



# Green Procurement Guidelines

## Version 9.0

Murata Machinery, Ltd.  
Communication Equipment Division and  
ICT&Control development Headquarters

November 4, 2022

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## **1. 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 and ICT&Control development Headquarters (hereinafter called "our division") defines our actions in each stage of development, design, material procurement, manufacturing, distribution, use and disposal, focusing on the environmental conservation and harmony, based on the environmental philosophy of Murata Machinery, Ltd., 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.

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.

## 2. Environmental Policy 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.

### 2.1 Environmental Policy

Based on the environmental philosophy of Murata Machinery, Ltd., our division 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 CO2 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.

### **3. Green Procurement Philosophy of our division**

#### **3.1 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.

#### **3.2 Green Procurement Efforts**

- 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.

#### **3.3 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.

#### **3.4 Definition and Explanation of the Terminology**

##### **Substances to manage**

The substances listed in the chemSHERPA list of substances to manage are substances to manage.

##### **Prohibited substances**

Among the substances to manage, those substances that are currently or scheduled to be prohibited in products by legislation as well as substances Murata Machinery, Ltd. Communication Equipment Division restricts voluntarily.

Among the substances to manage, it is prohibited to contain each substance specified in Appendix 2 "Prohibited substances" in excess of the threshold level or for purposes other than exemptions.

- Usages outside of the applicable scope of the EU RoHS directive are not prohibited by this guidelines. However, for EPEAT registered products, the use of cadmium exempted applications is prohibited.
- Even for those chemicals that are not controlled under this guideline, should there be any ban due to any national or local laws and regulations, those laws and regulations are given the priority.

##### **Reportable substances**

Although it is not prohibited to contain any of the substances specified in Appendix 2 "Reportable substances" , it is a substance for which data on whether or not they are used and the concentration of them should be known.

##### **Homogeneous material**

Based on the definition in EU RoHS (2011/65/EU), it means an identical material of a part element that contains the specified chemical substance, and that cannot be mechanically disjointed into different materials.

Example: Various types of plastic, ceramic, glass, metal, alloy, paper, board, coating, etc.

##### **Exemptions:**

Based on the definition in EU RoHS (2011/65/EU), uses that are temporarily permitted in an application where substitution is technically impracticable.

##### **Intentional addition**

The intentional addition of chemicals to give the object some performance.

## **Impurities**

A substance contained in natural materials which cannot be fully removed during the refining process, or is generated in a reaction process but cannot be removed technically.

※ Regardless of the concentration, it is not said to be an impurity when it is intentionally added or when it is intended to be contained.

## **chemSHERPA**

Generic name given to the new scheme for communicating information on chemical substances in products. This scheme was developed under the leadership of the Ministry of Economy, Trade and Industry of Japan. The details are referred to the below URL.

<https://chemsherpa.net/english>

### **3.5 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.

#### **3.5.1 Assessment Criteria**

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

① 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.

② 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.

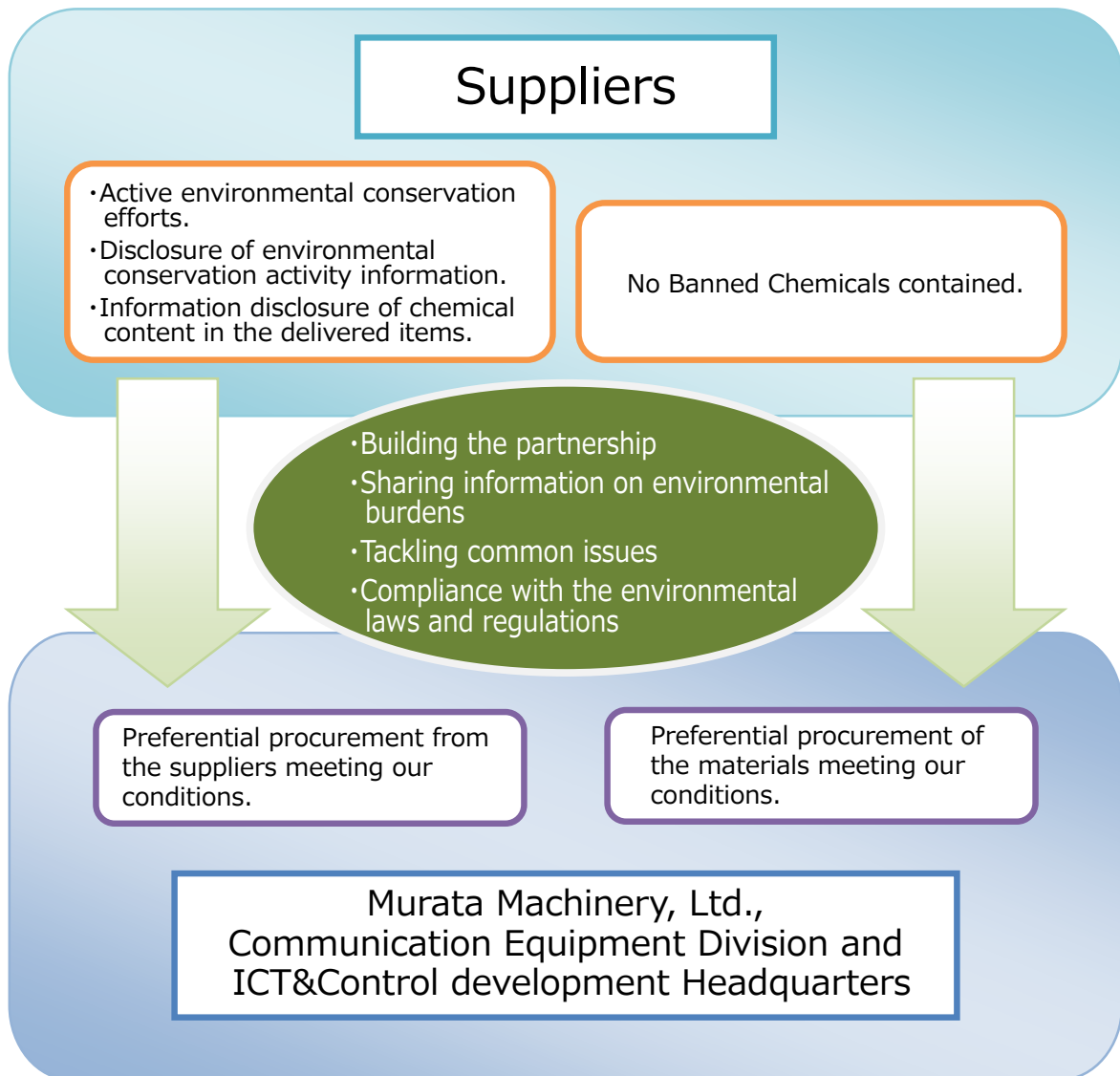
#### **3.5.2 Selection Criteria**

Based on the previous section "3.5.1 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 "4. Requested Supplier Cooperation" .

