

JOINT INDUSTRY GUIDE (JIG)

Material Composition Declaration for Electronic Products

JIG-101A

(Revision of JIG-101, May 2005)

September 18, 2007



NOTICE

This EIA standard contains material that has been prepared, reviewed, and approved through the JEDEC Board of Directors level and subsequently reviewed and approved by the legal counsel.

EIA standards and publications are designed to serve the public interest through eliminating misunderstandings between manufacturers and purchasers, facilitating interchangeability and improvement of products, and assisting the purchaser in selecting and obtaining with minimum delay the proper product for use by those other than EIA members, whether the standard is to be used either domestically or internationally.

EIA standards and publications are adopted without regard to whether or not their adoption may involve patents or articles, materials, or processes. By such action EIA does not assume any liability to any patent owner, nor does it assume any obligation whatever to parties adopting the EIA standards or publications.

The information included in EIA standards and publications represents a sound approach to product specification and application, principally from the electronics industry viewpoint. Within the EIA organization there are procedures whereby a EIA standard or publication may be further processed and ultimately become an ANSI/EIA standard.

No claims to be in conformance with this standard may be made unless all requirements stated in the standard are met.

Inquiries, comments, and suggestions relative to the content of this Joint Industry standard or publication should be addressed to *the Electronic Industries Alliance at the address below, or call (703) 907-7500 or www.eia.org*

*Published by
©Electronic IndustriesAlliance 2007
2500 Wilson Boulevard
Arlington, VA 22201-3834*

Printed in the U.S.A.
All rights reserved

PLEASE!

DON'T VIOLATE
THE
LAW!

This document is copyrighted by EIA and may not be
reproduced without permission.

Organizations may obtain permission to reproduce a limited number of copies
through entering into a license agreement. For information, contact:

Electronic Industries Alliance
2500 Wilson Boulevard
Arlington, Virginia 22201-3834
or call (703) 907-7500

MATERIAL COMPOSITION DECLARATION GUIDE FOR ELECTRONIC PRODUCTS

Contents

Introduction	ii
1 Use of Guide	1
2 Scope	2
3 Materials and Substances	3
4 Data Format	3
5 Terms and Definitions	4
6 Disclaimer	5
Annex A: Level A Materials and Substances	6
Annex B: Level B Materials and Substances	10
Annex C: Set of Data Fields	11
Annex D: Examples of Material Declaration Forms	12
Annex E: Detailed Chemical Lists with CAS-numbers	14
Annex F: Threshold Level and Reporting Level Flow Charts	24

MATERIAL COMPOSITION DECLARATION GUIDE FOR ELECTRONIC PRODUCTS

Introduction

The Electrical and Electronic Equipment (EEE) 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 and subparts that are purchased from suppliers for incorporation into final products. This affects the entire supply chain worldwide.

Material composition information can help manufacturers:

- 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 and subparts they sell. These questionnaires usually take the form of a list of banned or restricted materials and substances that the supplier must certify are not present in the product or subpart. In addition, they often include a separate list of materials and substances that need to be reported when present. 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 EEE 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.

MATERIAL COMPOSITION DECLARATION GUIDE FOR ELECTRONIC PRODUCTS

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

1 Scope

This Guide applies to products and subparts that are supplied to EEE manufacturers for incorporation into their products. It does not apply to packaging materials (e.g. cardboard, plastic tray). It covers materials and substances that may be present in the supplied product or subpart. It does not apply to process chemicals, unless those process chemicals constitute part of the finished product or subpart.

It applies to business-to-business transactions. It is not intended to be used by the general public when making purchasing decisions.

This Guide represents industry-wide consensus on the relevant materials and substances that must be disclosed by suppliers when those materials and substances are present in products and subparts that are incorporated into EEE. 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.

This Guide contains:

- the lists of materials and substances for disclosure;
- the composition amount that requires disclosure (i.e., Threshold Level);
- the regulatory requirements that establish threshold levels, where appropriate;
- a set of data fields for information exchange.

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

2 Use of Guide

This Guide establishes a reporting framework that the industry may use to establish reporting formats for material declaration. The Guide establishes the relevant substances as well as reporting thresholds that the industry agrees should govern material content disclosures. The Guide determines when suppliers should disclose the presence of a substance or material above a specified threshold in a supplier's product. Reporting material content that exceeds these thresholds is required regardless of whether the supplier's product is eligible for any exemption from regulatory requirements. Reporting the presence of a substance or material in amounts that are lower than the specified thresholds is not required by the Guide. The compliance of the supplier's product to restrictions above these thresholds is not required by this standard. Companies may require reporting below the thresholds of this guide; however, such reporting is outside the scope of this standard. The purpose of this Guide is to establish an industry-wide framework that establishes the relevant substances and reporting thresholds that determine when suppliers must disclose the presence of a substance or material in the products and parts they sell. This information is relevant because it has been determined that manufacturers need to obtain this information in order to determine the status of the supplier's product with respect to applicable regulation, design specifications, or other manufacturer objectives.

Suppliers should be prepared to report materials and substances to their customers based on Annexes A and B. Customers have the flexibility to use these lists in their entirety or as a subset depending upon their business needs (e.g., use Annex A, or Annex A and Annex B, or a subset of both lists). If suppliers lack the material or 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 found in Annex C.

Annexes A and B identify categories of materials and substances for reporting. Each category represents groups of materials and substances for which expanded listings are available in Annex E. For categories that represent inorganic substances in Annexes A and B, quantitation and reporting in those categories should be based on the total mass of the inorganic element for the category that is present whether in the form of the pure element or as a compound or alloy of that element in the declared part. For categories that represent organic substances, quantitation and reporting should be based on the total mass of all relevant compounds in the category that are present in the part being declared.

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

- When a law exists that sets a threshold for a material or substance, the units of concentration set forth in the law will be the basis for quantification and reporting of that substance.
- If the reporting threshold for a material/substance is set at "intentionally added," then the material/substance needs to be reported if it meets the definition of "intentionally added" in clause 5.
- If a material or substance is not present or is present below its applicable reporting threshold, it does not need to be reported. A supplier may voluntarily report this information.
- In situations where a material or substance has multiple reporting thresholds due to various legal requirements, a supplier should first determine whether the substance is intentionally added. If so, its level must be reported. If not, any applicable background threshold, if exceeded, must be reported.

NOTE: The figures in Annex F may be used as a guide for determining when to report and at what threshold.

3 Materials and substances

This guide establishes two categories of materials and substances to be declared. These lists are based on criteria that the industry has determined justify disclosure when these material/substances are present in products or subparts in amounts that exceed their specified threshold levels.

