

**Toppan Printing Co., Ltd.  
Electronics Division's  
Green Procurement Guidelines**

**Ver. 3**

**September 2008**

**Toppan Printing Co., Ltd.  
Electronics Division**

# Table of Contents

<b>1. Introduction</b>	<b>P.3</b>
<b>2. The Green Procurement Policy of the Electronics Division, Toppan Printing Co., Ltd.</b>	<b>P.4</b>
<b>3. The Green Procurement Guidelines of the Electronics Division, Toppan Printing Co., Ltd.</b>	<b>P.5</b>
<b>4. Terminology Used in These Guidelines</b>	<b>P.5,6</b>
<b>5. Requirements for Suppliers</b>	<b>P.7</b>
<b>5.1 The construction of environmental management systems and chemical substance control systems</b>	<b>P.7</b>
<b>5.2 Disclosure of situation concerning inclusion of chemical substances</b>	<b>P.7</b>
<b>5.3 Promotion to eliminate inclusion of restricted substances</b>	<b>P.13</b>
<b>5.4 Assurance of non-inclusion of restricted materials</b>	<b>P.13</b>
<b>5.5 Promotion of continuous research</b>	<b>P.14</b>
<b>6. Control of Information Disclosed by Suppliers</b>	<b>P.14</b>
<b>7. Validation Timing of Green Procurement</b>	<b>P.14</b>
<b>8. The handling of these guidelines</b>	<b>P.14</b>
<b>9. Department Receiving Investigation Report Inquiries</b>	<b>P.15</b>
<b>Appendix 1</b>	<b>P.16-25</b>
<b>Appendix 2</b>	<b>P.26,27</b>
<b>Appendix 3</b>	<b>P.28</b>

## **1. Introduction**

With the “Toppan Declaration on the Global Environment” as the fundamental concept, we at the Electronics Division of Toppan Printing Co., Ltd. (the “Division”) have been endeavoring to reduce burdens on the environment in our business operations while providing customers with products on which they can rely with confidence.

Now, as part of Toppan’s group-wide efforts, we have established the “Toppan Group CSR Procurement Guidelines (Version 1)” and the “Toppan Group Control Standards for Chemical Substances in Raw Materials (Version 1)”. To enhance consistency with the “Toppan Group CSR Procurement Guidelines (Version 1)” and “Toppan Group Control Standards for Chemical Substances in Raw Materials (Version 1)”, which are company-wide initiatives, we have made a partial revision to these guidelines.

In this regard, the Division revised a part of “The Green Procurement Guidelines of the Electronics Division” in order to promote further reduction of environmental loads, which may arise from our products and business operations, through continuing cooperation with our valuable suppliers.

We will continue to promote the reduction of environmental burden generated by products and business activities through collaboration with all our suppliers.

This Green Procurement Policy is to be applied as a part of our environmental management system and quality management system and will be continuously controlled and maintained.

Your understanding and continued support are greatly appreciated.

## **2. The Green Procurement Policy of the Electronics Division, Toppan Printing Co., Ltd.**

1. With the “Toppan Declaration on the Global Environment” as our fundamental concept, we at the Electronics Division place importance on environmental aspects relating to particular chemical substances contained in raw materials, parts, and components procured and used in our manufacturing processes, and will make our best efforts to reduce loads on the environment which may arise from any of our business activities and products in compliance with the “Toppan Group CSR Procurement Guidelines” and “Toppan Group Control Standards for Chemical Substances in Raw Materials”.
2. During our product development, we will sufficiently review particular restricted substances contained in materials and the environmental aspects of the manufacturing process, and will endeavor to develop products that impose reduced burdens on the environment.
3. In order to respond to customers’ requirements for the protection of the global environment, we will try to obtain information on every restricted substance contained in our products and to disclose information properly.
4. Through cooperation with our suppliers we will make our best efforts in acquiring information on any restricted substances to be used in our products and our business activities so that we can mitigate burdens on the environment as much as possible.
5. We will continuously control and maintain the Green Procurement Policy as a part of our environmental management system.

\* Note 1: This “Green Procurement Policy” will be disclosed to all the stakeholders relevant to our Electronics Division.

\* Note 2: This “Green Procurement Policy” will be applied to our Electronics Division as well as its affiliates.

