



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 http://www.ipc.org/IPC-175x	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 * 2013-09-11	Response Document ID PT6P*24081TA				
Contact Name *	Title - Contact	Phone - Contact *	Email - Contact *	Duplicate Contact -> Authorized Representative				
Authorized Representative * Laurent Tosi	Title - Representative MMS Central Packaging	Phone - Representative * +33 442 685 795	Email - Representative * laurent.tosi@st.com	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
		TSSOP 8 BODY 4.4 PITCH 0.65	2013-09-11	A	Shenzhen	34	mg	Each
Alternate Recommendation				Alternate Item Comments				

Manufacturing Process Information

Terminal Plating / Grid Array Material Nickel/Palladium/Gold (Ni/Pd/Au)	Terminal Base Alloy CU Alloy	J-STD-020 MSL Rating 1	Peak Process Body Temperature 260 C	Max Time at Peak Temperature 30 seconds	Number of Reflow Cycles 3
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Comments
Ecopack 2 compliant: means Br-Cl & Sb oxide free. DISCLAIMER: While STMicroelectronics has endeavored to provide information which is accurate and up to date, this docum

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RoHS Material Composition Declaration

Declaration Type *

Detailed

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

Please indicate whether any homogeneous material (as defined by the RoHS Directive, EU 2002/95/EC and implemented by the laws of the European Union member states) of the part identified on this form contains lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and/or polybrominated diphenyl ethers (each a "RoHS restricted substance") in excess of the applicable quantity limit identified above. If a homogeneous material within the part contains a RoHS restricted substance in excess of an applicable quantity limit, please indicate below which, if any, RoHS exemption you believe may apply. If the part is an assembly with lower level components, the declaration shall encompass all such components. Supplier certifies that it gathered the information it provides in this form 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. In the absence of such written agreement, the warranty rights and/or remedies of Supplier's Standard Terms and Conditions of Sale applicable to such part shall apply.

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

+I	-I	Item/SubItem Name	+M	-M	Homogeneous Material	Weight	Unit of Measure	+C	-C	Level	Substance Category	+S	-S	Substance	CAS	Exempt	Weight	Unit of Measure	Tolerance		PPM
																			-	+	
		TSSOP 8 BODY 4.4			Chip	0.195205	mg			Supplier	silicon die			Silicium (Si)	7440-21-3		0.194660	mg			5,725.2
										Supplier	die metallization			Aluminium(Al)	7429-90-5		0.000205	mg			6.0391
														Copper (Cu)	7440-50-8		0.000225	mg			6.6356
														Titanium (Ti)	7440-32-6		0.000114	mg			3.3551
					Lead-frame	14.51685	mg			Supplier	alloy			Copper (Cu)	7440-50-8		14.14667	mg			416.07
														Iron (Fe)	7439-89-6		0.340565	mg			10,016
														Zinc (Zn)	7440-66-6		0.017420	mg			512.35
														Iron Phosphide (FeP)	26508-33-8		0.012194	mg			358.64
					Lead-frame Coat	0.061636	mg			Supplier	coating			Nickel (Ni)	7440-02-0		0.056387	mg			1,658.4
														Palladium (Pd)	7440-05-3		0.001828	mg			53.768
														Gold (Au)	7440-57-5		0.001710	mg			50.305
														Silver (Ag)	7440-22-4		0.001710	mg			50.305
					Die Attach	0.044184	mg			Supplier	glue or soft solder			Poly(tetrafluoroethylene	9002-84-0		0.022534	mg			662.75
														Synthetic resin	Proprietary		0.008836	mg			259.90
														Bismaleimide resin	Proprietary		0.008836	mg			259.90
														Titanium dioxide	13463-67-7		0.001767	mg			51.981
														Silica, amorphous	7631-86-9		0.002209	mg			64.976
					Wires	0.013916	mg			Supplier	Bonding wire			Copper (Cu)	7440-50-8		0.013916	mg			409.29
					Encapsulation	19.168	mg			Supplier	Moulding Compound			Epoxy Resin	Proprietary		1.4376	mg			42,281
														Phenol Resin	Proprietary		0.9584	mg			28,187
														Silica, vitreous	60676-86-0		16.59948	mg			488,21
														Carbon black	1333-86-4		0.09584	mg			2,818.7
										B	Bismuth/Bismuth Com			Bismuth	7440-69-9		0.076672	mg			2,255.0

+M	-M	Finishing	0.000616	mg	+C	-C	Supplier	connections coating	+S	-S	Nickel (Ni)	7440-02-0		0.000563	mg			16.584
									+S	-S	Palladium (Pd)	7440-05-3		0.000018	mg			0.5376
									+S	-S	Gold (Au)	7440-57-5		0.000017	mg			0.5030
									+S	-S	Silver (Ag)	7440-22-4		0.000017	mg			0.5030