Criteria for Level A Disclosure:

The Level A List is composed of materials and substances that, when used in products and subparts, are subject to currently enacted legislation which:

- a) Prohibits their use;
- b) Restricts their use; or
- c) Requires reporting or results in other regulatory effects (e.g., labeling).

Based upon these criteria, Level A materials and substances are listed in Annex A.

Criteria for Level B Disclosure:

The Level B List is composed of materials and substances that the industry has determined relevant for disclosure because they meet one or more of the following criteria:

- a) Materials/substances that are of significant environmental, health, or safety interest
- b) Materials/substances that would trigger hazardous waste management requirements
- c) Materials/substances that could have a negative impact on end-of-life management.

Based upon these criteria, Level B materials and substances are listed in Annex B.

4 Data Format

This guide establishes the data disclosure framework. The framework contains required data fields as well as optional data fields. Optional fields, which may be needed for business-to-business purposes, may be added at the discretion of the customer. Annex C contains the required and optional data fields. As the guide is updated and changed, the data format will be modified to reflect these changes.

There are a variety of data format 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 specific tools. Rather, it establishes the minimum as well as possible optional fields that can be used and allows companies the flexibility to select the tool that best meets their business needs. As a result, companies that choose to use data format tools that contain the required fields but also additional fields not covered by this guide are consistent with the guide.

Annex D contains two examples of a simple material declaration request. The first contains only the required fields. The second example contains the required fields and the optional "negative declaration" field. Annex D also references additional material declaration tools.

5 Terms and definitions

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.

intentionally added: Deliberate use in the formulation of a product or subpart where its continued presence is desired to provide a specific characteristic, appearance or quality. If listed materials or substances are contained in products or subparts purchased by supplier and are incorporated, such materials/substances must be disclosed if the supplier has knowledge (or with reasonable inquiry should have knowledge) of the presence of such materials or substances.

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).

mechanically disjointed: materials that can, in principle, be separated by mechanical actions such as unscrewing, cutting, crushing, grinding and abrasive processes.

product: The item that the respondent is supplying (e.g., assembly, subassembly, component, raw material). A product may include product families if the products within those families perform the same function and have consistent material declarations.

subpart: A sub-unit of a product.

substances: Substances are chemical elements and their compounds (e.g., lead (chemical element), lead oxide (compound), polyvinyl chloride (compound). Registry numbers (RN) of the Chemical Abstracts System of the American Chemical Society (“CAS“ numbers) are attributed to all chemical elements and most of their compounds and should be used for their identification. CAS numbers are provided (in Annex E) for these substances where known.

threshold level: Concentration level which defines the limit (equal to or) above which the presence of a substance or material in a product or subpart must be declared based on the requirements of this guide. Where this level is set as a value, the presence of substances must be reported when the amount present exceeds that value. Where the threshold level is set to intentionally added (defined above), the presence of substances must be reported when the material or substance meets the definition of “intentionally added” regardless of quantity. See Figure 2 in Annex F for a graphical representation of this concept.

Numerical threshold levels are provided in ppm (and mass %). The general conversion used is 1000ppm = 0.1%.

6 Disclaimer

Although this guide and its annexes contain references to legal citations and regulatory limits for certain listed materials, 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 materials and 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 EIA or JGPSSI. Furthermore, where materials and substances are listed in this guide, their listing does not infer or constitute an industry judgment as to their environmental or health impacts.**

Annex A (Normative) Level A materials and substances

For Level A materials and substances, the threshold levels are set by applicable legal requirements that ban or restrict their use. Therefore, assessment as to whether the threshold level has been met must be based on the relevant legal requirements. If a law establishes a new threshold for ban or restriction purposes, the thresholds will be revised accordingly. For laws that allow the presence of certain materials or substances in amounts lower than a certain part per million (ppm) threshold, companies should use the ppm methodology that is established by that law in order to determine whether disclosure is necessary. Reporting below the threshold is allowed, but not required.

NOTE In some cases only a subset of the substances in a chemical category is regulated. Please refer to Annex E for details. For assistance on when to report a substance and at what threshold value, see Annex F.

A.1 Level A substances

NOTE The legal and regulatory information in this table is not a comprehensive listing. Please consult legal counsel for additional compliance information if necessary.

Substance/ Chemical Category	Key Legal and Regulatory Information	Examples of Use	Threshold Level (Reporting Level)
Asbestos	76/769/EEC, Marketing and Use of Dangerous Substances and amendments: (83/478/EEC; 85/610/EEC; 87/217/EEC; 91/659/EEC; 99/77/EEC). United States: Toxic Substances Control Act (restricts new uses); Switzerland Ordinance on the reduction of risks linked to chemical products (ORRChim)	Brake lining pad, insulator, filler, abrasive, insulator, filler, pigment, paint, talc, adiabatic material	Any content must be reported.
Certain azocolourants and azodyes (which form certain aromatic amines) in textile and leather applications only	76/769/EEC, Marketing and Use of Dangerous Substances and amendments: (2002/61/EC; 2003/03/EEC).	Pigment, dyes, colorants	1. Intentionally added 2. Any content greater than 30 ppm (0.003%) by weight in finished textile or leather articles
Cadmium/ Cadmium Compounds	76/769/EEC, Marketing and Use of Dangerous Substances and amendments: (91/338/EEC, 91/157/EEC, 93/86/EEC); 2002/95/EC (EU/RoHS Directive and its amendments) ; China Management Measures on EIP Pollution Control; California Electronic Waste Recycling Act SB 20, amended by SB 50 and AB 575; . Revised law for Promotion of Effective Utilization of Resources(J-Moss)	Pigment, anti-corrosion surface treatment, electric and electronic materials, optical material, stabilizer, plating, pigment for resin, fluorescent, electrode, solder, electric contact, contact point, zinc plating, stabilizer for PVC	1. Intentionally added 2. Any content greater than 100 ppm (0.01%) by weight in homogeneous material.

