

# JOINT INDUSTRY GUIDE (JIG)

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## Material Composition Declaration for Electrotechnical Products

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# MATERIAL COMPOSITION DECLARATION GUIDE FOR ELECTROTECHNICAL PRODUCTS

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*(Formulated under the cognizance of the Joint Industry Materials Declaration Guide International Steering Committee)*

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## **Introduction**

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The electrotechnical industry tracks and discloses specific information about the material composition of its products due to legal and market requirements. In order to obtain this information, the industry must gather information about the composition of products that are purchased from suppliers for incorporation into final products. This affects the entire supply chain worldwide.

Material composition information can help manufacturers among others to:

- satisfy legal and regulatory requirements;
- drive improvements in product design; and
- respond to inquiries from customers, product recyclers and other stakeholders.

To obtain material composition data, many manufacturers have developed material declaration questionnaires (also known as green procurement surveys or supply chain questionnaires) that require suppliers to disclose certain information about the products they sell. These questionnaires usually take the form of a list of banned or restricted materials and substances that the supplier must disclose if they are present in the product. Due to the diversity of information requests and formats, it is difficult for suppliers to manage material declaration requests.

Recognizing the challenges that the entire global electrotechnical industry faces from diverse material composition requests, a workgroup composed of industry representatives developed this material composition declaration guide, which is designed to promote consistent and standardized material declaration requests across the global supply chain.

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## 1 Scope

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This Guide applies to products that are supplied to manufacturers of electrotechnical products for incorporation (into their products). It covers materials and substances that may be present in the supplied product, including batteries. It does not apply to process chemicals (i.e. chemicals used and consumed during manufacture) unless those process chemicals constitute part of the finished product, nor does it apply to packaging (e.g. cardboard, plastic tray).

This Guide represents industry-wide consensus on the relevant materials and substances that shall be disclosed by suppliers when those materials and substances are present in products that are incorporated into electrotechnical products. The Guide benefits suppliers and their commercial customers by providing consistency and efficiency to the material declaration process and will promote the development of consistent data exchange formats and tools that will facilitate and improve data transfer along the entire global supply chain. It applies to business-to-business transactions. It is not intended to be used by the general public when making purchasing decisions.

### **This Guide contains:**

- the lists of substances for disclosure when contained in electrotechnical products;
- the threshold levels for substances in electrotechnical products, equal to or above which the quantity of the substance must be disclosed;
- the regulatory requirements that establish threshold levels for electrotechnical products, where appropriate;
- a set of data fields for information exchange.

This Guide does not preclude companies from inquiring about the presence of additional substances when necessary for their needs. However, such requests are outside the scope of this Guide.

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## 2 Use of Guide

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This Guide establishes the framework that the industry may use to report a substance content declaration. The Guide establishes the substances to be reported as well as their reporting thresholds, agreed by the industry to govern substance content disclosures for electrotechnical products due to regulatory or market requirements. Criteria justifying the substances to be reported and their threshold levels are provided in chapter 4. Threshold levels may not always indicate regulatory bans or restrictions as substance disclosure is also warranted to support regulatory labeling and/or reporting as well as industry recognized design for environment requirements. Suppliers shall disclose the presence of a substance or material if it exceeds the specified threshold level described in this Guide in their supplied product. Reporting substance content that exceeds these threshold levels is required regardless of whether the supplier's product is eligible for any exemption from regulatory requirements. This substance content disclosure information is relevant because it has been determined that manufacturers and other purchasers require this data in order to determine the status of the supplier's product with respect to applicable regulation, design specifications, or other objectives.

Suppliers shall be prepared to report to their customers substance categories or substances that are listed in the normative Annex A. The informative Annex B provides additional information and lists members of the substance categories without being comprehensive in most cases. If suppliers lack the substance information that is necessary to respond to customer inquiries that are based on this Guide, suppliers are expected to use this Guide with their own suppliers in order to obtain the necessary information. The recommended set of data fields for reporting purposes is provided in Annex D.

When determining whether it is necessary to report a substance, the following should be considered:

- 1) If a material/substance is present in the product above the threshold level it shall be reported. Where this level is set as a numeric value, the presence of substances shall be reported when the amount present equals or exceeds that value. Where the threshold level is set to "intentionally added", the presence of substances shall be reported when the substance meets the definition of "intentionally added" regardless of quantity. Suppliers shall report such substances when they have knowledge (or with reasonable inquiry should have knowledge) of their presence. Where this level represents a dual reporting threshold ("intentionally added" or a numerical value listed in Table A) follow the flowchart Figure C-1 in Annex C to determine if and at what level reporting is required.
- 2) If the reporting of a substance is limited to specific reportable applications (see Table A in Annex A), reporting is required if the substance exceeds the threshold level and if the product falls within these reportable applications. If the supplier is uncertain on applicability of the reportable application to their product, then the presence of the substance should be declared if it exceeds the threshold level in the supplied product.
- 3) In situations where a substance has multiple threshold levels due to varying legal/regulatory requirements for different reportable applications, separate reporting is required for each of the reportable applications for which the threshold level is exceeded.
- 4) If a substance is present in the product below the threshold level, reporting is not required.

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### 3 Terms and Definitions

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For the purposes of this Guide the following definitions apply:

**Homogeneous material:** A material that cannot be mechanically disjointed into different materials.

- The term “homogeneous” means “of uniform composition throughout.” Examples of “homogeneous materials” are individual types of plastics, ceramics, glass, metals, alloys, paper, board, resins and coatings.
- The term “mechanically disjointed” means that the materials can, in principle, be separated by mechanical actions such as: unscrewing, cutting, crushing, grinding and abrasive processes.

**Intentionally added:** Deliberately used in the formulation of a product where its continued presence is desired to provide a specific characteristic, appearance, property, attribute or quality.

**Material:** A material is made up of one or more substances (e.g., an alloy is a material, which in turn is made up of a number of substances).

**Product:** The item that the respondent making a material composition declaration is supplying to the electrotechnical industry (such as assembly, subassembly or component). The term “product” also covers a product family if the products within that family perform the same function and have consistent material declarations.

Note: Under the EU REACH regulation (Registration, Evaluation, Authorization and Restriction of Chemicals) product would be called “article”.

**Reportable application:** The intended use of a substance which determines its relevance to a given scope and threshold for disclosure

Note: This use is defined in the scope of the underlying law or industry standard. Examples are batteries, textiles, wood etc.

**Substance:** A chemical element or compound e.g., lead (a chemical element), lead oxide (a compound), polyvinyl chloride (a compound). Registry Numbers (RN) of the Chemical Abstracts System of the American Chemical Society (“CAS” numbers) and/or European Chemical (“EC” numbers) are attributed to all chemical elements and most of their compounds and should be used for their identification. CAS numbers and EC numbers are provided (in Annex B) for these substances where known.

**Threshold level:** The concentration level that defines the limit at or above which the presence of a substance in a product shall be declared based on the requirements of this Guide.

Numerical threshold levels are provided in weight % (and parts per million, or ppm). The conversion to be used to calculate ppm is 0.1 % = 1 000 ppm.



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## 4 Materials and Substances

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This Guide establishes three criteria that determine whether substances shall be declared. The resulting declarable substance list is based on these criteria which the industry has determined justify disclosure when these material/substances are present in electrotechnical products in amounts that exceed their specified threshold levels.

- Criteria 1 – R (Regulated)  
Substances that are subject to enacted legislation that (a) prohibits their use; or (b) restricts their use; or (c) requires reporting or results in other regulatory effects (e.g. labeling) and where the substance-specific effective date is currently in effect or scheduled to go into effect at a specific date in the future.
- Criteria 2 – A (For Assessment Only)  
Substances that are likely to be subject to enacted legislation where the substance-specific effective dates of the regulatory requirements are uncertain..
- Criteria 3 – I (For Information Only)  
Substances that are not regulated but where there is a recognized market requirement for reporting their content in electrotechnical products. Reporting is used to facilitate company assessment regarding widely adopted industry environmental agreements or standards.

The criteria are listed in their order of priority. Substances that might be covered by more than one of these criteria will enter the declarable substance list only once, referring to the criteria with the highest order of priority and its requirements. The fact that a substance is listed in Annex A does not necessarily indicate a ban or restriction of that substance.

The following criteria determine the threshold level for substance/material reporting:

- When a law or regulation exists that sets a content threshold for a substance, the value of concentration set forth in the law serves as threshold level for that substance.
- Threshold levels for a substance are assigned to reportable applications if the law specifies such information (e.g., lead in batteries has a different reporting threshold than lead in other applications).
- Where multiple laws/regulations apply to a substance in a reportable application:
  - If these laws all contain numerical content threshold levels the lowest concentration specified among all laws acts as the threshold level.
  - If none of these laws specifies a numeric content threshold level, “intentionally added” acts as the threshold level
  - If at least one of these laws specifies a numerical content threshold and another law does not specify a numerical content threshold, then the lowest numerical concentration threshold and “intentionally added” both act as dual reporting thresholds. See Annex C for instructions on the application of dual reporting thresholds.
- For substances falling under Criteria 3 – I, the default threshold level is set to 0.1 % (1 000 ppm) by weight of the product unless a different limit is specified by the industry standard or agreement.

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**5 Data Format**

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This Guide establishes the data disclosure framework. The framework contains required data fields as well as optional data fields. Optional fields may be added at the discretion of the requestor. Annex D contains the required and optional data fields.

There are a variety of data formats and tools that companies can use to implement this Guide. These tools could range from a paper form, a computerized spreadsheet, to an xml based e-business solution, such as the IPC-1752 family of reporting standards. This Guide does not dictate the use of any specific tool. Rather, it establishes the minimum data fields (as well as possible optional data fields) that can be used, giving companies the flexibility to select the tool that best meets their business needs. As a result, companies are allowed to add additional data fields not covered by this Guide, but still be consistent with the data format of the Guide.

Annex E contains two examples of a simple material declaration format. The first contains only the required fields. The second example contains the required data fields and the optional negative declaration field. Annex E also references examples of other material declaration formats and tools.

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**6 Disclaimers**

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Although this guide and its annexes contain references to legal citations and regulatory limits for certain listed substances, these citations and regulatory limits should not be relied upon for compliance purposes. The annexes also provide examples of expected use and regulatory restrictions and prohibitions relating to the substances. The examples are for reference only and do not constitute a comprehensive reference to all uses, regulations, and prohibitions and should not be used for compliance purposes. Please contact legal counsel for specific compliance requirements. Any use of this Guide, other than uses that are consistent with its stated purpose, are neither sanctioned nor endorsed by CEA, DIGITALEUROPE or JGPSSI. Furthermore, where substances are listed in this Guide, their listing does not infer or constitute an industry judgment as to their safety, environmental or health impacts.

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**Annex A (Normative) JIG Declarable Substance List**

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The threshold levels are set by applicable legal requirements that ban or restrict their use or require reporting or labeling. Therefore, assessment as to whether the threshold level has been met must be based on the relevant legal requirements. If a new law establishes a lower threshold for ban, restriction, labeling or reporting purposes; the thresholds and regulatory citations will be revised accordingly. Suppliers can voluntarily report to levels below the thresholds shown in Table A, but this is not required to meet the intent of this Guide.

NOTE 1: Where this level is set as a numeric value, the presence of substances shall be reported when the amount present equals or exceeds that value. Where the threshold level is set to “intentionally added”, the presence of substances shall be reported when the substance meets the definition of “intentionally added” regardless of quantity. Suppliers shall report such substances when they have knowledge (or with reasonable inquiry should have knowledge) of their presence. Where this level represents a dual reporting threshold (“intentionally added” or a numerical value listed in Table A) follow the flowchart Figure C-1 in Annex C to determine if and at what level reporting is required.

NOTE 2: For some categories the numeric threshold level specifies a different denominator than the product. In these cases reporting of the substance shall be based on the details provided (e.g. weight percentage of the substance in the material or in a battery).

NOTE 3: The “Key Legal and Regulatory or Industry Standard/Agreement Citation” and “Examples of Use” columns in Table A are for information only.

NOTE 4: The “Key Legal and Regulatory or Industry Standard/Agreement Citation” aims to cite the regulation that is responsible for setting the respective numeric threshold. As “intentionally added” is used as a default in case no numeric threshold is provided in any legislation, none of the legislations cited might specify this threshold. The listing of legislations is not comprehensive. Please consult legal counsel for additional compliance information if necessary.

NOTE 5: In some cases only a subset of the substances in a chemical category is regulated. Please refer to Annex B for details.

NOTE 6: When a substance is listed in Table A with a CAS number, then the reporting applies to the substance with that specific CAS number only. Reporting shall be based on the total mass of the substance with CAS number listed in Table A in the product being declared.

For substance / substance categories listed in Table A without a CAS number quantification and reporting shall be based on the total mass of all relevant compounds in the category that are present in the product being declared, unless the threshold level defines a deviating method.

NOTE 7: The “Latest Revision” indicates the date when this entry was last changed. “Revision Type” indicates the type of change limited to (i) addition as a new substances, (ii) change of the reportable application (iii) change in threshold level. Changes in the legal citation do not trigger an update of these entries. Annex H contains JIG-101 edition number and more details on the change for the corresponding latest revision date.

**Table A – JIG Declarable Substance List**

| Substance/<br>Category   | CAS #/<br>EC #                   | Criteria | Key Legal and Regulatory or<br>Industry Standard/Agreement<br>Citation   | Reportable<br>Application(s)   | Threshold Level<br>(Reporting level)   | Examples of Use   | Latest<br>Revision | Revision<br>Type |
|--|----------------------------------|----------|--|--|--|---|--------------------|------------------|
| Asbestos   | See Annex B                      | R        | ANNEX XVII of REACH<br>Regulation (EC) No 1907/2006;<br>US TSCA; Swiss Ordinance on<br>Reduction of Risk from Chemical<br>Products | All  | Intentionally added  | Insulator, filler, pigment,<br>paint, talc,   | 4/1/2005           | (i)              |
| Azocolourants and<br>azodyes which form certain<br>aromatic amines <sup>1</sup>  | Not applicable <sup>1</sup>      | R        | ANNEX XVII of REACH<br>Regulation (EC) No 1907/2006;   | Textiles and<br>leather  | 0.003% by weight<br>(30 ppm) of the finished<br>textile/leather product <sup>1</sup> | Pigment, dyes, colorants  | 4/28/2009          | (iii)            |
| 1,2-Benzenedicarboxylic acid,<br>di-C6-8-branched alkyl esters,<br>C7-rich (DIHP)  | CAS# 71888-89-6<br>EC# 276-158-1 | A        | ECHA Registry of Intentions<br>25.10.2010  | All  | 0.1% by weight<br>(1 000 ppm) of the<br>product                                      | Plasticizer, dye, pigment,<br>paint, ink, adhesive,<br>lubricant  | 3/1/2011           | (i)              |
| 1,2-Benzenedicarboxylic acid,<br>di-C7-11-branched and linear<br>alkyl esters (DHNUP)  | CAS# 68515-42-4<br>EC# 271-084-6 | A        | ECHA Registry of Intentions<br>04.10.2010  | All  | 0.1% by weight<br>(1 000 ppm) of the<br>product                                      | Plasticizer, dye, pigment,<br>paint, ink, adhesive,<br>lubricant  | 3/1/2011           | (i)              |
| Beryllium oxide (BeO)  | CAS# 1304-56-9                   | I        | DIGITALEUROPE <sup>2</sup> /CECED/<br>AeA <sup>3</sup> / EERA guidance   | All  | 0.1% by weight<br>(1 000 ppm) of the<br>product                                      | Ceramics  | 4/28/2009          | (ii)             |
| 4-[4,4'-bis(dimethylamino)<br>benzhydrylidene] cyclohexa-<br>2,5-dien-1-ylidene]<br>dimethylammonium chloride<br>(C.I. Basic Violet 3) | CAS# 548-62-9<br>EC# 208-953-6   | A        | ECHA Registry of Intentions<br>25.10.2010  | All  | 0.1% by weight<br>(1 000 ppm) of the<br>product                                      | Colorant in plastics or<br>paints   | 3/1/2011           | (i)              |
| Boric acid   | See Annex B                      | R        | Article 33 and 7.2 of REACH<br>Regulation (EC) No 1907/2006<br>(Candidate list of SVHC for<br>authorization 18.06.2010)            | All  | 0.1% by weight<br>(1 000 ppm) of the<br>product                                      | In wood veneers/ pressed<br>wooden panels as starch<br>additive, flame retardant<br>and stabilizer in<br>aminoplastic resin,<br>wood preservative,<br>as flame retardant in<br>wood, cotton and other<br>plant derived material | 9/13/2010          | (i)              |
| Brominated flame retardants<br>(other than PBBs, PBDEs, or<br>HBCDD)   | See Annex B                      | I        | DIGITALEUROPE <sup>2</sup> /CECED/<br>AeA <sup>3</sup> / EERA guidance,  | Plastic parts >25<br>grams other than<br>in printed wiring<br>board<br>assemblies <sup>4</sup> | 0.1% by weight<br>(1 000 ppm) of plastic<br>material                                 | flame retardant for<br>housing, connectors,<br>package molding sealing  | 4/28/2009          | (ii)             |

