



International Electronics Manufacturing Initiative

**iNEMI RoHS Update:
IPC-1752, Materials Declaration
Management
&
Implementation of Material
Composition Data Exchange Project**

Chair: Richard Kubin, E2open

APEX 2006

- **Background**
- **IPC-1752 Overview**
- **Next Steps**

Circa May-June 2004

- **Related activities:**
 - **RoHS Transition Task Group, and more specifically, Materials Declarations sub-team**
 - **iNEMI/IPC PDX 2.0 development team**
 - **RosettaNet 2A10, 2A13 PIP development**
 - **iNEMI 2004 Roadmap, PLIM chapter**
 - **iNEMI Business Leadership Team**
- **Participation and visibility across all**
- **Discussions with iNEMI leadership led to following conclusions:**
 - **Materials Declaration team needed help with electronic data exchange standards and supporting IT technology**
 - **PDX 2.0 team was struggling – Material Composition data was identified as addition information to be captured, but needed more focused activity (and resources)**
 - **RosettaNet PIPs were on divergent, or at best, parallel paths**

- **No standard had been established within the community**
 - Each company asks for different information
- **Most companies using some sort of spreadsheet and email to exchange data**
 - Each company uses different spreadsheet format
- **Most companies don't yet have a searchable database of material content that can be integrated for B2B exchange**
 - Filling out spreadsheets manually
- **Most companies have no way to know what they sent to whom**
 - Not able to ensure receipt or most recent version

- **Guidance Standards/Documents**
 - UK DTI RoHS Regulations Government Guidance
 - Joint Industry Guide (JIG)
 - IEC 61906
 - IPC 1065
- **Formats**
 - JGPSSI spreadsheet
 - Compliance Connect spreadsheet
 - RosettaNet 2A10 and 2A13 PIPs
 - ZVEI Umbrella Specs
- **Exchange standards**
 - email – RNIF – EDI – webservices – others...
- **Many standards = no standard**

Chair: Richard Kubin
Chair, NEMI Business Leadership Team
VP, PLM Solutions
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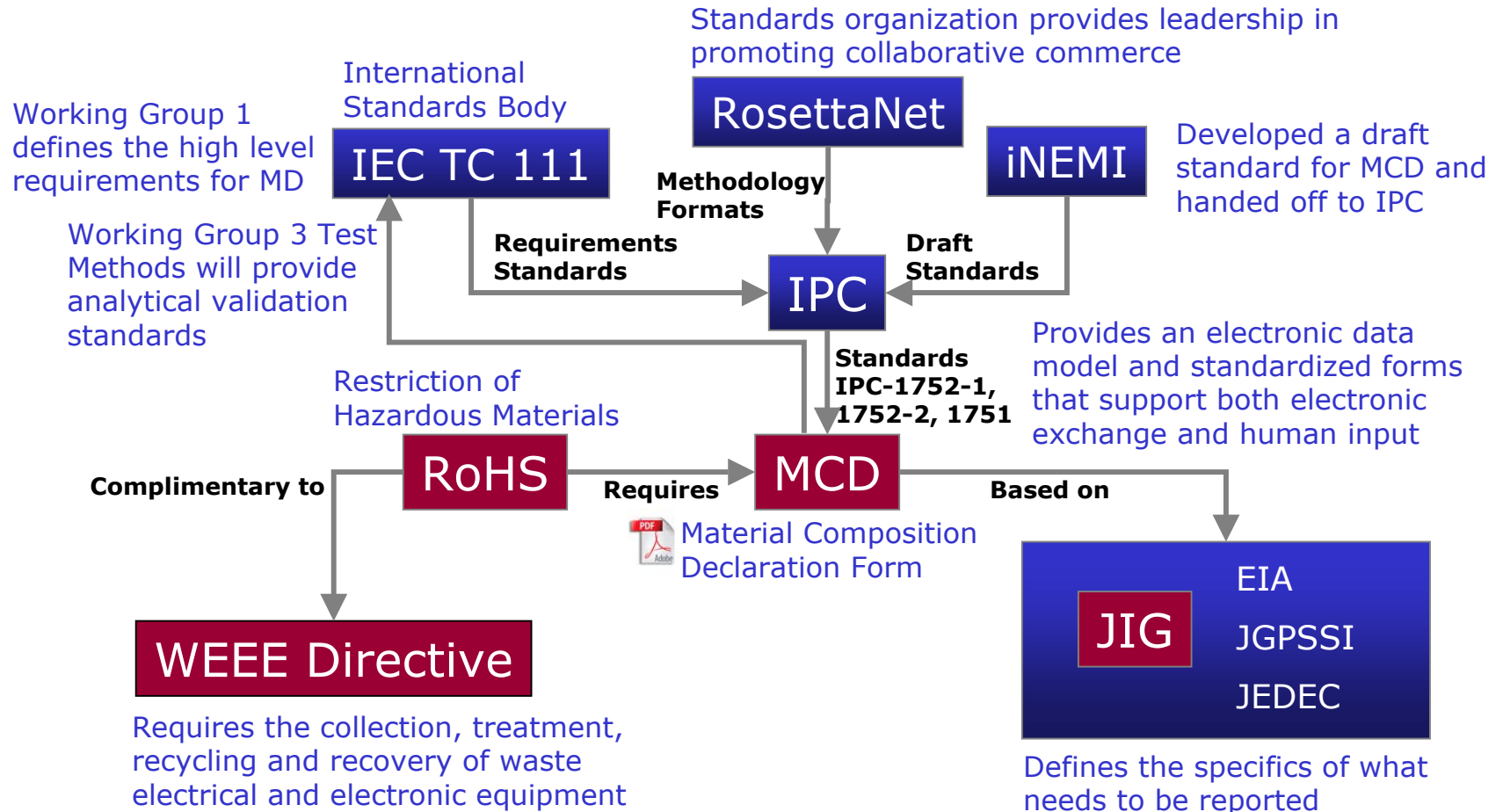
Co-Chair: Marissa Yao
Intel Corporation
408- 765-1227
marissa.a.yao@intel.com