A.1 Level A substances (cont'd)

Substance/ Chemical Category	Key Legal and Regulatory Information	Examples of Use	Threshold Level (Reporting Level)
Hexavalent Chromium/ Hexavalent Chromium Compounds	2002/95/EC (EU RoHS Directive and its amendments), ; China Management Measures on EIP Pollution Control; California Electronic Waste Recycling Act SB 20, amended by SB 50 and AB 575; Revised law for Promotion of Effective Utilization of Resources(J-Moss)	pigment, paint, ink, catalyst, plating, anti-corrosion surface treatment, dye, paint dryer, surface treatment, chromate treatment, paints adhesion enhancement, anti-corrosion	1. Intentionally added 2. Any content greater than 1000 ppm (0.1%) by weight in homogeneous material.
Lead/Lead Compounds	76/769/EEC, Marketing and Use of Dangerous Substances and amendments: (86/677/EEC, 91/157/EEC, 93/86/EEC); 2000/53/EC 2002/95/EC (EU/RoHS Directive and its amendments), China Management Measures on EIP Pollution Control, Mateel vs. Sprint Communications, et al. vs. Belkin Components et al , July 11, 2002 (Prop 65 Settlement)*; California Electronic Waste Recycling Act SB 20, amended by SB 50 and AB 575; Revised law for Promotion of Effective Utilization of Resources(J-Moss)	rubber hardener, pigment, paint, lubricant, plastic stabilizer, materials for battery, free-machining alloy, free-cutting steels, optical materials, X-ray shielding in CRT glass, electrical solder material, mechanical solder materials, curing agent, vulcanizing agent, ferroelectrics, resin stabilizer, plating, metal alloy, resin additives	1. Intentionally added 2. Any content greater than 1000 ppm (0.1%) by weight in homogeneous material or for surface contact layer of cables/cords (thermoset/thermoplastic coating) content greater than 300 ppm (0.03%) by weight (see Note 1).
Mercury/ Mercury Compounds	76/769/EEC, Marketing and Use of Dangerous Substances and amendments: (86/677/EEC, 91/157/EEC, 98/101/EEC; 2002/95/EC (EU/RoHS Directive and its amendments); Connecticut: C.G.S., Chapter 446m, Section 224-612-625, <i>Mercury Reduction and Education</i> . Rhode Island: Chapter 23-24.9, <i>Mercury Reduction and Education Act</i> . Vermont: Title 10, Chapter 164, <i>Comprehensive Mercury Management</i> ; China Management Measures on EIP Pollution Control; California Electronic Waste Recycling Act SB 20, amended by SB 50 and AB 575; Revised law for Promotion of Effective Utilization of Resources(J-Moss)	fluorescent bulb, contact point material, pigment, anti-corrosion, switches, high-efficiency phosphor, antibacterial treatment	1. Intentionally added 2. Any content greater than 1000 ppm (0.1%) by weight in homogeneous material.
Ozone Depleting Substances	Law Concerning the Protection of the Ozone Layer through the Control of Specified Substances and others (Japanese law), Montreal Protocol, 1990 revision of Article 611 of the Clean Air Act (US law); Regulation (EC) No. 2037/2000 on substances that deplete the ozone layer	refrigerant, foaming agent, extinguishant, solvent cleaner	Any content must be reported.

A.1 Level A substances (cont'd)

Substance/ Chemical Category	Key Legal and Regulatory Information	Examples of Use	Threshold Level (Reporting Level)
Polybrominated Biphenyls (PBBs)	2002/95/EC (EU/RoHS Directive and its amendments), Canada SOR/2003-99, Prohibition of Certain Toxic Substances Regulation 2003; China Management Measures on EIP Pollution Control; 76/769/EC Marketing and Use of Dangerous Substances as amended by 83/264/EEC; Revised law for Promotion of Effective Utilization of Resources(J-Moss)	flame retardant	1. Intentionally added 2. Any content greater than 1000 ppm (0.1%) by weight in homogeneous material.
Polybrominated Diphenylethers (PBDEs)	2002/95/EC (EU/RoHS Directive and its amendments); China Management Measures on EIP Pollution Control 76/769/EEC, Marketing and Use of Dangerous Substances and amendments: (2003/11/EEC for Penta BDE, Octa BDE). US Law (Hawaii, Maine for penta BDE and Octa BDE); Revised law for Promotion of Effective Utilization of Resources(J-Moss)	flame retardant	1. Intentionally added 2. Any content greater than 1000 ppm (0.1%) by weight in homogeneous material.
Polychlorinated Biphenyls and Terphenyls (PCBs, PCTs)	The Law concerning the Examination and Regulation of Manufacture etc. of Chemical Substances (Class 1 chemical substances: Japanese law), 76/769/EEC, Marketing and Use of Dangerous Substances.	insulation oil, lubricant oil, electrical insulation medium, solvent, electrolytic solution; Plasticizers, fire retardants, coatings for electrical wire and cable, dielectric sealants	Intentionally added
Polychlorinated Naphthalenes (more than 3 chlorine atoms)	The Law concerning the Examination and Regulation of Manufacture etc. of Chemical Substances (Class 1 chemical substances: Japanese law),	lubricant, paint, stabilizer (electric characteristic, flame-resistant, water-resistant) insulator, flame retardant	Intentionally added
Radioactive substances	U.S. Nuclear Regulatory Commission Title10 CFR Part 20 (Annex C). Laws for the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors, 1986 (Japanese law)	optical properties (thorium), measuring devices, gauges, detector	Intentionally added
Certain Shortchain Chlorinated Paraffins (C10 – C13)	Norway Regulations relating to restrictions on the use of chemicals and other products hazardous to health and the environment (Product regulations – updated November 2006); EU Marketing and Use Directive (76/769/EEC +2002/45/EC)	plasticizer for PVC, flame retardant	1. Intentionally added 2. Any content greater than 1000 ppm (0.1%) by weight.
Certain Tributyl Tin (TBT) and Triphenyl Tin (TPT) compounds	The Law concerning the Examination and Regulation of Manufacture etc. of Chemical Substances (Class 2 chemical substances: Japanese law)	Stabilizer, antioxidant, antibacterial and antifungal agents, antifoulant, antiseptic, anti-fungal agent, paint, pigment, antistaining	Intentionally added
Tributyl Tin Oxide (TBTO)	The Law concerning the Examination and Regulation of Manufacture etc. of Chemical Substances (Class 1 chemical substances: Japanese law)	antiseptic, antifungal agent, paint, pigment, antistaining, refrigerant, foaming agent, extinguishant, solvent cleaner	Intentionally added
<p>* <i>Mateel v. Sprint et al</i> is a legal settlement among signatory parties. The restricted substance level for lead (300 ppm) set forth in the settlement is a negotiated substance level that settling parties agreed is sufficient to meet Proposition 65's exposure thresholds for lead. Non-signatory parties that adopt a 300 ppm limit for lead in subparts and parts they purchase, however, may not be shielded from legal actions brought by plaintiffs that may allege that Proposition 65's exposure threshold for lead is violated at substance levels lower than 300 ppm.</p>			

Annex B (Normative) Level B materials and substances

Level B materials and substances may not be restricted or prohibited, but are relevant for electronic product material declaration purposes. Therefore, a generic default reporting threshold concentration level is set to 1,000 ppm based upon the weight of the inorganic element (totaled from all forms present) or the organic substances in a category contained in the product or subpart divided by the total weight of the product or subpart for which the declaration is being developed.

