ILTAM
Green Directives Workgroup

Second meeting
19.06.08
PFOS (perfluorooctane sulphonates)
• Common usage is found in metal plating, carpets, leather/apparel, textiles, paper and packaging, coatings and coating additives, cleaning products, and pesticides. It is also used by the semi-conductor industry.
• Council Directive 76/69/EEC & which now have its 30th amendment, published as Directive 2006/122/EC, prohibits PFOS content above 0.005%, as of 27.06.08.
• PFOS issue will be finally settled by REACH when the latter enters the stage of restrictions of substances. REACH repeals Directive 76/796/EEC with effect from 1 June 2009.

PFOA (perfluorooctanoic acid, known also as Teflon)
• There is no directive specifically limiting its use (however mentioned in 2006/122/ECOF as a substance to limit its use).
• Due Pont, US PFOA biggest producer, in collaboration with other 7 producers, decide in Jan. 2006 to decrease its usage by 95% up to 2010 and totally avoid this substance by 2015.
DECA-BDE (decabromodiphenyl ether)

- An inexpensive, highly efficient flame retardant that is very compatible with inexpensive high impact polystyrene (HIPS). Most probably, most components manufacturers do not use this substance any more. However, some plastic parts and especially PCBs might still use it.
- When the RoHS initiative first emerged, manufacturers pushed the TAC to exclude the Deca-BDE from the list of PBDEs banned by the directive, and their request was approved.
- On April 1st, this exemption was annulled by The European Court of Justice (ECJ)! Annulation enters into force on July 1, 2008.
• The Oko Institute, who is conducting the **RoHS substance review**, has drawn up a list of 46 substances for scrutiny!
• China-RoHS: A very brief version of the Catalogue may be released towards the end of 2008.
Norway PoHS

- Restriction of 18 substances, some of which are beyond the RoHS.
- Exemptions do not exclude restrictions on Pb and Cd in monitoring and control instruments (RoHS category 9).
- PoHS is still undergoing the process of assessing the 95 or so responses to the stakeholder consultation.
- It will be a couple of months until Norway is able to propose a new date for implementation. There may be changes to the substances or limit values as a result of the consultation process.

**Summary:** Problem to all manufacturers import into Norway!
• In June 2007 the EU REACH Regulation entered into force.
• As of June 1, 2008, EU manufacturers and importers of goods are in many instances required to submit a registration dossier for the substances they manufacture or import, on their own or in preparations, in quantities of **one ton or more per manufacturer or importer per year**.
• Manufacturers and importers of so-called "phase-in" substances (substances already delivered into the EU) will benefit from a phase-in registration period if they pre-register their substances between June 1 and December 1, 2008.

**Summary:** Most electronic equipment manufacturers are out of the 1T/Y boundary, therefore the REACH is not applicable for them.
Will EU REACH (Registration, Evaluation, Authorization and Restriction of Chemical substances) influence and change the chemical regulatory systems of Asia, as EU RoHS has done in China, Japan and Korea?

**The answer is YES!**

- China, Japan and Korea are (or will be) filling the regulatory gap they see between REACH and their chemical regulatory systems.

Predictions for the coming years:

1) Most Medical and Monitoring and Control equipment will come into scope for RoHS, effective 2012.

2) New substances will be added to RoHS - effective 2012.

3) Tin Whisker failures will start to show up.

4) REACH will become the major compliance project.
Material Declaration

Example of Materials......

- lead-frame coating
- board surface finish
- copper board finish
- epoxy
- glass
- solder
- copper

AudioCodes' Confidential Information
IPC-1752 is the standard for the exchange of materials declaration data. It was developed by a committee of OEMs, EMS providers, component manufacturers, circuit board manufacturers, materials suppliers, information technology solution providers, and the National Institute of Standards and Technology. The file includes:

- IPC-1751, *Generic Requirements for Declaration Process Management*
- IPC-1752, *Materials Declaration Management*
- IPC-1752 XML Schema
- IPC-1752-1, *PDF Form for General and Class I Materials Declarations*
- IPC-1752-2, *PDF Form for Class II Materials Declarations*
• IPC lists 136 companies W/W already committed to this spec (among which are Lucent; Sanmina; Solectron; SUN; Freescale; GE; TI and more).
• The standard refers to RoHS & JIG A and B type of substances.
• Additional standards are under consideration:
  o **IPC-1753: Laminate Structure Declaration Management** (intended to become a replacement for IPC-1730).
  o **IPC-1754: Printed Board Declaration Management** (intended to become a replacement for IPC-1710).
  o **IPC-1755: Electronic Assembly Declaration Management** (intended to become a replacement for IPC-1720).
IPC-1751, Generic Requirements for Declaration Process Management (V1.1)

- Provides the principles and details for material declaration necessary between members of a supply chain relationship.
- The descriptions apply to the entire document set and are used to define and maintain the declaration type information.
- Provides for the creation of a record that will serve as a legal commitment between trading partners and may be used to establish due diligence in any dispute in third party litigation.
IPC-1752, *Materials Declaration Management* (v. 1.1)

- Establishes the requirements for exchanging materials and substances data between suppliers and their customers for electrical and electronic equipment (EEE).
- Applies to products, components, subparts and materials that are supplied to EEE manufacturers for incorporation into their products.
- Covers materials and substances that may be present in the supplied product or subpart.
IPC-1752 XML Schema (V. 1.1)

- The 1752 schema is linked to the two forms and permits IT personnel to develop database concepts that capture instance files created by the forms.

IPC-1752-1, PDF Form for General and Class I Materials Declarations (V1.1)

IPC 1752-2, PDF Form for Class II Materials Declarations (V1.1)

- These forms are for request-response and supplier self-declaration. They are designed so they may be completed using free Adobe® Reader® 7.0 software, either by manual data entry, by importing saved data, or through integration and automation with internal systems. They can be saved locally and submitted electronically back to the requester.
### Material Composition Declaration

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**IPC Standard**
1752.1

**IPC Website**
http://www.ipc.org/committeedetail.asp?Committee=2.18

Form Type *
Request/Reply

Declaration Type *
RoHS and JIG Substances

---

### Request for Information

<table>
<thead>
<tr>
<th>Request Date</th>
<th>Request Document ID</th>
<th>Internal Item Name</th>
<th>Internal Item Number</th>
<th>Contact Name *</th>
<th>Contact Title</th>
<th>Contact Phone *</th>
<th>Contact Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-12-01</td>
<td></td>
<td>NTW AU CODES MGW</td>
<td>01890256G2</td>
<td>Loney Glaes</td>
<td>RoHS/WEEE Specialist</td>
<td>(847)632-2243</td>
<td><a href="mailto:050910C@motorola.com">050910C@motorola.com</a></td>
</tr>
</tbody>
</table>

**Company Unique ID**
Motorola Inc.

**Company Name**
Motorola Inc.

**Company Unique ID**
Unique ID Authority

**Digital Signature of Requester**
Manufacturing Site worst case

**My ID for the Manufacturer**
200350

**Destination** - URL or Email address
mailto:ROHSANE@motorola.com

---

### Supplier Information

<table>
<thead>
<tr>
<th>Response Date *</th>
<th>Response Document ID</th>
<th>Contact Name *</th>
<th>Contact Title</th>
<th>Contact Phone *</th>
<th>Name of person certifying as true and correct *</th>
<th>Year Glaed</th>
<th>Certifying Email *</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Neil Blumenthal</td>
<td>Senior Strategic Account Manager</td>
<td>773-695-8894</td>
<td>CertifyingTitle *</td>
<td>Certifying Phone *</td>
<td><a href="mailto:Neil.Blumenthal@audiocodes.com">Neil.Blumenthal@audiocodes.com</a></td>
</tr>
</tbody>
</table>

**Company Name**
Motorola Inc.

**Company Unique ID**
Unique ID Authority

**Contact Email**
neil.blumenthal@audiocodes.com

**Item Name**
TP1610

**Item Number**
TP1610

**Item Weight**
1g

**Effective Date**
Version

**Availability Date**
Manufacturing Site

**Alternative Part Comments**
Item Comments

---

### Manufacturing Process Information

<table>
<thead>
<tr>
<th>Material Group</th>
<th>Terminal Base Alloy</th>
<th>J-STD-020 Moisture</th>
<th>Maximum Reflow Temp</th>
<th>Maximum Cycles for Reflow</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

* Required Field

---

**Form enabled courtesy of Adobe Systems**

**IPC Form 1752.1 v06**

**DRAFT**
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. NCTE. 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.