| Substance/<br>Category  | CAS #/<br>EC #                  | Criteria | Key Legal and Regulatory or<br>Industry Standard/Agreement<br>Citation  | Reportable<br>Application(s)                  | Threshold Level<br>(Reporting level)  | Examples of Use   | Latest<br>Revision | Revision<br>Type |
|---|---------------------------------|----------|---|---|---|---|--------------------|------------------|
| Brominated flame retardants<br>(other than PBBs,PBDEs, or<br>HBCDD) | See Annex B                     | I        | IPC-4101 and<br>IEC 61249-2-21  | Printed wiring<br>board laminate <sup>4</sup> | 0.09% total bromine<br>content by weight<br>(900 ppm) in the<br>laminate      | flame retardant   | 3/31/2010          | (ii,iii)         |
| Cadmium/cadmium<br>compounds  | See Annex B                     | R        | ANNEX XVII of REACH<br>Regulation (EC) No 1907/2006;<br>EU Directive 2002/95/EC and<br>2005/618/EC;<br>China MII Methods;<br>Korea RoHS;<br>Japan J-MOSS;<br>US/CA SB-20/50   | All, except<br>batteries                      | 0.01% by weight<br>(100 ppm) of cadmium<br>in homogeneous<br>materials        | Pigment, anti-corrosion<br>surface treatment,<br>optical glass, stabilizer,<br>plating, fluorescent,<br>electrode, solder, electric<br>contact, contact point,<br>zinc plating, | 4/28/2009          | (ii)             |
| Cadmium/cadmium<br>compounds  | See Annex B                     | R        | Swiss Ordinance on Reduction<br>of Risk from Chemical Products;<br>EU Battery Directive 2006/66/EC<br>Chinese Standard GB 24427-<br>2009 "Limitation of mercury,<br>cadmium and lead contents for<br>alkaline and non-alkaline zinc<br>manganese dioxide batteries" | Batteries <sup>5</sup>                        | 0.0005% by weight<br>(5 ppm) of cadmium in<br>battery                         | NiCd accumulators   | 4/28/2009          | (ii)             |
| Chromium VI<br>compounds  | See Annex B                     | R        | EU Directive 2002/95/EC and<br>2005/618/EC;<br>China MII Methods;<br>Korea RoHS;<br>Japan J-MOSS;<br>US/CA SB-20/50   | All   | 0.1% by weight<br>(1 000 ppm) of<br>chromium (VI) in<br>homogeneous materials | Pigment, paint, ink,<br>catalyst, plating, anti-<br>corrosion surface<br>treatment, dye,  | 4/28/2009          | (iii)            |
| Cobalt dichloride (CoCl <sub>2</sub> )                              | CAS# 7646-79-9<br>EC# 231-589-4 | R        | Article 33 and 7.2 of REACH<br>Regulation (EC) No 1907/2006<br>(Candidate list of SVHC for<br>authorization 13.01.2010)   | All   | 0.1% by weight<br>(1 000 ppm) of the<br>product                               | Pneumatic panels to<br>indicate water<br>contamination  | 3/31/2010          | (i)              |
| Diarsenic pentoxide   | CAS# 1303-28-2<br>EC# 215-116-9 | R        | Article 33 and 7.2 of REACH<br>Regulation (EC) No 1907/2006<br>(Candidate list of SVHC for<br>authorization 28.10.2008)   | All   | 0.1% by weight<br>(1 000 ppm) of the<br>product                               | Additive in wood, metal,<br>glass and plastics  | 4/28/2009          | (i)              |
| Diarsenic trioxide  | CAS# 1327-53-3<br>EC# 215-481-4 | R        | Article 33 and 7.2 of REACH<br>Regulation (EC) No 1907/2006<br>(Candidate list of SVHC for<br>authorization 28.10.2008)   | All   | 0.1% by weight<br>(1 000 ppm) of the<br>product                               | Additive in wood, metal,<br>glass and plastics  | 4/28/2009          | (i)              |

| Substance/<br>Category                          | CAS #/<br>EC # | Criteria | Key Legal and Regulatory or<br>Industry Standard/Agreement<br>Citation  | Reportable<br>Application(s)  | Threshold Level<br>(Reporting level)                               | Examples of Use   | Latest<br>Revision | Revision<br>Type |
|---|----------------|----------|---|---|--|---|--------------------|------------------|
| Dibutyltin (DBT) compounds                      | See Annex B    | R        | ANNEX XVII of REACH<br>Regulation (EC) No 1907/2006<br>and Commission Regulation<br>(EU) No 276/2010                    | All   | 0.1% by weight<br>(1 000 ppm) of tin in a<br>material <sup>6</sup> | Stabilizer for PVC, curing<br>catalyst for silicone resin<br>and urethane resin   | 3/31/2010          | (i)              |
| Diocetyl tin (DOT) compounds                    | See Annex B    | R        | ANNEX XVII of REACH<br>Regulation (EC) No 1907/2006<br>and Commission Regulation<br>(EU) No 276/2010                    | (a) textile and<br>leather articles<br>intended to come<br>into contact with<br>the skin,<br>(b) childcare<br>articles<br>(c) two-component<br>room temperature<br>vulcanisation<br>moulding kits<br>(RTV-2 moulding<br>kits) | 0.1% by weight<br>(1 000 ppm) of tin in a<br>material <sup>6</sup> | Stabilizer for PVC, curing<br>catalyst for silicone resin<br>and urethane resin   | 3/31/2010          | (i)              |
| Dimethyl fumarate                               | CAS# 624-49-7  | R        | COMMISSION DECISION<br>2009/251/EC  | All   | 0.00001% by weight<br>(0.1 ppm) in a material <sup>6</sup>         | Biocide, mold treatment<br>of electronic leather seats,<br>including recliners,<br>massage chairs   | 3/31/2010          | (i)              |
| Disodium tetraborate,<br>anhydrous              | See Annex B    | R        | Article 33 and 7.2 of REACH<br>Regulation (EC) No 1907/2006<br>(Candidate list of SVHC for<br>authorization 18.06.2010) | All   | 0.1% by weight<br>(1 000 ppm) of the<br>product                    | In wood veneers/ pressed<br>wooden panels as starch<br>additive, flame retardant<br>and stabilizer in<br>aminoplastic resin,<br>wood preservative | 9/13/2010          | (i)              |
| Fluorinated greenhouse gases<br>(PFC, SF6, HFC) | See Annex B    | R        | EU Reg. No. 842/2006  | All   | Intentionally added  | Refrigerants, blowing<br>agents, extinguishing<br>agents, cleaning agents,<br>insulating media, caustic<br>gas                                    | 4/28/2009          | (i)              |

| Substance/Category  | CAS #/<br>EC # | Criteria | Key Legal and Regulatory or Industry Standard/Agreement Citation  | Reportable Application(s)  | Threshold Level (Reporting level)                           | Examples of Use   | Latest Revision | Revision Type |
|---|----------------|----------|---|--|---|---|-----------------|---------------|
| Formaldehyde  | CAS# 50-00-0   | R        | US/CA CARB Rule<br>US Federal Law 111-199/TSCA Section 601  | Composite wood (plywood, particle board, medium density fiberboard) products or components | Intentionally added <sup>7</sup>                            | Stereo cabinets, kiosk enclosures   | 4/28/2009       | (i)           |
| Formaldehyde  | CAS# 50-00-0   | R        | Austria - BGB I 1990/194: Formaldehydverordnung, §2, 12/2/1990;<br>Lithuanian Hygiene Norm HN 96:2000 (Hygiene standards and regulations)                             | Textiles   | 0.0075% by weight (75 ppm) of textile product               | Textiles  | 4/28/2009       | (i)           |
| Hexabromocyclododecane (HBCDD) and all major diastereoisomers | See Annex B    | R        | Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 28.10.2008)  | All  | 0.1% by weight (1 000 ppm) of the product                   | Flame retardant mainly used for expanded polystyrene and some types of fiber  | 4/28/2009       | (i)           |
| Lead/lead compounds   | See Annex B    | R        | EU Directive 2002/95/EC and 2005/618/EC;<br>ANNEX XVII of REACH Regulation (EC) No 1907/2006;<br>China MII Methods;<br>Korea RoHS;<br>Japan J-MOSS;<br>US/CA SB-20/50 | All, except as noted below   | 0.1% by weight (1 000 ppm) of lead in homogeneous materials | Rubber hardener, pigment, paint, lubricant, plastic stabilizer, free-machining alloy, free-cutting steels, optical materials, X-ray shielding in CRT glass, solder materials, curing agent, vulcanizing agent, ferroelectrics, plating, metal alloy | 4/28/2009       | (ii)          |
| Lead/lead compounds   | See Annex B    | R        | U.S. Consumer Product Safety Improvement Act  | Consumer products designed or intended primarily for children 12 years of age or younger   | 0.03% by weight (300 ppm) of lead in the children's product | Pigment, paint, stabilizer, colorant  | 4/28/2009       | (ii)          |

| Substance/<br>Category  | CAS #/<br>EC #                   | Criteria | Key Legal and Regulatory or<br>Industry Standard/Agreement<br>Citation   | Reportable<br>Application(s)  | Threshold Level<br>(Reporting level)                       | Examples of Use                                   | Latest<br>Revision | Revision<br>Type |
|---|----------------------------------|----------|--|---|--|---|--------------------|------------------|
| Lead/lead compounds   | See Annex B                      | R        | U.S. Consumer Product Safety<br>Improvement Act  | Paint and similar<br>surface coatings<br>of toys and other<br>articles intended<br>for use by<br>children | 0.009% by weight<br>(90 ppm) of lead in<br>surface coating | Pigment, paint, stabilizer,<br>colorant           | 4/28/2009          | (ii)             |
| Lead/lead compounds   | See Annex B                      | R        | US/CA Proposition 65 Case law  | Cables/cords<br>with thermoset or<br>thermoplastic<br>coatings  | 0.03% by weight<br>(300 ppm) of lead in<br>surface coating | Pigment, paint, stabilizer,<br>colorant           | 4/28/2009          | (ii)             |
| Lead/lead compounds   | See Annex B                      | R        | EU Battery Directive<br>2006/66/EC;<br>Chinese Standard GB 24427-<br>2009 "Limitation of mercury,<br>cadmium and lead contents for<br>alkaline and non-alkaline zinc<br>manganese dioxide batteries" | Batteries <sup>5</sup>  | 0.004% by weight<br>(40 ppm) of lead in<br>battery         | Zinc carbon batteries,<br>alkaline button cells   | 4/28/2009          | (ii)             |
| Lead chromate   | CAS# 7758-97-6<br>EC# 231-846-0  | R        | Article 33 and 7.2 of REACH<br>Regulation (EC) No 1907/2006<br>(Candidate list of SVHC for<br>authorization 13.01.2010)  | All   | 0.1% by weight<br>(1 000 ppm) of the<br>product            | Colorant in plastics;<br>Colorant in paint        | 3/31/2010          | (i)              |
| Lead chromate molybdate<br>sulphate red<br>(C.I. Pigment Red 104) | CAS# 12656-85-8<br>EC# 235-759-9 | R        | Article 33 and 7.2 of REACH<br>Regulation (EC) No 1907/2006<br>(Candidate list of SVHC for<br>authorization 13.01.2010)  | All   | 0.1% by weight<br>(1 000 ppm) of the<br>product            | Colorant in plastics;<br>Colorant in red paint    | 3/31/2010          | (i)              |
| Lead sulfochromate yellow<br>(C.I. Pigment Yellow 34)             | CAS# 1344-37-2<br>EC# 215-693-7  | R        | Article 33 and 7.2 of REACH<br>Regulation (EC) No 1907/2006<br>(Candidate list of SVHC for<br>authorization 13.01.2010)  | All   | 0.1% by weight<br>(1 000 ppm) of the<br>product            | Colorant in plastics;<br>Colorant in yellow paint | 3/31/2010          | (i)              |



| Substance/<br>Category     | CAS #/<br>EC # | Criteria | Key Legal and Regulatory or<br>Industry Standard/Agreement<br>Citation  | Reportable<br>Application(s)                  | Threshold Level<br>(Reporting level)  | Examples of Use  | Latest<br>Revision | Revision<br>Type |
|----------------------------|----------------|----------|---|---|---|--|--------------------|------------------|
| Mercury/mercury compounds  | See Annex B    | R        | Vermont act relating to comprehensive management of exposure to mercury;<br>Rhode Island General Laws 23-24.9 and amendment of 2007;<br>Louisiana Mercury Risk Reduction Act; ANNEX XVII of REACH Regulation (EC) No 1907/2006; EU Directives 2002/95/EC and 2005/618/EC;<br>China MII Methods;<br>Korea RoHS;<br>Japan J-MOSS;<br>US/CA SB-20/50   | All, except batteries                         | Intentionally added or 0.1% (1 000 ppm) of mercury in homogeneous material <sup>8</sup> | Fluorescent bulb, contact point material, pigment, anti-corrosion, switches, antibacterial treatment             | 4/28/2009          | (ii)             |
| Mercury/mercury compounds  | See Annex B    | R        | New York Env Law § 27-0719 Battery Management and Disposal; Taiwan Restrictions on the Manufacture, Import, and Sale of Dry Cell Batteries; Korea: Law on quality management and control of safety of industrial products Battery regulation;<br>EU Battery Directive 2006/66/EC;<br>Chinese Standard GB 24427-2009 "Limitation of mercury, cadmium and lead contents for alkaline and non-alkaline zinc manganese dioxide batteries" | Batteries <sup>5</sup>                        | 0.0001% by weight (1 ppm) of mercury in of the battery                                  | Silver-oxide button cells, alkaline batteries, zinc carbon batteries   | 4/28/2009          | (ii)             |
| Nickel <sup>9</sup>        | CAS# 7440-02-0 | R        | ANNEX XVII of REACH Regulation (EC) No 1907/2006  | All, where prolonged skin contact is expected | Intentionally added <sup>7</sup>  | Stainless steel, plating; example application for prolonged skin contact is an ear bud (headphone), mobile phone | 4/28/2009          | (ii)             |
| Ozone depleting substances | See Annex B    | R        | Montreal Protocol<br>EU EC No. 2037/2000<br>EC 1005/2009<br>US Clean Air Act  | All   | Intentionally added   | Refrigerant, foaming agent, extinguishant, solvent cleaner   | 4/1/2005           | (i)              |