### 3.6 Basic Concept of Green Procurement by our division

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



## **4. Requested Supplier Cooperation**

### **4.1 Request for Submission of "Information on contained chemical substances"**

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.

#### **4.1.1 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.

Substances to manage are those substances included in the chemSHERPA list of substances to manage. See the chemSHERPA list of substances to manage on the following website.

<https://chemsherpa.net/tool#declarable>

#### **4.1.2 Survey method**

In principle, please use the "chemSHERPA-AI" file for the information on the contained chemical substances. We ask you to enter composition information (required) and compliance judgment information (optional).

Please follow the guidelines and usage rules provided by the Joint Article Management Promotion-consortium (JAMP) when preparing the chemSHERPA file.

chemSHERPA data entry support tool:

<https://chemsherpa.net/english/tool>

chemSHERPA documents:

<https://chemsherpa.net/english/docs/description>

Survey requests will be e-mailed.

Please fill out the required details and return the chemSHERPA file to the requesting party via e-mail.

\* 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.

\* A different survey method and/or response format might be requested depending on the procured item. Evidence such as measured results might need to be submitted.

#### **4.1.3 Timing**

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

### **4.2 Request for clear specification of RoHS Compliance Status in the Delivery Specifications**

We request that you clearly specify the status of EU RoHS (2011/65/EU) Compliance of delivered items. Please clearly specify in the delivery specifications that the delivered items are EU RoHS compliant products. Please also clearly specify the date the compliance check was conducted.

### **4.3 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.

- The supplier will fill out and submit required information in our specified document.
- 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.



#### **4.4 Confidentiality**

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

#### **5. 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.

<http://www.muratec.jp/ce/business/eco/procurement.html>

## 6. Revision History

June 1, 2005 (1st edition)	<ul style="list-style-type: none"> <li>• First edition released.</li> </ul>
July 1, 2005 (2nd edition)	<ul style="list-style-type: none"> <li>• Spelling errors corrected.</li> <li>• Appendix containing substances lists added.</li> </ul>
June 15, 2007 (3rd edition)	<ul style="list-style-type: none"> <li>• Section on Communication Equipment Division environmental policy added.</li> <li>• Part of article 1-4, paragraph 5 on suppliers and assessment criteria revised.</li> <li>• "Requirements for Chemical Management in Products" added.</li> <li>• Section "2-3 Assessing the Efforts on Environmental Conservation" added.</li> <li>• "Supplier Environmental Questionnaire (Green Procurement Agreement)" added.</li> </ul>
April 1, 2010 (4th edition)	<ul style="list-style-type: none"> <li>• Date of original issue revised.</li> <li>• Section on environmental philosophy revised.</li> <li>• "Definition and Description of Terms" section added.</li> <li>• "List of Controlled Chemicals" updated.</li> <li>• Information on Reportable Chemicals added.</li> <li>• Revision of statement regarding excluded applications of prohibited substances.</li> <li>• Information regarding Declaration of RoHS Compliance added (Requirement for submission of RoHS Compliance Certificates on a product-by-product basis eliminated.)</li> <li>• "Supplier Environmental Questionnaire (Green Procurement Agreement)" deleted.</li> <li>• "Revision History" added.</li> </ul>
November 1, 2011 (5th edition)	<ul style="list-style-type: none"> <li>• Date of original issue revised.</li> <li>• Revision of statement regarding excluded applications of prohibited substances.</li> <li>• 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).</li> <li>• Contact information updated.</li> </ul>
April 18, 2013 (6th edition)	<ul style="list-style-type: none"> <li>• Add "Appendix 3: China environmental labeling (Technical requirement HJ2512-2012)"</li> </ul>
June 1, 2014 (7th edition)	<ul style="list-style-type: none"> <li>• Update "Appendix 2: List of Controlled Chemicals". Added or deleted the information on "1. Banned Chemicals", "2. Controlled Chemicals", and "3. Reportable Chemicals".</li> <li>• Change "Appendix 3: China environmental labeling (Technical requirement HJ2512-2012)" to Appendix 4.</li> <li>• Add "Appendix 4: Detailed Chemical Lists (Quotation from Annex B of JIG-101 Ed 4.1) "</li> </ul>
July 18, 2020 (8th edition)	<ul style="list-style-type: none"> <li>• Change definition and explanation of the terminology.</li> <li>• Change the survey method to "chemSHERPA".</li> <li>• Delete the China Production Dept. Purchasing Section from the Inquiries list.</li> <li>• Update Appendix 2: List of Controlled Chemicals".</li> <li>• Change Appendix 3: Detailed Chemical Lists to Appendix 3: Lists of sample substances considered as "Prohibited substances".</li> <li>• Add "Appendix 4: Lists of sample substances considered as "Reportable substances".</li> <li>• Delete "Appendix 4: China environmental labeling (Technical requirement HJ2512-2012)".</li> </ul>
November 4, 2022 (9th edition)	<ul style="list-style-type: none"> <li>• "ICT&amp;Control development Headquarters" as a division name added.</li> <li>• Update Appendix 2: List of Controlled Chemicals.</li> <li>• Update Appendix 3: List of sample substances considered as "Prohibited substances"</li> <li>• Update Appendix 4: List of sample substances considered as "Reportable substances"</li> </ul>