NOTE See Annex E for expanded chemical listings.

B.1 Level B substances

Substance	Key Legal and Regulatory Information	Examples of Use	Threshold Level (Reporting Level)
Antimony/Antimony Compounds	Not applicable.	pigment, paint, catalyst, lead free solder, stabilizer, n-type dopant, flame retardant, catalyst	1000 ppm
Arsenic/Arsenic Compounds	Not applicable.	pigment, paint, dye, antifoamer for glass, III-V group semiconductor substrate (GaAs), flame retardant	1000 ppm
Beryllium/Beryllium Compounds	Not applicable.	ceramics, metal alloy, copper-beryllium alloy, catalyst, precipitation hardening alloy, copper-beryllium alloy for spring, solder	1000 ppm
Bismuth/ Bismuth Compounds	Not applicable.	lead free solder, solder	1000 ppm
Brominated Flame Retardants (other than PBBs or PBDEs)	Not applicable.	flame retardant, package molding sealing, plasticizer for PVC, flame retardant	1000 ppm
Certain Phthalates*	Not applicable.	plasticizer, dye, pigment, paint, ink, adhesive, lubricant	1000 ppm
Nickel** (specific applications only, see Annex A)	76/769/EEC Marketing and Use of Dangerous Substances and Amendment 94/27/EC	Stainless steel, plating; Example application for prolonged skin contact is an ear bud (headphone)	Release of nickel not to exceed 0.5 micrograms/sq cm/week when tested to DIN EN 1811
Polyvinyl Chloride (PVC)	Not applicable.	Insulator, chemical resistance, transparency, sheath material	1000 ppm
Selenium/Selenium Compounds	Not applicable.	photoreceptor, pigment, ink, catalyst, oxidizer, (semiconductor material, light receiving element, photocell)	1000 ppm
* regulations exist which limit the use of phthalates in certain products but these regulations do not apply to most electrical and electronic equipment.			
** Nickel must be reported in certain regulated applications where nickel 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 in components and parts designed to be located inside the outer enclosure of a product need not be reported.			

Annex C (Normative) Set of data fields

#	Category	Data field	Status	Description
1	DECLARATION	Date (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. http://www.dnb.com . 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 person	Optional	The contact person at the company.
		Email-address	Optional	Email-address for the contact person
3	PRODUCT/ SUBPART	Product/Subpart Name	Required	The item that the respondent is supplying (e.g., assembly, subassembly, component, raw material). A sub-part refers to a sub-unit of a product.
		Product /Subpart Number	Required	The supplier product number
		Information Receiver Product /Subpart Number	Optional	The customer product number
		Product /Subpart Total Mass (g)	Required	Grams of the Product/Subpart Total mass. Disclosure must be in SI units as defined in ISO 31.
		Product /Subpart Information	Optional	Additional information about the product/subpart. This object is needed for ensuring e.g., RoHS-compliance by identifying sub-part or location Material/Substance.
4	MATERIAL/ SUBSTANCE	Material/Substance Category Name	Required	From Annex A or B
		Material/Substance Category present or not (Y/N) above threshold limit	Optional	Provides declaration that material/substance category is not present above threshold level in product or subproduct which is declared. Allows for negative declaration, if desired.
		Material/Substance Name	Optional	A material is made up of one or more substances (e.g., copper alloy is a material, which in turn is made up of a number of defined substances, copper, nickel, silver, etc.). Substances are chemical elements and their compounds. See Annex E for Examples
		Material/Substance CAS-number or ISO Number	Optional	Chemicals Abstract Service Numbering System. ISO International Standards number for identifying material/substance e.g. as in the case of brominated flame retardants.
		Material/Substance Mass (g)	Required (Optional for PVC)	Grams of Material/Substance mass if present above threshold levels. Disclosure must be in SI units as defined in ISO 31.
		Material/Substance (ppm or %)	Optional	Parts per million, ppm, or weight percentage of Material/Substance mass if present above threshold levels
		Detailed Material/Substance Information	Required*/ Optional	Location/application information. This object may be needed for ensuring e.g., RoHS-compliance. * Mandatory when declaring Level A materials/substances
		Detailed Material/Substance Note	Optional	Additional information about the material/substance. If applicable, additional information about radioactivity, e.g. radioactivity isotope name and code, max activity Level (MBq), typical activity level (MBq)

Annex D (Normative) Examples of Material Declaration Forms

Below you will find two examples of a material declaration that is based on this guide. This represents the most basic form containing only mandatory data fields. The second example contains the mandatory fields plus the optional “negative declaration” field.

Example 1 — Sample material declaration data sheet with required data fields

Date: _____
 Company Name: Any Company
 Product Name: Integrated Circuit
 Product Number: 001
 Product Total Mass (g): 1.0 g

Material/Substance Category Name	Material/Substance Mass (g)	Detailed Material/Substance Information
Bismuth	0.2	Solder

Example 2 — Sample material declaration data sheet with required data fields that achieves negative declaration

Date: 21-JUL-2004
 Company Name: Any Company _____
 Product Name: Integrated Circuit
 Product Number(s): 001
 Product Total Mass (g): 1.0

Level A Material and Substance Declaration:

Material/Substance Category Name	Material/Substance Category intentionally added or present (Y/N) above threshold level	If Yes, Material Substance Mass (g)	If Yes, Detailed Material Substance Information
Asbestos	N		
Certain azocolourants and azodyes	N		
Cadmium/Cadmium compounds	N		
Hexavalent Chromium/Hexavalent Chromium Compounds	N		
Lead/Lead Compounds	N		
Mercury/Mercury Compounds	N		
Ozone Depleting Substances	N		
Polybrominated Biphenyls (PBBs)	N		
Polybrominated Diphenylethers (PBDEs)	N		
Polychlorinated Biphenyls (PCBs) and Terphenyls (PCTs)	N		
Polychlorinated Naphthalenes (more than 3 chlorine atoms)	N		
Radioactive Substances	N		
Certain Shortchain Chlorinated Paraffins (C10 – C13)	N		
Certain Tributyl Tin (TBT) and Triphenyl Tin (TPT)	N		
Tributyl Tin Oxide (TBTO)	N		

