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Green Procurement Guidelines

Murata Machinery, Ltd.

Communication Equipment Division

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Introduction

With an increasing awareness of the earth environment conservation being a crucial issue that is common among all human kinds, companies have promoted various environmental conservation activities aiming at sustainable societies.

Murata Machinery, Ltd., Communication Equipment Division has included “Harmony with the Environment” in our new business vision, Muratec Identity. This is based on the environmental philosophy of Murata Machinery, Ltd., and it defines our actions in each stage of development, design, material procurement, manufacturing, distribution, use and disposal, focusing on the environmental conservation and harmony, so that we pass on the precious earth to the next generation.

In order to further promote these activities, it is necessary to enhance the environmental conservation activities in cooperation with our suppliers, as well as to prioritize the procurement of materials and services that are less stressful to the environment in our procurement activities.

Legal controls regarding chemicals contained in products are being reinforced every year. Internationally, it is anticipated that such legislation will become stricter, particularly in Europe. Moreover, this trend appears to be expanding on a global scale.

As for our company, we would like to ask for your cooperation in business dealings that comply with this “Green Procurement Guidelines,” while we propel our efforts of environmental conservation and harmony by preferentially purchasing from those of you who are willing to cooperate. We appreciate your understanding regarding the importance of conservation efforts for the global environment, and cordially ask for your cooperation.

Masahiko Omachi
Director / General Manager
Communication Equipment Division
Murata Machinery, Ltd.

Kikuji Yamashita
Chief Manager of
Purchasing Department,
Manufacturing Headquarters

1. Environmental Policy of Murata Machinery, Ltd.

Environmental Philosophy of Murata Machinery, Ltd.

We recognize that resources and environmental problems pose a serious threat to our society and that we must address these issues directly through our business operations, products and services.

Environmental Policy of Murata Machinery, Ltd., Communication Equipment Division

Based on the environmental philosophy of Murata Machinery, Ltd., the Communication Equipment Division is to place the environmental conservation as one of the four core values in our business vision, and pledges to promote environmental conservation activities based on the environmental policies.

To ensure that the next generation may inherit our precious planet, the Communication Equipment Division will act in consideration of environmental conservation and harmony at the material procurement, manufacturing, distribution, usage, and disposal stages to promote the reduction of CO_2 emissions in order to prevent global warming.

1. Environmental-Friendly Products
We strive to offer products that are environmentally sound in all aspects of product development including initial design, material procurement, machine production, packaging, distribution, deployment, customer use and disposal. These measures help minimize the environmental impacts throughout every stage of the product life cycle.

2. Management and Reduction of Hazardous Chemicals
We strive to reduce and/or eliminate the use of hazardous chemicals that can negatively affect the environment and search for alternative materials that have a positive impact on both the environment and machine performance.

3. Promotion of Reuse and Recycle
We actively collect used machines, parts and supplies from the market and with the intent to reuse and recycle to reduce our reliance on virgin materials.

4. Promotion of Environmental Conservation in Production and Office Activities
In our daily business activities we actively promote conservation, energy use reduction, waste reduction, recycling, beautification and "Green Projects".

5. Compliance with Laws and Regulations
We comply with all applicable environmental laws and regulations.

6. Information Disclosure
We actively disclose information on our environmental activities.

2. Green Procurement Philosophy of Murata Machinery, Ltd., Communication Equipment Division

2.1. Objectives

Based on the environmental philosophy of our company and environmental policy of our division, we are to promote Green Procurement of products, parts, materials, equipments, office supplies and services that are less stressful to the environment.

2.2. Green Procurement Efforts by Murata Machinery, Ltd., Communication Equipment Division

1) We procure from the suppliers who promote reduction in environmental burden.
2) We procure products, parts, materials, equipments, office supplies and services that are less stressful to the environment.
3) We comply with the environmental laws and regulations of each country and region.
4) While building partnership with our suppliers, we move forward to share our environmental impact information, and to tackle common problem.

2.3. Applicable Scope of this Guideline

This guideline is applied to all procurement (products, parts, materials, equipments and office supplies) and services to be used in the products that are manufactured and sold by our division.

2.4. Definition and Explanation of the Terminology

- **Japan Green Procurement Survey Standardization Initiative (JGPSSI)**
  JGPSSI is a voluntary organization that was formed in January 2001 with the aim of standardizing information disclosure related to chemical substances contained in parts and materials of electrical and electronic products through effective survey methods. JGPSSI stipulates survey response formats for chemical substances contained in parts and materials.
  Website: http://www.vt62474.jp/toolv431.html

- **Joint Industry Guide (JIG)**
  JIG was established as a joint effort by JGPSSI and European and US organizations (DIGITALEUROPE and CEA). JIG is a set of guidelines aimed at providing

consistency and standardization of the details of requests for information disclosure on chemical substance content in the supply chain worldwide.
A Japanese translation of JIG can be downloaded from the JGPSSI website.

- **Joint Article Management Promotion-Consortium (JAMP)**
  JAMP is a consortium that aims to create and promote a specific framework to efficiently disclose and disseminate information regarding chemical substances contained in articles (here used as a collective term for parts, molded components, and similar) throughout the supply chain.
  Website: http://www.jamp-info.com/

2.5. Assessment and Selection Criteria for the Suppliers

We ask you to make your own efforts on environmental conservation activities, however, we will assess your environmental conservation activities in order for us to base our decision on whether to procure the materials from you or not.

2.5.1. Assessment Criteria

(1) **Existence of an Environmental Management System (EMS)**

a. You already have an EMS in place or plan to create an EMS

You possess applicable certificate(s), such as ISO14001 and/or similar that has been granted by a third party. Or plan to obtain in the near future.

b. You do not have an EMS in place

If no ISO14001 nor a certificate by a third party is obtained or planned to be obtained, the environmental conservation efforts of the following 10 items are actively carried out:

1) Preparation of plans to install an organization to promote environment management and set targets
2) Clarification of internal positions and functions of the relevant organization
3) Management participation in the relevant organization
4) Compliance with the environmental laws and regulations
5) Planning of utilization of materials that are environment-friendly
6) Improvement plans for manufacturing processes that are environment-friendly
7) Planning and implementation of employee education related to environmental conservation
8) Understanding of the environmental policy of our division
9) Promotion of product manufacturing that is environment-friendly
10) Implementation of green purchasing

(2) **Chemical Management System**

You have implemented the requirements of each item stated in Appendix 1 "Requirements for Chemical Management in Products".

(3) **Law Ethics Status**

You have not received any punitive action from related authorities in the immediate past.

2.5.2. **Selection Criteria**

Based on the previous section "2.5.1 Assessment Criteria," those suppliers who promote environmental conservation activities will be prioritized in our procurement.

We will prioritize those suppliers who are able to accommodate our requests for cooperation addressed to our suppliers, defined in "3. Requested Supplier Cooperation".

2.5.3. **Selection Criteria for Procurement (Products, Parts, Materials, Equipments and Office Supplies)**

The Communication Equipment Division manages procurement according to the "Guidelines for the Management of Chemical Substances in Products" issued by JGPSSI. Our List of Controlled Chemicals cites chemicals listed in "Annex A – JIG Declarable Substance List" from JIG-101 and classifies them into the following 3 categories:

(1) **Banned Chemicals**

It is mandatory that none of the chemical groups defined in "1. Banned Chemicals" in Appendix 2 "List of Controlled Chemicals" is contained (Notes 1 and 2).

(2) **Controlled Chemicals**

Regarding each of the chemical groups defined in "2. Controlled Chemicals" in Appendix 2 "List of Controlled Chemicals", its use is not prohibited, however, the containable amount is controlled.

(3) **Reportable Chemicals**

Products are not prohibited from containing the chemicals defined in "3. Reportable Chemicals" in Appendix 2 "List of Controlled Chemicals", but information regarding such chemicals contained in products must be reported. We therefore require that suppliers report the amount of such chemicals used, purpose of use, places used, and similar information (Notes 3 and 4).

Note1) Usages outside of the applicable scope of the European RoHS directive are not prohibited by these guidelines.

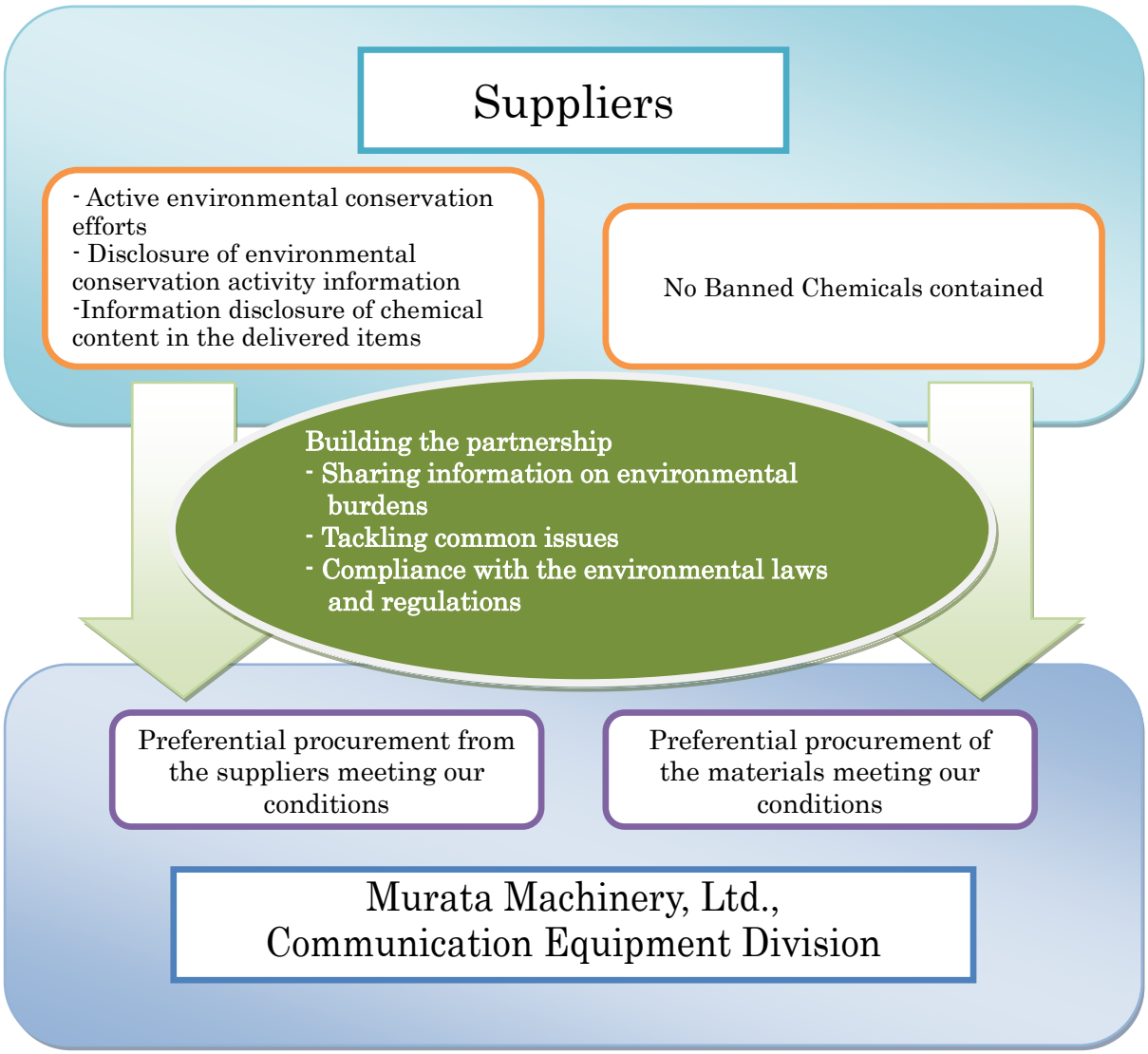
Note2) Even for those chemicals that are not controlled under these guidelines, should there be any ban due to any national or local laws and regulations, those laws and regulations are given the priority.

Note3) The Reportable Chemicals in Appendix 2 are those listed in the "Candidate List of Substances of Very High Concern" in the European REACH regulation. It is expected that the European Chemicals Agency will update the "Candidate List of Substances of Very High Concern," and such updates will be added to these guidelines in the future.

Note4) If there are any discrepancies between the Reportable Chemicals listed in these guidelines and the "Candidate List of Substances of Very High Concern" in the European REACH regulation, priority shall be given to the Candidate List. In such cases, we may ask suppliers to report such substances without waiting to revise these guidelines.