**Established: June 23, 2005**

**Revised: June 12, 2007**

**Revised: September 1, 2008**

**Kiyoshi Otsuka  
Senior Managing Director  
Electronics Division  
Toppan Printing Co., Ltd.**

### **3. The Green Procurement Guidelines of the Electronics Division, Toppan Printing Co., Ltd.**

The Green Procurement Guidelines of the Electronics Division, Toppan Printing Co., Ltd. (hereinafter referred to as the “Guidelines”) were compiled based on the Green Procurement Policy of the Division, and their purpose is to mitigate any environmental burden from products that are manufactured by the Division as well as its business activities, and to provide detailed procedures regarding Green Procurement to our valuable suppliers.

These Guidelines are to be applied to procurement of every material including raw materials for new products under development, intermediate materials to be used in our processes, and packing materials that the Electronics Division of Toppan Printing Co., Ltd. or any of its affiliates procure from suppliers.

The contents of these Guidelines may be changed or added to from time to time in accordance with the changing requirements of our customers and social circumstances such as changes in trends in the industry. Any updated versions will be provided to our suppliers.

### **4. Terminology Used in These Guidelines**

#### **Joint Industry Guide: No. JIG-101A**

This is a tool for providing highly reliable information regarding chemical substances contained in electronic products and components that are subject to regulations. It has been created by the US Electronic Industries Alliance (EIA), the JEDEC Solid State Technology Association (JEDEC) and the Japan Green Procurement Survey Standardization Initiative (JGPSSI).

**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 a 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.

**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.

## **5. Requirements for Suppliers**

We require our suppliers to comply with the following requests to enable us to implement Green Procurement:

### **5 - 1 . The construction of environmental management systems and chemical substance control systems**

In order to promote environmental activities not just in the business activities of Toppan Printing but throughout the supply chain, we ask for the construction of environmental management systems at suppliers.

We also ask for the construction of chemical substance control systems for the appropriate management of chemical substances in materials and products.

**Environmental management systems :** The construction of systems compliant with the specifications and requirements of ISO14001 :2004

**Chemical substance management systems :** The construction of systems in line with the JGPSSI\*<sup>1</sup> “Guidelines for the Management of Chemical Substances in Products”<sup>\*2</sup> (In addition to management of chemical substances in products at your company, we ask for the construction of a management system that includes your company’s suppliers.)

\*1JGPSSI (Japan Green Procurement Survey Standardization Initiative ) : This is a voluntary council launched in January 2001 by willing companies from the electric and electronic device industry. It aims to reduce the workload for research on green procurement and enhance the quality of responses by sharing both the lists of subjects of research and response formats.

JGPSSI website

[http://210.254.215.73/jeita\\_eps/green/greenTOP.html](http://210.254.215.73/jeita_eps/green/greenTOP.html)

\*2 Site featuring the “Guidelines for the Management of Chemical Substances in Products”

[http://210.254.215.73/jeita\\_eps/green/green8-2jp.htm](http://210.254.215.73/jeita_eps/green/green8-2jp.htm)

### **5.2 Disclosure of situation concerning inclusion of chemical substances**

Every supplier is required to submit data on all the substances contained in materials that the Division procures for the purpose of using in our products, new products under development, intermediate materials to be used in manufacturing processes or development, packing materials, and the substances contained in manufacturing equipment that the Division procures for the purpose of manufacturing our products.

The manufacturing equipment covers the portions which are in direct or indirect contact

with our products. The details will be determined and reflected in specifications after separate discussions.

In cases where it is difficult technically or socially to ascertain the situation regarding chemical substances in the above materials, Toppan Printing may request individual discussions.

### **5.2.1 Substances to be investigated**

Substances to be investigated designated in these Guidelines are based on the Joint Industry Guide: JIG-101.

Based on JIG-101A and the “Toppan Group Control Standards for Chemical Substances in Raw Materials”, we have established original criteria and made a selection.

Concerning Joint Industry Guide: JIG-101A level A chemical substances

- For level A materials and chemical substances, threshold values are set according to Japanese and overseas laws and regulations that prohibit or restrict use. Accordingly, evaluation of whether the threshold value has been reached must be based on the requirements of the related laws and regulations.
- In cases where, according to laws and regulations, new threshold values have been set with the aim of prohibition or restriction, threshold values in these guidelines may also be revised in line with the changes. (For example, if there is a legal decision concerning the European Union directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS), the threshold values will be revised for lead, mercury, cadmium, hexavalent chromium, PBBs, and PBDEs.)
- “Intentionally added” refers to deliberate use of a substance in the formation of a product or subpart where its continued presence is desired to provide a specific characteristic, appearance or quality. Metal plating is an example of intentional addition.

