



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 * ST MICROELECTRONICS	Company Unique ID	Unique ID Authority	Response Date * N/A	Response Document ID				
Contact Name *	Title - Contact	Phone - Contact *	Email - Contact *					
Authorized Representative * GIUSEPPE VITALI PALMA	Title - Representative APM MD CHAMPION	Phone - Representative * N/A	Email - Representative * N/A	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
		TLDZ*5H3AB52	2012-02-09	A	SH1A	1,919	mg	Each
Alternate Recommendation	PACKAGE: TO 220 AB NON IS			Alternate Item Comments	ECOPACK1/ROHS; BSA: CD00213226			

Manufacturing Process Information

Terminal Plating / Grid Array Material Matte Tin (Sn) - annealed	Terminal Base Alloy CU Alloy	J-STD-020 MSL Rating Not Applicable	Peak Process Body Temperature C	Max Time at Peak Temperature seconds	Number of Reflow Cycles
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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"

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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 * 4 - Item(s) does not contain RoHS restricted substances per the definition above except for selected exemptions

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.

Exemption List Version EL-2006/690/EC

7a. Lead in high melting temperature type solders (i.e. lead based solder alloys containing 85% by weight or more lead).

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
											-	+	
TLDZ*5H3AB52	Silicon Die	0.83	mg	Supplier	Silicon die	Silicon	7440-21-3		0.81	mg			975,90
				Supplier	die metallization	Aluminium(Al)	7429-90-5		0.009	mg			10,843
						Titanium (Ti)	7440-32-6		0.001	mg			1,205
						Nickel (Ni)	7440-02-0		0.008	mg			9,639
						(Gold (Au)	7440-57-5		0.002	mg			2,410
Leadframe	1,166.11	mg	supplier	alloy	Copper (Cu)	7440-50-8		1,164.59	mg			998,70	
					Iron (Fe)	7439-89-6		0.536	mg		460		
					Iron Phosphide (FeP)	26508-33-8		0.98	mg		840		
Leadframe coating	2.735	mg	supplier	coating	Nickel (Ni)	7440-02-0		2.418	mg			884,09	
					Phosphorus (P)	12185-10-3		0.317	mg		115,90		
Die Attach	1.095	mg	JIG R	Lead/Lead Compound	Lead (Pb)	7439-92-1	7a. Lead	1.046	mg			955,25	
			supplier	soft solder	Silver (Ag)	7440-22-4		0.027	mg		24,658		
					Tin (Sn)	7440-31-5		0.022	mg		20,091		
Bonding wire	1.412	mg	Supplier	Bonding wire	Aluminium (Al)	7429-90-5		0.768	mg			543,90	
					Magnesium (Mg)	7439-95-4		0.001	mg		708		
					Aluminium (Al)	7429-90-5		0.643	mg		455,38		
Encapsulation	735.898	mg	supplier	Moulding Compound	Silica fused	60676-86-0		577.175	mg			784,31	
					Bisphenol F type liquid	9003-36-5		68.54	mg		93,138		
					Phenol resin	9003-35-4		64.932	mg		88,235		
					supplier	Antimony/Antimony C	Antimony Trioxide	1309-64-4		12.265	mg		16,667
					JIG I	Brominated Flame Ret	Brominated flame retard	40039-93-8		10.822	mg		14,706
	supplier	Molding compound	Carbon Black	1333-86-4		2.164	mg		2,941				
Finishing	10.919	mg	supplier	connection coating	Tin (Sn)	7440-31-5		10.919	mg			1,000,0	