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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	<p>A policy that includes "approach" to manage chemical content in products must be implemented and maintained.</p> <ul style="list-style-type: none"> <li>A policy that includes the chemical management approach has been made and informed to the parties involved.</li> </ul>
	1.2 Identifying the requirements (1) Clarifying the legal and client requirements	<p>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.</p> <ul style="list-style-type: none"> <li>Documents regarding laws, regulations and client requirements related to the product are managed. Updated information are always obtained and managed.</li> <li>The information is also passed onto the parties involved.</li> </ul>
	1.2 Identifying the requirements (2) Clarifying the scope of management	<p>"Products," "processes" and "substances" that are subjected to chemical management in products must be clarified.</p> <ul style="list-style-type: none"> <li>Substances and processes that are subject to control are identified in the self-management standards, QC process checklist, etc.</li> </ul>
	1.3 Defining targets and planning	<p>Within the clarified management scope, appropriate internal targets and plans must be laid out.</p> <ul style="list-style-type: none"> <li>Schedule is made against a target, and the progress is monitored.</li> <li>Also, the above reflects the laws, regulations and client requirements.</li> </ul>
	1.4 Clarifying the organization plans, roles and authorities	<p>A structure that promotes chemical management in products (person in charge and an organized body) must be implemented.</p> <ul style="list-style-type: none"> <li>A structure for chemical management in products is determined (i.e. an organization chart).</li> <li>Responsible division and personnel, and their roles are identified and clearly described.</li> </ul>
	1.5 Document management	<p>There is a system to prepare, maintain and manage the documents related to chemical management in products.</p> <ul style="list-style-type: none"> <li>Based on the chemical management system, practical procedures are documented.</li> <li>There are specific forms to be used.</li> </ul>
	1.6 Education and training	<p>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.</p> <ul style="list-style-type: none"> <li>Education plans are made and implemented.</li> <li>The operation is carried out by those who properly understand, and possess knowledge and skills of laws, regulation and client requirements.</li> </ul>
	2.1 Design and development	<p>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.</p> <ul style="list-style-type: none"> <li>Materials are specified, and banned chemicals are identified, in the specifications and drawings.</li> <li>Suppliers are informed of laws, regulations and client requirements.</li> <li>Parts and material to be used are proven to conform with the laws, regulations and client requirements.</li> </ul>
	2.2 Obtaining and checking the content information	<p>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.</p> <ul style="list-style-type: none"> <li>Forms that enable conformity check with laws, regulations and client requirements are obtained.</li> <li>For the parts and material to be procured, their conformity with the laws, regulations and client requirements is checked using the forms.</li> <li>The supply source is requested to implement an assurance system for chemicals in the products based on this guideline.</li> </ul>
	2.3 Purchase management	<p>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.</p> <ul style="list-style-type: none"> <li>The supply source of the procurement conforms with the requirements (such as data disclosure) regarding chemical content in the products.</li> <li>The secondary and further supply sources are also requested to implement an assurance system for chemicals in the products.</li> <li>The implementation requirements of the supply source based on this guideline are checked and instructed. Also, nonconformities are rectified.</li> </ul>
2. Implementation and Practice		

Item	Requirement	Desirable Condition
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.	<ul style="list-style-type: none"> <li>Parts and material to be received are confirmed to conform with the laws, regulations and client requirements (data check).</li> <li>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.</li> </ul>
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 oxidation, evaporation, reaction and change in concentration.	<ul style="list-style-type: none"> <li>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.</li> <li>Products are identified for each of the laws, regulations, and client requirements</li> <li>Items that achieved/yet to achieve elimination are separated by storing in different locations, etc.</li> </ul>
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.	<ul style="list-style-type: none"> <li>An assurance system for chemicals in the products based on this guideline is requested.</li> <li>The secondary and further contract manufacturers are also requested to implement an assurance system for chemicals in the products.</li> <li>The implementation requirements based on this guideline are checked and instructed. Also, nonconformities are rectified</li> </ul>
2.5 Change management	Management rules for changes in chemical management must be defined and properly applied.	<ul style="list-style-type: none"> <li>Internal procedures in case of any changes in 4M*1 are clear (i.e. definition of 4M changes, etc.).</li> <li>External (client, supplier, contract manufacturer, etc.) communication procedure is clear.</li> </ul>
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. 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.	<ul style="list-style-type: none"> <li>There is a method to confirm that laws, regulations and client requirements are thoroughly met.</li> <li>Confirmed results are recorded and stored.</li> </ul>
2.7 Handling nonconformities	The information on the chemical content of the product must be properly calculated to provide to the clients and third parties.	<ul style="list-style-type: none"> <li>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.</li> <li>A procedure to identify the object (lot tracing) is determined and implemented.</li> <li>Measures for improvement and prevention are clarified and implemented.</li> </ul>
2.8 Information disclosure	There is a system, such as an internal audit, to assess and confirm if the chemical management is actually implemented and working.	<ul style="list-style-type: none"> <li>Necessary information regarding chemical content of the products are properly communicated and shared in the company.</li> <li>The communication route for the information disclosure upon client inquiries is determined.</li> </ul>
3. Inspections and Improvement	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.	<ul style="list-style-type: none"> <li>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.</li> <li>Nonconformities are rectified.</li> </ul>
4. Review by the Management		<ul style="list-style-type: none"> <li>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.</li> </ul>

\*1: 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

### Prohibited substances

No.	Substance/ Category	CAS RN®	Reportable Applications	Control limit (Threshold Level)	Remarks
1	Cadmium/cadmium compounds	See Appendix 3 ①	All, except batteries	0.01% by weight (100 ppm) in homogeneous materials	For EPEAT registered products, cadmium and its compounds shall not be contained. This shall be applied also to EU RoHS directive exempted cadmium applications.  The parts, which use the Exceptional use, will be prohibited to deliver to Muratec after the expiration date has expired.
			Batteries	0.001% by weight (10 ppm) in battery	
2	Lead/lead compounds	See Appendix 3 ②	All, except as noted below	0.1% by weight (1000 ppm) in homogeneous materials	The parts, which use the Exceptional use, will be prohibited to deliver to Muratec after the expiration date has expired.
			Cables/ cords with thermoset or thermoplastic coatings	0.03% by weight (300 ppm) in surface coating	
			Consumer products designed or intended primarily for children 12 years of age or younger	0.01% by weight (100 ppm) in the children' s product	
			Paint and similar surface coatings of toys and other articles intended for use by children	0.009% by weight (90 ppm) in surface coating	
			Batteries	0.004% by weight (40 ppm) in battery	
3	Mercury/mercury compounds	See Appendix 3 ③	All, except batteries	Intentionally added or 0.1% (1000 ppm) in homogeneous material	The parts, which use the Exceptional use, will be prohibited to deliver to Muratec after the expiration date has expired.
			Batteries	0.0001% by weight (1 ppm) in of the battery	
4	Chromium VI compounds	See Appendix 3 ④	ALL	0.1% by weight (1000 ppm) in homogeneous materials	The parts, which use the Exceptional use, will be prohibited to deliver to Muratec after the expiration date has expired.