Purpose:

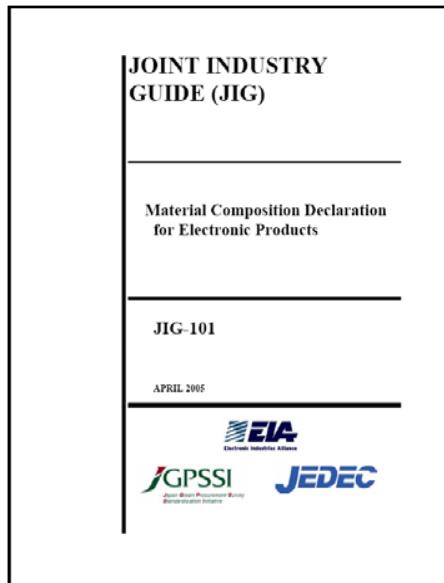
- Work with the appropriate international standards bodies to help define and validate standards for the electronic exchange of Material Composition data between all elements of the value chain and across the entire product lifecycle in order to support requirements of the WEEE and RoHS Directives:
 - Support for bulk material, component, sub-assembly and finished product level reporting
 - Definition of standard data exchange formats and transfer protocols
 - Automate data exchange query and response where possible, while also supporting human interaction

- **Review international activity to understand current state and identify relevant organizations and contacts**
- **Define data exchange requirements and develop use cases to test and validate standards**
- **Identify pilot participants and resources**
- **Determine pilot matrix to exercise use cases**
- **Conduct pilots to validate standards and exchange mechanisms**
- **Develop matrix of available standards and exchange mechanisms against requirements, including pros/cons, dependencies and required infrastructure**
- **Make recommendations on International Materials Composition Data Exchange Format and Protocol Standards**
- **Develop a roadmap for delivering Materials Composition Data Exchange capabilities that covers near-term requirements and technical limitations while providing a path to full B2B capabilities, including IT infrastructure requirements and trading partner dependencies**
- **Produce report summarizing pilot results, recommendations and next steps**

- **Call for Participation meeting** **June 30, 2004**
- **First Team meeting** **July 7, 2004**
 - Define Team membership
 - Review SOW and revise as required
- **Second Team meeting** **July 14, 2004**
 - Agreement on revised SOW
- **Complete Discovery activities** **Aug. 11, 2004**
- **Conduct 2-day Workshop** **Aug. 30/31, 2004**
- **Define requirements and use/test cases** **Sept. 15, 2004**
- **Identify pilot participants** **Sept. 15, 2004**
- **Complete initial pilots** **Nov. 24, 2004**
- **Initiate IPC Standardization Process** **Jan. 4, 2005**
- **Conduct additional pilots with IPC draft** **April 2005**
- **Close Project** **July 2005**



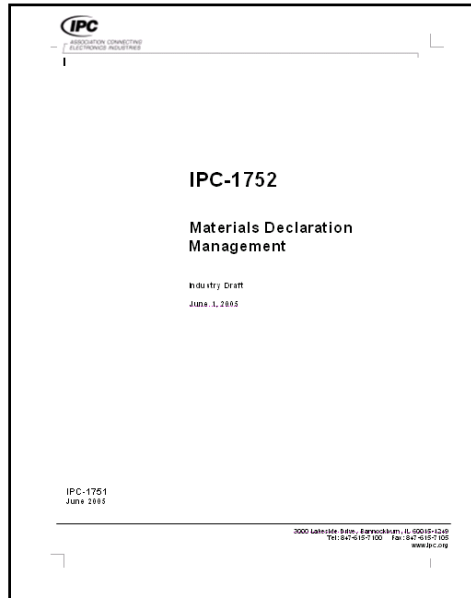
Joint Industry Guide



- Targeted lists of materials and substances for disclosure
- The composition amount or "threshold level"
- 15 Level A Material/Substance categories (including the 6 RoHS substances)
- 9 Level B Material/Substance categories
- **Over 2000 specific substance CAS numbers!**
- Formally released as an EIA/JEDEC standard on May 25, 2005