2.6. Basic Concept of Green Procurement by Murata Machinery, Ltd., Communication Equipment Division

The following conceptual diagram signifies the Green Procurement concept of our company.



3. Requested Supplier Cooperation

3.1. Request for Submission of "Chemical Content Check Sheet"

To manage information regarding the specific chemical content of all procured items delivered to our division, please submit a survey report on the chemical content of products.

3.1.1. Target

All items (products, parts, materials, equipments and office supplies) procured and used in the products manufactured and sold by us are subject to this check. The chemicals subject to the content check are those defined under Appendix 2 "List of Controlled Chemicals".

3.1.2. Method

Please use the JGPSSI Survey Response Tool in your survey report on the chemical content of products. Survey requests will be e-mailed.
After entering information regarding used materials (e.g. types of materials used, controlled substance content, amounts of substances contained, ratios of substances contained, purpose of use, places used, etc.,) attach the JGP file (i.e. the digital file) to an e-mail and return it to the party that requested the survey.

Please refer to the official survey/response manual and similar documentation that is available for download from the official VT62474 website (http://www.vt62474.jp/toolv431.html).
We have prepared an instruction guide for using JGPSSI Ver. 4. The guide is available for download from the following website:

- Japanese: http://www.muratec.jp/ce/business/eco/procurement.html
- English: http://www.muratec.net/ce/environment/procurement.html
- Chinese: http://www.muratec.com.cn/ce/csr/procurement.html

For certain procured items, we may e-mail you an AIS sheet, a survey tool released by JAMP. In such cases, please fill out the required details and return the sheet to the requesting party via e-mail.

For instruction on how to use JAMP survey tool and official survey/response manuals, visit the official JAMP website (http://www.jamp-info.com/).

*If you are a trade firm or agent, you can have the manufacturer of the delivered items fill out the form instead, or you may carry out your own inspection under your responsibility to answer it.

3.1.3. **Timing**

The inspection is to be carried out as needed. We ask your cooperation to submit your survey response by the specified due date.

3.2. Request for clear specification of RoHS Compliance Status in the Delivery Specifications

We request that you clearly specify the status of European RoHS Compliance of delivered items. Please clearly specify in the delivery specifications that the delivered items are European RoHS compliant products (*5).

Note 5: Please also clearly specify the date the compliance check was conducted.

3.3. Assessing the Efforts on Environmental Conservation

For those suppliers and procured items that are deemed necessary, we may assess the extent of the supplier's environmental conservation efforts more in detail. The assessment method will be one of the following two, or both, depending on the supplier's or the procured item's condition.

1) The supplier will fill out and submit required information in our specified document.
2) We will visit the supplier (mainly its manufacturing section) to assess the condition.

In order to move forward with our Green Procurement, and also to continuously procure from you, we consider these processes important. We appreciate your kind understanding and cooperation.

3.4. Confidentiality

The information provided to us for the assessment purposes will only be used within the Murata Machinery Group (Note 6), and will not be disclosed elsewhere.

Note 6: Our affiliates listed in our website under "Headquarters and production bases"

4. Use of This Guideline

We will provide this guideline to you in the following manner:

1) Suppliers will be provided with these guidelines via our contact in charge of order placement.
2) For new suppliers, we will provide this guideline via our contact in charge of order placement, before the business transaction begins.
3) Suppliers will be contacted by our contact in charge of order placement whenever we revise these guidelines. The latest version of these guidelines is available from our website.

- Japanese: http://www.muratec.jp/ce/business/eco/procurement.html
- English: http://www.muratec.net/ce/environment/procurement.html
- Chinese: http://www.muratec.com.cn/ce/csr/procurement.html

5. Revision History

June 1, 2005 (1st edition)	• First edition released.
July 1, 2005 (2nd edition)	• Spelling errors corrected. • Appendix containing substances lists added.
June 15, 2007 (3rd edition)	• Section on Communication Equipment Division environmental policy added. • Part of article 1-4, paragraph 5 on suppliers and assessment criteria revised. • "Requirements for Chemical Management in Products" added. • Section "2-3 Assessing the Efforts on Environmental Conservation" added. • "Supplier Environmental Questionnaire (Green Procurement Agreement)" added.
April 1, 2010 (4th edition)	• Date of original issue revised. • Section on environmental philosophy revised. • "Definition and Description of Terms" section added. • "List of Controlled Chemicals" updated. • Information on Reportable Chemicals added. • Revision of statement regarding excluded applications of prohibited substances. • Information regarding Declaration of RoHS Compliance added (Requirement for submission of RoHS Compliance Certificates on a product-by-product basis eliminated.) • "Supplier Environmental Questionnaire (Green Procurement Agreement)" deleted. • "Revision History" added.
November 1, 2011 (5th edition)	• Date of original issue revised. • Revision of statement regarding excluded applications of prohibited substances. • Information on Reportable Chemicals added. Request for description of "RoHS Compliance Status" in the delivery specification added (acquisition of "Declaration of RoHS Compliance" on a supplier basis deleted). • Contact information updated.

April 18, 2013 (6th edition)	• Add “Appendix 3: China environmental labeling （Technical requirement HJ2512-2012）
May 1, 2014 (7th edition)	• Update "Appendix 2: List of Controlled Chemicals". Added or deleted the information on "1. Banned Chemicals", "2. Controlled Chemicals", and "3. Reportable Chemicals". • Change “Appendix 3: China environmental labeling （Technical requirement HJ2512-2012） to Appendix 4. • Add “Appendix 4: Detailed Chemical Lists （Quotation from Annex B of JIG-101 Ed 4.1）"

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■ Appendix 1: Requirements for Chemical Management in Products

Item		Requirement	Desirable Condition
1. Policy and Planning	1.1 Making policies for chemical content in products	A policy that includes "approach" to manage chemical content in products must be implemented and maintained.	● A policy that includes the chemical management approach has been made and informed to the parties involved.
	1.2 Identifying the requirements (1) Clarifying the legal and client requirements	Documents regarding laws and regulations related to products and client requirements should always be updated and managed. Also, information on chemical management in products must be properly communicated to relevant sections in the company.	● Documents regarding laws, regulations and client requirements related to the product are managed. Updated information are always obtained and managed. ● The information is also passed onto the parties involved.
	1.2 Identifying the requirements (2) Clarifying the scope of management	"Products," "processes" and "substances" that are subjected to chemical management in products must be clarified.	● Substances and processes that are subject to control are identified in the self-management standards, QC process checklist, etc.
	1.3 Defining targets and planning	Within the clarified management scope, appropriate internal targets and plans must be laid out.	● Schedule is made against a target, and the progress is monitored. ● Also, the above reflects the laws, regulations and client requirements.
	1.4 Clarifying the organization plans, roles and authorities	A structure that promotes chemical management in products (person in charge and an organized body) must be implemented.	● A structure for chemical management in products is determined (i.e. an organization chart). ● Responsible division and personnel, and their roles are identified and clearly described.
	1.5 Document management	There is a system to prepare, maintain and manage the documents related to chemical management in products.	● Based on the chemical management system, practical procedures are documented. ● There are specific forms to be used.
	1.6 Education and training	Educational necessities are identified; there is a curriculum appropriate for each company, which is useful to obtain sufficient knowledge regarding chemicals and their management; and relevant employees are systematically educated and trained.	● Education plans are made and implemented. ● The operation is carried out by those who properly understand, and possess knowledge and skills of laws, regulation and client requirements.
2. Implementation and Practice	2.1 Design and development	In order to avoid banned chemicals in the products, necessary actions in the process of product design and development (design and review) are identified and implemented.	● Materials are specified, and banned chemicals are identified, in the specifications and drawings. ● Suppliers are informed of laws, regulations and client requirements. ● Parts and material to be used are proven to conform with the laws, regulations and client requirements.
	2.2 Obtaining and checking the content information	The chemical information of the product must be checked for completeness and appropriateness, and the information must also be properly checked by comparing the content against the requirements.	● Forms that enable conformity check with laws, regulations and client requirements are obtained. ● For the parts and material to be procured, their conformity with the laws, regulations and client requirements is checked using the forms.
	2.3 Purchase management	The suppliers of parts and material that make up the company products must properly manage the chemical content in their products. There must be a working system that checks this and encourages improvement.	● The supply source is requested to implement an assurance system for chemicals in the products based on this guideline. ● The supply source of the procurement conforms with the requirements (such as data disclosure) regarding chemical content in the products. ● The secondary and further supply sources are also requested to implement an assurance system for chemicals in the products. ● The implementation requirements of the supply source based on this guideline are checked and instructed. Also, nonconformities are rectified.

Item		Requirement	Desirable Condition
2. Implementation and Practice	2.4 Manufacturing process (1) Inspection upon receipt	Inspection methods and standards regarding the chemical content in the products must be identified and implemented in the internal "inspection upon receipt." When required, actual item check must be properly carried out by analytical measurement.	● Parts and material to be received are confirmed to conform with the laws, regulations and client requirements (data check). ● If the manufacturer's management condition of the parts and material to be received is not clear (i.e. recycled material), the conformity with the laws, regulations and client requirements is checked (i.e. internal analysis, etc.) using the actual item, as required.
	2.4 Manufacturing process (2) Process management (Internal)	Contamination in the manufacturing process must be prevented. A process management must be implemented to ascertain there is no influence by oxidization, evaporation, reaction and change in concentration.	● For the products with different laws, regulations and client requirements, the lines are separated. If the lines were inseparable, a method to prevent contamination of banned chemicals in the mixing process is identified and implemented. ● Products are identified for each of the laws, regulations, and client requirements ● Items that achieved/yet to achieve elimination are separated by storing in different locations, etc.
	2.4 Manufacturing process (3) Process management (Contract manufacturer)	The contract manufacturer must be requested to follow the necessary actions due to chemical management in products. Meanwhile, there must be a working system to routinely check, instruct and monitor the contract manufacturer's management condition.	● An assurance system for chemicals in the products based on this guideline is requested. ● The secondary and further contract manufacturers are also requested to implement an assurance system for chemicals in the products. ● The implementation requirements based on this guideline are checked and instructed. Also, nonconformities are rectified
	2.5 Change management	Management rules for changes in chemical management must be defined and properly applied.	● Internal procedures in case of any changes in 4M[1] are clear (i.e. definition of 4M changes, etc.). ● External (client, supplier, contract manufacturer, etc.) communication procedure is clear.
	2.6 Checking before shipment	All processes regarding chemical management must be thoroughly exercised, and the shipment decision must be based on the highly reliable information obtained.	● There is a method to confirm that laws, regulations and client requirements are thoroughly met. ● Confirmed results are recorded and stored.
	2.7 Handling nonconformities	If found, there must be a system ready to handle nonconforming products and to promptly inform and report to all participants (internal divisions, suppliers and clients). The cause must be investigated, and counter/preventive measures must be taken.	● Personnel in charge of, and procedures for, reporting any nonconformities to the clients (including the supply source and contract manufacturer) are determined, should any nonconformities arise. ● A procedure to identify the object (lot tracing) is determined and implemented. ● Measures for improvement and prevention are clarified and implemented.
	2.8 Information disclosure	The information on the chemical content of the product must be properly calculated to provide to the clients and third parties.	● Necessary information regarding chemical content of the products are properly communicated and shared in the company. ● The communication route for the information disclosure upon client inquiries is determined.
3. Inspections and Improvement		There is a system, such as an internal audit, to assess and confirm if the chemical management is actually implemented and working.	● There is a system, such as an internal audit, for managing the product content of chemicals, to assess and confirm that the chemical management in the products is functioning. ● Nonconformities are rectified.
4. Review by the Management		If any problem were found as a result of an inspection such as an internal audit, it must be reflected in the policies, for example, in a form of achievement target for the next period.	● If any problem were found as a result of an inspection such as an internal audit, it is reflected in the policies, for example in a form of achievement target for the next period, to improve the quality assurance system.

[1] 4M: Denotes the four production process elements: Man, Machine, Material, and Method. The point is that when any of these change, “defective quality” can occur easily.