Concerning Joint Industry Guide: JIG-101A level B chemical substances

- The threshold value concentration level for level B materials and chemical substances is 1000ppm based on the value of the weight of organic compounds or inorganic material units (total mass containing substance) contained in the product or component subject to disclosure, divided by the total weight of the product or component.

#### **A. Prohibited substances (15 families of substances including 6 families designated by the RoHS Directive)**

Asbestos, some kinds of azo dye and pigment, cadmium and its compounds\*, hexavalent chromium and its compounds\*, lead and its compounds\*, mercury and its compounds\*, ozone layer depleting substances (CFCs, HCFCs, HBCFCs, carbon tetrachloride, polybrominated biphenyl (PBBs)\*, polybrominated diphenylether (PBDEs)\*,

**polychlorinated biphenyl (PCBs), polychlorinated naphthalene (with 3 or more chlorine atoms), radio active substances, some kinds of short-chain chlorinated paraffin (see the Appendix 1), tributyl tin (TBT), triphenyl tin (TPT), tributyl tin oxide (TBTO)**

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 (JMoss)	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.
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(JMoss)	Pigment, paint, ink, catalyst, plating, anti-corrosion surface treatment, dye, paint dryer, surface treatment, chromate treatment, paints adhesion enhancement, anticorrosion	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 Environmental Justice Foundation 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(JMoss)	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 300ppm (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, Mercury Reduction and Education. Rhode Island: Chapter 23-24.9, Mercury Reduction and Education Act. Vermont: Title 10, Chapter 164, Comprehensive Mercury Management ; 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 (JMoss)	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.
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(JMoss)	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, flameresistant, 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

### **Exemption of prohibited substances**

**In consideration of business content, and technical and economic factors, procurement restrictions may not be applicable in cases where exclusion or substitution is difficult. For known uses, exemptions are stipulated for each group of substances.**

**Details on requisites for exemption are provided in appendix 3.**

## **B . Controlled substances ( 10 groups of substances)**

**Antimony/Antimony Compounds, Arsenic/Arsenic Compounds, Beryllium/Beryllium Compounds, Bismuth/ Bismuth Compounds, Brominated Flame Retardants (other than PBBs or PBDEs), Certain Phthalates\* , Nickel\*\*(specific applications only, see Annex A, Note 2), Polyvinyl Chloride (PVC), Selenium/Selenium Compounds, Nickel Compounds**

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, copperberyllium 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, Note 2)	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
Nickel Compounds			1000 ppm
<p>* Regulations exist which limit the use of phthalates in certain products but these regulations do not apply to most electrical and electronic equipment.</p> <p>** 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.</p>			

**Note: The relevant chemical substances are listed by group. For details please refer to Appendix 1.**

### **Determination of “contains”**

- **For groups of chemical substances where “intentionally added” is recorded for the threshold level, where there is intentional addition the item will be determined to**

“contain” the substance. On each product please disclose the mass in “g” and added volume in “ppm”.

- For groups of chemical substances where the threshold level is recorded as “ppm or intentionally added” or “ ppm”, regardless of whether there is intentional addition or not, if there is a target chemical substance present exceeding the threshold level, including impurity concentration, the item will be determined to “contain” the substance. For each homogenous material of a product, please disclose the mass of the homogenous material in “g” and the volume contained in “ppm”.

#### **Determination of “does not contain”**

- In cases other than the abovementioned, the item will be determined to “not contain” the substance. For groups of chemical substances where the threshold level is recorded as “ ppm or intentionally added” or “ ppm”, in order that the product can be recorded as “not containing” the substance, it must be scientifically verified that the threshold level is not exceeded via the result of analysis or similar means.

#### **C. Example substances and CASNo.**

For each group of substances, example substances and CAS Numbers are provided in tables A to Y of Appendix 1.

### **5.3 Promotion to eliminate inclusion of restricted substances**

- With regard to all materials, including raw materials, to be used in products or new products under development, intermediate materials to be used in manufacturing or development and packing materials, as well as manufacturing equipment that contain particular investigated substance, the Division will perform further review to eliminate some substances if necessary.
- Therefore, based on the results of investigation, the Division may ask suppliers to develop alternative materials or switch to an alternative material. In the process we will make our best efforts in good faith and we hope every supplier thoroughly understands and cooperates with the Green Procurement Policy of the Division.