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 (10 PPM) of homogeneous material for Cadmium.

RoHS Declaration
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 declaration and submit the form to have it returned to the requestor.

RoHS Exemptions
Exemptions: The item on this form meets the specifications listed under General Compliance for RoHS, as applicable. The exemptions to the RoHS directive are listed for reference purposes only. If the item has exemptions then select the appropriate response in the RoHS Declaration above and checkboxes will appear below.

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 triphosphat 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
5. Lead in glass of cathode ray tubes, electronic components and fluorescent tubes
6a. Lead as an alloying element in steel containing up to 0.36% lead by weight
6b. Lead as an alloying element in aluminum containing up to 0.4% lead by weight
e. 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, signaling, transmission as well as network management for telecommunications
7c. Lead in electronic ceramic parts (e.g. piezoelectronic devices)
9. Hexavalent chromium as an anti-corrosion of the carbon steel cooling system in absorption refrigerators
10. Lead used in compliant pin connectors systems
11. Lead as a coating material for a thermal conduction module c-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 microcontrollers with a lead content of more than 80% and less than 85% by weight
14. Lead in solders consisting of 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 RoHS 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 four substances noted with an asterisk (*) below, which are defined at the homogeneous level. If the maximum concentration of any RoHS Substance is intentionally added or exceeds the JIG threshold levels within any homogeneous material contained in the item, then the RoHS substance content must be reported in total weight or ppm within the item along with a description of material use. The JIG can be downloaded at [http://www.eia.org/jig](http://www.eia.org/jig).

<table>
<thead>
<tr>
<th>JIG</th>
<th>Category Name</th>
<th>Threshold Level</th>
<th>Above Threshold Level?</th>
<th>If yes, enter weight or PPM</th>
<th>Description of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Asbestos</td>
<td>Intentionally Added</td>
<td>No</td>
<td>Weight Unit PPM</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Certain Azo colorantes</td>
<td>Intentionally Added</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Cadmium/Cadmium Compounds *</td>
<td>75 ppm or Intentionally Added</td>
<td>No</td>
<td>mg</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Hexavalent Chromium/Hexavalent Chromium Compounds *</td>
<td>1000 ppm or Intentionally Added</td>
<td>No</td>
<td>mg</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Lead/Lead Compounds *</td>
<td>1000 ppm or Intentionally Added</td>
<td>No</td>
<td>mg</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Lead/Lead Compounds - PVC Cables Only</td>
<td>300 ppm or Intentionally Added</td>
<td>No</td>
<td>mg</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Mercury/Mercury Compounds</td>
<td>1000 ppm or Intentionally Added</td>
<td>No</td>
<td>mg</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Ozone Depleting Substances (CFCs, HFCs, carbon tetrachloride, etc.)</td>
<td>Intentionally Added</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Ozone Depleting Substances (HFCs)</td>
<td>Class II. (HFCs): 1000 ppm</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Polybrominated Diphenylethers (PBDEs) *</td>
<td>1000 ppm or Intentionally Added</td>
<td>No</td>
<td>mg</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Polybrominated Diphenyls (PBD)</td>
<td>1000 ppm or Intentionally Added</td>
<td>No</td>
<td>mg</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Polyphosphinated Naphthalenes (&gt;3 chlorine atoms)</td>
<td>Intentionally Added</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Radioactive Substances</td>
<td>Intentionally Added</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Certain Shortchain Chlorinated Paraffins</td>
<td>Intentionally Added</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Tributyl Tin (TBT) and Triphenyl Tin (TPT)</td>
<td>Intentionally Added</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Tributyl Tin Oxide (TTO)</td>
<td>Intentionally Added</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Antimony/Antimony Compounds</td>
<td>1000 ppm or Intentionally Added</td>
<td>No</td>
<td>mg</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Arsenic/Arsenic Compounds</td>
<td>1000 ppm or Intentionally Added</td>
<td>No</td>
<td>mg</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Beryllium/Beryllium Compounds</td>
<td>1000 ppm or Intentionally Added</td>
<td>No</td>
<td>mg</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Bismuth/Bismuth Compounds</td>
<td>1000 ppm or Intentionally Added</td>
<td>No</td>
<td>mg</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Brominated Flame Retardants (other than PBDEs)</td>
<td>1000 ppm or Intentionally Added</td>
<td>No</td>
<td>mg</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Nickel (external applications only)</td>
<td>1000 ppm or Intentionally Added</td>
<td>No</td>
<td>mg</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Certain Phthalates</td>
<td>1000 ppm or Intentionally Added</td>
<td>No</td>
<td>mg</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Selenium/Selenium Compounds</td>
<td>1000 ppm or Intentionally Added</td>
<td>No</td>
<td>mg</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Polyvinyl Chloride (PVC)</td>
<td>1000 ppm or Intentionally Added</td>
<td>No</td>
<td>mg</td>
<td></td>
</tr>
</tbody>
</table>