■ Appendix 2: List of Controlled Chemicals [2]

1. Banned Chemicals

Substance/ Category	CAS No.	Reportable Application(s)	Threshold Level (Report Level)	Examples of Use	Key Legal and Regulatory or Industry Standard/Agreement Citation	Revised
Asbestos	See Appendix 3	All	Intentionally added	Brake lining pads, isolators, filling, polish, pigments, paints, talc, insulator	ANNEX XVII of REACH Regulation (EC) No 1907/2006; US TSCA; Swiss Ordinance on Reduction of Risk from Chemical Products	
Azocolourants and azodyes which form certain aromatic amines	See Appendix 3	Textiles and leather	0.003% by weight (30ppm) of the finished textile / leather products	Pigments, dyes, colorants	ANNEX XVII of REACH Regulation (EC) No 1907/2006;	
Cadmium / cadmium compounds	See Appendix 3	All, except batteries	0.01% by weight (100 ppm) of cadmium in homogeneous materials	Pigments, anticorrosion surface treatment, electric and electronic materials, optical glass, stabilizer, plating, pigments for resin, fluorescent, electrode, solder, electric contact, contact point, zinc plating, stabilizer for PVC	ANNEX XVII of REACH Regulation (EC) No 1907/2006; EU Directive 2011/65/EU; China MII methods, Korean RoHS; Japanese J-MOSS; US/CA SB-20/50	●
		Batteries	0.001% by weight (10 ppm) of cadmium in battery	NiCd accumulators	Korean law on quality management and safety control of industrial products.; EU Battery Directive 2006/66/EC Chinese Standard GB 24427-2009 “Limitation of mercury, cadmium and lead contents for alkaline and non-alkaline zinc manganese dioxide batteries”	●

[2] The List of Controlled Chemicals at Muratec’s Communication Equipment Division quotes the JIG-101 “Annex A: JIG Declarable Substance List”, and the substances described therein are classified into “Banned Chemicals”, “Controlled Chemicals”, and “Reportable Chemicals”. For details of controlled substances, refer to JIG-101. Further, Reportable Chemicals will be added to the list due to the “Candidate List of Substances of Very High Concern” in the EU’s REACH regulations being updated.

1. Banned Chemicals

Substance/ Category	CAS No.	Reportable Application(s)	Threshold Level (Report Level)	Examples of Use	Key Legal and Regulatory or Industry Standard/Agreement Citation	Revised
Chromium VI compounds	See Appendix 3	All	0.1% by weight (1 000 ppm) of chromium (VI) in homogeneous materials	Pigment, paint, ink, catalyst, plating, anticorrosion surface treatment, dye,	EU Directive 2011/65/EU; China MII Methods; Korea RoHS; Japan J-MOSS; US/CA SB-20/50	●
Dimethyl fumarate (dimethyl fumaric acid)	624-49-7	All	0.00001% by weight (0.1ppm) in a materials	Biocide, mold treatment of electronic, leather seats including reclining, massage chairs	COMMISSION DECISION 2009/251/EC	
Lead / lead compounds	See Appendix 3	All, except as noted below	0.1% by weight (1,000 ppm) of lead in homogeneous materials	Rubber hardener, pigment, paint, lubricant, plastic stabilizer, free-machining alloy, free-cutting steels, optical materials, X-ray shielding in CRT glass, solder materials, curing agent, vulcanizing agent, ferroelectrics, plating, metal alloy	EU Directive 2011/65/EU; ANNEX XVII of REACH Regulation (EC) No 1907/2006; China MII methods, Korean RoHS; Japanese J-MOSS; US/CA SB-20/50	●
		Consumer products designed or intended primarily for children 12 years of age or younger	0.01% by weight (100 ppm) of lead in the children's product	Pigment, paint, stabilizer, colorant	Amended by U.S. Consumer Product Safety Improvement Act HB2715	●

1. Banned Chemicals

Substance/ Category	CAS No.	Reportable Application(s)	Threshold Level (Report Level)	Examples of Use	Key Legal and Regulatory or Industry Standard/Agreement Citation	Revised
Lead / lead compounds (con'd)	See Appendix 3	Paint and similar surface coatings of toys and other articles intended for use by children	0.009% by weight (90 ppm) of lead in surface coating	Pigment, paint, stabilizer, colorant	U.S. Consumer Product Safety Improvement Act	
		Cables/ cords with thermo set or thermo plastic coatings	0.03% by weight (300 ppm) of lead in surface coating	Pigment, paint, stabilizer, colorant	US/CA Proposition 65 Case law	
		Batteries	0.004% by weight (40 ppm) of lead in battery	Zinc carbon batteries, alkaline button cells	EU Battery Directive 2006/66/EC; Chinese Standard GB 24427-2009 “Limitation of mercury, cadmium and lead contents for alkaline and non-alkaline zinc manganese dioxide batteries”	
Mercury / mercury compounds	See Appendix 3	All, except batteries	Intentionally added or 0.1% (1,000 ppm) of mercury in homogeneous material	Fluorescent bulb, contact point materials, pigments, anticorrosion, switches, antibacterial treatment	Vermont act relating to comprehensive management of exposure to mercury; Rhode Island General Laws 23-24.9 and amendment of 2007; Louisiana Mercury Risk Reduction Act; ANNEX XVII of REACH Regulation (EC) No 1907/2006; EU Directive 2011/65/EU; China MII methods, Korean RoHS; Japanese J-MOSS; US/CA SB-20/50	●

1. Banned Chemicals

Substance/ Category	CAS No.	Reportable Application(s)	Threshold Level (Report Level)	Examples of Use	Key Legal and Regulatory or Industry Standard/Agreement Citation	Revised
Mercury / mercury compounds (con'd)	See Appendix 3	Batteries	Intentionally added or 0.0001% by weight (1 ppm) of mercury in of the battery	Silver-oxide button cells, alkaline batteries, zinc carbon batteries	Law concerning mercury reduction and education in Rhode Island and Connecticut. New York Env Law § 27-0719 Battery Management and Disposal; Taiwan Restrictions on the Manufacture, Import, and Sale of Dry Cell Batteries; Korea: Law on quality management and control of safety of industrial products Battery regulation; EU Battery Directive 2006/66/EC; Chinese Standard GB 24427-2009 “Limitation of mercury, cadmium and lead contents for alkaline and non-alkaline zinc manganese dioxide batteries”	●
Ozone depleting substances	See Appendix 3	All	Intentionally added	Refrigerant, foaming agent, extinguishant, solvents cleaner	Montreal Protocol; EU EC No.2037/2000; EC1005/2009; US Clean Air Act	
Perfluorooctane sulfonate (PFOS)	See Appendix 3	All	Intentionally added or 0.1% by weight (1,000 ppm) in material	Antistatic agent for films and plastics	Commission Regulation (EU) No.757/2010; Canadian Environmental Protection Act SOR/ 2008-178; Japan Law concerning the evaluation of chemical substances	●
2-(2H-1,2,3-benzotri-azole-2-YL)-4, 6-di-tert-butylphenol	3846-71-7	All	Intentionally added	Adhesive, paints, printing inks, plastics, ink ribbon, putty, caulking or sealing filler	Japan Law concerning the evaluation of chemical substances	
Polybrominated biphenyls (PBBs)	See Appendix 3	All	0.1% by weight (1,000ppm) of homogenous materials	Flame retardants	EU Directive 2011/65/EU; China MII Methods; Korea RoHS; Japan J-MOSS	●
Polybrominated diphenylethers (PBDEs)	See Appendix 3	All	Intentionally added or 0.1% by weight (1,000ppm) of homogenous materials	Flame retardants	EU Directive 2011/65/EU; China MII Methods; Korea RoHS; Japan J-MOSS, Japan Law concerning the evaluation of chemical substances	●

1. Banned Chemicals

Substance/ Category	CAS No.	Reportable Application(s)	Threshold Level (Report Level)	Examples of Use	Key Legal and Regulatory or Industry Standard/Agreement Citation	Revised
Polychlorinated biphenyls (PCBs) and specific substitutes	See Appendix 3	All	Intentionally added	Insulation oil, lubricants oil, electrical insulation medium, solvents, electrolytic solution, plasticizers, fire retardants, electrical wires and cable, dielectric sealants	Japan Law concerning the evaluation of chemical substances; ANNEX XVII of REACH Regulation (EC) No 1907/2006; US TSCA	
Polychlorinated napthalenes (more than 3 chlorine atoms)	See Appendix 3	All	Intentionally added	Lubricant, paints, stabilizer (electrical characteristics, flame-resistant, water-resistant), electrical insulation medium, flame retardants	Japan Law concerning the evaluation of chemical substances	
Radioactive substances	See Appendix 3	All	Intentionally added	Optical properties (thorium), measuring devices, gauges, detectors	EU-D 96/29/Euratom; Japan Law for the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors, 1986; Japan Law Concerning Prevention from Radiation Hazards; US NRC	
Short chlorinated paraffins (C10 to C13)	See Appendix 3	All	0.1% by weight (1,000ppm) of the product	Plasticizer for PVC, flame retardants	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 28.10.2008); Norway Product Regulation FOR-2004-06-01-922; Swiss Ordinance on Reduction of Risk from Chemical Products	
Tri-substiituted organostannic compounds	See Appendix 3	All	Intentionally added or 0.1% by weight (1,000ppm) of tin in a material	Stabilizer, antioxidant, antibacterial and antifungal agents, antifoulant, antiseptic, anti-fungal agent, paint, pigment, antistaining	ANNEX XVII of REACH Regulation (EC) No 1907/2006 and Commission Regulation (EU) No 276/2010; Japan Law concerning the evaluation of chemical substances	

1. Banned Chemicals

Substance/ Category	CAS No.	Reportable Application(s)	Threshold Level (Report Level)	Examples of Use	Key Legal and Regulatory or Industry Standard/Agreement Citation	Revised
Tributyl tin oxide (TBTO)	56-35-9	All	Intentionally added, or 0.1% by weight (1,000ppm) of the product	Antiseptic, antifungal agents, paints, pigments, antistaining, refrigerant, foaming agent, extinguishant, solvents cleaner	Japan Law concerning the evaluation of chemical substances; Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 28.10.2008)	
Dibutyltin (DBT) compounds	See Appendix 3	All	0.1% by weight (1,000ppm) of tin in a materials	Stabilizer for PVC, curing catalyst for silicone resin and urethane resin	ANNEX XVII of REACH Regulation (EC) No 1907/2006 and Commission Regulation (EU) No 276/2010	●
Dioctyltin (DOT) compounds	See Appendix 3	(a) textile and leather articles intended to come into contact with the skin, (b) childcare articles (c) twocomponent room temperature vulcanisation moulding kits (RTV-2 moulding kits)	0.1% by weight (1,000ppm) of tin in a materials	Stabilizer for PVC, curing catalyst for silicone resin and urethane resins	ANNEX XVII of REACH Regulation (EC) No 1907/2006 and Commission Regulation (EU) No 276/2010	●
Polychlorinated terphenyls (PCTs)	See Appendix 3	All	0.005% by weight (50 ppm) in material	Insulation oil, lubricants, electrical insulation medium, solvents, electrolytes, plasticizers, fire retardants, coatings for electrical wires and cable, dielectric sealants	ANNEX XVII of REACH Regulation (EC) No 1907/2006;	●

Substance/ Category	CAS No.	Reportable Application(s)	Threshold Level (Report Level)	Examples of Use	Key Legal and Regulatory or Industry Standard/Agreement Citation	Revised
Hexabromocyclo-dodecane (HBCDD) all major diastereoisomers	See Appendix 3	All	0.1% by weight (1,000ppm) of the products	Flame retardants mainly used for expanded polystyrene and some types of fiber	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 28.10.2008)	●

Packing Materials

Substance	Reportable Application(s)	Threshold Level (Report Level)	Examples of Use	Key Legal and Regulatory or Industry Standard/Agreement Citation	Revised
Lead, cadmium, mercury, hexavalent chromium	Packing materials used to pack department products	0.01% by weight (100ppm) of the total concentration of lead, cadmium, mercury, and hexavalent chromium in the parts comprising the packing materials	Packing materials	EU Directive 94/62/EC and 2004/12/EC; US regulation concerning heavy metal used in packing materials	