| Substance/<br>Category   | CAS #/<br>EC #                 | Criteria | Key Legal and Regulatory or<br>Industry Standard/Agreement<br>Citation  | Reportable<br>Application(s)   | Threshold Level<br>(Reporting level)  | Examples of Use  | Latest<br>Revision | Revision<br>Type |
|--|--------------------------------|----------|---|--|---|--|--------------------|------------------|
| Perchlorates   | See Annex B                    | R        | US/CA DTSC Rulemaking   | All  | 0.0000006% by weight<br>(0.006 ppm) of the<br>product                             | Coin cell batteries  | 4/28/2009          | (i)              |
| Perfluorooctane sulfonate<br>(PFOS)                            | See Annex B                    | R        | ANNEX XVII of REACH<br>Regulation (EC) No 1907/2006<br>and Commission Regulation<br>(EC) No 552/2009; Canadian<br>Environmental Protection Act<br>SOR/ 2008-178; Japan Law<br>concerning the evaluation of<br>chemical substances | All  | Intentionally added or<br>0.1% by weight<br>(1000 ppm) in material <sup>6,8</sup> | Antistatic agent for films<br>and plastics   | 3/1/2011           | (iii)            |
| Phenol,2-(2H-benzotriazol-2-yl)-<br>4,6-bis(1,1-dimethylethyl) | CAS# 3846-71-7                 | R        | Japan Law concerning the<br>evaluation of chemical<br>substances  | All  | Intentionally added   | Adhesives, paints, printing<br>inks, plastics, inked<br>ribbons, putty, caulking or<br>sealing fillers | 4/28/2009          | (i)              |
| Bis (2-ethylhexyl) phthalate<br>(DEHP)                         | CAS# 117-81-7<br>EC# 204-211-0 | R        | Article 33 and 7.2 of REACH<br>Regulation (EC) No 1907/2006<br>(Candidate list of SVHC for<br>authorization 28.10.2008)   | All  | 0.1% by weight<br>(1 000 ppm) of the<br>product                                   | Plasticizer, dye, pigment,<br>paint, ink, adhesive,<br>lubricant                                       | 3/31/2010          | (i)              |
| Dibutyl phthalate (DBP)  | CAS# 84-74-2<br>EC# 201-557-4  | R        | Article 33 and 7.2 of REACH<br>Regulation (EC) No 1907/2006<br>(Candidate list of SVHC for<br>authorization 28.10.2008)   | All  | 0.1% by weight<br>(1 000 ppm) of the<br>product                                   | Plasticizer, dye, pigment,<br>paint, ink, adhesive,<br>lubricant                                       | 3/31/2010          | (i)              |
| Benzyl butyl phthalate (BBP)                                   | CAS# 85-68-7<br>EC# 201-622-7  | R        | Article 33 and 7.2 of REACH<br>Regulation (EC) No 1907/2006<br>(Candidate list of SVHC for<br>authorization 28.10.2008)   | All  | 0.1% by weight<br>(1 000 ppm) of the<br>product                                   | Plasticizer, dye, pigment,<br>paint, ink, adhesive,<br>lubricant                                       | 3/31/2010          | (i)              |
| Diisobutyl phthalate (DIBP)                                    | CAS# 84-69-5<br>EC# 201-553-2  | R        | Article 33 and 7.2 of REACH<br>Regulation (EC) No 1907/2006<br>(Candidate list of SVHC for<br>authorization 13.01.2010)   | All  | 0.1% by weight<br>(1 000 ppm) of the<br>product                                   | plasticizer, dye, pigment,<br>paint, ink, adhesive,<br>lubricant                                       | 3/31/2010          | (i)              |
| Selected Phthalates<br>Group 1<br>(BBP, DBP, DEHP)             | See Annex B                    | R        | ANNEX XVII of REACH<br>Regulation (EC) No 1907/2006;<br>U.S. Consumer Product Safety<br>Improvement Act   | Children's toy or<br>child care article  | 0.1% by weight<br>(1 000 ppm) in<br>plasticized material <sup>10</sup>            | Plasticizer, dye, pigment,<br>paint, ink, adhesive,<br>lubricant                                       | 4/28/2009          | (ii)             |
| Selected Phthalates<br>Group 2<br>(DIDP, DINP, DNOP)           | See Annex B                    | R        | ANNEX XVII of REACH<br>Regulation (EC) No 1907/2006;<br>U.S. Consumer Product Safety<br>Improvement Act   | Children's toy or<br>child care article<br>that can be<br>placed in a<br>child's mouth | 0.1% by weight<br>(1 000 ppm) in<br>plasticized material <sup>10</sup>            | Plasticizer, dye, pigment,<br>paint, ink, adhesive,<br>lubricant                                       | 4/28/2009          | (ii)             |

| Substance/<br>Category                                    | CAS #/<br>EC # | Criteria | Key Legal and Regulatory or<br>Industry Standard/Agreement<br>Citation   | Reportable<br>Application(s) | Threshold Level<br>(Reporting level)  | Examples of Use   | Latest<br>Revision | Revision<br>Type |
|---|----------------|----------|--|------------------------------|---|---|--------------------|------------------|
| Polybrominated biphenyls (PBBs)                           | See Annex B    | R        | EU Directive 2002/95/EC and 2005/618/EC;<br>China MII Methods;<br>Korea RoHS;<br>Japan J-MOSS  | All                          | 0.1% by weight<br>(1 000 ppm) in<br>homogeneous material  | Flame retardant   | 4/28/2009          | (iii)            |
| Polybrominated diphenylethers (PBDEs)                     | See Annex B    | R        | EU Directive 2002/95/EC and 2005/618/EC;<br>China MII Methods;<br>Korea RoHS;<br>Japan J-MOSS,<br>Japan Law concerning the<br>evaluation of chemical<br>substances | All                          | Intentionally added or<br>0.1% by weight<br>(1 000 ppm) in<br>homogeneous material <sup>8</sup> | Flame retardant   | 3/1/2011           | (iii)            |
| Polychlorinated biphenyls (PCBs) and specific substitutes | See Annex B    | R        | Japan Law concerning the<br>evaluation of chemical<br>substances;<br>ANNEX XVII of REACH<br>Regulation (EC) No 1907/2006;<br>US TSCA.                              | All                          | Intentionally added   | Insulation oil, lubricant oil,<br>electrical insulation<br>medium, solvent,<br>electrolytic solution;<br>plasticizers, flame<br>retardants, dielectric<br>sealants  | 4/1/2005           | (i)              |
| Polychlorinated terphenyls (PCTs)                         | See Annex B    | R        | ANNEX XVII of REACH<br>Regulation (EC) No 1907/2006;   | All                          | 0.005% by weight<br>(50 ppm) in material  | Insulation oil, lubricant oil,<br>electrical insulation<br>medium, solvent,<br>electrolytic solution;<br>plasticizers, flame<br>retardants, coatings for<br>electrical wire and cable,<br>dielectric sealants | 3/1/2011           | (iii)            |
| Polychlorinated naphthalenes (more than 3 chlorine atoms) | See Annex B    | R        | Japan Law concerning the<br>evaluation of chemical<br>substances   | All                          | Intentionally added   | Lubricant, paint, stabilizer<br>(electric characteristic,<br>flame-resistant, water-<br>resistant) insulator, flame<br>retardant  | 4/1/2005           | (i)              |
| Polyvinyl chloride (PVC)                                  | See Annex B    | I        | IEEE1680 (EPEAT: Electronic<br>Product Environmental<br>Assessment Tool)   | All                          | 0.1% by weight<br>(1 000 ppm) of the<br>product   | Insulator, chemical<br>resistance, transparency,<br>sheath material   | 4/1/2005           | (i)              |

| Substance/<br>Category                                 | CAS #/<br>EC #                    | Criteria | Key Legal and Regulatory or<br>Industry Standard/Agreement<br>Citation  | Reportable<br>Application(s) | Threshold Level<br>(Reporting level)   | Examples of Use   | Latest<br>Revision | Revision<br>Type |
|--|-----------------------------------|----------|---|------------------------------|--|---|--------------------|------------------|
| Radioactive substances                                 | See Annex B                       | R        | EU-D 96/29/Euratom;<br>Japan Law for the Regulation of<br>Nuclear Source Material,<br>Nuclear Fuel Material, and<br>Reactors, 1986; Japan Law<br>Concerning Prevention from<br>Radiation Hazards;<br>US NRC                                     | All                          | Intentionally added <sup>7</sup>   | Optical properties<br>(thorium), measuring<br>devices, gauges, detector   | 4/1/2005           | (i)              |
| Refractory Ceramic Fibres,<br>Aluminosilicate          | See Annex B                       | R        | Article 33 and 7.2 of REACH<br>Regulation (EC) No 1907/2006<br>(Candidate list of SVHC for<br>authorization 13.01.2010),  | All                          | 0.1% by weight<br>(1 000 ppm) of the<br>product  | Insulation in high-temp<br>test equipment   | 3/31/2010          | (i)              |
| Refractory Ceramic Fibres,<br>Zirconia Aluminosilicate | See Annex B                       | R        | Article 33 and 7.2 of REACH<br>Regulation (EC) No 1907/2006<br>(Candidate list of SVHC for<br>authorization 13.01.2010),  | All                          | 0.1% by weight<br>(1 000 ppm) of the<br>product  | Insulation in high-temp<br>test equipment   | 3/31/2010          | (i)              |
| Shortchain chlorinated<br>paraffins<br>(C10 – C13)     | See Annex B                       | R        | Article 33 and 7.2 of REACH<br>Regulation (EC) No 1907/2006<br>(Candidate list of SVHC for<br>authorization 28.10.2008),<br>Norway Product Regulations<br>FOR-2004-06-01-922;<br>Swiss Ordinance on Reduction<br>of Risk from Chemical Products | All                          | 0.1% by weight<br>(1 000 ppm) of the<br>product  | Plasticizer for PVC, flame<br>retardant   | 4/28/2009          | (iii)            |
| Tetraboron disodium<br>heptaoxide, hydrate             | CAS# 12267-73-1/<br>EC# 235-541-3 | R        | Article 33 and 7.2 of REACH<br>Regulation (EC) No 1907/2006<br>(Candidate list of SVHC for<br>authorization 18.06.2010)   | All                          | 0.1% by weight<br>(1 000 ppm) of the<br>product  | In wood veneers/ pressed<br>wooden panels as starch<br>additive, flame retardant<br>and stabilizer in<br>aminoplastic resin,<br>wood preservative | 9/13/2010          | (i)              |
| Tri-substituted organostannic<br>compounds             | See Annex B                       | R        | ANNEX XVII of REACH<br>Regulation (EC) No 1907/2006<br>and Commission Regulation<br>(EU) No 276/2010;<br>Japan Law concerning the<br>evaluation of chemical<br>substances<br>Norwegian product regulation                                       | All                          | Intentionally added or<br>0.1% by weight<br>(1 000 ppm) of tin in a<br>material <sup>6,8</sup> | Stabilizer, antioxidant,<br>antibacterial and<br>antifungal agents,<br>antifoulant, antiseptic,<br>paint, pigment,<br>antistaining                | 3/1/2011           | (iii)            |

| Substance/<br>Category                   | CAS #/<br>EC #                 | Criteria | Key Legal and Regulatory or<br>Industry Standard/Agreement<br>Citation  | Reportable<br>Application(s) | Threshold Level<br>(Reporting level)   | Examples of Use   | Latest<br>Revision | Revision<br>Type |
|--|--------------------------------|----------|---|------------------------------|--|---|--------------------|------------------|
| Tributyl tin oxide<br>(TBTO)             | CAS# 56-35-9<br>EC# 200-268-0  | R        | Japan Law concerning the<br>evaluation of chemical<br>substances<br>Article 33 and 7.2 of REACH<br>Regulation (EC) No 1907/2006<br>(Candidate list of SVHC for<br>authorization 28.10.2008) | All                          | Intentionally added or<br>0.1% by weight<br>(1 000 ppm) of the<br>product <sup>8</sup> | Antiseptic, antifungal<br>agent, paint, pigment,<br>antistaining, refrigerant,<br>foaming agent,<br>extinguishant, solvent<br>cleaner | 4/28/2009          | (iii)            |
| Tris (2-chloroethyl) phosphate<br>(TCEP) | CAS# 115-96-8<br>EC# 204-118-5 | R        | Article 33 and 7.2 of REACH<br>Regulation (EC) No 1907/2006<br>(Candidate list of SVHC for<br>authorization 13.01.2010)   | All                          | 0.1% by weight<br>(1 000 ppm) of the<br>product  | Flame retardant   | 4/28/2009          | (i)              |

<sup>1</sup> The European Community's ban applies to azocolourants and azodyes that by reductive cleavage of azo groups may release one of the aromatic amines listed in Annex B. The threshold level given applies to these amines, not to the azocolourants and azodyes.

<sup>2</sup> Formerly known as EICTA

<sup>3</sup> Now part of TechAmerica

<sup>4</sup> A printed wiring board laminate refers to the layered board materials excluding surface finishes and components whereas a printed wiring board assembly refers to an assembly that uses a printed wiring board laminate for component mounting and interconnecting purposes.

<sup>5</sup> The battery reporting threshold level is based on the strictest known legal requirement. However, for simplification, the same reporting threshold level is set for all kind of batteries, even if the underlying legal requirement is only applicable for only one specific battery type.

<sup>6</sup> Commission Regulation (EU) No 276/2010 defines a concentration limit of 0.1% by weight of tin in the article or part thereof. Likewise Commission Decision 2009/251/EC defines a concentration limit of 0.00001% by weight of DMF in the product or part of the product and Commission Regulation (EC) No 552/2009 defines a concentration limit of 0.1% by weight of PFOS in the semifinished product or article or part thereof. Because no legal definition of part is provided in these legislations, the most potentially restrictive concentration limit is not adequately specified. Therefore, the concentration limit is applied at the level of a material vs. a part to ensure disclosure of the regulated substances for the most basic unit of a part.

<sup>7</sup> Regulatory thresholds for substances in these applications are based on emission or exposure limits rather than on the concentration in the product. Examples of regulatory limits are:

Formaldehyde in hardwood plyboard with veneer core – 0.05 ppm (measured as gaseous emission from product);

For Nickel in applications of prolonged skin contact - 0.5 micrograms/sq cm/week per DIN EN 1811;

Radioactive substances -a dose rate exceeding 1 µSv h<sup>-1</sup> at a distance of 0,1 m.

Because emission and exposure levels cannot be derived from actual concentrations, a threshold level of “intentionally added” is indicated for reporting. Suppliers may choose to report a default concentration of 0.1% by weight in the product for these substances, in lieu of determining the exact concentrations in their products, to indicate that the substance is known to be present in their product, as the actual concentration in the product is not informative for regulatory compliance assessment.

<sup>8</sup> See Annex C for clarification of how the two reporting thresholds apply.

<sup>9</sup> Nickel must be reported in certain regulated applications where it is likely to result in prolonged skin exposure (e.g., an outer enclosure for a portable electronic product designed to be carried). Use of nickel or nickel contained in components and parts designed to be located inside the outer enclosure of a product need not be reported.

<sup>10</sup> The threshold level here is the sum of the phthalate concentrations of the phthalates (identified in the respective Annex B tables) in the selected phthalate group designated by the Substance/Category.

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**Annex B (Informative) Detailed Substance Lists with CAS Numbers and/or EC Numbers**


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These lists are typically not comprehensive; they represent examples of chemicals listing CAS numbers and/or EC numbers if applicable or available. In case the list is complete (and the reporting requirement is limited to those substances listed) this is indicated in a note below the respective substance category.