[IPC Form 1752.1 v09] DRAFT

Form enabled courtesy of Adobe Systems.
IPC-1752-3, Users Guide for Materials Declaration Forms (V 1.1)

• This User’s Guide provides instructions, with examples, on how to properly use and complete the standard PDF forms developed as a part of the IPC-1752 standard.

• The details provide recommended procedures and mandatory implementation concepts.

Note: Version 1.1 documents have been updated to include the June and October, 2006 exemptions approved by the EU.
## Reporting Classes

<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
<th>Form Type</th>
<th>Declaration Type</th>
</tr>
</thead>
</table>
| Class 1 | - RoHS reporting at a homogeneous material level in yes/no format.                                                                                                                                          | IPC-1752-1  
IPC-1752-2 | RoHS Yes/No                      |
| Class 2 | - RoHS reporting at a homogeneous material level in yes/no format.  
- Manufacturing process reporting.                                                                                                                  | IPC-1752-1  
IPC-1752-2 | RoHS Yes/No, Mfg Process Info     |
| Class 3 | - RoHS reporting at a homogeneous material level in yes/no format.  
- RoHS substance reporting at a homogeneous level.  
- Other JIG A & B substances plus other substances reporting at the item level.                                                                 | IPC-1752-1 | RoHS Yes/No, JIG formatted substances |
| Class 4 | - RoHS reporting at a homogeneous material level in yes/no format.  
- RoHS substance reporting at a homogeneous material level.  
- Other JIG A & B substances plus other substances reporting at the item level.  
- Manufacturing process reporting.                                                                                                                  | IPC-1752-1 | RoHS Yes/No, JIG formatted substances, Mfg Process Info |
| Class 5 | - RoHS reporting at a homogeneous material level in yes/no format  
- Substance reporting at the homogeneous material level.  
- JIG A & B substances and other substances are accommodated.                                                                                     | IPC-1752-2 | RoHS, JIG & other substances         |
| Class 6 | - RoHS reporting at a homogeneous material level in yes/no format  
- Substance reporting at the homogeneous material level.  
- JIG A & B substances and other substances are accommodated.  
- Manufacturing process reporting.                                                                                                                  | IPC-1752-2 | RoHS, JIG & other substances and manufacturing information |
• In some EU states, registration is already mandatory (e.g. Germany, Spain).

• “Producer” interpretation: Registration must be done by local producer/importer.

• The exact status of legislation in each EU states can be found in -
  http://www.buyusa.gov/europeanunion/weee_rohs_countries.html
China WEEE

- Came into effect on 1 Feb. 2008.
- Mainly about the requirements for recyclers. There is one mention in Article 14 on producer responsibility (which, actually, is identical to the current effective China-RoHS marking requirements).
- No formal English version is available.