2. Controlled Chemicals

Substance/ Category	CAS No.	Reportable Application(s)	Threshold Level (Report Level)	Examples of Use	Key Legal and Regulatory or Industry Standard/Agreement Citation	Revised
Beryllium oxide (BeO)	1304-56-9	All	0.1% by weight (1,000ppm) of the product	Ceramics	DIGITALEUROPE / CECED / AeA / EERA guidance	
Brominated flame retardants (other than PBBs,PBDEs, or HBCDD)	See Appendix 3	Plastic materials than in printed wiring board assemblies	0.1% total bromine content by weight (1,000ppm) of plastics materials	Housings, connectors, flame retardant in package molding sealant.	JS709	●
		Printed wiring board laminate	0.09% total bromine content by weight (900 ppm) in the laminate	Printed wiring board laminate	IPC-4101 and IEC 61249-2-21	●
Fluorinated greenhouse gases (PFC, SF6, HFC)	See Appendix 3	All	Intentionally added	Refrigerant, extinguishing agents, cleaning agents,, electrical insulation medium, caustic gas	EU regulation No. 842/2006; Austrian byelaws by the federal ministers for agriculture, forestry, the environment, and water quality control concerning partial and total prohibition and regulation of hydrofluorocarbons and sulfur hexafluoride	
Formaldehyde	50-00-0	Composite wood (plywood, particle board, medium density fiberboard) products or components	Intentionally added	Stereo cabinets, kiosk surrounds	US/CA CARB Rule US Federal Law 111-199/TSCA Section 601	
		Textiles	0.0075% by weight (75ppm) of textile products	Textiles	Austria -BGB I 1990/194:Formaldehyde regulation §2, 12/2/1990; Lithuania Hygiene Norm HN 96:2000 (Hygiene standards and regulations)	
Nickel	7440-02-0	All, where prolonged skin contact is expected	Intentionally added	Stainless steel, plating; example of application for prolonged skin contact is an ear bud (headphone), mobile phone	ANNEX XVII of REACH Regulation (EC) No 1907/2006;	

Substance/ Category	CAS No.	Reportable Application(s)	Threshold Level (Report Level)	Examples of Use	Key Legal and Regulatory or Industry Standard/Agreement Citation	Revised
Perchlorate	See Appendix 3	All	0.0000006% by weight (0.006ppm) of the products	Coin cell batteries	US/ California - Perchlorate Contamination Prevention Act of 2003	●
Selected Phthalates Group 1 (BBP, DBP, DEHP)	See Appendix 3	Children's toy or child care article	0.1% by weight (1,000ppm) of plasticized materials	Plasticizers, dyes, pigments, paints, inks, adhesives, lubricants	ANNEX XVII of REACH Regulation (EC) No 1907/2006; U.S. Consumer Product Safety Improvement Act	
Selected Phthalates Group 2 (DIDP, DINP, DNOP)	See Appendix 3	Children's toy or child care article that can be placed in a child's mouth	0.1% by weight (1,000ppm) of plasticized materials	Plasticizers, dyes, pigments, paints, inks, adhesives, lubricants	ANNEX XVII of REACH Regulation (EC) No 1907/2006; U.S. Consumer Product Safety Improvement Act	
Polyvinyl chloride (PVC) & PVC Copolymers	See Appendix 3	Plastic materials except printed wiring board laminates.	0.1% total chlorine content by weight (1000 ppm) in the plastic material.	Insulator, chemical resistance, transparency, sheath materials	JS709	●

3. Reportable Chemicals

Substance/ Category	CAS No.	Reportable Application(s)	Conditional Subjects	Examples of Use	Key Legal and Regulatory or Industry Standard/Agreement Citation	Revised
Cobalt dichloride ($CoCl_2$)	7646-79-9	All	0.1% by weight (1,000ppm) of the products	Pneumatic panels toindicate water contamination	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 28.10.2008)	
Diarsenic pentoxide	1303-28-2	All	0.1% by weight (1,000ppm) of the products	Glass	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 28.10.2008)	
Diarsenic trioxide	1327-53-3	All	0.1% by weight (1,000ppm) of the products	Glass	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 28.10.2008)	
Lead chromate	7758-97-6	All	0.1% by weight (1,000ppm) of the products	Colorant in plastics; Colorant in paints	REACH regulations (EC) No. 1907/2006 paragraphs 33 and 7.2 (SVHC candidate list 13.01 2010)	
Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	12656-85-8	All	0.1% by weight (1,000ppm) of the products	Colorant in plastics; Colorant in red paints	REACH regulations (EC) No. 1907/2006 paragraphs 33 and 7.2 (SVHC candidate list 13.01 2010)	●
C.I. Pigment yellow 34	1344-37-2	All	0.1% by weight (1,000ppm) of the products	Colorant in plastics; Colorant in yellow paints	REACH regulations (EC) No. 1907/2006 paragraphs 33 and 7.2 (SVHC candidate list 13.01 2010)	●
Di(2-ethylhexyl) phthalate (DEHP)	117-81-7	All	0.1% by weight (1,000ppm) of the products	Plasticizers, dyes, pigments, paints, inks, adhesives, lubricants	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 28.10.2008)	
Dibutyl phthalate (DBP)	84-74-2	All	0.1% by weight (1,000ppm) of the products	Plasticizers, dyes, pigments, paints, inks, adhesives, lubricants	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 28.10.2008)	
Butyl benzyl phthalate (BBP)	85-68-7	All	0.1% by weight (1,000ppm) of the products	Plasticizers, dyes, pigments, paints, inks, adhesives, lubricants	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 28.10.2008)	
Diisobutyl Phthalate (DIBP)	84-69-5	All	0.1% by weight (1,000ppm) of the products	Plasticizers, dyes, pigments, paints, inks, adhesives, lubricants	REACH regulations (EC) No. 1907/2006 paragraphs 33 and 7.2 (SVHC candidate list 13.01 2010)	
Refractory Ceramic Fibres, Aluminosilicate	—	All	0.1% by weight (1,000ppm) of the products	Insulation in high-temp test equipment	REACH regulations (EC) No. 1907/2006 paragraphs 33 and 7.2 (SVHC candidate list 19.12 2011)	●

Substance/ Category	CAS No.	Reportable Application(s)	Conditional Subjects	Examples of Use	Key Legal and Regulatory or Industry Standard/Agreement Citation	Revised
Refractory Ceramic Fibres, Zirconia Aluminosilicate	—	All	0.1% by weight (1,000ppm) of the products	Insulation in high-temp test equipment	REACH regulations (EC) No. 1907/2006 paragraphs 33 and 7.2 (SVHC candidate list 19.12 2011)	●
Tris(2-carboxy e-thyl) phosphine (TCEP)	115-96-8	All	0.1% by weight (1,000ppm) of the products	Flame retardants	REACH regulations (EC) No. 1907/2006 paragraphs 33 and 7.2 (SVHC candidate list 13.01 2010)	
Tetraboron disodium heptaoxide, hydrate	12267-73-1	All	0.1% by weight (1,000 ppm) of the product	In wood veneers/ pressed wooden panels as starch additive, flame retardant and stabilizer in aminoplastic resin, wood preservative	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 18.06.2010)	
1,2-Benzenedi carboxylic acid, di-C6-8-branch ed alkyl esters, C7-rich (DIHP)	71888-89-6	All	0.1% by weight (1,000 ppm) of the product	Plasticizer, dye, pigment, paint, ink, adhesive, lubricant	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 20.06.2011)	●
1,2-Benzenedi carboxylic acid, di-C7-11-branc hed and linear alkyl esters (DHNUP)	68515-42-4	All	0.1% by weight (1,000 ppm) of the product	Plasticizer, dye, pigment, paint, ink, adhesive, lubricant	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 20.06.2011)	●
Disodium tetraborate, anhydrous	See Appendix 3	All	0.1% by weight (1,000 ppm) of the product	In wood veneers/ pressed wooden panels as starch additive, flame retardant and stabilizer in aminoplastic resin, wood preservative	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 18.06.2010)	●
4-[4,4'-bis(dim ethylamino) benzhydrylide ne] cyclohexa-2,5-dien-1-ylidene] dimethylammo nium chloride (C.I. Basic Violet 3)	548-62-9	All	0.1% by weight (1,000 ppm) of the product	Ink	ECHA Registry of Intentions 25.10.2010	●

Substance/ Category	CAS No.	Reportable Application(s)	Conditional Subjects	Examples of Use	Key Legal and Regulatory or Industry Standard/Agreement Citation	Revised
Boric acid	See Appendix 3	All	0.1% by weight (1,000 ppm) of the product	In wood veneers/ pressed wooden panels as starch additive, flame retardant and stabilizer in aminoplastic resin, wood preservative, as flame retardant in wood, cotton and other plant derived material	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 18.06.2010)	●
Bis (2-methoxyethyl) ether	111-96-6	All	0.1% by weight (1,000 ppm) of the product	Electrolytic solution of battery	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 2011.12.19)	●
Bis(2-methoxyethyl) phthalate	117-82-8	All	0.1% by weight (1,000 ppm) of the product	Plasticizers	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 2011.12.19)	●
Chlorinated flame retardants	See Appendix 3	Plastic materials except printed wiring board laminates.	0.1% total chlorine content by weight (1000 ppm) in the plastic material	Housings, connectors, flame retardant in package molding sealant.	JS709	●
		Printed wiring board laminate	0.09% total chlorine content by weight (900 ppm) in the laminate.	Flame retardant	IPC-4101 and IEC61249-2-21	●
2,2'-dichloro-4, 4'-methylenedianiline(MOCA)	101-14-4	All	0.1% by weight (1,000 ppm) of the product	Curing agent for polyurethane	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 2011.12.19)	●
N,N-dimethylacetamide (DMAC)	127-19-5	All	0.1% by weight (1,000 ppm) of the product	Unreacted process chemical	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 2011.12.19)	●

Substance/ Category	CAS No.	Reportable Application(s)	Conditional Subjects	Examples of Use	Key Legal and Regulatory or Industry Standard/Agreement Citation	Revised
4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-Octylphenol)	140-66-9	All	0.1% by weight (1,000 ppm) of the product	Unreacted process chemical	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 2011.12.19)	●
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	All	Intentionally added	Covering material of wires and cables, artificial leathers, toys, carpet backing, and pool liner.	Proposition 65 (Warning label requirements)	●
Di-n-hexyl Phthalate (DnHP)	84-75-3	All	Intentionally added	Dip molded products such as dishwasher basket and handle of a tool, flooring, vinyl gloves, flea collar, and belt conveyor used in food processing	Proposition 65 (Warning label requirements)	●
Pentazinc chromate octahydroxide	49663-84-5	All	0.1% by weight (1,000 ppm) of the product	Colorant	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 2011.12.19)	●
Potassium hydroxyoctaoxodizincate dichromate	11103-86-9	All	0.1% by weight (1,000 ppm) of the product	Anticorrosive paint	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 2011.12.19)	●
Strontium chromate	7789-06-2	All	0.1% by weight (1,000 ppm) of the product	Anticorrosive	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 2011.06.20)	●
Decabromodiphenyl ether	1163-19-5	All	0.1% by weight (1,000 ppm) of the product	Polystyrene, ABS resin, flame retardant for polyester, adhesive, sealant, fabric coating	REACH candidate list published on 2012.12.19	●
Sulfurous acid, lead salt, dibasic	62229-08-7	All	0.1% by weight (1,000 ppm) of the product	PVC additives, resin	REACH candidate list published on 2012.12.19	●

Substance/ Category	CAS No.	Reportable Application(s)	Conditional Subjects	Examples of Use	Key Legal and Regulatory or Industry Standard/Agreement Citation	Revised
1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	All	0.1% by weight (1,000 ppm) of the product	Solvents, processing aids, refrigerants, absorbent, acid gas cleaners, brake fluid.	REACH candidate list published on 2012.06.18	●
Trilead dioxide phosphonate	12141-20-7	All	0.1% by weight (1,000 ppm) of the product	PVC additives	REACH candidate list published on 2012.12.19	●
1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	All	0.1% by weight (1,000 ppm) of the product	Solvents, processing aids, refrigerants, absorbent, acid gas cleaners, and electrolytic solvent of lithium battery	REACH candidate list published on 2012.12.19	●
4-aminoazobenzene	60-09-3	All	0.1% by weight (1,000 ppm) of the product	Dyes, pigments, intermediates	REACH candidate list published on 2012.12.19	●
Tetralead trioxide sulphate	12202-17-4	All	0.1% by weight (1,000 ppm) of the product	PVC additives, battery	REACH candidate list published on 2012.12.19	●
Orange lead (lead tetroxide)	1314-41-6	All	0.1% by weight (1,000 ppm) of the product	Electronic materials, paints, glass raw materials, and battery.	REACH candidate list published on 2012.12.19	●
Pyrochlore, antimony lead yellow	8012-00-8	All	0.1% by weight (1,000 ppm) of the product	Coatings, paints, ceramics	REACH candidate list published on 2012.12.19	●
Pentalead tetraoxide sulphate	12065-90-6	All	0.1% by weight (1,000 ppm) of the product	PVC additives, battery	REACH candidate list published on 2012.12.19	●
1,2-Diethoxyethane	629-14-1	All	0.1% by weight (1,000 ppm) of the product	Solvents such as nitrocellulose, rubber, resin. Organic synthesis reaction solvent	REACH candidate list published on 2012.12.19	●