No.	Substance/ Category	CAS RN®	Reportable Applications	Control limit (Threshold Level)	Remarks
5	Polybrominated biphenyls (PBBs)	See Appendix 3 ⑤	ALL	Intentionally added or 0.1% by weight (1000ppm) in homogenous materials	The parts, which use the Exceptional use, will be prohibited to deliver to Muratec after the expiration date has expired.
6	Polybrominated diphenylethers (PBDEs)	See Appendix 3 ⑥	ALL	Intentionally added or 0.1% by weight (1000ppm) in homogenous materials	The parts, which use the Exceptional use, will be prohibited to deliver to Muratec after the expiration date has expired.
7	Di(2-ethylhexyl) phthalate (DEHP)	117-81-7	ALL	0.1% by weight (1000 ppm) in homogeneous materials	The parts, which use the Exceptional use, will be prohibited to deliver to Muratec after the expiration date has expired.
8	Butyl benzyl phthalate (BBP)	85-68-7	ALL	0.1% by weight (1000 ppm) in homogeneous materials	The parts, which use the Exceptional use, will be prohibited to deliver to Muratec after the expiration date has expired.
9	Dibutyl phthalate (DBP)	84-74-2	ALL	0.1% by weight (1000 ppm) in homogeneous materials	The parts, which use the Exceptional use, will be prohibited to deliver to Muratec after the expiration date has expired.
10	Diisobutyl Phthalate (DIBP)	84-69-5	ALL	0.1% by weight (1000 ppm) in homogeneous materials	The parts, which use the Exceptional use, will be prohibited to deliver to Muratec after the expiration date has expired.
11	Selected Phthalates Group 1 (BBP, DBP, DEHP, DIBP)	See Appendix 3 ⑦	Children's toy or child care article	0.1% by weight (1000 ppm) in total of BBP, DBP, DEHP and DIBP in plasticized materials	
12	Selected Phthalates Group 2 (DIDP, DINP, DNOP)	See Appendix 3 ⑧	Children's toy or child care article that can be placed in a child's mouth	0.1% by weight (1000 ppm) in total of DIDP, DINP and DNOP in plasticized materials	
13	Asbestos	See Appendix 3 ⑨	ALL	Intentionally added	
14	Azocolourants and azodyes which form certain aromatic amines	See Appendix 3 ⑩	Textiles and leather products that may have direct contact with human skin and/or oral cavities for an extended period of time	0.003% by weight (30 ppm) in the finished textile/ leather products	

No.	Substance/ Category	CAS RN®	Reportable Applications	Control limit (Threshold Level)	Remarks
15	Dimethyl fumarate (DMF)	624-49-7	ALL	0.00001% by weight (0.1 ppm) in a materials	
16	Ozone depleting substances	See Appendix 3 ⑪	ALL	Intentionally added	Including prohibition in manufacturing
17	Fluorinated greenhouse gases (PFC, SF6, HFC)	See Appendix 3 ⑫	ALL	Intentionally added	
18	2-(2H-1,2,3-benzotriazole-2-yl)-4,6-di-tert-butylphenol	3846-71-7	ALL	Intentionally added	
19	Perfluorooctane sulfonate (PFOS)	See Appendix 3 ⑬	ALL	Intentionally added or 0.1% by weight (1000 ppm) in semifinished goods, articles, and parts. For surface treatment, more than 1 µg/m <sup>2</sup>	Exemptions: • Photoresist for photolithography processes • Photographic coatings applied to films, papers, or printing plates
20	Perfluorooctanoic acid (PFOA), its salts and PFOA-related substances	See Appendix 3 ⑭	parts	• In the case of PFOA (including individual salts), concentration must be less than 25 ppb (0.025 ppm) • In the case of combination of one or multiple PFOA-related substances, concentration must be less than 1000 ppb (1 ppm) in total of the PFOA, its salts and PFOA-related substances.	
21	Polychlorinated biphenyls (PCBs) and specific substitutes	See Appendix 3 ⑮	ALL	Intentionally added	
22	Polychlorinated naphthalenes (more than 1 chlorine atoms)	See Appendix 3 ⑯	ALL	Intentionally added	
23	Polychlorinated terphenyls (PCTs)	See Appendix 3 ⑰	ALL	0.005% by weight (50 ppm) in material	
24	Radioactive substances	See Appendix 3 ⑱	ALL	Intentionally added	
25	Short chlorinated paraffins (C10 to C13)	See Appendix 3 ⑲	ALL	Intentionally added	
26	Tri-substituted organostannic compounds (Excluding TBTO)	See Appendix 3 ⑳	ALL	Intentionally added or Containing more than 0.1 wt% (1000 ppm) of tin element in the material as an impurity.	
27	Tributyl tin oxide (TBTO)	56-35-9	ALL	Intentionally added	
28	Dibutyltin (DBT) compounds	See Appendix 3 ㉑	ALL	0.1% by weight (1000ppm) of tin element in a materials	