**TABLE — Asbestos**

| Asbestos            | CAS Numbers |
|---------------------|-------------|
| Asbestos            | 1332-21-4   |
| Actinolite          | 77536-66-4  |
| Amosite (Grunerite) | 12172-73-5  |
| Anthophyllite       | 77536-67-5  |
| Chrysotile          | 12001-29-5  |
| Crocidolite         | 12001-28-4  |
| Tremolite           | 77536-68-6  |

**TABLE— Azocolourants and azodyes which form certain aromatic amines**

| Aromatic Amines                     | CAS Numbers |
|-------------------------------------|-------------|
| Biphenyl-4-ylamine                  | 92-67-1     |
| Benzidine                           | 92-87-5     |
| 4-chloro-o-toluidine                | 95-69-2     |
| 2-naphthylamine                     | 91-59-8     |
| o-aminoazotoluene                   | 97-56-3     |
| 5-nitro-o-toluidine                 | 99-55-8     |
| 4-chloroaniline                     | 106-47-8    |
| 4-methoxy-m-phenylenediamine        | 615-05-4    |
| 4,4'-methylenedianiline             | 101-77-9    |
| 3,3'-dichlorobenzidine              | 91-94-1     |
| 3,3'-dimethoxybenzidine             | 119-90-4    |
| 3,3'-dimethylbenzidine              | 119-93-7    |
| 4,4'-methylenedi-o-toluidine        | 838-88-0    |
| 6-methoxy-m-toluidine               | 120-71-8    |
| 4,4'-methylene-bis(2-chloroaniline) | 101-14-4    |
| 4,4'-oxydianiline                   | 101-80-4    |
| 4,4'-thiodianiline                  | 139-65-1    |
| o-toluidine                         | 95-53-4     |
| 4-methyl-m-phenylenediamine         | 95-80-7     |
| 2,4,5-trimethylaniline              | 137-17-7    |
| o-anisidine                         | 90-04-0     |
| 4-amino azobenzene                  | 60-09-3     |

*Note: The European Community's ban applies to azocolourants and azodyes that by reductive cleavage of azo groups may release one of the above 22 aromatic amines.*

**TABLE — Boric Acid**

| Boric Acid | EC Numbers | CAS Numbers |
|------------|------------|-------------|
| Boric acid | 233-139-2  | 10043-35-3  |
|            | 234-343-4  | 11113-50-1  |

*Note: The reporting requirement refers to the sum of just those substances listed above*

**TABLE — Brominated Flame Retardants (other than PBBs, PBDEs or HBCDD)**

| Brominated Flame Retardants<br>(other than PBBs, PBDEs or HBCDD)   | CAS Numbers |
|--|-------------|
| Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(14) [Aliphatic/alicyclic brominated compounds]  | -           |
| Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(15) [Aliphatic/alicyclic brominated compounds in combination with antimony compounds]   | -           |
| Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(16) [Aromatic brominated compounds excluding brominated diphenyl ether and biphenyls]   | -           |
| Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(17) [Aromatic brominated compounds excluding brominated diphenyl ether and biphenyls] in combination with antimony compounds] | -           |
| Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(22) [Aliphatic/alicyclic chlorinated and brominated compounds]  | -           |
| Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(42) [Brominated organic phosphorus compounds]   | -           |
| Poly(2,6-dibromo-phenylene oxide)  | 69882-11-7  |
| Tetra-decabromo-diphenoxy-benzene  | 58965-66-5  |
| 1,2-Bis(2,4,6-tribromo-phenoxy) ethane   | 37853-59-1  |
| 3,5,3',5'-Tetrabromo-bisphenol A (TBBA)  | 79-94-7     |
| TBBA, unspecified  | 30496-13-0  |
| TBBA-epichlorhydrin oligomer   | 40039-93-8  |
| TBBA-TBBA-diglycidyl-ether oligomer  | 70682-74-5  |
| TBBA carbonate oligomer  | 28906-13-0  |
| TBBA carbonate oligomer, phenoxy end capped  | 94334-64-2  |
| TBBA carbonate oligomer, 2,4,6-tribromo-phenol terminated  | 71342-77-3  |
| TBBA-bisphenol A-phosgene polymer  | 32844-27-2  |
| Brominated epoxy resin end-capped with tribromophenol  | 139638-58-7 |
| Brominated epoxy resin end-capped with tribromophenol  | 135229-48-0 |
| TBBA-(2,3-dibromo-propyl-ether)  | 21850-44-2  |
| TBBA bis-(2-hydroxy-ethyl-ether)   | 4162-45-2   |
| TBBA-bis-(allyl-ether)   | 25327-89-3  |
| TBBA-dimethyl-ether  | 37853-61-5  |
| Tetrabromo-bisphenol S   | 39635-79-5  |
| TBBS-bis-(2,3-dibromo-propyl-ether)  | 42757-55-1  |
| 2,4-Dibromo-phenol   | 615-58-7    |
| 2,4,6-tribromo-phenol  | 118-79-6    |
| Pentabromo-phenol  | 608-71-9    |
| 2,4,6-Tribromo-phenyl-allyl-ether  | 3278-89-5   |
| Tribromo-phenyl-allyl-ether, unspecified   | 26762-91-4  |
| Bis(methyl)tetrabromo-phthalate  | 55481-60-2  |
| Bis(2-ethylhexyl)tetrabromo-phthalate  | 26040-51-7  |
| 2-Hydroxy-propyl-2-(2-hydroxy-ethoxy)-ethyl-TBP  | 20566-35-2  |
| TBPA, glycol-and propylene-oxide esters  | 75790-69-1  |
| N,N'-Ethylene -bis-(tetrabromo-phthalimide)  | 32588-76-4  |
| Ethylene-bis(5,6-dibromo-norbornane-2,3-dicarboximide)   | 52907-07-0  |
| 2,3-Dibromo-2-butene-1,4-diol  | 3234-02-4   |
| Dibromo-neopentyl-glycol   | 3296-90-0   |
| Dibromo-propanol   | 96-13-9     |
| Tribromo-neopentyl-alcohol   | 36483-57-5  |
| Poly tribromo-styrene  | 57137-10-7  |

| <b>Brominated Flame Retardants<br/>(other than PBBs, PBDEs or HBCDD)</b> | <b>CAS Numbers</b> |
|--|--------------------|
| Tribromo-styrene   | 61368-34-1         |
| Dibromo-styrene grafted PP   | 171091-06-8        |
| Poly-dibromo-styrene   | 31780-26-4         |
| Bromo-/Chloro-paraffins  | 68955-41-9         |
| Bromo-/Chloro-alpha-olefin   | 82600-56-4         |
| Vinylbromide   | 593-60-2           |
| Tris-(2,3-dibromo-propyl)-isocyanurate                                   | 52434-90-9         |
| Tris(2,4-Dibromo-phenyl) phosphate                                       | 49690-63-3         |
| Tris(tribromo-neopentyl) phosphate                                       | 19186-97-1         |
| Chlorinated and brominated phosphate ester                               | 125997-20-8        |
| Pentabromo-toluene   | 87-83-2            |
| Pentabromo-benzyl bromide  | 38521-51-6         |
| 1,3-Butadiene homopolymer, brominated                                    | 68441-46-3         |
| Pentabromo-benzyl-acrylate, monomer                                      | 59447-55-1         |
| Pentabromo-benzyl-acrylate, polymer                                      | 59447-57-3         |
| Decabromo-diphenyl-ethane  | 84852-53-9         |
| Tribromo-bisphenyl-maleinimide   | 59789-51-4         |
| Tetrabromo-cyclo-octane  | 31454-48-5         |
| 1,2-Dibromo-4-(1,2 dibromo-methyl)-cyclo-hexane                          | 3322-93-8          |
| Tetrabromophthalic acid Na salt  | 25357-79-3         |
| Tetrabromo phthalic-anhydride  | 632-79-1           |
| Octabromo-1,1,3-trimethyl-1-phenylindane (FR-1808)                       | 155613-93-7        |
| Other Brominated Flame Retardants  | -                  |

**TABLE — Cadmium/Cadmium Compounds**

| <b>Cadmium/Cadmium Compounds</b> | <b>CAS Numbers</b> |
|----------------------------------|--------------------|
| Cadmium                          | 7440-43-9          |
| Cadmium oxide                    | 1306-19-0          |
| Cadmium sulfide                  | 1306-23-6          |
| Cadmium chloride                 | 10108-64-2         |
| Cadmium sulfate                  | 10124-36-4         |
| Other cadmium compounds          | -                  |

**TABLE — Chromium VI Compounds**

| <b>Chromium VI Compounds</b>         | <b>EC Numbers</b> | <b>CAS Numbers</b> |
|--------------------------------------|-------------------|--------------------|
| Chromium (VI) oxide                  |                   | 1333-82-0          |
| Barium chromate                      |                   | 10294-40-3         |
| Calcium chromate                     |                   | 13765-19-0         |
| Lead (II) chromate                   | 231-846-0         | 7758-97-6          |
| Lead chromate molybdate sulphate red | 235-759-9         | 12656-85-8         |
| Lead sulfochromate yellow            | 215-693-7         | 1344-37-2          |
| Sodium chromate                      |                   | 7775-11-3          |
| Sodium dichromate                    |                   | 10588-01-9         |
| Strontium chromate                   |                   | 7789-06-2          |
| Potassium dichromate                 |                   | 7778-50-9          |
| Potassium chromate                   |                   | 7789-00-6          |
| Zinc chromate                        |                   | 13530-65-9         |
| Other chromium VI compounds          |                   | -                  |



**TABLE — Dibutyltin Compounds (DBT)**

| Dibutyltin Compounds       | CAS Numbers |
|----------------------------|-------------|
| Dibutyltin oxide           | 818-08-6    |
| Dibutyltin diacetate       | 1067-33-0   |
| Dibutyltin dilaurate       | 77-58-7     |
| Dibutyltin maleate         | 78-04-6     |
| Other dibutyltin compounds | -           |

**TABLE — Dioctyltin Compounds (DOT)**

| Dioctyltin Compounds       | CAS Numbers |
|----------------------------|-------------|
| Dioctyl Tin Oxide          | 870-08-6    |
| Dioctyltin dilaurate       | 3648-18-8   |
| Other Dioctyltin compounds | -           |

**TABLE — Disodium tetraborate, anhydrous**

| Boric Acid                         | EC Numbers | CAS Numbers |
|------------------------------------|------------|-------------|
| Disodium tetraborate decahydrate   |            | 1303-96-4   |
| Disodium tetraborate, anhydrous    | 215-540-4  | 1330-43-4   |
| Disodium tetraborate, pentahydrate |            | 12179-04-3  |

*Note: The reporting requirement refers to the sum of just those substances listed above*

**TABLE – Fluorinated Greenhouse Gases  
Perfluorocarbons (PFC), Sulfur hexafluoride (SF6) & Hydrofluorocarbons (HFC)**

| Fluorinated Greenhouse Gases                      | CAS Numbers |
|---|-------------|
| Tetrafluoromethane (Carbon tetrafluoride, PFC-14) | 75-73-0     |
| Hexafluoroethane (PFC-116)                        | 76-16-4     |
| Octafluoropropane (PFC-218)                       | 76-19-7     |
| Decafluorobutane (PFC-31-10)                      | 355-25-9    |
| Dodecafluoropentane (PFC-41-12)                   | 678-26-2    |
| Tetradecafluorohexane (PFC-51-14)                 | 355-42-0    |
| Octafluorocyclobutane (PFC-c318)                  | 115-25-3    |
| Sulfur Hexafluoride (SF6)                         | 2551-62-4   |
| Trifluoromethane (HFC-23)                         | 75-46-7     |
| Difluoromethane (HFC-32)                          | 75-10-5     |
| Methyl fluoride (HFC-41)                          | 593-53-3    |
| 2H,3H-Decafluoropentane (HFC-43-10mee)            | 138495-42-8 |
| Pentafluoroethane (HFC-125)                       | 354-33-6    |
| 1,1,2,2-Tetrafluoroethane (HFC-134)               | 359-35-3    |
| 1,1,1,2-Tetrafluoroethane (HFC-134a)              | 811-97-2    |
| 1,1-Difluoroethane (HFC-152a)                     | 75-37-6     |
| 1,1,2-Trifluoroethane (HFC-143 )                  | 430-66-0    |
| 1,1,1-Trifluoroethane (HFC-143a)                  | 420-46-2    |
| 2H-Heptafluoropropane (HFC-227ea)                 | 431-89-0    |
| 1,1,1,2,2,3-Hexafluoro-propane ( HFC-236cb)       | 677-56-5    |
| 1,1,1,2,3,3-Hexafluoropropane (HFC-236ea)         | 431-63-0    |
| 1,1,1,3,3,3-Hexafluoropropane (HFC-236fa)         | 690-39-1    |
| 1,1,2,2,3-Pentafluoropropane (HFC-245ca)          | 679-86-7    |
| 1,1,1,3,3-Pentafluoropropane (HFC-245fa)          | 460-73-1    |
| 1,1,1,3,3-Pentafluorobutane (HFC-365mfc)          | 406-58-6    |

*Note: The reporting requirement refers to the sum of just those substances listed above*

**TABLE – Hexabromocyclododecane (HBCDD)**

| HBCDD and all Major Diastereoisomers | EC Numbers                 | CAS Numbers                 |
|--------------------------------------|----------------------------|-----------------------------|
| Hexabromocyclododecane (HBCDD)       | 247-148-4 and<br>221-695-9 | 25637-99-4 and<br>3194-55-6 |
| $\alpha$ -hexabromocyclododecane     | NA                         | 134237-50-6                 |
| $\beta$ -hexabromocyclododecane      | NA                         | 134237-51-7                 |
| $\gamma$ -hexabromocyclododecane     | NA                         | 134237-52-8                 |

*Note: The reporting requirement refers to the sum of just those substances listed above*

**TABLE — Lead/lead Compounds**

| Lead/lead Compounds                     | EC Numbers | CAS Numbers |
|---|------------|-------------|
| Lead                                    |            | 7439-92-1   |
| Lead (II) sulfate                       |            | 7446-14-2   |
| Lead (II) carbonate                     |            | 598-63-0    |
| Lead (II) chromate                      | 231-846-0  | 7758-97-6   |
| Lead chromate molybdate sulphate red    | 235-759-9  | 12656-85-8  |
| Lead hydrocarbonate                     |            | 1319-46-6   |
| Lead acetate                            |            | 301-04-2    |
| Lead (II) acetate, trihydrate           |            | 6080-56-4   |
| Lead phosphate                          |            | 7446-27-7   |
| Lead selenide                           |            | 12069-00-0  |
| Lead (IV) oxide                         |            | 1309-60-0   |
| Lead (II,IV) oxide                      |            | 1314-41-6   |
| Lead (II) sulfide                       |            | 1314-87-0   |
| Lead (II) oxide                         |            | 1317-36-8   |
| Lead (II) carbonate basic               |            | 1319-46-6   |
| Lead hydroxidcarbonate                  |            | 1344-36-1   |
| Lead (II) phosphate                     |            | 7446-27-7   |
| Lead sulfochromate yellow               | 215-693-7  | 1344-37-2   |
| Lead (II) titanate                      |            | 12060-00-3  |
| Lead sulfate, sulphuric acid, lead salt |            | 15739-80-7  |
| Lead sulphate, tribasic                 |            | 12202-17-4  |
| Lead stearate                           |            | 1072-35-1   |
| Other lead compounds                    |            | -           |

**TABLE — Mercury /Mercury Compounds**

| Mercury /Mercury Compounds | CAS Numbers |
|----------------------------|-------------|
| Mercury                    | 7439-97-6   |
| Mercuric chloride          | 33631-63-9  |
| Mercury (II) chloride      | 7487-94-7   |
| Mercuric sulfate           | 7783-35-9   |
| Mercuric nitrate           | 10045-94-0  |
| Mercuric (II) oxide        | 21908-53-2  |
| Mercuric sulfide           | 1344-48-5   |
| Other mercury compounds    | -           |