Substance/ Category	CAS No.	Reportable Application(s)	Conditional Subjects	Examples of Use	Key Legal and Regulatory or Industry Standard/Agreement Citation	Revised
Diboron trioxide	1303-86-2	All	0.1% by weight (1,000 ppm) of the product	Glass, fiber glass, frits, ceramics, flame retardants, catalysts, industrial liquid, metallurgy, adhesives, ink/paints, developer of a film, detergent, cleaner, insecticide and fungicide, light-emitting diode materials, boron compound materials, silicon chloride science analytical reagent.	REACH candidate list published on 2012.06.18	●
Dibutyltin dichloride (DBTC)	683-18-1	All	0.1% by weight (1,000 ppm) of the product	PVC stabilizer intermediates, catalyst, rubber additives	REACH candidate list published on 2012.12.19	●
Lead cynamidate	20837-86-9	All	0.1% by weight (1,000 ppm) of the product	Anticorrosive pigments	REACH candidate list published on 2012.12.19	●
N,N-dimethylformamide	68-12-2	All	0.1% by weight (1,000 ppm) of the product	Solvent (for urethane synthetic leather, dye intermediate / pesticide / pharmaceutical synthesis, various polymers, special ink, textile printing), catalyst, gas absorbent.	REACH candidate list published on 2012.12.19	●
Silicic acid (H2Si2O5), barium salt (1:1), lead-doped	68784-75-8	All	0.1% by weight (1,000 ppm) of the product	Bulb lamp coating	REACH candidate list published on 2012.12.19	●

Substance/ Category	CAS No.	Reportable Application(s)	Conditional Subjects	Examples of Use	Key Legal and Regulatory or Industry Standard/Agreement Citation	Revised
1.2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	All	0.1% by weight (1,000 ppm) of the product	Plasticizers	REACH candidate list published on 2012.12.19	●
Diisopentylphthalate (DIPP)	605-50-5	All	0.1% by weight (1,000 ppm) of the product	Plasticizers	REACH candidate list published on 2012.12.19	●
N-pentyl-isopentylphthalate	776297-69-9	All	0.1% by weight (1,000 ppm) of the product	Plasticizers	REACH candidate list published on 2012.12.19	●
Lead titanium trioxide	12060-00-3	All	0.1% by weight (1,000 ppm) of the product	Semiconductor materials	REACH candidate list published on 2012.12.19	●
Lead titanium zirconium oxide	12626-81-2	All	0.1% by weight (1,000 ppm) of the product	Semiconductor materials	REACH candidate list published on 2012.12.19	●
Lead oxide sulfate	12036-76-9	All	0.1% by weight (1,000 ppm) of the product	PVC additives	REACH candidate list published on 2012.12.19	●
[Phthalato(2-)]dioxotrilead	69011-06-9	All	0.1% by weight (1,000 ppm) of the product	PVC additives	REACH candidate list published on 2012.12.19	●
Dioxobis(stearato)trilead	12578-12-0	All	0.1% by weight (1,000 ppm) of the product	PVC additives	REACH candidate list published on 2012.12.19	●
Fatty acids, C16-18, lead salts	91031-62-8	All	0.1% by weight (1,000 ppm) of the product	PVC additives	REACH candidate list published on 2012.12.19	●
Lead dinitrate	10099-74-8	All	0.1% by weight (1,000 ppm) of the product	Lead compound materials, matches, explosives, optical glass raw materials, reagents, pigments	REACH candidate list published on 2012.12.19	●

■ Appendix 3: Detailed Chemical Lists （Quotation from Annex B of JIG-101 Ed 4.1）

Substance Group	Substance name	CAS No.
Asbestos	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
Azocolourants and azodyes which form certain aromatic amines	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	60-09-3
Cadmium / Cadmium Compounds	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	—
Chromium VI Compounds	Chromium (VI) oxide	1333-82-0
	Barium chromate	10294-40-3
	Calcium chromate	13765-19-0
	Lead (II) chromate	7758-97-6
	Lead chromate molybdate sulphate red	12656-85-8
	Lead sulfochromate yellow	1344-37-2
	Sodium chromate	7775-11-3
	Sodium dichromate	10588-01-9
	Strontium chromate	7789-06-2
	Potassium dichromate	7778-50-9
	Potassium chromate	7789-00-6
	Zinc chromate	13530-65-9
	Pentazinc chromate octahydroxide	49663-84-5
	Potassium hydroxyoctaoxodizincate dichromate	11103-86-9
	Other hexavalent chromium compounds	—
Lead / lead Compounds	Lead	7439-92-1
	Lead(II) sulfate	7446-14-2
	Lead(II) carbonate	598-63-0
	Lead(II) chromate	7758-97-6
	Lead chromate molybdate sulphate red	12656-85-8
	Lead hydroxidcarbonate	1319-46-6

Substance Group	Substance name	CAS No.
Lead / lead Compounds (con'd)	Lead acetate	301-04-2
	Lead (II) acetate, trihydrate	6080-56-4
	Lead phosphate	7446-27-7
	Lead selenide	12069-00-0
	Lead (IV) oxide	1309-60-0
	Lead (II,IV) oxide	1314-41-6
	Lead (II) sulfide	1314-87-0
	Lead (II) oxide	1317-36-8
	Lead(II) carbonate basic	1319-46-6
	Lead hydroxidcarbonate	1344-36-1
	Lead(II) phosphate	7446-27-7
	Lead sulfochromate yellow	1344-37-2
	Lead(II) titanate	12060-00-3
	Lead sulfate,sulphuric acid, lead salt	15739-80-7
	Lead sulphate,tribasic	12202-17-4
	Lead stearate	1072-35-1
	Other lead compounds	—
Mercury / Mercury Compounds	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	—
Ozone Depleting Substances	Trichlorofluoromethane (CFC-11)	75-69-4
	Dichlorodifluoromethane (CFC-12)	75-71-8
	Chlorotrifluoromethane (CFC-13)	75-72-9
	Pentachlorofluoroethane (CFC-111)	354-56-3
	Tetrachlorodifluoroethane (CFC-112) 1,1,2,2-Tetrachloro-1,2-difluoroethane (CFC-112) 1,1,1,2-Tetrachloro-2,2-difluoroethane (CFC-112a)	76-12-0 76-12-0 76-11-9
	Trichlorotrifluoroethane (CFC-113) 1,1,2-Trichloro-1,2,2 trifluoroethane (CFC-113) 1,1,1-Trichloro-2,2,2 trifluoroethane (CFC-113a)	76-13-1 76-13-1 354-58-5
	Dichlorotetrafluoroethane (CFC-114)	76-14-2
	Monochloropentafluoroethane (CFC-115)	76-15-3
	Heptachlorofluoropropane (CFC-211) 1,1,1,2,2,3,3-Heptachloro-3-fluoropropane (CFC-211aa) 1,1,1,2,3,3,3-Heptachloro-2-fluoropropane (CFC-211ba)	422-78-6 135401-87-5 422-78-6 422-81-1
	Hexachlorodifluoropropane (CFC-212)	3182-26-1
	Pentachlorotrifluoropropane (CFC-213)	2354-06-5 134237-31-3
	Tetrachlorotetrafluoropropane (CFC-214) 1,2,2,3-Tetrachloro-1,1,3,3-tetrafluoropropane (CFC-214aa) 1,1,1,3-Tetrachloro-2,2,3,3-tetrafluoropropane (CFC-214cb)	29255-31-0 2268-46-4 —
	Trichloropentafluoropropane (CFC-215) 1,2,2-Trichloropentafluoropropane(CFC-215aa) 1,2,3-Trichloropentafluoropropane(CFC-215ba) 1,1,2-Trichloropentafluoropropane(CFC-215bb) 1,1,3-Trichloropentafluoropropane(CFC-215ca) 1,1,1-Trichloropentafluoropropane(CFC-215cb)	1599-41-3 1599-41-3 76-17-5 — — 4259-43-2
	Dichlorohexafluoropropane (CFC-216)	661-97-2
	Chloroheptafluoropropane (CFC-217)	422-86-6
	Bromochloromethane (Halon-1011)	74-97-5

Substance Group	Substance name	CAS No.
Ozone Depleting Substances (con'd)	Dibromodifluoromethane (Halon-1202)	75-61-6
	Bromochlorodifluoromethane(Halon-1211)	353-59-3
	Bromotrifluoromethane (Halon-1301)	75-63-8
	Dibromotetrafluoroethane (Halon-2402)	124-73-2
	Tetrachloromethane (carbon tetrachloride)	56-23-5
	1,1,1-Trichloroethane (methylchloroform)	71-55-6
	Bromomethane (methyl bromide)	74-83-9
	Bromoethane (ethyl bromide)	74-96-4
	1-Bromopropane (n-propyl bromide)	106-94-5
	Trifluoroiodomethane (trifluoromethyl iodide)	2314-97-8
	Chloromethane (methyl chloride)	74-87-3
	Dibromofluoromethane (HBFC-21B2)	1868-53-7
	Bromodifluoromethane (HBFC-22B1)	1511-62-2
	Bromofluoromethane (HBFC-31 B1)	373-52-4
	Tetrabromofluoroethane(HBFC-121 B4)	306-80-9
	Tribromodifluoroethane (HBFC-122 B3)	—
	Dibromotrifluoroethane (HBFC-123 B2)	354-04-1
	Bromotetrafluoroethane (HBFC-124 B1)	124-72-1
	Tribromofluoroethane (HBFC-131 B3)	—
	Dibromodifluoroethane (HBFC-132 B2)	75-82-1
	Bromotrifluoroethane (HBFC-133 B1)	421-06-7
	Dibromofluoroethane (HBFC-141 B2)	358-97-4
	Bromodifluoroethane (HBFC-142 B1)	420-47-3
	Bromofluoroethane (HBFC-151 B1)	762-49-2
	Hexabromofluoropropane (HBFC-221 B6)	—
	Pentabromodifluoropropane (HBFC-222 B5)	—
	Tetrabromotrifluoropropane (HBFC-223 B4)	—
	Tribromotetrafluoropropane (HBFC-224 B3)	—
	Dibromopentafluoropropane (HBFC-225 B2)	431-78-7
	Bromohexafluoropropane (HBFC-226 B1)	2252-78-0
	Pentabromofluoropropane (HBFC-231 B5)	—
	Tetrabromodifluoropropane (HBFC-232 B4)	—
	Tribromotrifluoropropane (HBFC-233 B3)	—
	Dibromotetrafluoropropane(HBFC-234 B2)	—
	Bromopentafluoropropane (HBFC-235 B1)	460-88-8
	Tetrabromofluoropropane (HBFC-241 B4)	—
	Tribromodifluoropropane (HBFC-242 B3)	70192-80-2
	Dibromotrifluoropropane (HBFC-243 B2)	431-21-0
	Bromotetrafluoropropane (HBFC-244 B1)	679-84-5
	Tribromofluoropropane (HBFC-251 B3)	75372-14-4
	Dibromodifluoropropane (HBFC-252 B2)	460-25-3
	Bromotrifluoropropane (HBFC-253 B1)	421-46-5
	Dibromofluoropropane (HBFC-261 B2)	51584-26-0
	Bromodifluoropropane (HBFC-262 B1)	—
	Bromofluoropropane (HBFC-271 B1)	1871-72-3
	Dichlorofluoromethane (HCFC-21)	75-43-4
	Chlorodifluoromethane (HCFC-22)	75-45-6
	Chlorofluoromethane (HCFC-31)	593-70-4
	Tetrachlorofluoroethane (HCFC-121) 1,1,2,2-Tetrachloro-1-fluoroethane (HCFC-121) 1,1,1,2-Tetrachloro-2-fluoroethane (HCFC-121a)	134237-32-4 354-14-3 354-11-0
	Trichlorodifluoroethane (HCFC-122) 1,2,2-Trichloro-1,1-difluoroethane (HCFC-122) 1,1,2-Trichloro-1,2-difluoroethane (HCFC-122a) 1,1,1-Trichloro-2,2-difluoroethane (HCFC-122b)	41834-16-6 354-21-2 354-15-4 354-12-1