No.	Substance/ Category	CAS RN®	Reportable Applications	Control limit (Threshold Level)	Remarks
29	Diocetyl tin (DOT) compounds	See Appendix 3 ⑳	(a) textile and leather articles intended to come into contact with the skin (b) childcare articles (c) two component room temperature vulcanisation moulding kits (RTV-2 moulding kits)	0.1% by weight (1000ppm) of tin element in a materials	
30	Hexabromocyclo-dodecane (HBCDD) all major diastereoisomers	See Appendix 3 ㉑	ALL	Intentionally added	
31	Formaldehyde	50-00-0	Clothing which under normal or reasonably foreseeable conditions of use come into contact with human skin.	0.0075% by weight (75ppm) in clothing	
32	Nickel/Nickel Compounds	See Appendix 3 ㉒	Parts that may come into direct contact with human skin for a long time	Intentionally added	
33	Polycyclic aromatic hydrocarbon (PAH)	See Appendix 3 ㉓	Rubber or plastic parts that come into direct, prolonged or repetitive skin or oral cavity contact except those for toys or childcare articles	Each of PAHs $\leq$ 1mg/kg (1 ppm) and total PAH $\leq$ 50mg/kg (50 ppm)	Product exterior, various operation buttons and external power cable.
34	Phenol, Isopropylated Phosphate(3 : 1) (PIP3 : 1) )	68937-41-7	Adhesives and sealants in parts	Intentionally added	The parts, which use adhesives and sealants in parts, will be prohibited to deliver to our company after 2024/1/6.
			Other than above	Intentionally added	Excluding applications and materials listed in Reporting substances.

No.	Substance/ Category	CAS RN®	Reportable Applications	Control limit (Threshold Level)	Remarks
35	C9-C14 PFCAs, their salts and C9- C14 PFCA-related substances	See Appendix 3 ②⑥	Extinguishing agent, Water repellent, Surface- active agent, Anti-rust, etching solution, Antireflection coating, Photoresist, Plating solution, Activator, coating, Solder, Lubricant, adhesive, Surface treating, Paint, Resin additive (fluororesin)	<p>Scope of application—Not to be used if applicable to any of the following:</p> <ul style="list-style-type: none"> <li>• 0.0000025% by weight (25 ppb) for the sum of C9-C14 PFCAs and their salts in a mixture or an article</li> <li>• 0.000026% by weight (260ppb) for the sum of C9-C14 PFCA-related substances in a mixture or an article</li> </ul> <p>Note) In principle, delivery of contained product is prohibited even before the prohibition deadline.</p> <p>If there are any contained products, please contact us.</p> <p>Applications exempted</p> <p>①</p> <ul style="list-style-type: none"> <li>(1) Semiconductors on their own; December 31, 2023</li> <li>(2) Semiconductors incorporated in semi-finished and finished electronic equipment; December 31, 2023</li> <li>(3) Photolithography or etch processes in semiconductor manufacturing; July 4, 2025</li> <li>(4) Photographic coatings applied to films; July 4, 2025</li> <li>(5) Invasive and implantable medical devices; July 4, 2025</li> <li>(6) fire-fighting foam for liquid fuel vapour suppression and liquid fuel fire (Class B fires) already installed in systems, including both mobile and fixed systems, subject to the following conditions; July 4, 2025</li> <li>(7) semiconductors used in spare or replacement parts for finished electronic equipment placed on the market before 31 December 2023; December 31, 2030</li> </ul> <p>② For the sum of C9-C14 PFCAs in fluoroplastics and fluoroelastomers that contain perfluoroalkoxy groups;</p> <ul style="list-style-type: none"> <li>(1) Containing less than 2,000 ppb (0.0002% by weight) ; Until August 25,2024</li> <li>(2) Containing less than 100 ppb (0.00001% by weight) ; From August 25,2024</li> </ul> <p>③ Polytetrafluoroethylene (PTFE) micro powders produced by ionising irradiation or by thermal degradation containing less than 1,000 ppb for the sum of C9-C14 PFCAs;</p> <p>Review this derogation no later than 25 August 2024.</p>	

[Prohibited substances related to packaging materials]

No.	Substance/Category	CAS RN <sup>®</sup>	Reportable Applications	Threshold Level (Report Level)	Note
1	Polyvinyl chloride (PVC)	9002-86-2	Resin packaging materials (bags, tapes, binding bands, etc.)	Intentionally added	
2	Four heavy metals (Cadmium, Lead, Hexavalent chromium, and Mercury)	–	Packing materials used to pack products	Intentional use prohibited and concentration must be less than 100ppm in total with the mass of the materials constituting the packaging as the denominator	

**Reportable substances**

No.	Substance/Category	CAS RN <sup>®</sup>	Reportable Applications	Threshold Level (Report Level)	Note
1	Beryllium oxide (BeO)	1304-56-9	ALL	0.1% by weight (1000 ppm) in parts	
2	Brominated flame retardants (other than PBBs, PBDEs, or HBCDD)	See Appendix 4 ①	Plastic materials except printed wiring board laminates.	0.1% total bromine content by weight (1000 ppm) of plastics materials	
			Printed wiring board laminate	0.09% total bromine content by weight (900 ppm) in the laminate	
3	Chlorinated flame retardants	See Appendix 4 ②	Plastic materials except printed wiring board laminates.	0.1% total chlorine content by weight (1000 ppm) in the plastic material	
			Printed wiring board laminate	0.09% total chlorine content by weight (900 ppm) in the laminate.	
4	Formaldehyde	50-00-0	Composite wood (plywood, particle board, medium density fiberboard) products or components	Intentionally added	
5	Perchlorate	See Appendix 4 ③	ALL	0.0000006% by weight (0.006ppm) in parts	
6	Dipentylphthalate	131-18-0	ALL	0.1% by weight (1000 ppm) in parts	
7	Diisopentylphthalate (DIPP)	605-50-5	ALL	0.1% by weight (1000 ppm) in parts	
8	Bis(2-methoxyethyl) phthalate	117-82-8	ALL	0.1% by weight (1000 ppm) in parts	

No.	Substance / Category	CAS RN <sup>®</sup>	Reportable Applications	Threshold Level (Report Level)	Note
9	Polyvinyl chloride (PVC) & PVC Copolymers	See Appendix 4 ④	Plastic materials except printed wiring board laminates.	0.1% total chlorine content by weight (1000 ppm) in the plastic material.	
10	Di-n-hexyl Phthalate (DnHP)	84-75-3	ALL	Intentionally added or 0.1% by weight (1000 ppm) in the product	
11	4,4'-isopropylidenediphenol (BPA)	80-05-7	ALL	Intentionally added or 0.1% by weight (1000 ppm) in the product	
12	REACH Regulation Substances of SVHC Candidate List	See Appendix 4 ⑤	ALL	0.1% by weight (1000 ppm) in parts	
13	Phenol, Isopropylated Phosphate(3 : 1) (PIP3 : 1) )	68937-41-7	Lubricants and greases in parts Recycled resin part in parts	Report the content	
14	Dechlorane Plus™ TM [covering any of its individual anti- and syn-isomers or any combination thereof]	See Appendix 4 ⑥	ALL	0.1% by weight (1000 ppm) in parts	

### Appendix 3 List of sample substances considered as "Prohibited substances"

This list shows examples of applicable substances. Any substance not included in this list but classified as a "prohibited substance" shall be reported.