**TABLE — Ozone Depleting Substances**  
**Chlorofluorocarbons (CFC), Halons, Hydrobromofluorocarbons (HBFC),**  
**Hydrochlorofluorocarbons (HCFC) and others**

| Ozone Depleting Substances*                                | CAS Numbers |
|--|-------------|
| Trichlorofluoromethane (CFC-11)                            | 75-69-4     |
| Dichlorodifluoromethane (CFC-12)                           | 75-71-8     |
| Chlorotrifluoromethane (CFC-13)                            | 75-72-9     |
| Pentachlorofluoroethane (CFC-111)                          | 354-56-3    |
| Tetrachlorodifluoroethane (CFC-112)                        | 76-12-0     |
| 1,1,2,2-Tetrachloro-1,2-difluoroethane (CFC-112)           | 76-12-0     |
| 1,1,1,2-Tetrachloro-2,2-difluoroethane (CFC-112a)          | 76-11-9     |
| Trichlorotrifluoroethane (CFC-113)                         | 76-13-1,    |
| 1,1,2-Trichloro-1,2,2 trifluoroethane (CFC-113)            | 76-13-1     |
| 1,1,1-Trichloro-2,2,2 trifluoroethane (CFC-113a)           | 354-58-5    |
| Dichlorotetrafluoroethane (CFC-114)                        | 76-14-2     |
| Monochloropentafluoroethane (CFC-115)                      | 76-15-3     |
| Heptachlorofluoropropane (CFC-211)                         | 422-78-6    |
|  | 135401-87-5 |
| 1,1,1,2,2,3,3-Heptachloro-3-fluoropropane (CFC-211aa)      | 422-78-6    |
| 1,1,1,2,3,3,3-Heptachloro-2-fluoropropane (CFC-211ba)      | 422-81-1    |
| Hexachlorodifluoropropane (CFC-212)                        | 3182-26-1   |
| Pentachlorotrifluoropropane (CFC-213)                      | 2354-06-5   |
|  | 134237-31-3 |
| Tetrachlorotetrafluoropropane (CFC-214)                    | 29255-31-0  |
| 1,2,2,3-Tetrachloro-1,1,3,3-tetrafluoropropane (CFC-214aa) | 2268-46-4   |
| 1,1,1,3-Tetrachloro-2,2,3,3-tetrafluoropropane (CFC-214cb) | -           |
| Trichloropentafluoropropane (CFC-215)                      | 1599-41-3   |
| 1,2,2-Trichloropentafluoropropane (CFC-215aa)              | 1599-41-3   |
| 1,2,3-Trichloropentafluoropropane (CFC-215ba)              | 76-17-5     |
| 1,1,2-Trichloropentafluoropropane (CFC-215bb)              | -           |
| 1,1,3-Trichloropentafluoropropane (CFC-215ca)              | -           |
| 1,1,1-Trichloropentafluoropropane (CFC-215cb)              | 4259-43-2   |
| Dichlorohexafluoropropane (CFC-216)                        | 661-97-2    |
| Chloroheptafluoropropane (CFC-217)                         | 422-86-6    |
| Bromochloromethane (Halon-1011)                            | 74-97-5     |
| Dibromodifluoromethane (Halon-1202)                        | 75-61-6     |
| Bromochlorodifluoromethane (Halon-1211)                    | 353-59-3    |
| Bromotrifluoromethane (Halon-1301)                         | 75-63-8     |
| Dibromotetrafluoroethane (Halon-2402)                      | 124-73-2    |
| Tetrachloromethane (carbon tetrachloride)                  | 56-23-5     |
| 1,1,1-Trichloroethane (methylchloroform)                   | 71-55-6     |
| Bromomethane (methyl bromide)                              | 74-83-9     |
| Bromoethane (ethyl bromide)                                | 74-96-4     |
| 1-Bromopropane (n-propyl bromide)                          | 106-94-5    |
| Trifluoroiodomethane (trifluoromethyl iodide)              | 2314-97-8   |
| Chloromethane (methyl chloride)                            | 74-87-3     |
| Dibromofluoromethane (HBFC-21 B2)                          | 1868-53-7   |
| Bromodifluoromethane (HBFC-22 B1)                          | 1511-62-2   |
| Bromofluoromethane (HBFC-31 B1)                            | 373-52-4    |
| Tetrabromofluoroethane (HBFC-121 B4)                       | 306-80-9    |
| Tribromodifluoroethane (HBFC-122 B3)                       | -           |
| Dibromotrifluoroethane (HBFC-123 B2)                       | 354-04-1    |
| Bromotetrafluoroethane (HBFC-124 B1)                       | 124-72-1    |
| Tribromofluoroethane (HBFC-131 B3)                         | -           |
| Dibromodifluoroethane (HBFC-132 B2)                        | 75-82-1     |
| Bromotrifluoroethane (HBFC-133 B1)                         | 421-06-7    |
| Dibromofluoroethane (HBFC-141 B2)                          | 358-97-4    |
| Bromodifluoroethane (HBFC-142 B1)                          | 420-47-3    |

| Ozone Depleting Substances*                    | CAS Numbers                  |
|--|------------------------------|
| Bromofluoroethane (HBFC-151 B1)                | 762-49-2                     |
| Hexabromofluoropropane (HBFC-221 B6)           | -                            |
| Pentabromodifluoropropane (HBFC-222 B5)        | -                            |
| Tetrabromotrifluoropropane (HBFC-223 B4)       | -                            |
| Tribromotetrafluoropropane (HBFC-224 B3)       | -                            |
| Dibromopentafluoropropane (HBFC-225 B2)        | 431-78-7                     |
| Bromohexafluoropropane (HBFC-226 B1)           | 2252-78-0                    |
| Pentabromofluoropropane (HBFC-231 B5)          | -                            |
| Tetrabromodifluoropropane (HBFC-232 B4)        | -                            |
| Tribromotrifluoropropane (HBFC-233 B3)         | -                            |
| Dibromotetrafluoropropane (HBFC-234 B2)        | -                            |
| Bromopentafluoropropane (HBFC-235 B1)          | 460-88-8                     |
| Tetrabromofluoropropane (HBFC-241 B4)          | -                            |
| Tribromodifluoropropane (HBFC-242 B3)          | 70192-80-2                   |
| Dibromotrifluoropropane (HBFC-243 B2)          | 431-21-0                     |
| Bromotetrafluoropropane (HBFC-244 B1)          | 679-84-5                     |
| Tribromofluoropropane (HBFC-251 B3)            | 75372-14-4                   |
| Dibromodifluoropropane (HBFC-252 B2)           | 460-25-3                     |
| Bromotrifluoropropane (HBFC-253 B1)            | 421-46-5                     |
| Dibromofluoropropane (HBFC-261 B2)             | 51584-26-0                   |
| Bromodifluoropropane (HBFC-262 B1)             | -                            |
| Bromofluoropropane (HBFC-271 B1)               | 1871-72-3                    |
| Dichlorofluoromethane (HCFC-21)                | 75-43-4                      |
| Chlorodifluoromethane (HCFC-22)                | 75-45-6                      |
| Chlorofluoromethane (HCFC-31)                  | 593-70-4                     |
| Tetrachlorofluoroethane (HCFC-121)             | 134237-32-4                  |
| 1,1,2,2-Tetrachloro-1-fluoroethane (HCFC-121)  | 354-14-3                     |
| 1,1,1,2-Tetrachloro-2-fluoroethane (HCFC-121a) | 354-11-0                     |
| Trichlorodifluoroethane (HCFC-122)             | 41834-16-6                   |
| 1,2,2-Trichloro-1,1-difluoroethane (HCFC-122)  | 354-21-2                     |
| 1,1,2-Trichloro-1,2-difluoroethane (HCFC-122a) | 354-15-4                     |
| 1,1,1-Trichloro-2,2-difluoroethane (HCFC-122b) | 354-12-1                     |
| Dichlorotrifluoroethane (HCFC-123)             | 34077-87-7                   |
| 1,1-Dichloro-2,2,2-trifluoroethane (HCFC-123)  | 306-83-2                     |
| 1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123a) | 354-23-4                     |
| 1,1-Dichloro-1,2,2-trifluoroethane (HCFC-123b) | 90454-18-5<br>812-04-4       |
| Chlorotetrafluoroethane (HCFC-124)             | 63938-10-3                   |
| 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124)  | 2837-89-0                    |
| 1-chloro-1,1,2,2-tetrafluoroethane (HCFC-124a) | 354-25-6                     |
| Trichlorofluoroethane (HCFC-131)               | 27154-33-2;<br>(134237-34-6) |
| 1,1,2-Trichloro-2-fluoroethane (HCFC-131)      | 359-28-4                     |
| 1,1,2-Trichloro-1-fluoroethane (HCFC-131a)     | 811-95-0                     |
| 1,1,1-Trichloro-2-fluoroethane (HCFC-131b)     | 2366-36-1                    |
| Dichlorodifluoroethane (HCFC-132)              | 25915-78-0                   |
| 1,2-Dichloro-1,2-difluoroethane (HCFC-132)     | 431-06-1                     |
| 1,1-Dichloro-2,2-difluoroethane (HCFC-132a)    | 471-43-2                     |
| 1,2-Dichloro-1,1-difluoroethane (HCFC-132b)    | 1649-08-7                    |
| 1,1-Dichloro-1,2-difluoroethane (HCFC-132c)    | 1842-05-3                    |
| Chlorotrifluoroethane (HCFC-133)               | 1330-45-6<br>431-07-2        |
| 1-Chloro-1,2,2-trifluoroethane (HCFC-133)      | 1330-45-6                    |
| 2-Chloro-1,1,1-trifluoroethane (HCFC-133a)     | 75-88-7                      |
| 1-Chloro-1,1,2-trifluoroethane (HCFC-133b)     | 421-04-5                     |

| Ozone Depleting Substances*                             | CAS Numbers                |
|---|----------------------------|
| Dichlorofluoroethane(HCFC-141)                          | 1717-00-6;<br>(25167-88-8) |
| 1,2-Dichloro-1-fluoroethane (HCFC-141)                  | 430-57-9                   |
| 1,1-Dichloro-2-fluoroethane (HCFC-141a)                 | 430-53-5                   |
| 1,1-Dichloro-1-fluoroethane (HCFC-141b)                 | 1717-00-6                  |
| Chlorodifluoroethane (HCFC-142)                         | 25497-29-4                 |
| 2-Chloro-1,1-Difluoroethane (HCFC-142)                  | 338-65-8                   |
| 1-Chloro-1,1-difluoroethane (HCFC-142b)                 | 75-68-3                    |
| 1-Chloro-1,2-difluoroethane (HCFC-142a)                 | 338-64-7                   |
| Chlorofluoroethane (HCFC-151)                           | 110587-14-9                |
| 1-Chloro-2-fluoroethane (HCFC-151)                      | 762-50-5                   |
| 1-Chloro-1-fluoroethane (HCFC-151a)                     | 1615-75-4                  |
| Hexachlorofluoropropane (HCFC-221)                      | 134237-35-7                |
| 1,1,1,2,2,3-Hexachloro-3-fluoropropane (HCFC-221ab)     | 29470-94-8<br>422-26-4     |
| Pentachlorodifluoropropane (HCFC-222)                   | 134237-36-8                |
| 1,1,1,3,3-pentachloro-2,2-difluoropropane (HCFC-222ca)) | 422-49-1                   |
| 1,2,2,3,3-pentachloro-1,1-difluoropropane (HCFC-222aa)  | 422-30-0                   |
| Tetrachlorotrifluoropropane (HCFC-223)                  | 134237-37-9                |
| 1,1,3,3-Tetrachloro-1,2,2-trifluoropropane (HCFC-223ca) | 422-52-6                   |
| 1,1,1,3-Tetrachloro-2,2,3-trifluoropropane (HCFC-223cb) | 422-50-4                   |
| Trichlorotetrafluoropropane (HCFC-224)                  | 134237-38-0                |
| 1,3,3-Trichloro-1,1,2,2-tetrafluoropropane (HCFC-224ca) | 422-54-8                   |
| 1,1,3-Trichloro-1,2,2,3-tetrafluoropropane (HCFC-224cb) | 422-53-7                   |
| 1,1,1-Trichloro-2,2,3,3-tetrafluoropropane (HCFC-224cc) | 422-51-7                   |
| Dichloropentafluoropropane (HCFC-225)                   | 127564-92-5                |
| 2,2-Dichloro-1,1,1,3,3-pentafluoropropane(HCFC-225aa)   | 128903-21-9                |
| 2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC-225ba)  | 422-48-0                   |
| 1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225bb)  | 422-44-6                   |
| 3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)  | 422-56-0                   |
| 1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)  | 507-55-1                   |
| 1,1-Dichloro-1,2,2,3,3-pentafluoropropane(HCFC-225cc)   | 13474-88-9                 |
| 1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC-225da)  | 431-86-7                   |
| 1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225ea)  | 136013-79-1                |
| 1,1-Dichloro-1,2,3,3,3-pentafluoropropane(HCFC-225eb)   | 111512-56-2                |
| Chlorohexafluoropropane (HCFC-226)                      | 134308-72-8                |
| 2-Chloro-1,1,1,3,3,3-hexafluoro-propane (HCFC-226da)    | 431-87-8                   |
| Pentachlorofluoropropane (HCFC-231)                     | 134190-48-0                |
| 1,1,1,2,3-pentachloro-2-fluoro-propane (HCFC-231bb)     | 421-94-3                   |
| Tetrachlorodifluoropropane (HCFC-232)                   | 134237-39-1                |
| 1,1,1,3-Tetrachloro-3,3-difluoropropane (HCFC-232fc)    | 460-89-9                   |
| Trichlorotrifluoropropane (HCFC-233)                    | 134237-40-4                |
| 1,1,1-Trichloro-3,3,3-trifluoropropane (HCFC-233fb)     | 7125-83-9                  |
| Dichlorotetrafluoropropane (HCFC-234)                   | 127564-83-4                |
| 1,2-Dichloro-1,2,3,3-tetrafluoropropane (HCFC-234db)    | 425-94-5                   |
| Chloropentafluoropropane (HCFC-235)                     | 134237-41-5                |
| 1-Chloro-1,1,3,3,3-pentafluoropropane (HCFC-235fa)      | 460-92-4                   |
| Tetrachlorofluoropropane (HCFC-241)                     | 134190-49-1                |
| 1,1,2,3-Tetrachloro-1-fluoropropane (HCFC-241db)        | 666-27-3                   |
| Trichlorodifluoropropane (HCFC-242)                     | 134237-42-6                |
| 1,3,3,Trichloro-1,1-difluoropropane (HCFC-242fa)        | 460-63-9                   |
| Dichlorotrifluoropropane (HCFC-243)                     | 134237-43-7                |
| 1,1-Dichloro-1,2,2-trifluoropropane (HCFC-243cc)        | 7125-99-7                  |
| 2,3-Dichloro-1,1,1-trifluoropropane (HCFC-243db)        | 338-75-0                   |
| 3,3-Dichloro-1,1,1-trifluoropropane (HCFC-243fa)        | 460-69-5                   |
| Chlorotetrafluoropropane (HCFC-244)                     | 134190-50-4                |
| 3-Chloro-1,1,2,2-tetrafluoropropane (HCFC-244ca)        | 679-85-6                   |
| 1-Chloro-1,1,2,2-tetrafluoropropane (HCFC-244cc)        | 421-75-0                   |

| Ozone Depleting Substances*                   | CAS Numbers |
|---|-------------|
| Trichlorofluoropropane (HCFC-251)             | 134190-51-5 |
| 1,1,3-Trichloro-1-fluoropropane (HCFC-251fb)  | 818-99-5    |
| 1,1,2-Trichloro-1-fluoropropane (HCFC-251dc)  | 421-41-0    |
| Dichlorodifluoropropane (HCFC-252)            | 134190-52-6 |
| 1,3-Dichloro-1,1-difluoropropane (HCFC-252fb) | 819-00-1    |
| Chlorotrifluoropropane (HCFC-253)             | 134237-44-8 |
| 3-Chloro-1,1,1-trifluoropropane (HCFC-253fb)  | 460-35-5    |
| Dichlorofluoropropane (HCFC-261)              | 134237-45-9 |
| 1,1-Dichloro-1-fluoropropane (HCFC-261fc)     | 7799-56-6   |
| 1,2-Dichloro-2-fluoro-propane (HCFC-261ba)    | 420-97-3    |
| Chlorodifluoropropane (HCFC-262)              | 134190-53-7 |
| 1-Chloro-2,2-difluoropropane (HCFC-262ca)     | 420-99-5    |
| 2-Chloro-1,3-difluoropropane (HCFC-262da)     | 102738-79-4 |
| 1-Chloro-1,1-difluoropropane (HCFC-262fc)     | 421-02-3    |
| Chlorofluoropropane (HCFC-271)                | 134190-54-8 |
| 2-Chloro-2-fluoropropane (HCFC-271ba)         | 420-44-0    |
| 1-Chloro-1-fluoropropane (HCFC-271fb)         | 430-55-7    |

\*Note: These substances may contain further isomers that are not listed here. Isomers with CAS numbers have been included when available.