Substance Group	Substance name	CAS No.
Ozone Depleting Substances (con'd)	Dichlorotrifluoroethane(HCFC-123) 1,1-Dichloro-2,2,2-trifluoroethane (HCFC-123) 1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123a) 1,1-Dichloro-1,2,2-trifluoroethane (HCFC-123b)	34077-87-7 306-83-2 354-23-4 90454-18-5 812-04-4
	Chlorotetrafluoroethane (HCFC-124) 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124) 1-chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)	63938-10-3 2837-89-0 354-25-6
	Trichlorofluoroethane (HCFC-131) 1,1,2-Trichloro-2-fluoroethane (HCFC-131) 1,1,2-Trichloro-1-fluoroethane (HCFC131a) 1,1,1-Trichloro-2-fluoroethane (HCFC-131b)	27154-33-2; (134237-34-6) 359-28-4 811-95-0 2366-36-1
	Dichlorodifluoroethane (HCFC-132) 1,2-Dichloro-1,2-difluoroethane (HCFC-132) 1,1-Dichloro-2,2-difluoroethane (HCFC-132a) 1,2-Dichloro-1,1-difluoroethane (HCFC-132b) 1,1-Dichloro-1,2-difluoroethane (HCFC-132c)	25915-78-0 431-06-1 471-43-2 1649-08-7 1842-05-3
	Chlorotrifluoroethane (HCFC-133) 1-Chloro-1,2,2-trifluoroethane (HCFC-133) 2-Chloro-1,1,1-trifluoroethane (HCFC-133a) 1-Chloro-1,1,2-trifluoroethane (HCFC-133b)	1330-45-6 431-07-2 1330-45-6 75-88-7 421-04-5
	Dichlorofluoroethane(HCFC-141) 1,2-Dichloro-1-fluoroethane (HCFC-141) 1,1-Dichloro-2-fluoroethane (HCFC-141a) 1,1-Dichloro-1-fluoroethane (HCFC-141b)	1717-00-6; (25167-88-8) 430-57-9 430-53-5 1717-00-6
	Chlorodifluoroethane (HCFC-142) 2-Chloro-1,1-Difluoroethane (HCFC-142) 1-Chloro-1,1-difluoroethane (HCFC-142b) 1-Chloro-1,2-difluoroethane (HCFC-142a)	25497-29-4 338-65-8 75-68-3 338-64-7
	Chlorofluoroethane (HCFC-151) 1-Chloro-2-fluoroethane (HCFC-151) 1-Chloro-1-fluoroethane (HCFC-151a)	110587-14-9 762-50-5 1615-75-4
	Hexachlorofluoropropane (HCFC-221) 1,1,1,2,2,3-Hexachloro-3-fluoropropane (HCFC-221ab)	134237-35-7 29470-94-8 422-26-4
	Pentachlorodifluoropropane(HCFC-222) 1,1,1,3,3-pentachloro-2,2-difluoropropane (HCFC-222ca)) 1,2,2,3,3-pentachloro-1,1-difluoropropane (HCFC-222aa)	134237-36-8 422-49-1 422-30-0
	Tetrachlorotrifluoropropane (HCFC-223) 1,1,3,3-Tetrachloro-1,2,2-trifluoropropane (HCFC-223ca) 1,1,1,3-Tetrachloro-2,2,3-trifluoropropane (HCFC-223cb)	134237-37-9 422-52-6 422-50-4
	Trichlorotetrafluoropropane (HCFC-224) 1,3,3-Trichloro-1,1,2,2-tetrafluoropropane (HCFC-224ca) 1,1,3-Trichloro-1,2,2,3-tetrafluoropropane (HCFC-224cb) 1,1,1-Trichloro-2,2,3,3-tetrafluoropropane (HCFC-224cc)	134237-38-0 422-54-8 422-53-7 422-51-7

Substance Group	Substance name	CAS No.
Ozone Depleting Substances (con'd)	Dichloropentafluoropropane (HCFC-225) 2,2-Dichloro-1,1,1,3,3-pentafluoropropane(HCFC-225aa) 2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC-225ba) 1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225bb) 3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca) 1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb) 1,1-Dichloro-1,2,2,3,3-pentafluoropropane(HCFC-225cc) 1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC-225da) 1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225ea) 1,1-Dichloro-1,2,3,3,3-pentafluoropropane(HCFC-225eb)	127564-92-5 128903-21-9 422-48-0 422-44-6 422-56-0 507-55-1 13474-88-9 431-86-7 136013-79-1 111512-56-2
	Chlorohexafluoropropane (HCFC-226) 2-Chloro-1,1,1,3,3,3-hexafluoropropane (HCFC-226da)	134308-72-8 431-87-8
	Pentachlorofluoropropane (HCFC-231) 1,1,1,2,3-pentachloro-2-fluoropropane (HCFC-231bb)	134190-48-0 421-94-3
	Tetrachlorodifluoropropane (HCFC-232) 1,1,1,3-Tetrachloro-3,3-difluoropropane (HCFC-232fc)	134237-39-1 460-89-9
	Trichlorotrifluoropropane (HCFC-233) 1,1,1-Trichloro-3,3,3-trifluoropropane (HCFC-233fb)	134237-40-4 7125-83-9
	Dichlorotetrafluoropropane (HCFC-234) 1,2-Dichloro-1,2,3,3-tetrafluoropropane (HCFC-234db)	127564-83-4 425-94-5
	Chloropentafluoropropane (HCFC-235) 1-Chloro-1,1,3,3,3-pentafluoropropane (HCFC-235fa)	134237-41-5 460-92-4
	Tetrachlorofluoropropane (HCFC-241) 1,1,2,3-Tetrachloro-1-fluoropropane (HCFC-241db)	134190-49-1 666-27-3
	Trichlorodifluoropropane (HCFC-242) 1,3,3,Trichloro-1,1-difluoropropane (HCFC-242fa)	134237-42-6 460-63-9
	Dichlorotrifluoropropane (HCFC-243) 1,1-Dichloro-1,2,2-trifluoropropane (HCFC-243cc) 2,3-Dichloro-1,1,1-trifluoropropane (HCFC-243db) 3,3-Dichloro-1,1,1-trifluoropropane (HCFC-243fa)	134237-43-7 7125-99-7 338-75-0 460-69-5
	Chlorotetrafluoropropane (HCFC-244) 3-Chloro-1,1,2,2-tetrafluoropropane (HCFC-244ca) 1-Chloro-1,1,2,2-tetrafluoropropane (HCFC-244cc)	134190-50-4 679-85-6 421-75-0
	Trichlorofluoropropane (HCFC-251) 1,1,3-Trichloro-1-fluoropropane (HCFC-251fb) 1,1,2-Trichloro-1-fluoropropane (HCFC-251dc)	134190-51-5 818-99-5 421-41-0
	Dichlorodifluoropropane (HCFC-252) 1,3-Dicloro-1,1-difluoropropane (HCFC-252fb)	134190-52-6 819-00-1
	Chlorotrifluoropropane (HCFC-253) 3-Chloro-1,1,1-trifluoropropane (HCFC-253fb)	134237-44-8 460-35-5

Substance Group	Substance name	CAS No.
Ozone Depleting Substances (con'd)	Dichlorofluoropropane (HCFC-261) 1,1-Dichloro-1-fluoropropane (HCFC-261fc) 1,2-Dichloro-2-fluoro-propane (HCFC-261ba)	134237-45-9 7799-56-6 420-97-3
	Chlorodifluoropropane (HCFC-262) 1-Chloro-2,2-difluoropropane (HCFC-262ca) 2-Chloro-1,3-difluoropropane (HCFC-262da) 1-Chloro-1,1-difluoropropane (HCFC-262fc)	134190-53-7 420-99-5 102738-79-4 421-02-3
	Chlorofluoropropane (HCFC-271) 2-Chloro-2-fluoropropane (HCFC-271ba) 1-Chloro-1-fluoropropane (HCFC-271fb)	134190-54-8 420-44-0 430-55-7
Perfluorooctane sulfonate (PFOS)	Perfluoroctane Sulfonates (PFOS) C8F17SO2X, where X = OR, NR or other derivative	—
Polybrominated Biphenyls (PBBs)	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
	Pentabrphenyl	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
Polybrominated Diphenyl Ethers (PBDEs)	Bromodiphenyl ether	101-55-3
	Dibromodiphenyl ethers	2050-47-7
	Tribromodiphenyl ether	49690-94-0
	Tetrabromodiphenyl ethers	40088-47-9
	Pentabromodidphenyl 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
Polychlorinated Biphenyls (PCBs) and specific substitutes	Polychlorinated Biphenyls (all isomers and congeners)	1336-36-3
	Monomethyl-tetrachloro-diphenyl methane (Ugilec 141)	76253-60-6
	Monomethyl-dichloro-diphenyl methane (Ugilec 121, Ugilec 21)	81161-70-8
	Monomethyl-dibromo-diphenyl methane (DBBT)	99688-47-8
Polychlorinated Naphthalenes (more than 3 chlorine atoms)	Polychlorinated Naphthalenes	70776-03-3
	Other polychlorinated Naphthalenes	—
Radioactive Substances (Radioactive Isotope)	Uranium-238	7440-61-1
	Radon	10043-92-2
	Americium-241	14596-10-2
	Thorium-232	7440-29-1
	Cesium-137	10045-97-3
	Strontium-90	10098-97-2
	Other radioactive substances	—

Substance Group	Substance name	CAS No.
Shortchain Chlorinated Paraffins (C10 to C13)	Alkanes, C10-13, chloro	85535-84-8
	Alkanes, C10-12, chloro	108171-26-2
	Alkanes, C12-13, chloro	71011-12-6
	Alkanes, chloro	61788-76-9
	Other Short Chain Chlorinated Paraffins	—
Tri-substiituted organostannic compounds	Triphenyltin=N, Ndimethyldithiocarbamate	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
	Coplymer 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 7342-38-3
	Tributyltin cyclopentane carbonate=mixture	85409-17-2
	Tributyltin-1, 2,3,4,4a, 4b, 5,6,10,10adecahydro-7-isoplopyl-1, 4a-dimethyl-1-phenanthrencarboxylatemix	26239-64-5
	Other tri-substituted organostannic compounds	—
Dibutyltin (DBT) compounds	Dibutyltin oxide	818-08-6
	Dibutyltin diacetate	1067-33-0
	Dibutyltin dilaurate	77-58-7
	Dibutyltin maleate	78-04-6
	Other dibutyltin compounds	—
Dioctyltin (DOT) compounds	Dioctyl Tin Oxide	870-08-6
	Dioctyltin dilaurate	3648-18-8
	Other Dioctyltin compounds	—
Polychlorinated Terphenyls (PCTs)	Polychlorinated Terphenyls (all isomers and congeners)	61788-33-8
Hexabromocyclododecane(HBCDD) and all major diastereoisomers	Hexabromocyclododecane (HBCDD)	25637-99-4 3194-55-6
	alpha-hexabromocyclododecane	134237-50-6
	beta-hexabromocyclododecane	134237-51-7
	gamma-hexabromocyclododecane	134237-52-8
Brominated flame retardants (other than PBBs,PBDEs, or HBCDD)	Brominated flame retardant w hich comes under notation of ISO 1043-4 code number FR(14)[Aliphatic/alicyclic brominated compounds]	—
	Brominated flame retardant w hich comes under notation of ISO 1043-4 code number FR(15)[Aliphatic/alicyclic brominated compounds in combination w ith antimony compounds]	—
	Brominated flame retardant w hich comes under notation of ISO 1043-4 code number FR(16)[Aromatic brominated compounds excluding brominated diphenyl ether and biphenyls)]	—

Substance Group	Substance name	CAS No.
Brominated flame retardants (other than PBBs,PBDEs, or HBCDD) (con'd)	Brominated flame retardant w hich comes under notation of ISO 1043-4 code number FR(17)[Aromatic brominated compounds excluding brominated diphenyl ether and biphenyls) in combination w ith antimony compounds]	—
	Brominated flame retardant w hich comes under notation of ISO 1043-4 code number FR(22)[Aliphatic/alicyclic chlorinated and brominated compounds]	—
	Brominated flame retardant w hich 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	94344-64-2
	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-alltl-ether	3278-89-5
	Tribromo-phenyl-allyl-ether, unspecified	26762-91-4
	Bis(methyl)tetrabromo-phtalate	55481-60-2
	Bis(2-ethlhexyl)tetrabromo-phtalate	26040-51-7
	2-Hydroxy-propyl-2-(2-hydroxyethoxy)-ethyl-TBP	20566-35-2
	TBPA, glycol-and propylene-oxide esters	75790-69-1
	N,N'-Ethylene –bis-(tetrabromophthalimide)	32588-76-4
	Ethylene-bis(5,6-dibromo-norbornane-2,3-dicarbo ximide)	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