Substance group	substance name	CAS RN®
① Cadmium / Cadmium Compounds	Cadmium	7440-43-9
	Cadmium oxide	1306-19-0
	Cadmium sulfide	1306-23-6
	Cadmium chloride	10108-64-2
	Cadmium sulphate	10124-36-4
	Cadmium nitrate	10325-94-7
	Cadmium carbonate	513-78-0
	Cadmium hydroxide	21041-95-2
	Other cadmium compounds	–
② 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(II) 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 hydroxidcarbonate	1344-36-1
	Lead 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
	Lead dinitrate	10099-74-8
Other lead compounds	–	
③ 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	–
④ 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
	C.I. Pigment Yellow 34	1344-37-2
	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 hydroxyoctaoxidizincate dichromate	11103-86-9
	Other hexavalent chromium compounds	–

Substance group	substance name	CAS RN®
⑤ 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
	Pentabromobiphenyl	56307-79-0
	Hexabromobiphenyl	59080-40-9
	hexabromo-1,1-biphenyl	36355-01-8
	Firemaster FF-1	67774-32-7
	Heptabromobiphenyl	35194-78-6
	Octabromobiphenyl	61288-13-9
	Nonabiphenyl	27753-52-2
Decabromobiphenyl	13654-09-6	
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
	Pentabromodiphenyl ether	32534-81-9
	Hexabromodiphenyl ether	36483-60-0
	Heptabromodiphenylether	68928-80-3
	Octabromodiphenyl ether	32536-52-0
	Nonabromodiphenylether	63936-56-1
	Decabromodiphenyl ether	1163-19-5
	⑦ Selected Phthalates Group 1 (BBP, DBP, DEHP)	Butyl benzyl phthalate (BBP)
Dibutylphthalate (DBP)		84-74-2
Bis (2-ethylhexyl) phthalate (DEHP)		117-81-7
Diisobutyl phthalate		84-69-5
⑧ 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
⑨ 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
⑩ 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	

Substance group	substance name	CAS RN®
⑩ Azocolourants and azodyes which form certain aromatic amines (con'd)	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
⑪ 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)	76-12-0
	1,1,2,2-Tetrachloro-1,2-difluoroethane (CFC-112)	76-12-0
	1,1,1,2-Tetrachloro-2,2-difluoroethane (CFC-112a)	76-11-9
	Trichlorotrifluoroethane (CFC-113)	76-13-1
	1,1,2-Trichloro-1,2,2 trifluoroethane (CFC-113)	76-13-1
	1,1,1-Trichloro-2,2,2 trifluoroethane (CFC-113a)	354-58-5
	Dichlorotetrafluoroethane (CFC-114)	76-14-2
	Monochloropentafluoroethane (CFC-115)	76-15-3
	Heptachlorofluoropropane (CFC-211)	135401-87-5
	1,1,1,2,2,3,3-Heptachloro-3-fluoropropane (CFC-211aa)	422-78-6
	1,1,1,2,3,3,3-Heptachloro-2-fluoropropane (CFC-211ba)	422-81-1
	Hexachlorodifluoropropane (CFC-212)	3182-26-1
	Pentachlorotrifluoropropane (CFC-213)	2354-06-5 134237-31-3
	Tetrachlorotetrafluoropropane (CFC-214)	29255-31-0
	1,2,2,3-Tetrachloro-1,1,3,3-tetrafluoropropane (CFC-214aa)	2268-46-4
	1,1,1,3-Tetrachloro-2,2,3,3-tetrafluoropropane (CFC-214cb)	–
	Trichloropentafluoropropane (CFC-215)	1599-41-3
	1,2,2-Trichloropentafluoropropane (CFC-215aa)	1599-41-3
	1,2,3-Trichloropentafluoropropane (CFC-215ba)	76-17-5
	1,1,2-Trichloropentafluoropropane (CFC-215bb)	–
	1,1,3-Trichloropentafluoropropane (CFC-215ca)	–
	1,1,1-Trichloropentafluoropropane (CFC-215cb)	4259-43-2
	Dichlorohexafluoropropane (CFC-216)	661-97-2
	Chloroheptafluoropropane (CFC-217)	422-86-6
	Bromochloromethane (Halon-1011)	74-97-5
	Dibromodifluoromethane (Halon-1202)	75-61-6
	Bromochlorodifluoromethane(Halon-1211)	353-59-3
	Bromotrifluoromethane (Halon-1301)	75-63-8
	Dibromotetrafluoroethane (Halon-2402)	124-73-2
	Tetrachloromethane (carbon tetrachloride)	56-23-5
	1,1,1-Trichloroethane (methylchloroform)	71-55-6
	Bromomethane (methyl bromide)	74-83-9
	Bromoethane (ethyl bromide)	74-96-4
	Trifluoriodomethane (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	