◆ *Provides “What” needs to be declared*

IPC-1752 Materials Declaration Management



- References RoHS and JIG for substance reporting requirements
- Provides a standard data model, XML schema and human readable presentation format (PDF)
- XML schema will be aligned with RosettaNet 2A13/2A15 PIPs
- 2 versions of the form:
 - IPC-1752-1: RoHS at homogeneous and JIG substance reporting at the part level
 - IPC-1752-2: RoHS and substance reporting at the homogeneous material level

Provides standard on “How” to declare

- Background
- **IPC-1752 Overview**
- Next Steps

IPC 175x: a Family of Supplier Declaration Standards

- **1751 Generic Requirements**
 - Establishes the principles and details for any declaration necessary between members of a supply chain
 - Contains general information about the supplier
 - Supplemented by sectional standards that define specific details for customer requested information
- **1752 Material and Substance Declaration**
- **Future Declaration Standards**

- **Leverage existing work**
 - **EIA/EICTA/JGPSSI Joint Industry Guide (JIG) – materials and substances to be disclosed by suppliers**
 - **RosettaNet - Partner Interface Processes (PIPs) for Partner-to-Partner electronic exchange**
 - **iNEMI Projects**
 - **Material Declarations**
 - **Data exchange format and process project**



Companies Involved in Development and/or Supporting Use of IPC-1752

Agere Systems
Ageus Solutions
Avanex
Brush Wellman
Celestica
Cisco Systems
Coherent Photonics
Dell
Delphi
E2open
Eaton Cutler-Hammer
Foresite Systems
Foxconn
Freescale
Semiconductor
Good Bye Chain


Harris
Hewlett Packard
IBM
Intel
Jabil Circuit
Kemet
KOA Speer
Lenovo
Lockheed Martin
Lucent
Technologies
MatrixOne
Maxtor
Motorola
National Electronic
Distributors
Association
(NEDA)

National Institute of
Standards and
Technology
(NIST)
National
Semiconductor
Pelco
Qualcomm, Inc.
RadiSys
Rohm and Haas
Electronic
Seabridge
Solectron
Corporation
Synapsis
Technology
Teradyne
Texas Instruments
Vitesse

- **Defined using a UML data model**
- **Underlying XML schema**
- **Provide a PDF-based form version for human input**
 - **Conforms to the XML schema**
 - **Support for automated data load and extract**
- **Aligned and consistent with the data models for RosettaNet PIPs**
 - **2A13 and 2A15**
- **Support for both “Request/Response” and “Distribute” models**
- **Support for declaration of bulk material, components, sub-assemblies, products**
- **Support for Part Family declaration (Umbrella Spec)**

- **Human presentation of 1752 XML data**
- **Estimated 500 million Adobe readers deployed**
- **The Adobe PDF reader is free to trading partners**
- **Large number of Independent Software Vendors (ISVs) supporting PDF**
- **Platform independent**
- **Supports manual entry**
- **Provides XML import/export to integrate with data management systems**

Class	Description	Form type
Class 1	- RoHS reporting at a homogeneous level in yes/no format	IPC-1752-1 IPC-1752-2
Class 2	- same as Class 1, with the addition of Manufacturing process reporting	IPC-1752-1 IPC-1752-2
Class 3	- RoHS reporting at a homogeneous level in yes/no format - RoHS substance reporting at a homogeneous level and other JIG A & B substance reporting at the part level plus other substances at the part level	IPC-1752-1
Class 4	- same as Class 3, with the addition of Manufacturing process reporting	IPC-1752-1
Class 5	- RoHS reporting at a homogeneous level in yes/no format - Substance reporting at the homogeneous level. JIG A & B substance list provided, other substances can be added	IPC-1752-2
Class 6	- same as Class 5, with the addition of Manufacturing process reporting	IPC-1752-2

 Material Composition Declaration		<small>This document is a declaration of the substances within the manufacturer item listed. The item must be declared as containing or not containing RoHS (Restriction of the use of certain hazardous substances in electrical and electronic equipment) substances or as an unknown item or obsolete item. Note: If the item is an assembly with lower level parts, the declaration encompasses all lower level materials.</small>	
<small>© Copyright 2005, IPC, Bannockburn, Illinois. All rights reserved under both International and Pan-American copyright conventions.</small>			
IPC Standard 1752.2	IPC Web Site http://www.ipc.org/committeedetail.asp?Committee=2-18	Form Type * Request/Reply	Declaration Type * RoHS, JIG and Manufacturing Information