**TABLE – Perchlorate Compounds**

| Perchlorate Compounds       | CAS Numbers |
|-----------------------------|-------------|
| Lithium perchlorate         | 7791-03-9   |
| Other perchlorate compounds | -           |

**TABLE – PFOS Compounds**

| PFOS Compounds  | CAS Numbers |
|---|-------------|
| Perfluorooctane Sulfonates (PFOS)<br>C <sub>8</sub> F <sub>17</sub> SO <sub>2</sub> X, where X = OR, NR or other derivative | -           |

**TABLE — Selected Phthalates Group 1 (BBP, DBP, DEHP)**

| Phthalates                        | EC Numbers | CAS Numbers |
|-----------------------------------|------------|-------------|
| Butylbenzyl phthalate (BBP)       | 201-622-7  | 85-68-7     |
| Dibutyl phthalate (DBP)           | 201-557-4  | 84-74-2     |
| Di(2-ethylhexyl) phthalate (DEHP) | 204-211-0  | 117-81-7    |

Note: The reporting requirement refers to the sum of just those substances listed above

**TABLE — Selected Phthalates Group 2 (DIDP, DINP, DNOP)**

| Phthalates                  | EC Numbers             | CAS Numbers              |
|-----------------------------|------------------------|--------------------------|
| Diisodecyl phthalate (DIDP) | 247-977-1<br>271-091-4 | 26761-40-0<br>68515-49-1 |
| Diisononyl phthalate (DINP) | 249-079-5<br>271-090-9 | 28553-12-0<br>68515-48-0 |
| Di-n-octyl phthalate (DNOP) | 204-214-7              | 117-84-0                 |

Note: The reporting requirement refers to the sum of just those substances listed above

**TABLE — Polybrominated Biphenyls (PBBs)**

| <b>Polybrominated Biphenyls (PBBs)</b> | <b>CAS Numbers</b> |
|--|--------------------|
| Polybrominated Biphenyls               | 59536-65-1         |
| Dibromobiphenyl                        | 92-86-4            |
| 2-Bromobiphenyl                        | 2052-07-5          |
| 3-Bromobiphenyl                        | 2113-57-7          |
| 4-Bromobiphenyl                        | 92-66-0            |
| Tribromobiphenyl                       | 59080-34-1         |
| Tetrabromobiphenyl                     | 40088-45-7         |
| Pentabromobiphenyl                     | 56307-79-0         |
| Hexabromobiphenyl                      | 59080-40-9         |
| Hexabromo-1,1-biphenyl                 | 36355-01-8         |
| Firemaster FF-1                        | 67774-32-7         |
| Heptabromobiphenyl                     | 35194-78-6         |
| Octabromobiphenyl                      | 61288-13-9         |
| Nonabromobiphenyl                      | 27753-52-2         |
| Decabromobiphenyl                      | 13654-09-6         |

**TABLE — Polybrominated Diphenyl Ethers (PBDEs)**

| <b>Polybrominated Diphenyl Ethers (PBDEs)</b>  | <b>CAS Numbers</b>  |
|--|---|
| Bromodiphenyl ether  | 101-55-3  |
| Dibromodiphenyl ether  | 2050-47-7   |
| Tribromodiphenyl ether   | 49690-94-0  |
| Tetrabromodiphenyl ether   | 40088-47-9  |
| Pentabromodiphenyl ether (note: Commercially available PeBDPO is a complex reaction mixture containing a variety of brominated diphenyloxides. | 32534-81-9<br>(CAS number used for commercial grades of PeBDPO) |
| Hexabromodiphenyl ether  | 36483-60-0  |
| Heptabromodiphenyl ether   | 68928-80-3  |
| Octabromodiphenyl ether  | 32536-52-0  |
| Nonabromodiphenyl ether  | 63936-56-1  |
| Decabromodiphenyl ether  | 1163-19-5   |

**TABLE — Polychlorinated Biphenyls (PCBs) and specific substitutes**

| <b>Polychlorinated Biphenyls (PCBs)</b>                      | <b>CAS Numbers</b> |
|--|--------------------|
| Polychlorinated Biphenyls (all isomers and congeners)        | 1336-36-3          |
| Monomethyl-tetrachloro-diphenyl methane (Ugilec 141)         | 76253-60-6         |
| Monomethyl-dichloro-diphenyl methane (Ugilec 121, Ugilec 21) | 81161-70-8         |
| Monomethyl-dibromo-diphenyl methane (DBBT)                   | 99688-47-8         |

**TABLE — Polychlorinated Terphenyls (PCTs)**

| <b>Polychlorinated Terphenyls (PCTs)</b>               | <b>CAS Numbers</b> |
|--|--------------------|
| Polychlorinated Terphenyls (all isomers and congeners) | 61788-33-8         |

**TABLE — Polychlorinated Naphthalenes**

| <b>Polychlorinated Naphthalenes</b> | <b>CAS Numbers</b> |
|-------------------------------------|--------------------|
| Polychlorinated Naphthalenes        | 70776-03-3         |
| Other polychlorinated Naphthalenes  | -                  |

**TABLE— (PVC) Polyvinyl Chloride**

| Polyvinyl Chloride        | CAS Numbers |
|---------------------------|-------------|
| Polyvinyl chloride (PVC)  | 9002-86-2   |
| Other Polyvinyl chlorides | -           |

**TABLE — Radioactive Substances (Radioactive Isotope)**

| Radioactive Substances       | CAS Numbers |
|------------------------------|-------------|
| Uranium-238                  | 7440-61-1   |
| Radon                        | 10043-92-2  |
| Americium-241                | 14596-10-2  |
| Thorium-232                  | 7440-29-1   |
| Cesium-137                   | 10045-97-3  |
| Strontium-90                 | 10098-97-2  |
| Other radioactive substances | -           |

**TABLE — Refractory Ceramic Fibers, Aluminosilicate**

| Refractory Ceramic Fibers, Aluminiumsilicate   | Index Numbers |
|--|---------------|
| are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.2 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, and fulfill the two following conditions:<br>a) Al <sub>2</sub> O <sub>3</sub> and SiO <sub>2</sub> are present within the following concentration ranges: <ul style="list-style-type: none"> <li>• Al<sub>2</sub>O<sub>3</sub>: 43.5 – 47 % w/w, and SiO<sub>2</sub>: 49.5 – 53.5 % w/w, or</li> <li>• Al<sub>2</sub>O<sub>3</sub>: 45.5 – 50.5 % w/w, and SiO<sub>2</sub>: 48.5 – 54 % w/w,</li> </ul> b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm) | 650-017-00-8  |

**TABLE — Refractory Ceramic Fibers, Zirconia Aluminosilicate**

| Refractory Ceramic Fibers, Aluminiumsilicate  | Index Numbers |
|---|---------------|
| are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.2 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, and fulfill the two following conditions:<br>a) Al <sub>2</sub> O <sub>3</sub> , SiO <sub>2</sub> and ZrO <sub>2</sub> are present within the following concentration ranges: <ul style="list-style-type: none"> <li>• Al<sub>2</sub>O<sub>3</sub>: 35 – 36 % w/w, and</li> <li>• SiO<sub>2</sub>: 47.5 – 50 % w/w, and</li> <li>• ZrO<sub>2</sub>: 15 - 17 % w/w,</li> </ul> b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm) | 650-017-00-8  |

**TABLE — Short Chain Chlorinated Paraffins (SCCPs)**

| Short Chain Chlorinated Paraffins (C10-C13) | EC Numbers | CAS Numbers |
|---|------------|-------------|
| Alkanes, C10-13, chloro                     | 287-476-5  | 85535-84-8  |
| Alkanes, C10-12, chloro                     |            | 108171-26-2 |
| Alkanes, C12-13, chloro                     |            | 71011-12-6  |
| Alkanes, chloro                             |            | 61788-76-9  |
| Other Short Chain Chlorinated Paraffins     |            | -           |



**TABLE — Tri-substituted Organostannic Compounds**

| <b>Tri-substituted Organostannic Compounds</b>  | <b>CAS Numbers</b>                                   |
|---|--|
| Triphenyltin-N, N-dimethyldithiocarbamate   | 1803-12-9  |
| Triphenyltinfluoride  | 379-52-2   |
| Triphenyltinacetate   | 900-95-8   |
| Triphenyltinchloride  | 639-58-7   |
| Triphenyltinhydroxide   | 76-87-9  |
| Triphenyltin fattyacid((9-11)salt)  | 18380-71-7<br>18380-72-8<br>47672-31-1<br>94850-90-5 |
| Triphenyltinchloroacetate   | 7094-94-2  |
| Tributyltinmethacrylate   | 2155-70-6  |
| Bis(tributyltin)fumalate  | 6454-35-9  |
| Tributyltinfluoride   | 1983-10-4  |
| Bis(tributyltin)2,3-dibromosuccinate  | 31732-71-5   |
| Tributyltinacetate  | 56-36-0  |
| Tributyltinlaurate  | 3090-36-6  |
| Bis(tributyltin)phthalate   | 4782-29-0  |
| Copolymer of alkyl (c=8) acrylate, methyl methacrylate and tributyltin methacrylate                   | 67772-01-4   |
| Tributyltinsulfamate  | 6517-25-5  |
| Bis(tributyltin)maleate   | 14275-57-1   |
| Tributyltinchloride   | 1461-22-9<br>7342-38-3                               |
| Tributyltin cyclopentane carbonate = mixture  | 85409-17-2   |
| Tributyltin-1,2,3,4,4a,4b,5,6,10,10a-decahydro-7-isopropyl-1,4a-dimethyl-1-phenanthrenecarboxylatemix | 26239-64-5   |
| Other tri-substituted organostannic compounds   | -  |

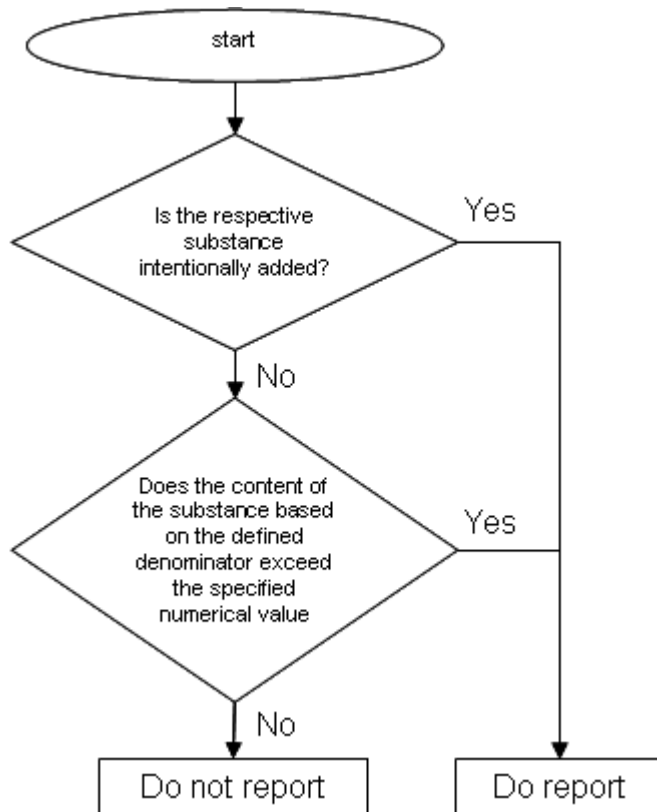
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**Annex C (Normative) Dual Threshold Level and Reporting Flow Chart**

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Figure C-1 – Reporting flow chart

Note: This flow chart is only applied when dual thresholds are set for the same substance category with the same reportable application.



**Annex D (Normative) Set of Data Fields**

| # | Category                         | Data field  | Status               | Description  |
|---|----------------------------------|---|----------------------|--|
| 1 | DECLARATION                      | Response Date<br>(timestamp date e.g. DD-MON-YYYY)                          | Required             | The declaration contains a date and time identifier.   |
|   |                                  | Declaration note  | Optional             | Additional information about the declaration may be added  |
| 2 | INFORMATION SENDER               | Company Name  | Required             | The company name.  |
|   |                                  | DUNS  | Optional             | Dun&Bradstreet's Data Universal Numbering System. <a href="http://www.dnb.com">http://www.dnb.com</a> . The D&B D-U-N-S Number is the standard for keeping track of the world's businesses. Its unique nine-digit code helps identify and link more than 60 million companies worldwide.                                   |
|   |                                  | Address   | Optional             | The address of company.  |
|   |                                  | Contact Name  | Optional             | The name of the contact person at the company.   |
|   |                                  | Email-Contact   | Optional             | Email-address for the contact person   |
| 3 | PRODUCT                          | Product Name  | Required             | The item that the respondent is supplying (e.g., assembly, subassembly, component).  |
|   |                                  | Supplier's Product Number   | Required             | The supplier product item number   |
|   |                                  | Receiver's Product Number   | Optional             | The customer product item number   |
|   |                                  | Product Total Mass (g)  | Required             | Grams of the Product Total mass. Disclosure must be in SI units as defined in ISO 31.  |
| 4 | SUBSTANCE CATEGORY/<br>SUBSTANCE | Substance Category/<br>Substance Name                                       | Required             | For substance categories/substances from Annex A if present above the threshold level  |
|   |                                  | Substance Category/<br>Substance present or not (Y/N) above threshold level | Optional             | Provides declaration that substance category/substance is not present above threshold level in product which is declared. Allows for negative declaration.   |
|   |                                  | Substance CAS-number, or EC number or ISO Number                            | Conditional (note 1) | Chemicals Abstract Service Numbering System. ISO International Standards number for identifying substance.<br>Note 1: Mandatory only for those substances listed in Table A with CAS# or EU# .   |
|   |                                  | Substance Category/<br>Substance Mass (g)                                   | Required             | Substance category/substance mass in grams if present above the threshold level. Disclosure must be in SI units as defined in ISO 31.  |
|   |                                  | Substance Category/<br>Substance (wt %)                                     | Conditional (note 2) | Weight percentage of Substance Category/<br>Substance mass if present above threshold levels<br>Note 2: Mandatory for substance categories/substances from Annex A if a) present above the threshold level and b) if threshold level specifies a different denominator than the product (e.g. material or batteries)       |
|   |                                  | Detailed Substance Information  | Conditional (note 2) | Location/application information.<br>This object may be needed for ensuring e.g., RoHS-compliance.<br>Note 2: Mandatory for substance categories/substances from Annex A if a) present above the threshold level and b) if threshold level specifies a different denominator than the product (e.g. material or batteries) |
|   |                                  | Detailed Substance Note   | Optional             | Additional information about the substance.<br>If applicable, additional information about radioactivity, e.g. radioactivity isotope name and code, max activity Level (MBq), typical activity level (MBq)   |

**Annex E (Informative) Examples of Material Declaration Forms**

This annex provides two examples of a declaration for the same product meeting the requirements of this Guide. Example 1 represents the most basic form limited to required data fields only. Example 2 is more detailed. It lists all required fields and provides in addition the optional "negative declaration" field and the optional field on "detailed substance information".