### **5.4 Assurance of non-inclusion of restricted materials**

In the case that a supplier can guarantee non-inclusion of the restricted substances in raw materials that the Division procures to be used in our products or products under development, intermediate materials to be used for manufacturing processes or development, packing materials, etc., such supplier will be asked to guarantee non-inclusion of the controlled substances.

However, non-inclusion of restricted substances can be guaranteed when the following requirements are satisfied.

- No restricted substance is intentionally added (by design).
- Contents of restricted substances of which threshold values are set forth are below the threshold value including impurities.
- A green procurement policy is in place, and the raw materials are sufficiently controlled.
- There is no risk of contamination within the processes of the supplier.
- With regard to RoHS Directive related substances, non-inclusion can be scientifically proved with analysis data or other means.

## **5.5 Promotion of continuous research**

We are determined to continuously promote control of restricted substances through Green Procurement. In addition to chemical substances cited in these guidelines as subject to investigation or prohibition, there are cases where separate or individual investigations are requested in response to trends in laws and regulations or the demands of Toppan Printing's customers. We kindly ask for your cooperation in such situations.

## **6. Control of Information Disclosed by Suppliers**

Any information disclosed by our suppliers will be managed with responsibility and will not be disclosed to any third party except for in the case of a legal order by the government or law, or for the purpose of using it in the quality assurance of our products as a result of a request by a customer.

## **7. Validation Timing of Green Procurement**

Our Green Procurement has been applied since June 23, 2005, when the "Green Procurement Policy of the Electronics Division of Toppan Printing Co., Ltd." was established.

## **8. The handling of these guidelines**

These guidelines are provided to new suppliers by the relevant purchasing department at Toppan Printing when transactions are commenced. They are provided in the same way when revisions have been made.

## **9. Inquiries**

**For inquiries concerning the Division's Green Procurement, please contact:**

**Mr. Tateishi**

**Green Procurement Committee Office**

**Electronics Division**

**Toppan Printing Co., Ltd.**

**Phone: 03-3276-8150**

**e-mail: [fujio.tateishi@toppan.co.jp](mailto:fujio.tateishi@toppan.co.jp)**

## Appendix1

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
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
methylene-bis(2-chloroaniline)	101-14-4
4,4'-oxydianiline	101-80-4
4,4'-thiodianiline	139-65-1
o-toluidine	95-53-4
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	-

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	7789-6-2
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	-

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	-
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
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 CASnumbers have been included when available.

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

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-phenanthrencarboxylatemix	26239-64-5

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	-

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
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	Nickel CAS Numbers
Nickel	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