Request for Information						Lock Request Fields
Request Date 6/12/05 10:32 PM	Request Document ID 7000938-4454-01	Internal Item Name Technium 4 Processor - 3.2G	Internal Item Number 4454-01	Contact Name * John Doe		
Respond By Date Sun Jun 19 00:00:00 PDT 2005	Company Name * Comps-R-Us	Manufacturer Item Name Technium 4 Processor - 3.2G	Manufacturer Item Number CHP07505	Contact Title MCD Manager	Contact Phone * 214 245 6775	
Company Unique ID 63901	Unique ID Authority DUNS	Manufacturer Item Version 1.0	Manufacturer Effective Date	Contact Email * john@comps.com		
Digital Signature of Requester		Manufacturing Site Japan	My ID for the Manufacturer	Requester Comments		
<small>These fields control how the form is returned by the supplier using the Submit button. Consult your IT staff to determine the File Type and address (https, http, ftp or mailto)</small>			File Type XDP	Destination - URL or Email address /e2sctran/e2sc/servlet/submitR		

Supplier Information						Duplicate Contact ->
Response Date * 2005-06-23	Response Document ID	Contact Name * Richard Kubin		Name of person certifying as true and correct * Richard Kubin		
Company Name * Electronix		Contact Title	Contact Phone * 123-234-1234	Certifying Title * VP	Certifying Phone * 123-234-1234	
Company Unique ID		Contact Email * rkubin@elex.com		Certifying Email * rkubin@elex.com		
Item Name	Weight * g	Unit per Length/Area/Volume Each	URL for Additional Information			
Effective Date	Version 1.0	Manufacturing Site	Item Comments			
Alternative Recommended Item	Alternative Item Name	Availability Date	Alternative Part Comments			

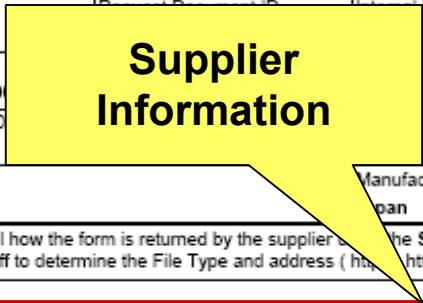
Requestor Information

Manufacturing Process Information					
Terminal Plating / Grid Array Material SnAgCu	Terminal Base Alloy Alloy 42	J-STD-020 Moisture 3	Maximum Reflow Temp 260	C	Maximum cycles for Reflow 3
Manufacturing Process Comments					

* Required Field

 Material Composition Declaration		<small>This document is a declaration of the substances within the manufacturer item listed. The item must be declared as containing or not containing RoHS (Restriction of the use of certain hazardous substances in electrical and electronic equipment) substances or as an unknown item or obsolete item. Note: If the item is an assembly with lower level parts, the declaration encompasses all lower level materials.</small>	
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Respond By Date Sun Jun 19 00:00:00	Manufacturer Item Name Item 4 Processor - 3.2G	Manufacturer Item Number CHP07505	Contact Title MCD Manager	Contact Phone * 214 245 6775		
Company Unique ID 63901	Manufacturer Item Version	Manufacturer Effective Date	Contact Email * john@comps.com			
Digital Signature of Requester	Manufacturing Site Japan	My ID for the Manufacturer	Requester Comments			
These fields control how the form is returned by the supplier when the Submit button is pressed. Consult your IT staff to determine the File Type and address (http, ftp or mailto)		File Type XDP	Destination - URL or Email address /e2sctran/e2sc/servlet/submitR			



Supplier Information						<input type="button" value="Duplicate Contact ->"/>	
Response Date * 2005-06-23	ResponseDocument ID	Contact Name * Richard Kubin		Name of person certifying as true and correct * Richard Kubin			
Company Name * Electronix		Contact Title	Contact Phone * 123-234-1234	CertifyingTitle * VP	Certifying Phone * 123-234-1234		
Company Unique ID	Unique ID Authority	Contact Email * rkubin@elex.com		Certifying Email * rkubin@elex.com			
Item Name	Item Number * CHP07505	Item Weight * 45 g	Unit per Length/Area/Volume Each	URL for Additional Information			
Effective Date	Version 1.0	Manufacturing Site	Item Comments				
Alternative Recommended Item	Alternative Item Name	Availability Date	Alternative Part Comments				

Manufacturing Process Information					
Terminal Plating / Grid Array Material SnAgCu	Terminal Base Alloy Alloy 42	J-STD-020 Moisture 3	Maximum Reflow Temp 260 C	Maximum cycles for Reflow 3	
Manufacturing Process Comments					

* Required Field

 Material Composition Declaration		<small>This document is a declaration of the substances within the manufacturer item listed. The item must be declared as containing or not containing RoHS (Restriction of the use of certain hazardous substances in electrical and electronic equipment) substances or as an unknown item or obsolete item. Note: If the item is an assembly with lower level parts, the declaration encompasses all lower level materials.</small>	
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IPC Standard 1752.2	IPC Web Site http://www.ipc.org/committeedetail.asp?Committee=2-18	Form Type * Request/Reply	Declaration Type * RoHS, JIG and Manufacturing Information