Substance Group	Substance name	CAS No.
Brominated flame retardants (other than PBBs,PBDEs, or HBCDD) (con'd)	Tris(tribromo-neopentyl) phosphate	19186-97-1
	Chlorinated and brominated phosphate esther	125997-20-8
	Pentabromo-toluene	87-83-2
	Pentabromo-benzyl bromide	38521-51-6
	1,3-Butadiene homopolymer,brominated	68441-46-3
	Pentabromo-benzyl-acrylate, monomer	59447-55-1
	Pentabromo-benzyl-acrylate, polymer	59447-57-3
	Decabromo-diphenyl-ethane	84852-53-9
	Tribromo-bisphenyl-maleinimide	59789-51-4
	Tetrabromo-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
	Octabromo-1,1,3-trimethyl-1-phenylindane (FR-1808)	155613-93-7
	Other Brominated Flame Retardants	–
Fluorinated greenhouse gases (PFC, SF6, HFC)	Tetrafluoromethane (Carbon tetrafluoride, PFC-14)	75-73-0
	Hexafluoroethane (PFC-116)	76-16-4
	Octafluoropropane (PFC-218)	76-19-7
	Decafluorobutane (PFC-31-10)	355-25-9
	Dodecafluoropentane (PFC-41-12)	678-26-2
	Tetradecafluorohexane (PFC-51-14)	355-42-0
	Octafluorocyclobutane (PFC-c318)	115-25-3
	Sulfur Hexafluoride (SF6)	2551-62-4
	Trifluoromethane - (HFC-23)	75-46-7
	Difluoromethane - (HFC-32)	75-10-5
	Methyl fluoride – (HFC-41)	593-53-3
	2H,3H-Decafluoropentane – (HFC-43-10mee)	138495-42-8
	Pentafluoroethane (HFC-125)	354-33-6
	1,1,2,2-Tetrafluoroethane – (HFC-134)	359-35-3
	1,1,1,2-Tetrafluoroethane – (HFC-134a)	811-97-2
	1,1-Difluoroethane – (HFC-152a)	75-37-6
	1,1,2-Trifluoroethane–(HFC-143)	430-66-0
	1,1,1-Trifluoroethane – (HFC-143a)	420-46-2
	2H-Heptafluoropropane– (HFC-227ea)	431-89-0
	1,1,1,2,2,3-hexafluoro-propane (HFC-236cb)	677-56-5
	1,1,1,2,3,3-Hexafluoropropane – (HFC-236ea)	431-63-0
	1,1,1,3,3,3-Hexafluoropropane – (HFC-236fa)	690-39-1
	1,1,2,2,3-Pentafluoropropane – (HFC-245ca)	679-86-7
	1,1,1,3,3-Pentafluoropropane – (HFC-245fa)	460-73-1
	1,1,1,3,3-Pentafluorobutane – (HFC-365mfc)	406-58-6
Perchlorates	Lithium perchlorate	7791-03-9
	Other perchlorate compounds	–
Selected Phthalates Group 1 (BBP, DBP, DEHP)	Butyl benzyl phthalate (BBP)	85-68-7
	Dibutylphthalate (DBP)	84-74-2
	Bis (2-ethylhexyl) phthalate (DEHP)	117-81-7
Selected Phthalates Group 2 (DIDP, DINP, DNOP)	1,2-Benzenedicarboxylic acid diisodecyl ester (DIDP)	26761-40-0 68515-49-1
	Diisononyl phthalate (DINP)	28553-12-0 68515-48-0
	Di-n-octyl phthalate (DNOP)	117-84-0
Polyvinyl Chloride (PVC) and PVC Copolymers	Polyvinyl chloride (PVC)	9002-86-2
	Other Polyvinyl chlorides	–
	PVC Copolymers	–
Disodium tetraborate, anhydrous	Disodium tetraborate decahydrate	1303-96-4
	Disodium tetraborate, anhydrous	1330-43-4
	Disodium tetraborate, pentahydrate	12179-04-3

Substance Group	Substance name	CAS No.
Boric acid	Boric acid	10043-35-3
	Boric acid	11113-50-1
Chlorinated flame retardants	Tetrakis(2-chloroethyl)dichloroisopentyldiphosphate	38051-10-4
	Tris(1-chloro-2-propyl)phosphate	13674-84-5
	Tris(2,3-dichloro-1-propyl)phosphate	66108-37-0
	Other Chlorinated Flame Retardants	－

■ Appendix 4: List of OBJECT Chemicals for EACH COUNTRY

China environmental labeling （Technical requirement HJ2512-2012）

JGPSSI Classification No.	Substance Group	Substance name (English)	CAS No.
A05	**Cadmium/cadmium compounds**	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	-
A07	**Chromium VI compounds**	Chromium (VI) oxide	1333-82-0
		Barium chromate	10294-40-3
		Calcium chromate	13765-19-0
		Lead (II) chromate	7758-97-6
		Lead chromate molybdate sulphate red	12656-85-8
		Lead sulfochromate yellow	1344-37-2
		Sodium chromate	7775-11-3
		Sodium dichromate	10588-01-9
		Strontium chromate	7789-06-2
		Potassium dichromate	7778-50-9
		Potassium chromate	7789-00-6
		Zinc chromate	13530-65-9
		Pentazinc chromate octahydroxide	49663-84-5
		Potassium hydroxyoctaoxodizincate	11103-86-9
		Other hexavalent chromium compounds	-
A09	**Lead/lead compounds**	Lead	7439-92-1
		Lead(II) sulfate	7446-14-2
		Lead(II) carbonate	598-63-0
		Lead(II) chromate	7758-97-6
		Lead chromate molybdate sulphate red	12656-85-8
		Lead hydroxidcarbonate	1319-46-6
		Lead acetate	301-04-2
		Lead (II) acetate, trihydrate	6080-56-4
		Lead phosphate	7446-27-7
		Lead selenide	12069-00-0
		Lead (IV) oxide	1309-60-0
		Lead (II,IV) oxide	1314-41-6
		Lead (II) sulfide	1314-87-0
		Lead (II) oxide	1317-36-8
		Lead(II) carbonate basic	1319-46-6
		Lead hydroxidcarbonate	1344-36-1
		Lead(II) phosphate	7446-27-7
		Lead sulfochromate yellow	1344-37-2
		Lead(II) titanate	12060-00-3
		Lead sulfate,sulphuric acid, lead salt	15739-80-7
		Lead sulphate,tribasic	12202-17-4
		Lead stearate	1072-35-1
		Other lead compounds	-
A10	**Mercury/mercury compounds**	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	-
A11	**Nickel**	Nickel	7440-02-0
A17	**Tributyl Tin Oxide (TBTO)**	-	56-35-9

JGPSSI Classification No.	Substance Group	Substance name (English)	CAS No.
A28	**Tri-substiituted organostannic compounds**	Triphenyltin	
		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
		Coplymer 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, 7342-38-3
		Tributyltin cyclopentane carbonate=mixture	85409-17-2
		Tributyltin-1, 2,3,4,4a, 4b, 5,6,10,10a-decahydro-7-isoplopyl-1, 4a-dimethyl-1- phenanthrencarboxylatemix	26239-64-5
		Other tri-substituted organostannic compounds	-
B02	**Polybrominated Biphenyls (PBBs)**	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
		Pentabrphenyl	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
B03	**Polybrominated Diphenylethers (PBDEs)**	Bromodiphenyl ether	101-55-3
		Dibromodiphenyl ethers	2050-47-7
		Tribromodiphenyl ether	49690-94-0
		Tetrabromodiphenyl ethers	40088-47-9
		Pentabromodidphenyl 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

JGPSSI Classification No.	Substance Group	Substance name (English)	CAS No.
B08	**Brominated flame retardants (other than PBBs,PBDEs, orHBCDD)**	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	94344-64-2
		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-alltl-ether	3278-89-5
		Tribromo-phenyl-allyl-ether, unspecified	26762-91-4
		Bis(methyl)tetrabromo-phtalate	55481-60-2
		Bis(2-ethlhexyl)tetrabromo-phtalate	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

JGPSSI Classification No.	Substance Group	Substance name (English)	CAS No.
B08	**Brominated flame retardants (other than PBBs,PBDEs, orHBCDD) (con'd)**	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 esther	125997-20-8
		Pentabromo-toluene	87-83-2
		Pentabromo-benzyl bromide	38521-51-6
		1,3-Butadiene homopolymer,brominated	68441-46-3
		Pentabromo-benzyl-acrylate,monomer	59447-55-1
		Pentabromo-benzyl-acrylate,polymer	59447-57-3
		Decabromo-diphenyl-ethane	84852-53-9
		Tribromo-bisphenyl-maleinimide	59789-51-4
		Tetrabromo-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
		Octabromo-1,1,3-trimethyl-1- phenylindane (FR-1808)	155613-93-7
		Other Brominated Flame Retardants	-
B18	**Chlorinated flame retardants**	Tetrakis(2-chloroethyl)dichloroisopentyldiphosp hate	38051-10-4
		Tris(1-chloro-2-propyl)phosphate	13674-84-5
		Tris(2,3-dichloro-1-propyl)phosphate	66108-37-0
B09	**Shortchain Chlorinated Paraffins (C10 – C13)**	Alkanes, C10-13, chloro	85535-84-8
		Alkanes, C10-12, chloro	108171-26-2
		Alkanes, C12-13, chloro	71011-12-6
		Alkanes, chloro	61788-76-9
		Other Short Chain Chlorinated Paraffins	-
C02	**Azocolourants and azodyes which form certain aromatic amines**	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
C04	**Ozone Depleting Substances**	Trichlorofluoromethane (CFC-11)	75-69-4
		Dichlorodifluoromethane (CFC-12)	75-71-8
		Chlorotrifluoromethane (CFC-13)	75-72-9
		Pentachlorofluoroethane (CFC-111)	354-56-3
		Tetrachlorodifluoroethane (CFC-112) 1,1,2,2-Tetrachloro-1,2- difluoroethane (CFC-112) 1,1,1,2-Tetrachloro-2,2- difluoroethane (CFC-112a)	76-12-0 76-12-0 76-11-9

JGPSSI Classification No.	Substance Group	Substance name (English)	CAS No.
C04	**Ozone Depleting Substances (con'd)**	Trichlorotrifluoroethane (CFC-113) 1,1,2-Trichloro-1,2,2 trifluoroethane(CFC-113) 1,1,1-Trichloro-2,2,2 trifluoroethane(CFC-113a)	76-13-1, 76-13-1 354-58-5
		Dichlorotetrafluoroethane (CFC-114)	76-14-2
		Monochloropentafluoroethane (CFC-115)	76-15-3
		Heptachlorofluoropropane (CFC-211) 1,1,1,2,2,3,3-Heptachloro-3- fluoropropane (CFC-211aa)	422-78-6 135401-87-5 422-78-6
		1,1,1,2,3,3,3-Heptachloro-2- fluoropropane (CFC-211ba)	422-81-1
		Hexachlorodifluoropropane (CFC-212)	3182-26-1
		Pentachlorotrifluoropropane (CFC-213)	2354-06-5 134237-31-3
		Tetrachlorotetrafluoropropane (CFC-214) 1,2,2,3-Tetrachloro-1,1,3,3- tetrafluoropropane (CFC-214aa) 1,1,1,3-Tetrachloro-2,2,3,3- tetrafluoropropane (CFC-214cb)	29255-31-0 2268-46-4 -
		Trichloropentafluoropropane (CFC-215) 1,2,2-Trichloropentafluoropropane(CFC-215aa) 1,2,3-Trichloropentafluoropropane(CFC-215ba) 1,1,2-Trichloropentafluoropropane(CFC-215bb) 1,1,3-Trichloropentafluoropropane(CFC-215ca) 1,1,1-Trichloropentafluoropropane(CFC-215cb)	1599-41-3 1599-41-3 76-17-5 - - 4259-43-2
		Dichlorohexafluoropropane (CFC-216)	661-97-2
		Chloroheptafluoropropane (CFC-217)	422-86-6
		Bromochloromethane (Halon-1011)	74-97-5
		Dibromodifluoromethane (Halon-1202)	75-61-6
		Bromochlorodifluoromethane (Halon-1211)	353-59-3
		Bromotrifluoromethane (Halon-1301)	75-63-8
		Dibromotetrafluoroethane (Halon-2402)	124-73-2
		Tetrachloromethane (carbontetrachloride)	56-23-5
		1,1,1-Trichloroethane (methylchloroform)	71-55-6
		Bromomethane (methyl bromide)	74-83-9
		Bromoethane (ethyl bromide)	74-96-4
		1-Bromopropane (n-propyl bromide)	106-94-5
		Trifluoroiodomethane (trifluoromethyl iodide)	2314-97-8
		Chloromethane (methyl chloride)	74-87-3
		Dibromofluoromethane (HBFC-21B2)	1868-53-7
		Bromodifluoromethane (HBFC-22B1)	1511-62-2
		Bromofluoromethane (HBFC-31 B1)	373-52-4
		Tetrabromofluoroethane (HBFC-121 B4)	306-80-9
		Tribromodifluoroethane (HBFC-122B3)	-
		Dibromotrifluoroethane (HBFC-123B2)	354-04-1
		Bromotetrafluoroethane (HBFC-124B1)	124-72-1
		Tribromofluoroethane (HBFC-131B3)	-
		Dibromodifluoroethane (HBFC-132B2)	75-82-1
		Bromotrifluoroethane (HBFC-133B1)	421-06-7
		Dibromofluoroethane (HBFC-141B2)	358-97-4
		Bromodifluoroethane (HBFC-142B1)	420-47-3
		Bromofluoroethane (HBFC-151 B1)	762-49-2
		Hexabromofluoropropane (HBFC-221 B6)	-
		Pentabromodifluoropropane (HBFC-222 B5)	-
		Tetrabromotrifluoropropane (HBFC-223 B4)	-
		Tribromotetrafluoropropane (HBFC-224 B3)	-
		Dibromopentafluoropropane (HBFC-225 B2)	431-78-7
		Bromohexafluoropropane (HBFC-226 B1)	2252-78-0
		Pentabromofluoropropane (HBFC-231 B5)	-
		Tetrabromodifluoropropane (HBFC-232 B4)	-
		Tribromotrifluoropropane (HBFC-233B3)	-