## Appendix 2

### Controlled substance of Montreal Protocol on Substances that Deplete the Ozone Layer

Class	Group	Group	Substance	Chemical Formula
Class	C04097	CFC (Montreal Protocol on Substances that Deplete the Ozone Layer AnnexA Group )	CFC-11	CFCl <sub>3</sub>
			CFC-12	CF <sub>2</sub> Cl <sub>2</sub>
			CFC-113	C <sub>2</sub> F <sub>3</sub> Cl <sub>3</sub>
			CFC-114	C <sub>2</sub> F <sub>4</sub> Cl <sub>2</sub>
			CFC-115	C <sub>2</sub> F <sub>5</sub> Cl
	C04098	Halon (Montreal Protocol on Substances that Deplete the Ozone Layer AnnexA Group )	Halon1211	CF <sub>2</sub> BrCl
			Halon1301	CF <sub>3</sub> Br
			Halon2402	C <sub>2</sub> F <sub>4</sub> Br <sub>2</sub>
	C04099	Other CFC (Montreal Protocol on Substances that Deplete the Ozone Layer AnnexB Group )	CFC-13	CF <sub>3</sub> Cl
			CFC-111	C <sub>2</sub> FCl <sub>5</sub>
			CFC-112	C <sub>2</sub> F <sub>2</sub> Cl <sub>4</sub>
			CFC-211	C <sub>3</sub> FCl <sub>7</sub>
			CFC-212	C <sub>3</sub> F <sub>2</sub> Cl <sub>6</sub>
			CFC-213	C <sub>3</sub> F <sub>3</sub> Cl <sub>5</sub>
			CFC-214	C <sub>3</sub> F <sub>4</sub> Cl <sub>4</sub>
			CFC-215	C <sub>3</sub> F <sub>5</sub> Cl <sub>3</sub>
			CFC-216	C <sub>3</sub> F <sub>6</sub> Cl <sub>2</sub>
	CFC-217	C <sub>3</sub> F <sub>7</sub> Cl		
	C04100	Carbon tetrachloride (Montreal Protocol on Substances that Deplete the Ozone Layer AnnexB Group )	Carbontetrachloride	CCl <sub>4</sub>
	C04101	1,1,1-trichloroethane (Montreal Protocol on Substances that Deplete the Ozone Layer AnnexB Group )	1,1,1-Trichloroethane	C <sub>2</sub> H <sub>3</sub> Cl <sub>3</sub>
	C04102	bromochloromethane (Montreal Protocol on Substances that Deplete the Ozone Layer AnnexC Group )	Chlorobromomethane	CH <sub>2</sub> BrCl
	C04103	methyl bromide (Montreal Protocol on Substances that Deplete the Ozone Layer AnnexE)	Methylbromide	CH <sub>3</sub> Br
	C04104	HBFC (Montreal Protocol on Substances that Deplete the Ozone Layer AnnexC Group )	Dibromofluoromethane	CHFBr <sub>2</sub>
			Bromodifluoromethane	CHF <sub>2</sub> Br
			Bromofluoromethane	CH <sub>2</sub> FBr
			Tetrabromofluoroethane	C <sub>2</sub> HFBr <sub>4</sub>
			Tribromodifluoroethane	C <sub>2</sub> HF <sub>2</sub> Br <sub>3</sub>
			Dibromotrifluoroethane	C <sub>2</sub> HF <sub>3</sub> Br <sub>2</sub>
			Bromotetrafluoroethane	C <sub>2</sub> HF <sub>4</sub> Br
			Tribromofluoroethane	C <sub>2</sub> H <sub>2</sub> FBr <sub>3</sub>
			Dibromodifluoroethane	C <sub>2</sub> H <sub>2</sub> F <sub>2</sub> Br <sub>2</sub>
			Bromotrifluoroethane	C <sub>2</sub> H <sub>2</sub> F <sub>3</sub> Br
			Dibromofluoroethane	C <sub>2</sub> H <sub>3</sub> FBr <sub>2</sub>
			Bromodifluoroethane	C <sub>2</sub> H <sub>3</sub> F <sub>2</sub> Br
			Bromofluoroethane	C <sub>2</sub> H <sub>4</sub> FBr
			Hexabromofluoropropane	C <sub>3</sub> HFBr <sub>6</sub>
			Pentabromodifluoropropane	C <sub>3</sub> HF <sub>2</sub> Br <sub>5</sub>
Tetrabromotrifluoropropane			C <sub>3</sub> HF <sub>3</sub> Br <sub>4</sub>	
Tribromotetrafluoropropane			C <sub>3</sub> HF <sub>4</sub> Br <sub>3</sub>	
Dibromopentafluoropropane			C <sub>3</sub> HF <sub>5</sub> Br <sub>2</sub>	
Bromohexafluoropropane			C <sub>3</sub> HF <sub>6</sub> Br	
Pentabromofluoropropane			C <sub>3</sub> H <sub>2</sub> FBr <sub>5</sub>	
Tetrabromodifluoropropane			C <sub>3</sub> H <sub>2</sub> F <sub>2</sub> Br <sub>4</sub>	
Tribromotrifluoropropane	C <sub>3</sub> H <sub>2</sub> F <sub>3</sub> Br <sub>3</sub>			
Dibromotetrafluoropropane	C <sub>3</sub> H <sub>2</sub> F <sub>4</sub> Br <sub>2</sub>			
Bromopentafluoropropane	C <sub>3</sub> H <sub>2</sub> F <sub>5</sub> Br			
Tetrabromofluoropropane	C <sub>3</sub> H <sub>3</sub> FBr <sub>4</sub>			