Request for Information					<input type="button" value="Lock Request Fields"/>	
Request Date 6/12/05 10:32 PM	Request Document ID 7000938-4454-01	Internal Item Name Technium 4 Processor - 3.2G	Internal Item Number 4454-01	Contact Name * John Doe		
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Company Unique ID 63901	Unique ID Authority DUNS	Manufacturer Item Version 1.0	Manufacturer Effective Date	Contact Email * john@comps.com		
Digital Signature of Requester		Manufacturing Site Japan	My ID for the Manufacturer	Requester Comments		
<small>These fields control how the form is returned by the supplier using the Submit button. Consult your IT staff to determine the File Type and address (https, http, ftp or mailto)</small>			File Type XDP	Destination - URL or Email address /e2sctran/e2sc/servlet/submitR		

Optional Manufacturing Process Information

Supplier	<input type="button" value="Duplicate Contact ->"/>				
Response 2005-06-23	Contact Name * Richard Kubin		Name of person certifying as true and correct * Richard Kubin		
Company Electronix	Contact Title	Contact Phone * 123-234-1234	Certifying Title * VP	Certifying Phone * 123-234-1234	
Company	Contact Email * rkubin@elex.com		Certifying Email * rkubin@elex.com		
Item Name	Item Weight * 45 g	Unit per Length/Area/Volume Each	URL for Additional Information		
Effective Date	Version 1.0	Manufacturing Site	Item Comments		
Alternative Recommended Item	Alternative Item Name	Availability Date	Alternative Part Comments		

Manufacturing Process Information				
Terminal Plating / Grid Array Material SnAgCu	Terminal Base Alloy Alloy 42	J-STD-020 Moisture 3	Maximum Reflow Temp 260 C	Maximum cycles for Reflow 3
Manufacturing Process Comments				

* Required Field

Save the fields in this form to a file Import fields from a file into this form Clear all of the fields on this form Lock the fields on this form to prevent changes

RoHS Material Composition Declaration

For each item, please indicate whether it contains an amount above the quantity limit identified below for the following chemicals at the material level: lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and polybrominated diphenyl ethers (RoHS restricted substances). If the item contains a RoHS restricted substance in an amount above the quantity limit, please indicate whether you believe a listed exemption may apply. The 'material level' refers to each material of uniform composition within your item. If the part is an assembly with lower level items, the declaration encompasses all lower level components. This determination was made using appropriate systems and processes to ensure accuracy of any data provided. NOTE: Supplier does not provide any warranty, express or implied, with respect to the information provided in this declaration by completing and transmitting it. Rather, warranty obligations, if any, with respect to the identified part are solely as defined in a separate written agreement under which Supplier provides or sells such item. Submitter Acceptance

RoHS Directive Version 2002/95/EC RoHS Definition: Quantity limit of 0.1% by mass (1000 PPM) of 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

RoHS Declaration * Digital Signature of Supplier: Richard Kubin
Item does not contain RoHS restricted substances per the definition above except for selected exemptions

Instructions: Complete all of the required fields on all pages of this form, the Acceptance and Declaration fields above on this page must be completed, then digitally sign the form and submit the form to have it returned to the requester. Submission of this form using methods defined by the requester requires an internet connection.

RoHS Exemptions

Exemptions: The following exemptions are available for the listed substances. General Compliance for RoHS, as applicable, except for the following application specific exemptions. Check the appropriate exemptions on the next page then select the exemptions on that part of the form.

- 1. Mercury in lamps per lamp
- 2a. Mercury in halophosphate lamps not exceeding 5 mg per lamp
- 2b. Mercury in triphosphor lamps not exceeding 5 mg per lamp
- 2c. Mercury in triphosphor lamps with long lifetime 5 mg
- 3. Mercury in straight fluorescent lamps for special purposes
- 4. Mercury in other lamps not specifically mentioned in this list
- 5. Lead in glass of cathode ray tubes, electronic components and fluorescent tubes
- 6a. Lead as an alloying element in steel containing up to 0.35% lead by weight
- 6b. Lead as an alloying element in aluminum containing up to 0.4% lead by weight
- 6c. Lead as an alloying element in copper containing up to 4% lead by weight
- 7a. Lead in high melting temperature type solders (i.e. lead based solder alloys containing 85 % by weight or more lead)
- 7b. Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission as well as network management for telecommunications
- 7c. Lead in electronic ceramic parts (e.g. piezoelectric devices)
- 8. Cadmium and its compounds in electrical contacts and cadmium plating except for applications banned under Directive 91/338/EEC amending Directive 76/769/EEC relating to restrictions on the marketing and use of certain dangerous substances and preparations piezoelectric devices)
- 9. Hexavalent chromium as an anti-corrosion of the carbon steel cooling system in absorption refrigerators
- 10. Lead used in compliant pin connector systems
- 11. Lead as a coating material for a thermal conduction module o-ring
- 12a. Lead in optical and filter glass
- 12b. Cadmium in optical and filter glass
- 13. Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80% and less than 85% by weight
- 14. Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip packages