Annex D (Normative) Examples of Material Declaration Forms (cont'd)

Level B Material and Substance Declaration:

Material/Substance Category Name	Material/Substance Category present or not (Y/N) above threshold level	If Yes, Material Substance Mass	If Yes, Detailed Material Substance Information
Antimony/Antimony Compounds	N		
Arsenic/Arsenic Compounds	N		
Beryllium/Beryllium Compounds	N		
Bismuth/Bismuth Compounds	Y	0.2 g	Solder
Brominated Flame Retardants (other than PBBs or PBDEs)	N		
Nickel	N		
Certain Phthalates	N		
Selenium/Selenium Compounds	N		
Polyvinyl Chloride (PVC)	N		

EXAMPLES OF OTHER MATERIAL DECLARATION FORMATS:

For examples of other material declarations solutions, see:

JGPSSI: <http://www.jgpssi.jp/>

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

IPC 1752: http://members.ipc.org/committee/drafts/2-18_d_MaterialsDeclarationRequest.asp

Annex E (Normative) Detailed Chemical lists with CAS-numbers

These lists are not comprehensive; they represent examples of chemicals with known CAS numbers.

Where a product or sub-part contains related substance and meet reporting criteria, this information should be reported.

Table A — 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 B — Aromatic Amines formed from Azocolourants and Azodyes

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 certain azocolourants and azodyes that by reductive cleavage of azo groups may release one of the 22 aromatic amines shown in Table B.

Table C — Cadmium/Cadmium Compounds

Cadmium/Cadmium Compounds	CAS Numbers
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	-

Annex E (Normative) Detailed Chemical lists with CAS-numbers (cont'd)

Table D — Chromium VI Compounds

Chromium VI Compounds	CAS Numbers
Chromium (VI) oxide	1333-82-0
Barium chromate	10294-40-3
Calcium chromate	13765-19-0
Chromium trioxide	1333-82-0
Lead (II) chromate	7758-97-6
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 hexavalent chromium compounds	-

Table E — Lead/Lead Compounds

Lead/Lead Compounds	CAS Numbers
Lead	7439-92-1
Lead (II) sulfate	7446-14-2
Lead (II) carbonate	598-63-0
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 (II) chromate	7758-97-6
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 F — 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	-

Annex E (Normative) Detailed Chemical lists with CAS-numbers (cont'd)

Table G — Ozone Depleting Substances/Isomers*

Ozone Depleting Substances/Isomers*	CAS Numbers
Trichlorofluoromethane	75-69-4
Dichlorodifluoromethane (CFC12)	75-71-8
Chlorotrifluoromethane (CFC 13)	75-72-9
Pentachlorofluoroethane (CFC 111)	354-56-3
Tetrachlorodifluoroethane (CFC 112)	76-12-0
Trichlorotrifluoroethane (CFC 113)	354-58-5
1,1,2 Trichloro-1,2,2 trifluoroethane	76-13-1
Dichlorotetrafluoroethane (CFC 114)	76-14-2
Monochloropentafluoroethane (CFC 115)	76-15-3
Heptachlorofluoropropane (CFC 211)	422-78-6 135401-87-5
Hexachlorodifluoropropane (CFC 212)	3182-26-1
Pentachlorotrifluoropropane (CFC 213)	2354-06-5 134237-31-3
Tetrachlorotetrafluoropropane (CFC 214)	29255-31-0
1,1,1,3-Tetrachlorotetrafluoropropane	2268-46-4
Trichloropentafluoropropane (CFC 215)	1599-41-3
1,1,1-Trichloropentafluoropropane	4259-43-2
1,2,3-Trichloropentafluoropropane	76-17-5
Dichlorohexafluoropropane (CFC 216)	661-97-2
Monochloroheptafluoropropane (CFC 217)	422-86-6
Bromochlorodifluoromethane (Halon 1211)	353-59-3
Bromotrifluoromethane (Halon 1301)	75-63-8
Dibromotetrafluoroethane (Halon 2402)	124-73-2
Carbon Tetrachloride (Tetrachloromethane)	56-23-5
1,1,1, - Trichloroethane (methyl chloroform) and its isomers except 1,1,2-trichloroethane	71-55-6
Bromomethane (Methyl Bromide)	74-83-9
Dibromofluoromethane	1868-53-7
Bromodifluoromethane	1511-62-2
Bromofluoromethane	373-52-4
Tetrabromofluoroethane	306-80-9
Tribromodifluoroethane	-
Dibromotrifluoroethane	354-04-1
Bromotetrafluoroethane	124-72-1
Tribromofluoroethane	-
Dibromodifluoroethane	75-82-1
Bromotrifluoroethane	421-06-7
Dibromofluoroethane	358-97-4
Bromodifluoroethane	420-47-3
Bromofluoroethane	762-49-2
Hexabromofluoropropane	-
Pentabromodifluoropropane	-
Tetrabromotrifluoropropane	-
Tribromotetrafluoropropane	-
Dibromopentafluoropropane	431-78-7
Bromohexafluoropropane	2252-78-0
Pentabromofluoropropane	-

Annex E (Normative) Detailed Chemical lists with CAS-numbers (cont'd)

Table G — Ozone Depleting Substances/Isomers* (cont'd)

Ozone Depleting Substances/Isomers*	CAS Numbers
Tetrabromodifluoropropane	-
Tribromotrifluoropropane	-
Dibromotetrafluoropropane	-
Bromopentafluoropropane	460-88-8
Tetrabromofluoropropane	-
Tribromodifluoropropane	70192-80-2
Dibromotrifluoropropane	431-21-0
Bromotetrafluoropropane	679-84-5
Tribromofluoropropane	75372-14-4
Dibromodifluoropropane	460-25-3
Bromotrifluoropropane	421-46-5
Dibromofluoropropane	51584-26-0
Bromodifluoropropane	-
Bromofluoropropane	1871-72-3
Bromochloromethane	74-97-5

* These materials may contain isomers that are not listed here. Isomers with CAS numbers have been included when available.