**EXAMPLE 1 — SAMPLE MATERIAL DECLARATION FORMAT WITH REQUIRED DATA FIELDS**

**Date:** 21-JUL-2010  
**Company Name:** Any Company  
**Product Name:** Motor  
**Product Number:** 001  
**Product Total Mass (g):** 500.0 g

| Substance Category Name  | Substance Mass (g) | Wt%*         | Detailed substance information |
|--------------------------|--------------------|--------------|--------------------------------|
| Lead/lead compounds      | 0.2                | 60.0         | In solder                      |
|                          |                    | 0.1          | In battery                     |
| Polyvinyl Chloride (PVC) | 2.0                | Not required | Not required                   |

\*Declaration of wt% is mandatory only for those substance categories that are present above the threshold level and where Annex A specifies a different denominator than the product

**EXAMPLE 2 — SAMPLE MATERIAL DECLARATION FORMAT WITH OPTIONAL DATA FIELDS THAT ACHIEVES NEGATIVE DECLARATION**

**Date:** 21-JUL-2010  
**Company Name:** Any Company  
**Product Name:** Motor  
**Product Number:** 001  
**Product Total Mass (g):** 500.0g

**Criteria 1 – R (Regulated) Substance Declaration:**

| Substance Category Name                                       | Substance Category present (Y/N) above threshold level | Substance Mass (g) | Wt%* | Detailed Substance Information |
|---|--|--------------------|------|--------------------------------|
| Asbestos  | N  |                    |      |                                |
| Azocolourants and azodyes which form certain aromatic amines  | N  |                    |      |                                |
| Boric acid  | N  |                    |      |                                |
| Cadmium/Cadmium compounds                                     | N  |                    |      |                                |
| Chromium VI compounds   | N  |                    |      |                                |
| Cobalt dichloride (CoCl <sub>2</sub> )                        | N  |                    |      |                                |
| Diarsenic pentoxide   | N  |                    |      |                                |
| Diarsenic trioxide  | N  |                    |      |                                |
| Dibutyltin (DBT) compounds                                    | N  |                    |      |                                |
| Diocetyl tin (DOT) compounds                                  | N  |                    |      |                                |
| Dimethyl fumarate   | N  |                    |      |                                |
| Disodium tetraborate, anhydrous                               | N  |                    |      |                                |
| Fluorinated greenhouse gases (PFC, SF <sub>6</sub> , HFC)     | N  |                    |      |                                |
| Formaldehyde  | N  |                    |      |                                |
| Hexabromocyclododecane (HBCDD) and all major diastereoisomers | N  |                    |      |                                |

| Substance Category Name                                     | Substance Category present (Y/N) above threshold level | Substance Mass (g) | Wt%* | Detailed Substance Information |
|---|--|--------------------|------|--------------------------------|
| Lead/lead Compounds   | Y  | 0.2                | 60.0 | In Solder                      |
|   |  |                    | 0.1  | In battery                     |
| Lead chromate   | N  |                    |      |                                |
| Lead chromate molybdate sulphate red (C.I. Pigment Red 104) | N  |                    |      |                                |
| Lead sulfochromate yellow (C.I. Pigment Yellow 34)          | N  |                    |      |                                |
| Mercury/Mercury Compounds                                   | N  |                    |      |                                |
| Nickel  | N  |                    |      |                                |
| Ozone Depleting Substances                                  | N  |                    |      |                                |
| Perchlorates  | N  |                    |      |                                |
| Perfluorooctane sulfonate (PFOS)                            | N  |                    |      |                                |
| Phenol,2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl)  | N  |                    |      |                                |
| Bis (2-ethylhexyl) phthalate (DEHP)                         | N  |                    |      |                                |
| Dibutyl phthalate (DBP)                                     | N  |                    |      |                                |
| Benzyl butyl phthalate (BBP)                                | N  |                    |      |                                |
| Diisobutyl phthalate (DIBP)                                 | N  |                    |      |                                |
| Selected Phthalates Group 1 (BBP, DBP, DEHP)                | N  |                    |      |                                |
| Selected Phthalates Group 2 (DIDP, DINP, DNOP)              | N  |                    |      |                                |
| Polybrominated Biphenyls (PBBs)                             | N  |                    |      |                                |
| Polybrominated Diphenylethers (PBDEs)                       | N  |                    |      |                                |
| Polychlorinated Biphenyls (PCBs) and specific substitutes   | N  |                    |      |                                |
| Polychlorinated Terphenyls (PCTs)                           | N  |                    |      |                                |
| Polychlorinated Naphthalenes (more than 3 chlorine atoms)   | N  |                    |      |                                |
| Radioactive Substances                                      | N  |                    |      |                                |
| Refractory Ceramic Fibres, Aluminosilicate                  | N  |                    |      |                                |
| Refractory Ceramic Fibres, Zirconia Aluminosilicate         | N  |                    |      |                                |
| Shortchain Chlorinated Paraffins (C10 – C13)                | N  |                    |      |                                |
| Tetraboron disodium heptaoxide, hydrate                     | N  |                    |      |                                |
| Tri-substituted organostannic compounds                     | N  |                    |      |                                |
| Tributyl Tin Oxide (TBTO)                                   | N  |                    |      |                                |
| Tris (2-chloroethyl) phosphate(TCEP)                        | N  |                    |      |                                |

\*Declaration of wt% is mandatory only for those substance categories that are present above the threshold level and where Annex A specifies a different denominator than the product

**Criteria 2 – A (For Assessment Only) Substance Declaration:**

| Substance Category Name   | Substance Category present or not (Y/N) above threshold level | Substance Mass (g) | Detailed Substance Information |
|---|---|--------------------|--------------------------------|
| 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)   | N   |                    |                                |
| 1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)   | N   |                    |                                |
| 4-[4,4'-bis(dimethylamino) benzhydrylidene] cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Violet 3) | N   |                    |                                |

**Criteria 3 – I (For Information Only) Substance Declaration:**

| Substance Category Name  | Substance Category present or not (Y/N) above threshold level | Substance Mass (g) | Detailed Substance Information |
|--|---|--------------------|--------------------------------|
| Beryllium Oxide (BeO)  | N   |                    |                                |
| Brominated Flame Retardants (other than PBBs, PBDEs, or HBCDD) | N   |                    |                                |
| Polyvinyl Chloride (PVC)                                       | Y   | 2.0                | Cables                         |

**EXAMPLES OF OTHER MATERIAL DECLARATION FORMATS:**

For examples of other material declaration format and tools, see:

JGPSSI – <http://www.jgpssi.jp/>

RosettaNet – <http://www.rosettanet.org>

IPC 1752 – [www.ipc.org/ipc-175x](http://www.ipc.org/ipc-175x)

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**Annex F (Informative) REACH Screening Methodology**

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EU regulation on Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) entered into force on June 1, 2007. REACH Article 33 requires certain chemical information to be supplied to recipients and consumers and Article 7.2 requires notification to the European Chemicals Agency (ECHA) on articles containing substances of very high concern (SVHC) listed on the candidate list. The candidate list was first published on Oct. 28, 2008 and it is now updated twice per year. If a substance on the candidate list exceeds the concentration of 0.1 % weight in the article, the recipient needs to be informed immediately. If in addition, the quantity of such a substance contained in all articles of a legal entity exceeds the tonnage of 1 ton per year, notification to ECHA becomes mandatory (as of June 1, 2011).

As REACH regulates chemical across all industries, not all of the substances publicized on the candidate list occur in products of the electrotechnical industry. Therefore, this Guide introduces a generic screening methodology. This screening methodology allows identifying only those substances that are relevant for the electrotechnical industry product disclosure.

The following criteria and point scores are provided as conditions for indentifying relevant declarable substances using this screening method.

1) Substance potentially remains in the product after its production. This criterion eliminates manufacturing substances that are not part of final product (e.g., substances that represent a gas or liquid or substances that are chemically transformed during the manufacturing process)

2) Application information exists indicating the use of the substance in products of the electrotechnical industry (add 1 point to the score for each type of application). Such information is gathered from public databases relating to chemical substances which are readily accessible and information contained in REACH related EU member countries' documentation such as the Dossier (when Dossier is available). Then, technical knowledge of industry chemical experts is applied to determine known historical and/or existing uses of the substance in electrotechnical products.

Only substances that remain in the product (= pass criteria 1)) can score on applications (2). A single application score reviewed and approved justifies the inclusion into JIG.

The above described generic screening method was applied to the candidate list (with entries from October 28, 2008, January 13, 2010 & June 18, 2010) resulting in 19 substances that were found to meet the relevancy criteria. These 19 substances are listed under Criteria 1-R in Annex A (Table A), indicating that there is an immediate legal obligation for reporting (see Figure F-1 for details).

In order to allow the users of this Guide to proactively prepare for REACH the above described screening was also applied to the proposals for substances of SVHCs referred to as Registry of Intentions (considering those entries until Nov 2010), the most recent consultation (from Aug. 30, 2010), and to those substances from previous consultations (June 30, 2008 and Aug. 31, 2009) that did not move to the candidate list. 3 of these substances passed the screening and therefore meets the Criteria 2-A, justifying their inclusion into Annex A (see Figure F-2 for details) .

Note: Supplier information provided based on this "JIG REACH screening list" does not guarantee compliance with the REACH Regulation for the Article 33 communication and Article 7.2 notification duty for articles. Please consult with legal counsel regarding compliance.

**Figure F-1 JIG REACH Screen Process Score Sheet  
Candidate List**

Candidate list  
as updated on Dec 15, 2010

| Substance Name  | CAS #                     | EC #                    | Index #      | date       | Included into Candidate list on | Remains in product (Y/N) | Application (Positive factor for Electrotechnical Products) |                                      |                         |                 |          |                      |                        |  |   |                        |                    | Total     | Add to JIG - Passed REACH Screen |                                   |
|---|---------------------------|-------------------------|--------------|------------|---------------------------------|--------------------------|---|--------------------------------------|-------------------------|-----------------|----------|----------------------|------------------------|--|---|------------------------|--------------------|-----------|----------------------------------|-----------------------------------|
|   |                           |                         |              |            |                                 |                          | colorant /dye   | Surface Finish (ink, paint, plating) | surfactant/ lubricating | flame retardant | Wood     | metals/ metal alloys | Textiles/ Fibers       | Plastic, rubber, foam and other polymers |   | Glass/ Ceramic         | Other applications |           |                                  | Description of other applications |
|   |                           |                         |              |            |                                 |                          |   |                                      |                         |                 | additive | additive             | additive and/or fibers | plasti-cizer                             | other additive (eg. curing agents, fillers etc) | additive and/or fibers |                    |           |                                  |                                   |
| 1   | 1                         | 1                       | 1            | 1          | 1                               | 1                        | 1   | 1                                    | 1                       | 1               | 1        | 1                    | 1                      | 1  | 1   |                        |                    |           |                                  |                                   |
| 2,4-Dinitrotoluene  | 121-14-2                  | 204-450-0               |              | 13.01.2010 |                                 | Y                        |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    | 0         |                                  |                                   |
| 2-ethoxyethanol   | 110-80-5                  | 203-804-1               |              | 15.12.2010 |                                 | N                        |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    | 0         |                                  |                                   |
| 2-methoxyethanol (ethylene glycol monomethyl ether)   | 109-86-4                  | 203-713-7               |              | 15.12.2010 |                                 | N                        |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    | 0         |                                  |                                   |
| 4,4'- Diaminodiphenylmethane  | 101-77-9                  | 202-974-4               |              | 28.10.2008 |                                 | N                        |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    | 0         |                                  |                                   |
| 5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)  | 81-15-2                   | 201-329-4               |              | 28.10.2008 |                                 | Y                        |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    | 0         |                                  |                                   |
| Acids generated from chromium trioxide and their oligomers. Group containing:<br>Chromic Acid<br>Dichromic Acid<br>Oligomers of chromic acid and dichromic acid | 7738-94-5<br>13530-68-2   | 231-801-5<br>236-881-5  |              | 15.12.2010 |                                 | N                        |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    | 0         |                                  |                                   |
| Acrylamide  | 79-06-1                   | 201-173-7               |              | 30.03.2010 |                                 | N                        |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    | 0         |                                  |                                   |
| Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)   | 85535-84-8                | 287-476-5               |              | 28.10.2008 |                                 | Y                        |   |                                      | 1                       | 1               |          |                      |                        | 1  |   |                        |                    | 3         | Yes                              |                                   |
| Aluminosilicate Refractory Ceramic Fibres   | -                         |                         | 650-017-00-8 | 13.01.2010 |                                 | Y                        |   |                                      |                         |                 |          | 1                    |                        |  |   |                        |                    | 1         | Yes                              |                                   |
| Ammonium dichromate   | 7789-09-5                 | 232-143-1               |              | 18.06.2010 |                                 | N                        |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    | 0         |                                  |                                   |
| Anthracene  | 120-12-7                  | 204-371-1               |              | 28.10.2008 |                                 | Y                        |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    | 0         |                                  |                                   |
| Anthracene oil  | 90640-80-5                | 292-602-7               |              | 13.01.2010 |                                 | Y                        |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    | 0         |                                  |                                   |
| Anthracene oil, anthracene paste  | 90640-81-6                | 292-603-2               |              | 13.01.2010 |                                 | Y                        |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    | 0         |                                  |                                   |
| Anthracene oil, anthracene paste, anthracene fraction   | 91995-15-2                | 295-275-9               |              | 13.01.2010 |                                 | Y                        |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    | 0         |                                  |                                   |
| Anthracene oil, anthracene paste, distn. lights   | 91995-17-4                | 295-278-5               |              | 13.01.2010 |                                 | Y                        |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    | 0         |                                  |                                   |
| Anthracene oil,anthracene-low   | 90640-82-7                | 92-604-8                |              | 13.01.2010 |                                 | Y                        |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    | 0         |                                  |                                   |
| Benzyl butyl phthalate (BBP)  | 85-68-7                   | 201-622-7               |              | 28.10.2008 |                                 | Y                        | 1   | 1                                    | 1                       |                 |          |                      |                        | 1  |   |                        | 1                  | adhesives | 5                                | Yes                               |
| Bis (2-ethyl)(hexyl)phthalate (DEHP)  | 117-81-7                  | 204-211-0               |              | 28.10.2008 |                                 | Y                        | 1   | 1                                    | 1                       |                 |          |                      |                        | 1  |   |                        | 1                  | adhesives | 5                                | Yes                               |
| Bis(tributyltin)oxide   | 56-35-9                   | 200-268-0               |              | 28.10.2008 |                                 | Y                        | 1   |                                      |                         | 1               |          |                      |                        | 1  |   |                        |                    |           | 3                                | Yes                               |
| Boric Acid  | 10043-35-3,<br>11113-50-1 | 233-139-2,<br>234-343-4 |              | 18.06.2010 |                                 | Y                        |   |                                      |                         | 1               | 1        |                      |                        |  |   |                        |                    |           | 2                                | Yes                               |