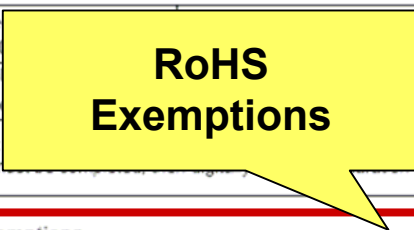
RoHS Declaration with option for Digital Signature

Save the fields in this form to a file	<input type="button" value="Export Data"/>	Import fields from a file into this form	<input type="button" value="Import Data"/>	Clear all of the fields on this form	<input type="button" value="Reset Form"/>	Lock the fields on this form to prevent changes	<input type="button" value="Lock Supplier Fields"/>
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RoHS Material Composition Declaration

For each item, please indicate whether it contains an amount above the quantity limit identified below for the following chemicals at the material level: lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and polybrominated diphenyl ethers (RoHS restricted substances). If the item contains a RoHS restricted substance in an amount above the quantity limit, please indicate whether you believe a listed exemption may apply. The 'material level' refers to each material of uniform composition within your item. If the part is an assembly with lower level items, the declaration encompasses all lower level components. This determination was made using appropriate systems and processes to ensure accuracy of any data provided. NOTE: Supplier does not provide any warranty, express or implied, with respect to the information provided in this declaration by completing and transmitting it. Rather, warranty obligations, if any, with respect to the identified part are solely as defined in a separate written agreement under which Supplier provides or sells such item. Submitter Acceptance

RoHS Directive Version 2002/95/EC	Quantity limit of 0.1% by mass (1000 PPM) of homogeneous material for: Lead (Pb), Mercury, Hexavalent Chromium, Polybrominated Diphenyl Ethers (PBDE) and quantity limit of 0.01% by mass (100 PPM) of homogeneous material for Cadmium
RoHS Declaration Item does not contain any of the above except for selected exemptions	Digital Signature of Supplier Richard Kubin <small>Digitally signed by Richard Kubin, DN: cn=Richard Kubin, o=IPC, email=kubinr@ipcdesign.com, Date: 2005.07.27 16:27:27 -0700</small>
Instructions: this page must be completed and submitted with this form, the Acceptance and Declaration fields above on this page and submit the form to have it returned to the requester.	Submission of this form using methods defined by the requester requires an internet connection. <input type="button" value="Submit Form"/>



RoHS Exemptions

Exemptions: The part on this form meets the specifications listed under General Compliance for RoHS, as applicable, except for the following application specific exemptions. Check the appropriate exemptions for the listed subpart and substance. If this form has a JIG declaration on the next page then select the exemptions on that part of the form.

- | | |
|---|--|
| <input type="checkbox"/> 1. Mercury in compact fluorescent lamps not exceeding 5 mg per lamp | <input type="checkbox"/> 7b. Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission as well as network management for telecommunications |
| <input type="checkbox"/> 2a. Mercury in straight fluorescent lamps for general purposes not exceeding halophosphate 10 mg | <input type="checkbox"/> 7c. Lead in electronic ceramic parts (e.g. piezoelectronic devices) |
| <input type="checkbox"/> 2b. Mercury in straight fluorescent lamps for general purposes not exceeding triphosphate with normal lifetime 5 mg | <input type="checkbox"/> 8. Cadmium and its compounds in electrical contacts and cadmium plating except for applications banned under Directive 91/338/EEC amending Directive 76/760/EEC relating to restrictions on the marketing and use of certain dangerous substances and preparations piezoelectronic devices) |
| <input type="checkbox"/> 2c. Mercury in straight fluorescent lamps for general purposes not exceeding triphosphat with long lifetime 8 mg | <input type="checkbox"/> 9. Hexavalent chromium as an anti-corrosion of the carbon steel cooling system in absorption refrigerators |
| <input type="checkbox"/> 3. Mercury in straight fluorescent lamps for special purposes | <input type="checkbox"/> 10. Lead used in compliant pin connector systems |
| <input type="checkbox"/> 4. Mercury in other lamps not specifically mentioned in this list | <input type="checkbox"/> 11. Lead as a coating material for a thermal conduction module o-ring |
| <input type="checkbox"/> 5. Lead in glass of cathode ray tubes, electronic components and fluorescent tubes | <input type="checkbox"/> 12a. Lead in optical and filter glass |
| <input type="checkbox"/> 6a. Lead as an alloying element in steel containing up to 0.35% lead by weight | <input type="checkbox"/> 12b. Cadmium in optical and filter glass |
| <input type="checkbox"/> 6b. Lead as an alloying element in aluminum containing up to 0.4% lead by weight | <input type="checkbox"/> 13. Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80% and less than 85% by weight |
| <input checked="" type="checkbox"/> 6c. Lead as an alloying element in copper containing up to 4% lead by weight | <input checked="" type="checkbox"/> 14. Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip packages |
| <input type="checkbox"/> 7a. Lead in high melting temperature type solders (i.e. lead based solder alloys containing 85 % by weight or more lead) | |

