



Material Composition Declaration

© Copyright 2005. IPC, Bannockburn, Illinois. All rights reserved under both international and Pan-American copyright conventions.

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
------------	--	---------------------------	--

Supplier Information

Company Name * STMicroelectronics	Company Unique ID	Unique ID Authority	Response Date * NA	Response Document ID				
Contact Name *	Title - Contact	Phone - Contact *	Email - Contact *	Duplicate Contact -> Authorized Representative				
Authorized Representative * GIOVANNI GIACOPELLO	Title - Representative APM MD CHAMPION	Phone - Representative * NA	Email - Representative * NA	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
	M48Z12-150PC1	HZPC*M6AAZ12	2011-02-07	A	MU1A	9,406.9	mg	Each
Alternate Recommendation	PDIP 24 .7 ZERO POWER Pac			Alternate Item Comments	ECOPACK1/ROHS BSA REF: CD00232973			

Manufacturing Process Information

Terminal Plating / Grid Array Material Matte Tin (Sn)	Terminal Base Alloy Alloy 42	J-STD-020 MSL Rating Not Applicable	Peak Process Body Temperature C	Max Time at Peak Temperature seconds	Number of Reflow Cycles
--	---------------------------------	--	------------------------------------	---	-------------------------

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

Save the fields in this form to a file

Export Data

Import fields from a file into this form

Import Data

Clear all of the fields on this form

Reset Form

Lock the fields on this form to prevent changes

Lock Supplier Fields

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		HZPC*M6AAZ12	+M	-M			Integrated circuit	11.09	mg	+C	-C	Supplier	Silicon die	+S	-S	Silicon (Si)	7440-21-3		11.023	mg			993,95
								die metallization			+C	-C	Supplier	die metallization	+S	-S	Aluminium (Al)	7429-90-5		0.067	mg			6,041
				+M	-M			Leadframe	990.47	mg	+C	-C	supplier	alloy	+S	-S	Iron (Fe)	7439-89-6		577.93	mg			583,49
											+S	-S		Nickel (Ni)	7440-02-0		406.885	mg					410,80	
											+S	-S		Chromium (Cr)	7440-47-3		0.297	mg					300	
											+S	-S		Silicon (Si)	7440-21-3		0.99	mg					1,000	
											+S	-S		Cobalt (Cb)	7440-48-4		0.208	mg					210	
											+S	-S		Manganese (Mg)	7439-96-5		4.16	mg					4,200	
				+M	-M			Leadframe coating	12.7	mg	+C	-C	supplier	coating	+S	-S	Silver (Ag)	7440-22-4		12.7	mg			1,000,0
				+M	-M			Die Attach	1.132	mg	+C	-C	supplier	glue or soft solder	+S	-S	Silver (Ag)	7440-22-4		0.906	mg			800,35
											+S	-S		2,6-Diglycidylphenyl ally	13561-08-5		0.17	mg					150,17	
											+S	-S		1,4-bis (2,3-epoxypropox	2425-79-8		0.022	mg					19,435	
											+S	-S		Polyoxypropylenediami	9046-10-0		0.034	mg					30,035	
				+M	-M			Bonding wire	1.759	mg	+C	-C	Supplier	Bonding wire	+S	-S	Au	7440-57-5		1.759	mg			1,000,0
				+M	-M			Moulding Compound	2,427.76	mg	+C	-C	supplier	Moulding Compound	+S	-S	Silica, vitreous	60676-86-0		1,808.688	mg			745,00
											+S	-S		Carbon black	1333-86-4		12.139	mg					5,000	
											+S	-S		Phenol resin	9003-35-4		218.499	mg					90,000	
							+C	-C	B					Brominated Flame Ret	+S	-S	B rominated epoxy resin	68541-56-0		58.266	mg			24,000
											+S	-S		Quartz	14808-60-7		60.694	mg					25,000	
											+S	-S		Epoxy cresol Novalak	29690-82-2		242.777	mg					100,00	
							+C	-C	B					Antimony/Antimony C	+S	-S	Antimony trioxide	1309-64-4		26.705	mg			11,000
				+M	-M			Finishing	13.948	mg	+C	-C	supplier	connection coating	+S	-S	Tin	7440-31-5		13.948	mg			1,000,0
				+M	-M			Encapsulation	3,170	mg	+C	-C		Encapsulation	+S	-S	Alumina Trihydrate	21645-51-2		1,806.9	mg			570,00