Substance group	substance name	CAS RN®
⑪ Ozone Depleting Substances (con'd)	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)	134237-32-4
	1,1,2,2-Tetrachloro-1-fluoroethane (HCFC-121)	354-14-3
	1,1,1,2-Tetrachloro-2-fluoroethane (HCFC-121a)	354-11-0
	Trichlorodifluoroethane (HCFC-122)	41834-16-6
	1,2,2-Trichloro-1,1-difluoroethane (HCFC-122)	354-21-2
	1,1,2-Trichloro-1,2-difluoroethane (HCFC-122a)	354-15-4
	1,1,1-Trichloro-2,2-difluoroethane (HCFC-122b)	354-12-1
	Dichlorotrifluoroethane (HCFC-123)	34077-87-7
	1,1-Dichloro-2,2,2-trifluoroethane (HCFC-123)	306-83-2
	1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123a)	354-23-4
		90454-18-5
	1,1-Dichloro-1,2,2-trifluoroethane (HCFC-123b)	812-04-4
	Chlorotetrafluoroethane (HCFC-124)	63938-10-3
	2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124)	2837-89-0
	1-chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)	354-25-6
	Trichlorofluoroethane (HCFC-131)	27154-33-2; (134237-34-6)
	1,1,2-Trichloro-2-fluoroethane (HCFC-131)	359-28-4
	1,1,2-Trichloro-1-fluoroethane (HCFC-131a)	811-95-0
	1,1,1-Trichloro-2-fluoroethane (HCFC-131b)	2366-36-1
	Dichlorodifluoroethane (HCFC-132)	25915-78-0
	1,2-Dichloro-1,2-difluoroethane (HCFC-132)	431-06-1
	1,1-Dichloro-2,2-difluoroethane (HCFC-132a)	471-43-2
	1,2-Dichloro-1,1-difluoroethane (HCFC-132b)	1649-08-7
	1,1-Dichloro-1,2-difluoroethane (HCFC-132c)	1842-05-3
	Chlorotrifluoroethane (HCFC-133)	1330-45-6
	1-Chloro-1,2,2-trifluoroethane (HCFC-133)	431-07-2
	2-Chloro-1,1,1-trifluoroethane (HCFC-133a)	75-88-7
	1-Chloro-1,1,2-trifluoroethane (HCFC-133b)	421-04-5



Substance group	substance name	CAS RN®
⑪ Ozone Depleting Substances (con'd)	Dichlorofluoroethane(HCFC-141)	25167-88-8
	1,2-Dichloro-1-fluoroethane (HCFC-141)	430-57-9
	1,1-Dichloro-2-fluoroethane (HCFC-141a)	430-53-5
	1,1-Dichloro-1-fluoroethane (HCFC-141b)	1717-00-6
	Chlorodifluoroethane (HCFC-142)	25497-29-4
	2-Chloro-1,1-Difluoroethane (HCFC-142)	338-65-8
	1-Chloro-1,1-difluoroethane (HCFC-142b)	75-68-3
	1-Chloro-1,2-difluoroethane (HCFC-142a)	338-64-7
	Chlorofluoroethane (HCFC-151)	110587-14-9
	1-Chloro-2-fluoroethane (HCFC-151)	762-50-5
	1-Chloro-1-fluoroethane (HCFC-151a)	1615-75-4
	Hexachlorofluoropropane (HCFC-221)	134237-35-7 29470-94-8
	1,1,1,2,2,3-Hexachloro-3-fluoropropane (HCFC-221ab)	422-26-4
	Pentachlorodifluoropropane(HCFC-222)	134237-36-8
	1,1,1,3,3-pentachloro-2,2-difluoropropane (HCFC-222ca)	422-49-1
	1,2,2,3,3-pentachloro-1,1-difluoropropane (HCFC-222aa)	422-30-0
	Tetrachlorotrifluoropropane (HCFC-223)	134237-37-9
	1,1,3,3-Tetrachloro-1,2,2-trifluoropropane (HCFC-223ca)	422-52-6
	1,1,1,3-Tetrachloro-2,2,3-trifluoropropane (HCFC-223cb)	422-50-4
	Trichlorotetrafluoropropane (HCFC-224)	134237-38-0
	1,3,3-Trichloro-1,1,2,2-tetrafluoropropane (HCFC-224ca)	422-54-8
	1,1,3-Trichloro-1,2,2,3-tetrafluoropropane (HCFC-224cb)	422-53-7
	1,1,1-Trichloro-2,2,3,3-tetrafluoropropane (HCFC-224cc)	422-51-5
	Dichloropentafluoropropane (HCFC-225)	127564-92-5
	2,2-Dichloro-1,1,1,3,3-pentafluoropropane(HCFC-225aa)	128903-21-9
	2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC-225ba)	422-48-0
	1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225bb)	422-44-6
	3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)	422-56-0
	1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)	507-55-1
	pentafluoropropane(HCFC-225cc)	13474-88-9
	1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC-225da)	431-86-7
	1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225ea)	136013-79-1
	1,1-Dichloro-1,2,3,3,3-pentafluoropropane(HCFC-225eb)	111512-56-2
	Chlorohexafluoropropane (HCFC-226)	134308-72-8
	2-Chloro-1,1,1,3,3,3-hexafluoropropane (HCFC-226da)	431-87-8
	Pentachlorofluoropropane (HCFC-231)	134190-48-0
	1,1,1,2,3-pentachloro-2-fluoropropane (HCFC-231bb)	421-94-3
	Tetrachlorodifluoropropane (HCFC-232)	134237-39-1
	1,1,1,3-Tetrachloro-3,3-difluoropropane (HCFC-232fc)	460-89-9
	Trichlorotrifluoropropane (HCFC-233)	134237-40-4
	1,1,1-Trichloro-3,3,3-trifluoropropane (HCFC-233fb)	7125-83-9
	Dichlorotetrafluoropropane (HCFC-234)	127564-83-4
	1,2-Dichloro-1,2,3,3-tetrafluoropropane (HCFC-234db)	425-94-5

