



# Material Composition Declaration

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This document is a declaration of the substances within the manufacturer listed item. Note: if the item is an assembly with lower level parts, the declaration encompasses all lower level materials for which the manufacturer has engineering responsibility.

Adobe Reader version 7.0.5 is required to complete this declaration.

1752-2 1.1	IPC Web Site for Information on IPC-1752 Standard <a href="http://www.ipc.org/IPC-175x">http://www.ipc.org/IPC-175x</a>	Form Type * Distribute	Declaration Class * Class 6 - RoHS Yes/No, Homogeneous Materials and Mfg Informat
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## Supplier Information

Company Name * STMicroelectronics	Company Unique ID	Unique ID Authority	Response Date *	Response Document ID				
Contact Name *	Title - Contact	Phone - Contact *	Email - Contact *	Duplicate Contact -> Authorized Representative				
Authorized Representative * Emilio Castelli	Title - Representative APG Material Declaration Cham	Phone - Representative *	Email - Representative *	Supplier Comments or URL for Additional Information				
Requester Item Number	Mfr Item Number	Mfr Item Name	Effective Date	Version	Manufacturing Site	Weight *	UOM	Unit Type
	L9781TR	A55W*UI15AC1	2012-04-06	A	MU1A	349.7	mg	Each
Alternate Recommendation	LQFP 64 10x10x1.4			Alternate Item Comments	Internal ST reference: BSA: CD00328549 EcoPack2			

## Manufacturing Process Information

Terminal Plating / Grid Array Material	Terminal Base Alloy	J-STD-020 MSL Rating	Peak Process Body Temperature	Max Time at Peak Temperature	Number of Reflow Cycles
Tin (Sn)	CU Alloy	3	260 C	30 seconds	3

Comments

**Disclaimer: 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**

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**RoHS Material Composition Declaration**

Declaration Type \*

Simplified

**RoHS Directive 2002/95/EC**

**RoHS Definition:** Quantity limit of 0.1% by mass (1000 PPM) in homogeneous material for: Lead (Pb), Mercury, Hexavalent Chromium, Polybrominated Biphenyls (PBB), Polybrominated Diphenyl Ethers (PBDE) and quantity limit of 0.01% by mass (100 PPM) of homogeneous material for Cadmium

Supplier certifies that it gathered the information it provides in this form concerning RoHS restrictive substances using appropriate methods to ensure its accuracy and that 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 with European Union member state laws that implement the RoHS Directive. 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, 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, 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.

**RoHS Declaration \***

1 - Item(s) does not contain RoHS restricted substances per the definition above

**Supplier Acceptance \***

Accepted

**Exemptions:** If the declared item does not contain RoHS restricted substances per the definition above except for defined RoHS exemptions, then select the corresponding response in the RoHS Declaration above and choose all applicable exemptions.

**Declaration Signature**

**Instructions:** Complete all of the required fields on all pages of this form. Select the "Accepted" on the Supplier Acceptance drop-down. This will display the signature area. Digitally sign the declaration (if required by the Requester) and click on Submit Form to have the form returned to the Requester.

Supplier Digital Signature

## Homogeneous Material Composition Declaration for Electronic Products

**SubItem Instructions:** The presence of any JIG Level A or B substances must be declared. [1] indicate the subpart in which the substance is located, [2] provide a description of the homogeneous material [3], enter the weight of the homogeneous material.

**Substance Instructions:** [A] select the Level (JIG A, JIG B, Requester or Supplier) [B] select the substance category (JIG or Requester) or enter a value (Supplier). [C] select the substance (JIG) or enter the substance and CAS (Other). [D] select a RoHS exemption, if applicable [E] enter the weight of the substance or the PPM concentration [F] Optionally enter the positive (+) and negative (-) tolerance in percent (Note: percent tolerance values are expected to cover a 3 sigma range of distribution unless otherwise noted).

**Line Functions:** +I Inserts a New Item /SubItem +M Inserts a new Material +C Inserts a new Substance Category +S Inserts a new Substance - Deletes the element line

	Item/SubItem Name		Homogeneous Material	Weight	Unit of Measure		Level	Substance Category		Substance	CAS	Exempt	Weight	Unit of Measure	Tolerance		PPM				
															-	+					
+I	-I	LQFP 64 10x10x1.4	+M -M	Integrated circuit	16.712	mg	+C -C	Supplier	Silicon die	+S -S	Silicon (Si)	7440-21-3		16.596	mg			993,05			
									+C -C		die metallization	+S -S	Aluminium (Al)	7429-90-5			0.001	mg			60
									+C -C		die metallization	+S -S	Copper (Cu)	7440-50-8			0.005	mg			299
									+C -C		die metallization	+S -S	Titanium (Ti)	7440-32-6			0.003	mg			180
									+C -C		Die coating	+S -S	Gamma-butyrolactone	96-48-0			0.072	mg			4,308
									+C -C		Die coating	+S -S	Polyhydroxyamide	55295-98-2			0.032	mg			1,915
									+C -C		Die coating	+S -S	Alcooxsilane	na			0.002	mg			120
									+C -C		Die coating	+S -S	Aryl Silicilic Acid	na			0.001	mg			60
			+M -M	Leadframe	102.111	mg	+C -C	supplier	frame alloy	+S -S	Copper (Cu)	7440-50-8		95.856	mg						938,74
									+C -C		frame alloy	+S -S	Nickel (Ni)	7440-02-0			2.989	mg			29,272
									+C -C		frame alloy	+S -S	Silicium (Si)	7440-21-3			0.648	mg			6,346
									+C -C		frame alloy	+S -S	Magnesium (Mg)	7439-95-4			0.149	mg			1,459
									+C -C		frame coating	+S -S	Silver (Ag)	7440-22-4			2.469	mg			24,180
			+M -M	Die Attach	2.175	mg	+C -C	supplier	glue	+S -S	Isobornyl Methacrylate	7534-94-3		0.12	mg						55,172
									+C -C		glue	+S -S	Bismaleimide resin	na			0.087	mg			40,000
									+C -C		glue	+S -S	spacer polymer	na			0.011	mg			5,057
									+C -C		glue	+S -S	Silver (Ag)	7440-22-4			1.957	mg			899,77
			+M -M	Bonding wire	1.609	mg	+C -C	Supplier	Bonding wire	+S -S	Gold (Au)	7440-57-5		1.594	mg						990,67
									+C -C		Bonding wire	+S -S	Copper (Cu)	7440-50-8			0.01	mg			6,215
									+C -C		Bonding wire	+S -S	Palladium (Pd)	7440-05-3			0.005	mg			3,108
			+M -M	Encapsulation	222	mg	+C -C	supplier	Moulding Compound	+S -S	Solid Epoxy Resin	na		17.76	mg						80,000
									+C -C		Moulding Compound	+S -S	Phenol Resin	na			8.88	mg			40,000
									+C -C		Moulding Compound	+S -S	Silica, vitreous	60676-86-0			193.362	mg			871,00

					+C	-C		Moulding Compound	+S	-S	Carbon-black	1333-86-4		1.11	mg			5,000
					+C	-C	B	Moulding Compound	+S	-S	Bismuth (Bi)	7440-69-9		0.888	mg			4,000
+M	-M	Finishing	5.093	mg	+C	-C	supplier	connection coating	+S	-S	Tin (Sn)	7440-31-5		5.093	mg			1,000,0