+S	-S	Silicon	7440-21-3		0.049	mg			3,006
+S	-S	Cobalt	7440-48-4		0.163	mg			10,000
+S	-S	Carbon	7440-44-0		0.003	mg			184

	+C	-C	Supplier	Glass				+S	-S	Silicon dioxide	7631-86-9		3.276	mg			558,75	
								+S	-S	Aluminum oxide	1344-28-1		0.311	mg			53,045	
								+S	-S	Diboron-trioxide	1303-86-2		1.231	mg			209,96	
								+S	-S	Barium oxide	1304-28-5		0.311	mg			53,045	
								+S	-S	Zinc Oxide	1314-13-2		0.018	mg			3,070	
								+S	-S	Disodium-oxide	1313-59-3		0.311	mg			53,045	
								+S	-S	Dipotassium-oxide	12136-45-7		0.311	mg			53,045	
								+S	-S	Dilithium-oxide	12057-24-8		0.029	mg			4,946	
								+S	-S	Diiron-trioxide	1309-37-1		0.018	mg			3,070	
								+S	-S	Chromium(III)oxide	1308-38-9		0.018	mg			3,070	
								+S	-S	Fluorine	7782-41-4		0.029	mg			4,946	
+M	-M	Ink	0.01	mg	+C	-C	Supplier	Ink	+S	-S	Phenolic Resin	Proprietary		0.008	mg			800,00
									+S	-S	Carbon black	1333-86-4		0.002	mg			200,00
+M	-M	Pins	20.441	mg	+C	-C	Supplier	Pins	+S	-S	Nickel	7440-02-0		5.336	mg			261,04
									+S	-S	Cobalt	7440-48-4		3.128	mg			153,02
									+S	-S	Manganese	7439-96-5		0.074	mg			3,620
									+S	-S	Iron	7439-89-6		10.893	mg			532,90
									+S	-S	Silicon	7440-21-3		0.015	mg			734
									+S	-S	Chromium	7440-47-3		0.037	mg			1,810
									+S	-S	Copper	7440-50-8		0.847	mg			41,436
									+S	-S	Molybdenum	7439-98-7		0.037	mg			1,810
									+S	-S	Zirconium	7440-67-7		0.018	mg			881
									+S	-S	Aluminum	7429-90-5		0.009	mg			440
									+S	-S	Magnesium	7439-95-4		0.018	mg			881
									+S	-S	Titanium metal	7440-32-6		0.018	mg			881
									+S	-S	Carbon	7440-44-0		0.005	mg			245
									+S	-S	Sulfur	7704-34-9		0.006	mg			294
+M	-M	Can	94.8	mg	+C	-C	Supplier	Can	+S	-S	Nickel	7440-02-0		21.537	mg			227,18
									+S	-S	Copper	7440-50-8		57.181	mg			603,17

* Required Field

+S	-S	Manganese	7439-96-5		0.223	mg			2,352									
+S	-S	Iron	7439-89-6		0.179	mg			1,888									
+S	-S	Lead	7439-92-1		0.045	mg			475									
+S	-S	Zinc	7440-66-6		15.635	mg			164,92									
+M	-M	Electrode	0.031	mg	+C	-C	Supplier	Electrode	+S	-S	Silver	7440-22-4		0.031	mg			1,000,0
+M	-M	Solder	0.539	mg	+C	-C	Supplier	Solder	+S	-S	Tin	7440-31-5		0.539	mg			1,000,0