			Tribromodifluoropropane	C3H3F2Br3
			Dibromotrifluoropropane	C3H3F3Br2
			Bromotetrafluoropropane	C3H3F4Br
			Tribromofluoropropane	C3H4FBr3
			Dibromodifluoropropane	C3H4F2Br2
			Bromotrifluoropropane	C3H4F3Br
			Dibromofluoropropane	C3H5FBr2
			Bromodifluoropropane	C3H5F2Br
			Bromofluoropropane	C3H6FBr
			Chlorobromomethane	CH2BrCl
Class	C04105	HCFC (Montreal Protocol on Substances that Deplete the Ozone Layer AnnexC Group )	HCFC-21	CHFCl2
			HCFC-22	CHF2Cl
			HCFC-31	CH2FCI
			HCFC-121	C2HFCl4
			HCFC-122	C2HF2Cl3
			HCFC-123	C2HF3Cl2
			HCFC-123*2	CHCl2CF3
			HCFC-124	C2HF4Cl
			HCFC-124*2	CHFClCF3
			HCFC-131	C2H2FCI3
			HCFC-132	C2H2F2Cl2
			HCFC-133	C2H2F3Cl
			HCFC-141	C2H3FCI2
			HCFC-141b*2	CH3CFCl2
			HCFC-142	C2H3F2Cl
			HCFC-142b*2	CH3CF2Cl
			HCFC-151	C2H4FCI
			HCFC-221	C3HFCl6
			HCFC-222	C3HF2Cl5
			HCFC-223	C3HF3Cl4
			HCFC-224	C2HF4Cl3
			HCFC-225	C3HF5Cl2
			HCFC-225ca*2	CF3CF2CHCl
			HCFC-225cb*2	CF2ClCF2CH
			HCFC-226	C3HF6Cl
			HCFC-231	C3H2FCI5
			HCFC-232	C3H2F2Cl4
			HCFC-233	C3H2F3Cl3
			HCFC-234	C3H2F4Cl2
			HCFC-235	C3H2F5Cl
			HCFC-241	C3H3FCI4
			HCFC-242	C3H3F2Cl3
			HCFC-243	C3H3F3Cl2
HCFC-244	C3H3F4Cl			
HCFC-251	C3H4FCI3			
HCFC-252	C3H4F2Cl2			
HCFC-253	C3H4F3Cl			
HCFC-261	C3H5FCI2			
HCFC-262	C3H5F2Cl			
HCFC-271	C3H6FCI			

Appendix 3

Requisites for exemption for containing prohibited substances

Material/Substance Category	Threshold level	Requisites for exemption
Asbestos	Intentionally added	NIL
Certain Azocolourants and Azodyes	30mg/kg or Intentionally added	Free from the possibility of long-time direct contact with human skin or mouth
Cadmium /Cadmium Compounds	75 ppm or Intentionally added	Used for plating electrical contact requiring high reliability and no alternatives are found. Optical glasses, filter glasses
Hexavalent Chromium/Hexavalent Chromium Compounds	1000 ppm or Intentionally added	For the purposes of electroforming, stabilizer for electroless nickel plating, etching, photo resist, defatting and washing
Lead/Lead Compounds	1000 ppm or Intentionally added 300 ppm (PVC cables only)	High-melting solder for interconnection (lead solder with a lead content in excess of 85wt%), glasses used in cathode-ray tube (CRT) and fluorescent display tube (including glass pastes), optical glasses, filter glasses and steel with a lead content less than 0.35wt%, copper alloy with a lead content less than 4wt%, solder with a lead content less than 1000 ppm
Mercury/Mercury Compounds	1000 ppm or Intentionally added	Fluorescent display tubes Compact type: less than 5mg; Straight type: halophosphate: less than 10mg triphosphate with normal lifetime: less than 5mg. triphosphate with long lifetime: less than 8mg
Ozone Depleting Substances (CFCs, HCFCs, HBFCs, carbon tetrachloride, etc.)	Class I: Intentionally added Class II . HCFCs: 1000 ppm	Ozone depleting substances other than CFC, halon, carbon tetrachloride, .1.1 .1 trichloroethane, HBFC, methyl-bromide
Polybrominated Biphenyls (PBBs)	1000 ppm or Intentionally added	NIL
Polybrominated Diphenylethers (PBDEs)	1000 ppm or Intentionally added	NIL
Polychlorinated Biphenyls (PCBs)	Intentionally added	NIL
Polychlorinated Naphthalenes (more than 3 chlorineatoms)	Intentionally added	NIL
Radioactive Substances	Intentionally added	NIL
Certain Shortchain Chlorinated Paraffins (See Annex F)	Intentionally added	Except for Shortchain Chlorinated Paraffines with carbon number of 10 to 13
Tributyl Tin (TBT) and Triphenyl Tin (TPT)	Intentionally added	NIL
Tributyl Tin Oxide (TBTO)	Intentionally added	NIL
Polyvinyl Chloride (PVC), monomer using in food packages	1ppm (Dissolution test)	NIL