Table H — Hydrochlorofluorocarbons/Isomers*

Hydrochlorofluorocarbons/Isomers*	CAS Numbers
Dichlorofluoromethane (HCFC 21)	75-43-4
Chlorodifluoromethane (HCFC 22)	75-45-6
Chlorofluoromethane (HCFC 31)	593-70-4
Tetrachlorofluoroethane (HCFC 121)	134237-32-4
1,1,1,2-tetrachloro-2-fluoroethane (HCFC 121a)	354-11-0
1,1,2,2-tetrachloro-1-fluoroethane	354-14-3
Trichlorodifluoroethane (HCFC 122)	41834-16-6
1,2,2-trichloro-1,1-difluoroethane	354-21-2
Dichlorotrifluoroethane(HCFC 123)	34077-87-7
Dichloro-1,1,2-trifluoroethane	90454-18-5
2,2-dichloro-1,1,1-trifluoroethane	306-83-2
1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a)	354-23-4
1,1-dichloro-1,2,2-trifluoroethane (HCFC-123b)	812-04-4
2,2-dichloro-1,1,2-trifluoroethane (HCFC-123b)	812-04-4
Chlorotetrafluoroethane (HCFC 124)	63938-10-3
2-chloro-1,1,1,2-tetrafluoroethane	2837-89-0
1-chloro-1,1,2,2-tetrafluoroethane (HCFC 124a)	354-25-6
Trichlorofluoroethane (HCFC 131)	27154-33-2;(134237-34-6)
1-Fluoro-1,2,2-trichloroethane	359-28-4
1,1,1-trichloro-2-fluoroethane (HCFC131b)	811-95-0
1-Chloro-1-fluoroethane (HCFC-151)	1615-75-4
Dichlorodifluoroethane (HCFC 132)	25915-78-0
1,2-dichloro-1,1-difluoroethane (HCFC 132b)	1649-08-7
1,1-dichloro-1,2-difluoroethane (HCFC 132c)	1842-05-3
1,1-dichloro-2,2-difluoroethane	471-43-2
1,2-dichloro-1,2-difluoroethane	431-06-1
Chlorotrifluoroethane (HCFC 133)	1330-45-6
1-chloro-1,2,2-trifluoroethane	1330-45-6
2-chloro-1,1,1-trifluoroethane (HCFC-133a)	75-88-7
Dichlorofluoroethane(HCFC 141)	1717-00-6; (25167-88-8)
1,1-dichloro-1-fluoroethane (HCFC-141b)	1717-00-6
1,2-dichloro-1-fluoroethane	430-57-9

Annex E (Normative) Detailed Chemical lists with CAS-numbers (cont'd)

Table H — Hydrochlorofluorocarbons/Isomers* (cont'd)

Hydrochlorofluorocarbons/Isomers*	CAS Numbers
Chlorodifluoroethane (HCFC 142)	25497-29-4
1-chloro-1,1-difluoroethane (HCFC142b)	75-68-3
1-chloro-1,2-difluoroethane (HCFC142a)	25497-29-4
Hexachlorofluoropropane (HCFC 221)	134237-35-7
Pentachlorodifluoropropane (HCFC 222)	134237-36-8
Tetrachlorotrifluoropropane (HCFC 223)	134237-37-9
Trichlorotetrafluoropropane (HCFC 224)	134237-38-0
Dichloropentafluoropropane, (Ethyne, fluoro-) (HCFC 225)	127564-92-5; (2713-09-9)
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
Pentachlorofluoropropane (HCFC 231)	134190-48-0
Tetrachlorodifluoropropane (HCFC 232)	134237-39-1
Trichlorotrifluoropropane (HCFC 233)	134237-40-4
1,1,1-Trichloro-3,3,3-trifluoropropane	7125-83-9
Dichlorotetrafluoropropane (HCFC 234)	127564-83-4
Chloropentafluoropropane (HCFC 235)	134237-41-5
1-Chloro-1,1,3,3,3-pentafluoropropane	460-92-4
Tetrachlorofluoropropane (HCFC 241)	134190-49-1
Trichlorodifluoropropane (HCFC 242)	134237-42-6
Dichlorotrifluoropropane (HCFC 243)	134237-43-7
1,1-dichloro-1,2,2-trifluoropropane	7125-99-7
2,3-dichloro-1,1,1-trifluoropropane	338-75-0
3,3-Dichloro-1,1,1-trifluoropropane	460-69-5
Chlorotetrafluoropropane (HCFC 244)	134190-50-4
3-chloro-1,1,2,2-tetrafluoropropane	679-85-6
Trichlorofluoropropane (HCFC 251)	134190-51-5
1,1,3-trichloro-1-fluoropropane	818-99-5
Dichlorodifluoropropane (HCFC 252)	134190-52-6
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	7799-56-6
Chlorodifluoropropane (HCFC 262)	134190-53-7
2-chloro-1,3-difluoropropane	102738-79-4
Chlorofluoropropane (HCFC 271)	134190-54-8
2-chloro-2-fluoropropane	420-44-0
* These materials may contain isomers that are not listed here. Isomers with CAS numbers have been included when available.	

Annex E (Normative) Detailed Chemical lists with CAS-numbers (cont'd)

Table I — Polybrominated Biphenyls (PBBs)

Polybrominated Biphenyls (PBBs)	CAS Numbers
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
Nonabiphenyl	27753-52-2
Decabromobiphenyl	13654-09-6

Table J — Polybrominated Diphenyl Ethers (PBDEs)

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

Table K — Polychlorinated Biphenyls (PCBs) and Polychlorinated Terphenyls (PCTs)

Polychlorinated Biphenyls (PCBs) and Polychlorinated Terphenyls (PCTs)	CAS Numbers
Polychlorinated Biphenyls	1336-36-3
Aroclor	12767-79-2
Chlorodiphenyl (Aroclor 1260)	11096-82-5
Kanechlor 500	27323-18-8
Aroclor 1254	11097-69-1
Monomethyl-tetrachloro-diphenyl methane (Ugilec 141)	76253-60-6
Monomethyl-dichloro-diphenyl methane (Ugilec 121, Ugilec 21)	-
Monomethyl-dibromo-diphenyl methane (DBBT)	99688-47-8
Polychlorinated Terphenyls	61788-33-8

Annex E (Normative) Detailed Chemical lists with CAS-numbers (cont'd)

Table L — Polychlorinated Naphthalenes

Polychlorinated Naphthalenes	CAS Numbers
Polychlorinated Naphthalenes	70776-03-3
Other polychlorinated Naphthalenes	-

Table M — Radioactive Substances (Radioactive Isotope)

Radioactive Substances	CAS Numbers
Uranium	-
Plutonium	-
Radon	-
Americium	-
Thorium	-
Cesium (Radioactive Isotopes only)	-
Strontium (Radioactive Isotopes only)	-
Other radioactive substances	-

NOTE Naturally occurring substances have been removed in Table M.