**Candidate list  
as updated on Dec 15, 2010  
(Continued)**

| Substance Name   | CAS #   | EC #                       | Index #      | date       | (Y/N) | Application (Positive factor for Electrotechnical Products) |                                      |                         |                 |          |                      |                        |  |   |                        |                    |                                   | Total     | Add to JIG - Passed REACH Screen |     |
|--|---|----------------------------|--------------|------------|-------|---|--------------------------------------|-------------------------|-----------------|----------|----------------------|------------------------|--|---|------------------------|--------------------|-----------------------------------|-----------|----------------------------------|-----|
|  |   |                            |              |            |       | colorant /dye   | Surface Finish (ink, paint, plating) | surfactant/ lubricating | flame retardant | Wood     | metals/ metal alloys | Textiles/ Fibers       | Plastic, rubber, foam and other polymers |   | Glass/ Ceramic         | Other applications | Description of other applications |           |                                  |     |
|  |   |                            |              |            |       |   |                                      |                         |                 | additive | additive             | additive and/or fibers | plasti-cizer                             | other additive (eg. curing agents, fillers etc) | additive and/or fibers |                    |                                   |           |                                  |     |
| Chromium trioxide (Trioxochromium)   | 1333-82-0                                     | 215-607-8                  |              | 15.12.2010 | N     |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    |                                   |           | 0                                |     |
| Cobalt (II) carbonate  | 513-79-1                                      | 208-169-4                  |              | 15.12.2010 | N     |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    |                                   |           | 0                                |     |
| Cobalt (II) diacetate  | 71-48-7                                       | 200-755-8                  |              | 15.12.2010 | N     |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    |                                   |           | 0                                |     |
| Cobalt (II) dinitrate  | 10141-05-6                                    | 233-402-1                  |              | 15.12.2010 | N     |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    |                                   |           | 0                                |     |
| Cobalt (II) sulphate   | 10124-43-3                                    | 233-334-2                  |              | 15.12.2010 | N     |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    |                                   |           | 0                                |     |
| Cobalt dichloride  | 7646-79-9                                     | 231-589-4                  |              | 28.10.2008 | Y     |   |                                      |                         |                 |          |                      |                        |  |   |                        | 1                  | Moisture detection                | 3         | Yes                              |     |
| Diarsenic pentaoxide   | 1303-28-2                                     | 215-116-9                  |              | 28.10.2008 | Y     |   |                                      |                         |                 | 1        | 1                    |                        |  | 1   | 1                      |                    |                                   |           | 4                                | Yes |
| Diarsenic trioxide   | 1327-53-3                                     | 215-481-4                  |              | 28.10.2008 | Y     |   |                                      |                         |                 | 1        | 1                    |                        |  | 1   | 1                      |                    |                                   |           | 4                                | Yes |
| Dibutyl phthalate (DBP)  | 84-74-2                                       | 201-557-4                  |              | 28.10.2008 | Y     | 1   | 1                                    | 1                       |                 |          |                      |                        | 1  |   |                        |                    | 1                                 | adhesives | 5                                | Yes |
| Diisobutyl phthalate (DIBP)  | 84-69-5                                       | 201-553-2                  |              | 13.01.2010 | Y     | 1   | 1                                    | 1                       |                 |          |                      |                        | 1  |   |                        |                    | 1                                 | adhesives | 5                                | Yes |
| Disodium tetraborate, anhydrous  | 1303-96-4,<br>1330-43-4,<br>12179-04-3        | 215-540-4                  |              | 18.06.2010 | Y     |   |                                      |                         | 1               | 1        |                      |                        |  |   |                        |                    |                                   |           | 2                                | Yes |
| Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ -HBCDD, $\beta$ -HBCDD, $\gamma$ -HBCDD) | (134237-50-6,<br>134237-51-7,<br>134237-52-8) | 247-148-4 and<br>221-695-9 |              | 28.10.2008 | Y     |   |                                      |                         | 1               |          |                      |                        |  |   |                        |                    |                                   |           | 1                                | Yes |
| Lead chromate  | 7758-97-6                                     | 231-846-0                  |              | 13.01.2010 | Y     | 1   | 1                                    |                         |                 |          |                      |                        |  |   |                        |                    |                                   |           | 2                                | Yes |
| Lead chromate molybdate sulphate red (C.I. Pigment Red 104)  | 12656-85-8                                    | 235-759-9                  |              | 13.01.2010 | Y     | 1   | 1                                    |                         |                 |          |                      |                        |  |   |                        |                    |                                   |           | 2                                | Yes |
| Lead hydrogen arsenate   | 7784-40-9                                     | 232-064-2                  |              | 28.10.2008 | Y     |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    |                                   |           | 0                                |     |
| Lead sulfochromate yellow (C.I. Pigment Yellow 34)   | 1344-37-2                                     | 215-693-7                  |              | 13.01.2010 | Y     | 1   | 1                                    |                         |                 |          |                      |                        |  |   |                        |                    |                                   |           | 2                                | Yes |
| Pitch, coal tar, high temperature  | 65996-93-2                                    | 266-028-2                  |              | 13.01.2010 | Y     |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    |                                   |           | 0                                |     |
| Potassium chromate   | 7789-00-6                                     | 232-140-5                  |              | 18.06.2010 | N     |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    |                                   |           | 0                                |     |
| Potassium dichromate   | 7778-50-9                                     | 231-906-6                  |              | 18.06.2010 | N     |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    |                                   |           | 0                                |     |
| Sodium chromate  | 7775-11-3                                     | 231-889-5                  |              | 18.06.2010 | N     |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    |                                   |           | 0                                |     |
| Sodium dichromate  | 7789-12-0,<br>10588-01-9                      | 234-190-3                  |              | 28.10.2008 | N     |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    |                                   |           | 0                                |     |
| Tetraboron disodium heptaoxide, hydrate  | 12267-73-1                                    | 235-541-3                  |              | 18.06.2010 | Y     |   |                                      |                         | 1               | 1        |                      |                        |  |   |                        |                    |                                   |           | 2                                | Yes |
| Tri(2-chloroethyl)phosphate (TCEP)   | 115-96-8                                      | 204-118-5                  |              | 13.01.2010 | Y     |   |                                      |                         | 1               |          |                      |                        |  |   |                        |                    |                                   |           | 1                                | Yes |
| Trichloroethylene  | 79-01-6                                       | 201-167-4                  |              | 18.06.2010 | N     |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    |                                   |           | 0                                |     |
| Triethyl arsenate  | 15606-95-8                                    | 427-700-2                  |              | 28.10.2008 | Y     |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    |                                   |           | 0                                |     |
| Zirconia Aluminosilicate Refractory Ceramic Fibres   | -   |                            | 650-017-00-8 | 13.01.2010 | Y     |   |                                      |                         |                 |          |                      |                        | 1  |   |                        |                    |                                   |           | 1                                | Yes |
|  |   |                            |              |            |       |   |                                      |                         |                 |          |                      |                        |  |   |                        |                    | <b>Total</b>                      | <b>19</b> |                                  |     |

**Figure F-2 JIG REACH Screen Process Score Sheet**  
**Most recent Consultations, Registry of Intentions and Substances from Previous Consultations that are not on the Candidate List**

Registry of intentions from Oct. 4 & 25, 2010  
 and previous consultations (not moved to candidate list)

| Substance Name   | CAS #      | EC #      | Index #     | date       | Remains in product (Y/N) | Application (Positive factor for Electrotechnical Products) |                                      |                         |                 |               |                               |   |  |   |                                       |                    | Total        | Add to JIG - Passed REACH Screen (Note 1) |                                   |     |
|--|------------|-----------|-------------|------------|--------------------------|---|--------------------------------------|-------------------------|-----------------|---------------|-------------------------------|---|--|---|---------------------------------------|--------------------|--------------|---|-----------------------------------|-----|
|  |            |           |             |            |                          | colorant /dye   | Surface Finish (ink, paint, plating) | surfactant/ lubricating | flame retardant | Wood additive | metals/ metal alloys additive | Textiles/ Fibers additive and/or fibers | Plastic, rubber, foam and other polymers plasticizer | other additive (eg. curing agents, fillers etc) | Glass/ Ceramic additive and/or fibers | Other applications |              |   | Description of other applications |     |
| 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)  | 71888-89-6 | 276-158-1 |             | 25.10.2010 | Y                        | 1   | 1                                    | 1                       | 1               | 1             | 1                             | 1                                       | 1  | 1   | 1                                     | 1                  | adhesives    | 5   | Yes                               |     |
| 1,2,3-trichloropropane   | 96-18-4    | 202-486-1 |             | 25.10.2010 | N                        |   |                                      |                         |                 |               |                               |   |  |   |                                       |                    |              | 0   |                                   |     |
| N-methyl-2-pyrrolidone; 1-methyl-2-pyrrolidone   | 872-50-4   | 212-828-1 |             | 25.10.2010 | N                        |   |                                      |                         |                 |               |                               |   |  |   |                                       |                    |              | 0   |                                   |     |
| Hydrazine  | 302-01-2   | 206-114-9 |             | 25.10.2010 | N                        |   |                                      |                         |                 |               |                               |   |  |   |                                       |                    |              | 0   |                                   |     |
| 4-[4,4'-bis(dimethylamino) benzhydrylidene] cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3) | 548-62-9   | 208-953-6 |             | 25.10.2010 | Y                        | 1   |                                      |                         |                 |               |                               |   |  |   |                                       |                    |              | 1   | Yes                               |     |
| 1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)  | 68515-42-4 | 271-084-6 |             | 04.10.2010 | Y                        | 1   | 1                                    | 1                       |                 |               |                               |   | 1  |   |                                       |                    | 1            | adhesives                                 | 5                                 | Yes |
| Arsenic acid and its salts   |            |           | 033-005-001 | 30.04.2009 | N                        |   |                                      |                         |                 |               |                               |   |  |   |                                       |                    |              | 0   |                                   |     |
| Residues (coal tar), pitch distn.  | 92061-94-4 | 295-507-9 |             | 27.06.2008 | N                        |   |                                      |                         |                 |               |                               |   |  |   |                                       |                    |              | 0   |                                   |     |
| Distillates (coal tar), heavy oils   | 90640-86-1 | 292-607-4 |             | 27.06.2008 | N                        |   |                                      |                         |                 |               |                               |   |  |   |                                       |                    |              | 0   |                                   |     |
| Distillates (coal tar), heavy oils, pyrene fraction  | 91995-42-5 | 295-304-5 |             | 27.06.2008 | N                        |   |                                      |                         |                 |               |                               |   |  |   |                                       |                    |              | 0   |                                   |     |
| Distillates (coal tar), pitch, pyrene fraction   | 91995-52-7 | 295-313-4 |             | 27.06.2008 | N                        |   |                                      |                         |                 |               |                               |   |  |   |                                       |                    |              | 0   |                                   |     |
|  |            |           |             |            |                          |   |                                      |                         |                 |               |                               |   |  |   |                                       |                    | <b>Total</b> | <b>3</b>                                  |                                   |     |

Note 1 - Chemicals that do not meet SVHC criteria under EU REACH - Do not meet JIG-101 reporting criteria (e.g. Cyclododecane; 1,3,5-trichlorobenzene; 1,2,3-trichlorobenzene; 1,2,4-trichlorobenzene)

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## Annex G (Informative) JIG Update Process

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Due to the changing regulatory and industry substance declaration requirements, this Guide will be updated on an annual basis. The maintenance process is discussed below.

During the maintenance process, the general document and its Annexes will be reviewed. A special focus will be put on the JIG declarable substance list to ensure that it is up to date, including a review of the:

- Declarable substance list (Annex A): addition, modification or deletion;
- Detailed substance list (Annex B): addition, modification or deletion; and
- Revision of the threshold levels.

### Organizational structure

- International JIG Steering Committee (SC):
  - a. Composed of representatives from CEA, DIGITALEUROPE & JGPSSI
  - b. SC members will be the Representative, Deputy Representative and Revision Review Team Leader for each region
  - c. The Steering Committee Secretariat will be established at CEA.
- Revision Review Teams (RRT):
  - a. Will be formed individually by CEA, DIGITALEUROPE and JGPSSI. These 3 associations have regional responsibilities (CEA - US, DIGITALEUROPE - Europe and JGPSSI – Japan) and are accountable for the member composition in their RRT;
  - b. Will include Participation by stakeholders for each region (participation will be left to the discretion of each regional association); and
  - c. Will have a leading role for legislative updates within their region.

### Annual revision process and proposed schedule

- Review by the Revision Review Team in each region (May – July annually)
  - Minutes of each Revision Review Team will be shared with other regions
- Creation of Revision Request Forms (July – August annually)
  - Completed individually by each regional Revision Review Team and focusing on regional responsibility. Results will be shared with other regional teams by end of August
- Review of the Revision Request Form (September – November annually)
  - Cross regional review and opinion exchange on submitted Revision Request Forms
  - Preliminary decisions on submitted Revision Request Forms will be prepared by conferences of the Steering Committee
- International Steering Committee Meeting (December annually)
  - Objective of this meeting will be to examine the results of each organization's Revision Request Form review and reach a final conclusion
  - Venue of this meeting should be rotated among the regions
- Editing of the Revised JIG (January annually)
  - CEA Secretariat will edit revised JIG reflecting the decisions of the SC.
- Regional approval of the Revised JIG (February annually)
  - Approval process is left to the discretion of the leading association
- Release of the Revised JIG (March annually)
  - CEA Secretariat will release the revised JIG on March 15
  - CEA Secretariat will issue a joint press release

NOTE: Annexes can be modified or added as interim updates following a condensed review process and an accelerated balloting schedule. Example: Modification of Annex A based on legal developments that require immediate maintenance action. All other maintenance actions should follow the regular annual maintenance process as described above. JIG revisions will be called JIG -101 Ed. x.y. where “x” refers to the annual update and “y” specifies the interim update.

**Annex H (Informative) JIG Revision History**

This annex lists the key milestones in the development of the JIG and summarizes the changes made.

| JIG Revision #         | Date      | Summary of Updates  |
|------------------------|-----------|---|
| <b>JIG -101</b>        | 4/1/2005  | <ul style="list-style-type: none"> <li>• First guide of this series.</li> <li>• Concept of two criteria: regulated (Level A) and market need (Level B).</li> </ul>  |
| <b>JIG -101A</b>       | 9/18/2007 | <ul style="list-style-type: none"> <li>• Minimal changes to the declarable substance list and its annexes. Mainly regulatory updates like the addition of Polychlorinated Terphenyls (PCT) and a revised reporting threshold for Nickel as well as some editorial changes.</li> <li>• Material/substance, thresholds levels, legal and regulatory information and examples of use have been combined from several annexes for both level A &amp; B to enhance readability.</li> <li>• Threshold level and reporting level flow charts have been added to further explain the concept of dual reporting levels (numerical threshold or “intentionally added”) a concept already introduced in JIG-101 but not understood by all users.</li> </ul>  |
| <b>JIG -101 Ed 2.0</b> | 4/28/2009 | <ul style="list-style-type: none"> <li>• Batteries are now explicitly covered by JIG-101. Specific threshold levels for this application have been added to Table A.</li> <li>• When legislation restricts substances only in specific reportable applications, such reportable applications are specified; Reporting is required only when the product declared falls under the reportable applications.</li> <li>• Regulatory updates triggered the revision of JIG-101 declarable substance list: Fluorinated Greenhouse Gases, Formaldehyde, Perchlorates, Perfluorooctanesulfonate, Phenol,2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl), have been added, and some threshold levels have been adapted.</li> <li>• Criteria for determining the threshold level have been added.</li> <li>• Three criteria now determine if substances shall be declared. These revised criteria replace the former criteria for level A and level B disclosure. The criteria have been revised to act more proactively and with a broad industry consensus.</li> <li>• All declarable substances appear in single list. This JIG-101 declarable substance list records also the rationale for inclusion (criteria 1 - R (Regulated), criteria 2 – A (For Assessment Only), criteria 3 – I (For Information Only)).</li> </ul> |

| JIG Revision #         | Date      | Summary of Updates   |
|------------------------|-----------|--|
|                        |           | <ul style="list-style-type: none"> <li>• European REACH regulation (EC 1907/2006) entered into force on June 1, 2007. With respect to electrotechnical products, Article 7.2 (Notification) and Article 33 (Information communication) both require knowledge of substances of very high concern (SVHC) listed on the REACH candidate list that are contained in the products above 0.1% by weight. To identify SVHCs that are relevant for the electrotechnical industry, a generic scientific screening methodology has been established and included in this Guide. Substances that are determined to be relevant for disclosure due to the application of this screening methodology to the candidate list published on Oct. 28, 2008 and the Registry of Intentions (ROI) have been added to Annex A. The inclusion of relevant substances from the ROI offers JIG-101 users the possibility to proactively prepare for REACH as these substances may be transferred to the candidate list in the future.</li> <li>• Maintenance chapter added, detailing the regular update cycle that will be applied to the future annual revisions of JIG-101.</li> <li>• History chapter added.</li> </ul>                               |
| <b>JIG-101 Ed. 3.0</b> | 3/31/2010 | <ul style="list-style-type: none"> <li>• Criteria 1 has been modified and the limitation to 24 months has been removed</li> <li>• Regulatory updates triggered the revision of JIG-101 declarable substance list: Cobalt dichloride, dibutyltin/dioctyltin compounds, trisubstituted organostannic compounds and dimethyl fumarate have been added. The separate entry of Decabromodiphenylether (DecaBDE) for TV/monitor housing has been removed based on legislative changes. DecaDBE is now covered under the generic PBDE entry.</li> <li>• Annex F – REACH Screening methodology has been refined</li> <li>• The modified screening has been applied to the candidate list (with entries from Oct. 28, 2008 &amp; Jan. 13, 2010), the Registry of Intentions (considering those entries until November 2009) and to those substances from previous consultations that have not been transferred to the candidate list. In total 7 additional substances have been identified to be relevant for the electrotechnical industry and added to Annex A.</li> <li>• Clarification added, that for substances with threshold levels referring to materials or specific applications more detailed reporting is required</li> </ul> |
| <b>JIG-101 Ed. 3.1</b> | 9/13/2010 | <ul style="list-style-type: none"> <li>• Interim update to address those substances that newly entered the REACH candidate list from June 18, 2010</li> </ul>  |

| JIG Revision #         | Date      | Summary of Updates   |
|------------------------|-----------|--|
| <b>JIG-101 Ed. 4.0</b> | 3/10/2011 | <ul style="list-style-type: none"> <li>• Criteria for determining the threshold level adapted</li> <li>• Table A modified to indicate latest revision date and revision type enabling the user to quickly identify new or changed entries</li> <li>• Screening has been applied the substances put on the consultation list on Aug. 30,2010, the Registry of Intentions (considering those entries until Nov 2010). In total 3 additional substances have been identified to be relevant for the electrotechnical industry and added to Annex A.</li> <li>• Annex F: Applications for the electrotechnical products simplified triggering also adjustments of the screening score sheet</li> </ul> |

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