RoHS Material Composition Declaration

For each item, please indicate whether it contains an amount above the quantity limit identified below for the following chemicals at the material level: lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and polybrominated diphenyl ethers (RoHS restricted substances). If the item contains a RoHS restricted substance in an amount above the quantity limit, please indicate whether you believe a limitation or exemption may apply. The 'material level' refers to each material of uniform composition within your item. If the part is an assembly with lower level items, the declaration encompasses the lower level components. This determination was made using appropriate systems and processes to ensure accuracy of any data provided. NOTE: Supplier does not provide warranty, express or implied, with respect to the information provided in this declaration by completing and transmitting it. Rather, warranty obligations, if any, with respect to the information provided are solely as defined in a separate written agreement under which Supplier provides or sells such item. Submitter Acceptance

**Import / Export
Form Reset
Lock Supplier Fields**

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

Declaration above except for selected exemptions

Submission of this form using methods defined by the requester requires an internet connection.

Digital Signature of Supplier: **Richard Kubin**
Digitally signed by Richard Kubin
 DN: cn=Richard Kubin, o=IPC, email=richard.kubin@adobe.com
 Date: 2005.07.27 16:27:27 -0700

RoHS Exemptions

Exemptions: The part on this form meets the specifications listed under General Compliance for RoHS, as applicable, except for the following application specific exemptions. Check the appropriate exemptions for the listed subpart and substance. If this form has a JIG declaration on the next page then select the exemptions on that part of the form.

- 1. Mercury in compact fluorescent lamps not exceeding 5 mg per lamp
- 2a. Mercury in straight fluorescent lamps for general purposes not exceeding halophosphate 10 mg
- 2b. Mercury in straight fluorescent lamps for general purposes not exceeding triphosphate with normal lifetime 5 mg
- 2c. Mercury in straight fluorescent lamps for general purposes not exceeding triphosphat with long lifetime 8 mg
- 3. Mercury in straight fluorescent lamps for special purposes
- 4. Mercury in other lamps not specifically mentioned in this list
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- 14. Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip packages

Joint Industry Guide (JIG) Material Composition Declaration for Electronic Products

Instructions: The presence of JIG Level A and JIG Level B substances must be declared if they exceed the threshold levels. Threshold levels are defined at the item level, except for the RoHS substances, noted with an asterisk (*) below, which are defined at the homogeneous material level. If the maximum concentration of any RoHS substance exceeds the JIG threshold levels within any homogeneous material contained in the item, then the RoHS substance content must be reported in total weight and worst case homogeneous material PPM within the item, along with a description of material use. JIG Level B materials must be reported in total weight and worst case PPM. Where threshold levels include "intentionally added", substances must be declared even if they fall below the PPM threshold value.

 JIG A autofill - No

 JIG B autofill - No

 JIG A & B autofill - No

JIG Level	Category Name	Threshold Level	Above Threshold Level?	If yes, enter weight or PPM			Description of Use
				Weight	Unit	PPM	
A	Asbestos	Intentionally Added	No				
A	Certain Azo colorants	Intentionally Added	No				
A	Cadmium/Cadmium Compounds *	75 PPM or Intentionally Added	Yes		mg	50	in copper alloy
A	Hexavalent Chromium/Hexavalent Chromium Compounds *	1000 PPM or Intentionally Added	No		mg		
A	Lead/Lead Compounds *	1000 PPM or Intentionally Added	Yes		mg	3,000	in copper alloy
A	Lead/Lead Compounds - PVC Cables and Wires Only	300 PPM	No				
A	Mercury/Mercury Compounds*	1000 PPM or Intentionally Added	No		mg		
A	Ozone Depleting Substances - Class I (CFCs, HBFCs, etc.)	Intentionally Added	No				
A	Ozone Depleting Substances - Class II (HCFCs)	1000 PPM	No				
A	Polybrominated Biphenyls (PBBs) *	1000 PPM or Intentionally Added	No				
A	Polybrominated Diphenylethers (PBDEs) *	1000 PPM or Intentionally Added	No				
A	Polybrominated Biphenyls (PCBs)	Intentionally Added	No				
A	Polychlorinated Naphthalenes (> 3 chlorine atoms)	Intentionally Added	No				
A	Radioactive Substances	Intentionally Added	No				
A	Certain Shortchain Chlorinated Paraffins	Intentionally Added	No				
A	Tributyl Tin (TBT) and Triphenyl Tin (TPT)	Intentionally Added	No				
A	Tributyl Tin Oxide (TBTO)	Intentionally Added	No				
B	Antimony/Antimony Compounds	1000 PPM	No				
B	Arsenic/Arsenic Compounds	1000 PPM	No				
B	Beryllium/Beryllium Compounds	1000 PPM	No				
B	Bismuth/Bismuth Compounds	1000 PPM	No				
B	Brominated Flame Retardants (other than PBBs or PBDEs)	1000 PPM	Yes				ound
B	Nickel (external applications only)	1000 PPM	No				
B	Certain Phthalates	1000 PPM	No		mg		
B	Selenium/Selenium Compounds	1000 PPM	No		mg		
B	Polyvinyl Chloride (PVC)	1000 PPM	No				

**JIG A & B
Substances in Yes /No
Format

(RoHS substances at
Homogeneous level)**

Joint Industry Guide (JIG Homogeneous Materials)

Subpart Instructions: The presence of any JIG Level A or B substances must be declared if they exceed the JIG threshold values or (for Level A only) if they are intentionally added. [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.

