shape
QFN	1.35X2.6X0.5	12	No lead
Comment	Package: DFN.26.135.055-050-10L		

QueryList : ROHS directive 2011/65/EU _ July 2011	
Query	Response
Product(s) meets EU RoHS requirement without any exemptions	true
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)	false
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

QueryList :REACH-19 December 2012				
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	ESTR*ECMF20A					
Homogeneous Material	Material Group	Mass	UoM	Level	Substance Category	Substance	CAS	Exempt	Mass	UoM	Concentration in homogeneous material (ppm)	Concentration in product (ppm)
Silicon Dies	Other inorganic materials	0.411	mg		Silicon Die	Si	7440-21-3		0.411	mg	1000000	82003
Leadframe	Copper & its alloys	1.069	mg		Alloy	Copper (Remaining)	7440-50-8		1.006	mg	941066	200718
Leadframe			mg		Alloy	Silicon (0.25-1.2%)	7440-21-3		0.006	mg	5613	1197
Leadframe			mg		Alloy	Nickel (2.2-4.2%)	7440-02-0		0.037	mg	34612	7382
Leadframe			mg		Alloy	Magnesium (0.05-0.3%)	7439-95-4		0.001	mg	935	200
Leadframe			mg		Alloy	Iron (0.2% max)	7439-89-6		0.001	mg	935	200
Leadframe			mg		Alloy	Zinc (1.0% max)	7440-66-6		0.005	mg	4677	998
Leadframe			mg		Alloy	Nickel plating (0.8-1.5%)	7440-02		0.012	mg	11225	2394
Leadframe			mg		Alloy	Palladium (0.05-0.15%)	7440-05-3		0.001	mg	935	200
Bonding wire	Precious metals	0.06	mg		Bonding wire	Au	7440-57-5		0.06	mg	1000000	11971
encapsulation	Other Organic Materials	3.139	mg		Molding compound	Silica Fused (85~95%)	60676-86-0		2.942	mg	937241	586991
encapsulation			mg		Molding compound	Epoxy Resin (1~5%)	Proprietary		0.094	mg	29946	18755
encapsulation			mg		Molding compound	Phenol Resin (1~5%)	Proprietary		0.094	mg	29946	18755
encapsulation			mg		Molding compound	Carbon Black (0.1~0.5%)	1333-86-4		0.009	mg	2867	1796
Die Attach 1	Other Organic Materials	0.033	mg		epoxy	Silver (50~90%)	7440-22-4		0.021	mg	636364	4190
Die Attach 1			mg		epoxy	2-(2-Ethoxyethoxy)ethyl acetate (1~10%)	112-15-2		0.002	mg	60606	399
Die Attach 1			mg		epoxy	Proylene carbonate (1~10%)	108-32-7		0.002	mg	60606	399
Die Attach 1			mg		epoxy	3,3-Diamino diphenyl sulfone (1~10%)	599-61-1		0.002	mg	60606	399
Die Attach 1			mg		epoxy	Urethane acrylate oligomer (1~10%)	Proprietary		0.002	mg	60606	399
Die Attach 1			mg		epoxy	Rubber modified epoxy (1~10%)	Proprietary		0.002	mg	60606	399
Die Attach 1			mg		epoxy	Epoxy resin (1~10%)	Proprietary		0.002	mg	60606	399
Die Attach 2	Other Organic Materials	0.3	mg		epoxy	Aluminium oxide	1344-28-1		0.09	mg	300000	17957
Die Attach 2			mg		epoxy	Diethylene glycol monoethyl ether acetate	112-15-2		0.12	mg	400000	23943
Die Attach 2			mg		epoxy	Epoxy resin	25068-38-6		0.021	mg	70000	4190
Die Attach 2			mg		epoxy	Epoxy resin	Proprietary		0.06	mg	200000	11971