Table N— Shortchain Chlorinated Paraffins (C10-13)

Shortchain Chlorinated paraffins (C10-13)	CAS Numbers
Chlorinated paraffins (C10-13)	85535-84-8

NOTE Only short-chain chlorinated paraffins with carbon length of 10-13 atoms are covered in Table N.

Table O— Tributyl Tin Oxide

Tributyl Tin Oxide	CAS Numbers
Bis(tri-n-butyltin) oxide	56-35-9

Table P— Certain Tributyl Tins (TBTs) and Triphenyl Tins (TPTs)

Tributyl Tin, Triphenyl Tin	CAS Numbers
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 18380-72-8 47672-31-1 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, 7432-38-3
Tributyltin cyclopentane carbonate=mixture	5409-17-2
Tributyltin-1, 2,3,4,4a, 4b, 5,6,10,10a-decahydro-7-isopropyl-1, 4a-dimethyl-1-phenanthrenecarboxylatemix	26239-64-5

Annex E (Normative) Detailed Chemical lists with CAS-numbers (cont'd)

Table Q — Antimony/Antimony Compounds

Antimony/Antimony Compounds	CAS Numbers
Antimony (metallic)	7440-36-0
Antimony trioxide	1309-64-4
Antimony pentoxide	1314-60-9
Antimony trichloride	10025-91-9
Sodium antimonate	15432-85-6
Other antimony compounds	-

Table R— Arsenic/Arsenic Compounds

Arsenic/Arsenic Compounds	CAS Numbers
Arsenic	7440-38-2
Gallium arsenide	1303-00-0
Calcium arsenate	7778-44-1
Calcium arsenite	27152-57-4
Arsenic pentoxide	1303-28-2
Arsenic trioxide	1327-53-3
Potassium arsenite	10124-50-2
Potassium arsenate	7784-41-0
Lead arsenate	3687-31-8
Other arsenic compounds	-

Table S — Beryllium/Beryllium Compounds

Beryllium/Beryllium Compounds	CAS Numbers
Beryllium	7440-41-7
Beryllium-aluminum alloy	12770-50-2
Beryllium chloride	7787-47-5
Beryllium fluoride	7787-49-7
Beryllium hydroxide	13327-32-7
Beryllium oxide	1304-56-9
Beryllium phosphate	13598-15-7
Beryllium sulfate	13510-49-1
Beryllium sulfate tetrahydrate	7787-56-6
Beryl ore	1302-52-9
Other beryllium compounds	-

Table T— Bismuth/Bismuth Compounds

Bismuth/Bismuth Compounds	CAS Numbers
Bismuth	7440-69-9
Bismuth trioxide	1304-76-3
Bismuth nitrate	10361-44-1
Other bismuth compounds	-

Annex E (Normative) Detailed Chemical lists with CAS-numbers (cont'd)

Table U — Brominated Flame Retardants (other than PBBs or PBBEs)

Brominated Flame Retardants (other than PBBs or PBBEs)	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
Tribromo-styrene	61368-34-1

Annex E (Normative) Detailed Chemical lists with CAS-numbers (cont'd)

Table U — Brominated Flame Retardants (other than PBBs or PBBEs) (cont'd)

Brominated Flame Retardants (other than PBBs or PBBEs)	CAS Numbers
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
Brominated trimethylphenyl-lindane	59789-51-4
Other Brominated Flame Retardants	-
Hexabromo-cyclo-dodecane (HBCD), unspecified	3194-55-6
Tetrabromo-chyclo-octane	31454-48-5
1,2-Dibromo-4-(1,2 dibromo-methyl)-cyclo-hexane	3322-93-8
TBPA Na salt	25357-79-3
Tetrabromo phthalic-anhydride	632-79-1

Table V — Nickel

Nickel	CAS Numbers
Nickel	7440-02-0

Table W— Phthalates

Phthalates	CAS Numbers
Bis (2-ethylhexyl) phthalate (DEHP)	117-81-7
Dibutylphthalate (DBP)	84-74-2
Diisononyl phthalate (DINP)	28553-12-0
1,2-Benzenedicarboxylic acid diisodecyl ester (DIDP)	26761-40-0
Butyl benzyl phthalate (BBP)	85-68-7
Di-n-octyl phthalate (DNOP)	117-84-0

Table X — Selenium/Selenium Compounds

Selenium/Selenium Compounds	CAS Numbers
Selenium	7782-49-2
Hydrogen selenide	7783-07-5
Sodium selenide	1313-85-5
Selenium dioxide	7446-08-4
Sodium selenate	10112-94-4
Dimethyl selenide	593-79-3
Selenium oxide	12640-89-0
Other selenium compounds	-

TABLE Y— Polyvinyl Chloride

Polyvinyl Chloride	CAS Number
Polyvinyl chloride (PVC)	9002-86-2

Annex F (Normative) Threshold Level and Reporting Level Flow Charts

Figure one may be used as a guide to determine when to report a substance. If after following the flowchart you arrive at “yes,” then you should list the substance. If you arrive at “no,” then reporting that material is not necessary.