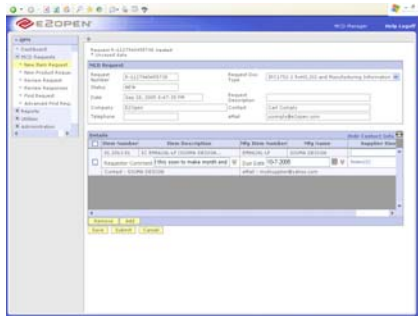
Substance Instructions: [A] select the Level (JIG A, JIG B or Other) [B] select the substance category (JIG) or enter a value (Other). [C] select the substance (JIG) or enter the substance and CAS (Other). [D] select a RoHS exemption, if applicable [E] enter the weight of the substance or the PPM concentration [F] Optionally enter the positive (+) and negative (-) tolerance in percent Note: percent tolerance values are expected to cover a 3 sigma range of distribution). Use the X on the left to delete an unnecessary line.

Part/Subpart Name	Homogeneous Material	Weight	Unit of Measure	Level	Substance Category	Substance	CAS	Exempt	Weight	Unit of Measure	Tolerance		PPM
											-	+	
X flip chip	solder	25.35	mg	A	Lead/Lead Compounds	Lead	7439-92-1	14	9.3795	mg			
X			mg	B	Antimony/Antimony Compo	Antimony (metallic)	7440-36-0		0.0155	mg			
X mold compound	plastic epoxy	452.55	mg	B	Brominated Flame Retardan	Aliphatic/alicyclic bromina	58965-66-5		0.0785	mg			
X heat spreader	copper alloy	375	mg	A	Lead/Lead Compounds	Lead	7439-92-1	6c	9.375	mg			
X			mg	B	Beryllium/Beryllium Compo	Beryllium	7440-41-7		2.125	mg			

Add New Part/Subpart

Add New Substance

**Homogeneous
Material Declaration
JIG A & B
And Other**



Auto-generate form and send to Supplier



Supplier completes Form (manual or data import) and submits back to Requestor



XML data is auto-extracted, analyzed and loaded into Compliance database



Material	Material Description	Material Code	Material Name	Material Type	Material Status	Material Category	Material Group	Material Sub-Group	Material Unit	Material Weight	Material Volume	Material Value	Material Risk
1000000000	1000000000	1000000000	1000000000	1000000000	1000000000	1000000000	1000000000	1000000000	1000000000	1000000000	1000000000	1000000000	1000000000

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Obtain agreement from key constituents (IPC, EIA /JEDEC (JIG), iNEMI, RosettaNet).....	Jan '05
Develop draft data model and pdf form.....	Mar '05
Incorporate iNEMI pilots feedback	Apr '05
Two day meeting to prepare draft standard.....	May '05
Circulate Draft Standard (60 days).....	June '05
Circulate as Proposed Standard for Ballot (30 days)	Sept '05
Resolve comments on Final Draft Standard.....	Oct/Nov '05
2nd Circulation (15 days).....	Dec. 23 '05
Review Ballot results	Jan. 9/10 '06
Release Standard	Feb '06
Establish as IEC standard	tbd

- **The standard and forms provide**
 - Request/Response or Distribute
 - Simple Yes/No RoHS Information
 - JIG level Declaration
 - Homogeneous level reporting, up to 100% declaration
 - Basic manufacturing information for lead-free
 - Attachment of supporting documentation (Lab Reports)
 - Digital Signature of supplier
- **Using this XML based format allows for**
 - “Submit” button to automatically send PDF, XDP, or XML data to Requestor
 - Automation to create forms (Request and Distribute), populate data into requests, extract data into internal systems
- **Free download www.ipc.org/IPC-175X**
 - February release expected

- Background
- IPC-1752 Overview
- **Next Steps**

- **Previous work has proven the concept - now we want to encourage rapid deployment**
- **We have done a number of pilots - no need to repeat them**
- **The emphasis should be on educating the industry on the benefits and helping people with adoption**
- **Work with other organizations to help promote this as a global standard**
 - IEC TC111
 - RosettaNet Japan + Asia (Greater China, Taiwan, Korea, Thailand)
 - JGPSSI
 - ZVEI
 - EICTA

Initiating new iNEMI Project

Proposed Project Scope:

- 1. Identify and promote key elements of supply chain that are committed to using the standard:**
 - OEMs
 - EMSs
 - Component Manufacturers
- 2. From information available and input from project members**
 - Develop generic business case that provides cost analysis, investment required, benefits, etc.

Q & A

- **Contact Information:**

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