JGPSSI Classification No.	Substance Group	Substance name (English)	CAS No.
C04	**Ozone Depleting Substances (con'd)**	Dibromotetrafluoropropane (HBFC-234 B2)	-
		Bromopentafluoropropane (HBFC-235 B1)	460-88-8
		Tetrabromofluoropropane (HBFC-241 B4)	-
		Tribromodifluoropropane (HBFC-242B3)	70192-80-2
		Dibromotrifluoropropane (HBFC-243B2)	431-21-0
		Bromotetrafluoropropane (HBFC-244 B1)	679-84-5
		Tribromofluoropropane (HBFC-251B3)	75372-14-4
		Dibromodifluoropropane (HBFC-252B2)	460-25-3
		Bromotrifluoropropane (HBFC-253B1)	421-46-5
		Dibromofluoropropane (HBFC-261B2)	51584-26-0
		Bromodifluoropropane (HBFC-262B1)	-
		Bromofluoropropane (HBFC-271 B1)	1871-72-3
		Dichlorofluoromethane (HCFC-21)	75-43-4
		Chlorodifluoromethane (HCFC-22)	75-45-6
		Chlorofluoromethane (HCFC-31)	593-70-4
		Tetrachlorofluoroethane (HCFC-121) 1,1,2,2-Tetrachloro-1-fluoroethane(HCFC-121) 1,1,1,2-Tetrachloro-2-fluoroethane(HCFC-121a)	134237-32-4 354-14-3 354-11-0
		Trichlorodifluoroethane (HCFC-122) 1,2,2-Trichloro-1,1-difluoroethane(HCFC-122) 1,1,2-Trichloro-1,2-difluoroethane(HCFC-122a) 1,1,1-Trichloro-2,2-difluoroethane(HCFC-122b)	41834-16-6 354-21-2 354-15-4 354-12-1
		Dichlorotrifluoroethane(HCFC-123) 1,1-Dichloro-2,2,2-trifluoroethane(HCFC-123) 1,2-Dichloro-1,1,2-trifluoroethane(HCFC-123a) 1,1-Dichloro-1,2,2-trifluoroethane(HCFC-123b)	34077-87-7 306-83-2 354-23-4 90454-18-5 812-04-4
		Chlorotetrafluoroethane (HCFC-124) 2-chloro-1,1,1,2-tetrafluoroethane(HCFC-124) 1-chloro-1,1,2,2-tetrafluoroethane(HCFC-124a)	63938-10-3 2837-89-0 354-25-6
		Trichlorofluoroethane (HCFC-131) 1,1,2-Trichloro-2-fluoroethane(HCFC-131) 1,1,2-Trichloro-1-fluoroethane(HCFC131a) 1,1,1-Trichloro-2-fluoroethane(HCFC-131b)	27154-33-2; (134237-34-6) 359-28-4 811-95-0 2366-36-1
		Dichlorodifluoroethane (HCFC-132) 1,2-Dichloro-1,2-difluoroethane(HCFC-132) 1,1-Dichloro-2,2-difluoroethane(HCFC-132a)	25915-78-0 431-06-1 471-43-2
		1,2-Dichloro-1,1-difluoroethane(HCFC-132b) 1,1-Dichloro-1,2-difluoroethane(HCFC-132c)	1649-08-7 1842-05-3
		Chlorotrifluoroethane (HCFC-133) 1-Chloro-1,2,2-trifluoroethane(HCFC-133) 2-Chloro-1,1,1-trifluoroethane(HCFC-133a) 1-Chloro-1,1,2-trifluoroethane(HCFC-133b)	1330-45-6 431-07-2 1330-45-6 75-88-7 421-04-5
		Dichlorofluoroethane(HCFC-141) 1,2-Dichloro-1-fluoroethane (HCFC-141) 1,1-Dichloro-2-fluoroethane (HCFC-141a) 1,1-Dichloro-1-fluoroethane (HCFC-141b)	1717-00-6; (25167-88-8) 430-57-9 430-53-5 1717-00-6
		Chlorodifluoroethane (HCFC-142) 2-Chloro-1,1-Difluoroethane (HCFC-142) 1-Chloro-1,1-difluoroethane (HCFC-142b) 1-Chloro-1,2-difluoroethane (HCFC-142a)	25497-29-4 338-65-8 75-68-3 338-64-7
		Chlorofluoroethane (HCFC-151) 1-Chloro-2-fluoroethane (HCFC-151) 1-Chloro-1-fluoroethane (HCFC-151a)	110587-14-9 762-50-5 1615-75-4
		Hexachlorofluoropropane (HCFC-221) 1,1,1,2,2,3-Hexachloro-3- fluoropropane (HCFC-221ab)	134237-35-7 29470-94-8 422-26-4

JGPSSI Classification No.	Substance Group	Substance name (English)	CAS No.
C04	**Ozone Depleting Substances (con'd)**	Pentachlorodifluoropropane (HCFC-222) 1,1,1,3,3-pentachloro-2,2- difluoropropane (HCFC-222ca)) 1,2,2,3,3-pentachloro-1,1- difluoropropane (HCFC-222aa)	134237-36-8 422-49-1 422-30-0
		Tetrachlorotrifluoropropane (HCFC-223) 1,1,3,3-Tetrachloro-1,2,2- trifluoropropane HCFC-223ca) 1,1,1,3-Tetrachloro-2,2,3- trifluoropropane HCFC-223cb)	134237-37-9 422-52-6 422-50-4
		Trichlorotetrafluoropropane (HCFC-224) 1,3,3-Trichloro-1,1,2,2- tetrafluoropropane(HCFC-224ca) 1,1,3-Trichloro-1,2,2,3- tetrafluoropropane(HCFC-224cb) 1,1,1-Trichloro-2,2,3,3-tetrafluoropropane (HCFC-224cc)	134237-38-0 422-54-8 422-53-7 422-51-7
		Dichloropentafluoropropane (HCFC-225) 2,2-Dichloro-1,1,1,3,3-pentafluoropropane(HCFC-225aa) 2,3-Dichloro-1,1,1,2,3-pentafluoropropane(HCFC-225ba)	127564-92-5 128903-21-9 422-48-0
		1,2-Dichloro-1,1,2,3,3- pentafluoropropane (HCFC-225bb) 3,3-Dichloro-1,1,1,2,2- pentafluoropropane (HCFC-225ca) 1,3-Dichloro-1,1,2,2,3- pentafluoropropane (HCFC-225cb) 1,1-Dichloro-1,2,2,3,3- pentafluoropropane (HCFC-225cc) 1,2-Dichloro-1,1,3,3,3- pentafluoropropane (HCFC-225da) 1,3-Dichloro-1,1,2,3,3- pentafluoropropane (HCFC-225ea) 1,1-Dichloro-1,2,3,3,3- pentafluoropropane (HCFC-225eb)	422-44-6 422-56-0 507-55-1 13474-88-9 431-86-7 136013-79-1 111512-56-2
		Chlorohexafluoropropane (HCFC-226) 2-Chloro-1,1,1,3,3,3-hexafluoro-propane (HCFC-226da)	134308-72-8 431-87-8
		Pentachlorofluoropropane (HCFC-231) 1,1,1,2,3-pentachloro-2-fluoro- propane (HCFC-231bb)	134190-48-0 421-94-3
		Tetrachlorodifluoropropane (HCFC-232) 1,1,1,3-Tetrachloro-3,3-difluoropropane(HCFC-232fc)	134237-39-1 460-89-9
		Trichlorotrifluoropropane (HCFC-233) 1,1,1-Trichloro-3,3,3-trifluoropropane(HCFC-233fb)	134237-40-4 7125-83-9
		Dichlorotetrafluoropropane (HCFC-234) 1,2-Dichloro-1,2,3,3-tetrafluoropropane(HCFC-234db)	127564-83-4 425-94-5
		Chloropentafluoropropane (HCFC-235) 1-Chloro-1,1,3,3,3- entafluoropropane(HCFC-235fa)	134237-41-5 460-92-4
		Tetrachlorofluoropropane (HCFC-241) 1,1,2,3-Tetrachloro-1-fluoropropane(HCFC-241db)	134190-49-1 666-27-3
		Trichlorodifluoropropane (HCFC-242) 1,3,3,Trichloro-1,1-difluoropropane(HCFC-242fa)	134237-42-6 460-63-9
		Dichlorotrifluoropropane (HCFC-243) 1,1-Dichloro-1,2,2-trifluoropropane(HCFC-243cc) 2,3-Dichloro-1,1,1-trifluoropropane(HCFC-243db) 3,3-Dichloro-1,1,1-trifluoropropane(HCFC-243fa)	134237-43-7 7125-99-7 338-75-0 460-69-5
		Chlorotetrafluoropropane (HCFC-244) 3-Chloro-1,1,2,2-tetrafluoropropane(HCFC-244ca) 1-Chloro-1,1,2,2-tetrafluoropropane(HCFC-244cc)	134190-50-4 679-85-6 421-75-0
		Trichlorofluoropropane (HCFC-251) 1,1,3-Trichloro-1-fluoropropane(HCFC-251fb) 1,1,2-Trichloro-1-fluoropropane(HCFC-251dc)	134190-51-5 818-99-5 421-41-0
		Dichlorodifluoropropane (HCFC-252) 1,3-Dicloro-1,1-difluoropropane(HCFC-252fb)	134190-52-6 819-00-1
		Chlorotrifluoropropane (HCFC-253) 3-Chloro-1,1,1-trifluoropropane(HCFC-253fb)	134237-44-8 460-35-5

JGPSSI Classification No.	Substance Group	Substance name (English)	CAS No.
C04	**Ozone Depleting Substances (con'd)**	Dichlorofluoropropane (HCFC-261) 1,1-Dichloro-1-fluoropropane(HCFC-261fc) 1,2-Dichloro-2-fluoro-propane(HCFC-261ba)	134237-45-9 7799-56-6 420-97-3
		Chlorodifluoropropane (HCFC-262) 1-Chloro-2,2-difluoropropane(HCFC-262ca) 2-Chloro-1,3-difluoropropane(HCFC-262da) 1-Chloro-1,1-difluoropropane(HCFC-262fc)	134190-53-7 420-99-5 102738-79-4 421-02-3
		Chlorofluoropropane (HCFC-271) 2-Chloro-2-fluoropropane (HCFC-271ba) 1-Chloro-1-fluoropropane (HCFC-271fb)	134190-54-8 420-44-0 430-55-7
C09	**Selected Phthalates Group 1 (BBP, DBP, DEHP)**	Butyl benzyl phthalate (BBP)	85-68-7
		Dibutylphthalate (DBP)	84-74-2
		Bis (2-ethylhexyl) phthalate (DEHP)	117-81-7
C10	**Selected Phthalates Group 2 (DIDP, DINP, DNOP)**	1,2-Benzenedicarboxylic acid diisodecyl ester (DIDP)	26761-40-0 68515-49-1
		Diisononyl phthalate (DINP)	28553-12-0 68515-48-0
		Di-n-octyl phthalate (DNOP)	117-84-0