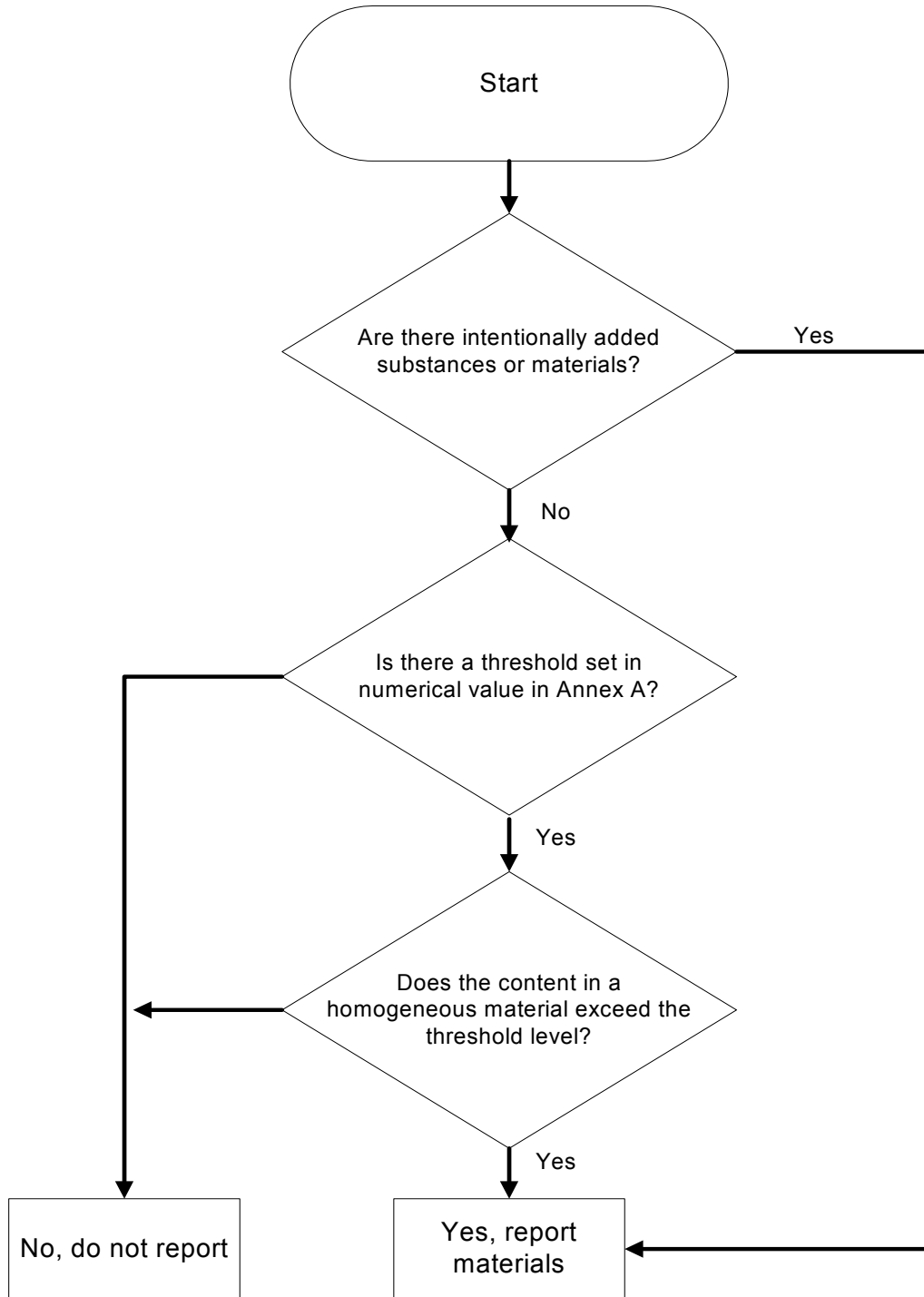


Figure 1 — reporting flow chart

Annex F (Normative) Threshold Level and Reporting Level Flow Charts (cont'd)

As defined in the clause 5, the “Threshold Level” is the concentration level which defines the limit (equal to or) above which the presence of a substance or material in a product or subpart must be declared based on the requirements of this guide. Where this level is set as a value, the presence of substances must be reported when the amount present exceeds that value. Where the threshold level is set to intentionally added (also defined in clause 5), the presence of substances must be reported when the material or substance meets the definition of “intentionally added” regardless of quantity.

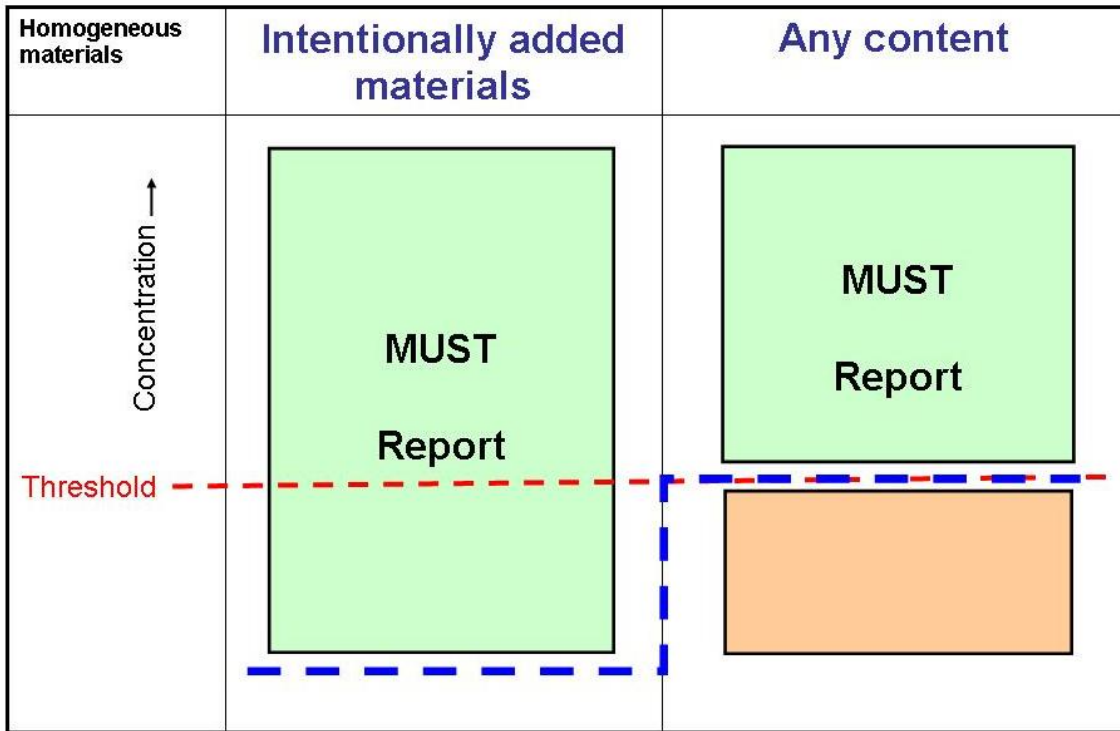


Figure 2 — Threshold level (reporting level) for Level A substances



Standard Improvement Form

Joint Industry Group Standard JIG-101A

The purpose of this form is to provide the Technical Committees with input from the industry regarding usage of the subject standard. Individuals or companies are invited to submit comments to the Joint Industry Group Materials Declaration Guide Committee. All comments will be forwarded to the appropriate committee(s).

If you can provide input, please complete this form and return to both associations:

EIA
Standards and Technology Department
2500 Wilson Blvd.
Arlington, VA 22201-3834
Fax: 703.907.7500

1. I recommend changes to the following:

Requirement, paragraph number _____
 Test method number _____ Clause number _____

The referenced paragraph number has proven to be:

Unclear Too Rigid In Error
 Other _____

2. Recommendations for correction:

3. Other suggestions for document improvement:

Submitted by:

Name: _____ Telephone: _____

Company: _____ E-mail: _____

Address: _____

City/State/Zip _____ Date: _____