Substance group	substance name	CAS RN®	
⑪ Ozone Depleting Substances (con'd)	Chloropentafluoropropane (HCFC-235)	134237-41-5	
	1-Chloro-1,1,3,3,3-pentafluoropropane (HCFC-235fa)	460-92-4	
	Tetrachlorofluoropropane (HCFC-241)	134190-49-1	
	1,1,2,3-Tetrachloro-1-fluoropropane (HCFC-241db)	666-27-3	
	Trichlorodifluoropropane (HCFC-242)	134237-42-6	
	1,3,3,Trichloro-1,1-difluoropropane (HCFC-242fa)	460-63-9	
	Dichlorotrifluoropropane (HCFC-243)	134237-43-7	
	1,1-Dichloro-1,2,2-trifluoropropane (HCFC-243cc)	7125-99-7	
	1,1-Dichloro-1,2,2-trifluoropropane (HCFC-243cc)	338-75-0	
	3,3-Dichloro-1,1,1-trifluoropropane (HCFC-243fa)	460-69-5	
	Chlorotetrafluoropropane (HCFC-244)	134190-50-4	
	3-Chloro-1,1,2,2-tetrafluoropropane (HCFC-244ca)	679-85-6	
	1-Chloro-1,1,2,2-tetrafluoropropane (HCFC-244cc)	421-75-0	
	Trichlorofluoropropane (HCFC-251)	134190-51-5	
	1,1,3-Trichloro-1-fluoropropane (HCFC-251fb)	818-99-5	
	1,1,2-Trichloro-1-fluoropropane (HCFC-251dc)	421-41-0	
	Dichlorodifluoropropane (HCFC-252)	134190-52-6	
	1,3-Dichloro-1,1-difluoropropane (HCFC-252fb)	819-00-1	
	Chlorotrifluoropropane (HCFC-253)	134237-44-8	
	3-Chloro-1,1,1-trifluoropropane (HCFC-253fb)	460-35-5	
	Dichlorofluoropropane (HCFC-261)	134237-45-9	
	1,1-Dichloro-1-fluoropropane (HCFC-261fc)	7799-56-6	
	1,2-Dichloro-2-fluoropropane (HCFC-261ba)	420-97-3	
	Chlorodifluoropropane (HCFC-262)	134190-53-7	
	1-Chloro-2,2-difluoropropane (HCFC-262ca)	420-99-5	
	2-Chloro-1,3-difluoropropane (HCFC-262da)	102738-79-4	
	1-Chloro-1,1-difluoropropane (HCFC-262fc)	421-02-3	
	Chlorofluoropropane (HCFC-271)	134190-54-8	
	2-Chloro-2-fluoropropane (HCFC-271ba)	420-44-0	
	1-Chloro-1-fluoropropane (HCFC-271fb)	430-55-7	
	⑫ 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	

Substance group	substance name	CAS RN®
⑬ PFOS(Perfluorooctane sulfonates)	2-Propenoic acid, 2-methyl-, dodecyl ester, polymers with 2-[methyl[(perfluoro-C4-8-alkyl)-sulfonyl]amino]ethyl acrylate and vinylidene chloride	306975-62-2
	Glycine, N-ethyl-N-[(heptadecafluorooctyl)sulfonyl]-, potassium salt	2991-51-7
	Sodium pentadecafluorooctanoate	335-95-5
⑭ Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA	Pentadecafluorooctanoic acid (PFOA)	335-67-1
	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1
	Sodium salt of Perfluorooctanoic acid	335-95-5
	Potassium salt of Perfluorooctanoic acid	2395-00-8
	Silver(1+) salt of Perfluorooctanoic acid	335-93-3
	Perfluorooctanoyl fluoride	335-66-0
	Methyl perfluorooctanoate	376-27-2
	Ethyl perfluorooctanoate	3108-24-5
	1-Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-	678-39-7
⑮ 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
⑯ Polychlorinated naphthalenes (more than 1 chlorine atoms)	Polychlorinated Naphthalenes (PCN)	70776-03-3
	1-Chloronaphthalene	90-13-1
	2-Chloronaphthalene	91-58-7
	1,5-Dichloronaphthalene	1825-30-5
	1,4-Dichloronaphthalene	1825-31-6
	1,2-Dichloronaphthalene	2050-69-3
	1,6-Dichloronaphthalene	2050-72-8
	1,7-Dichloronaphthalene	2050-73-9
	1,8-Dichloronaphthalene	2050-74-0
	2,3-Dichloronaphthalene	2050-75-1
	2,6-Dichloronaphthalene	2065-70-5
	1,3-Dichloronaphthalene	2198-75-6
	2,7-Dichloronaphthalene	2198-77-8
	Chloronaphthalene	25586-43-0
	Dichloronaphthalene	28699-88-9
	Pentachloronaphthalene	1321-64-8
	Trichloronaphthalene	1321-65-9
	Hexachloronaphthalene	1335-87-1
	Tetrachloronaphthalene	1335-88-2
	Perchloronaphthalene	2234-13-1
	1,4,6-Trichloronaphthalene	2437-54-9
	1,4,5-Trichloronaphthalene	2437-55-0
	1,4,5,8-Tetrachloronaphthalene	3432-57-3
	1,2,4,8-Tetrachloronaphthalene	6529-87-9
	1,2,4,5-Tetrachloronaphthalene	6733-54-6
	1,2,3,6,7,8-Hexachloronaphthalene	17062-87-2
	1,2,3,4-Tetrachloronaphthalene	20020-02-4
	1,3,5,8-Tetrachloronaphthalene	31604-28-1
	Heptachloronaphthalene	32241-08-0
	2,3,6,7-Tetrachloronaphthalene	34588-40-4
	1,2,4-Trichloronaphthalene	50402-51-2
	1,2,3-Trichloronaphthalene	50402-52-3
	1,3,5-Trichloronaphthalene	51570-43-5
1,2,6-Trichloronaphthalene	51570-44-6	
1,2,4,6-Tetrachloronaphthalene	51570-45-7	
1,2,3,5-Tetrachloronaphthalene	53555-63-8	
1,3,5,7-Tetrachloronaphthalene	53555-64-9	

Substance group	substance name	CAS RN®
⑩ Polychlorinated naphthalenes (more than 1 chlorine atoms) (con'd)	1,2,3,5,7-Pentachloronaphthalene	53555-65-0
	1,2,5-Trichloronaphthalene	55720-33-7
	1,2,7-Trichloronaphthalene	55720-34-8
	1,2,8-Trichloronaphthalene	55720-35-9
	1,3,6-Trichloronaphthalene	55720-36-0
	1,3,7-Trichloronaphthalene	55720-37-1
	1,3,8-Trichloronaphthalene	55720-38-2
	1,6,7-Trichloronaphthalene	55720-39-3
	2,3,6-Trichloronaphthalene	55720-40-6
	1,2,3,7-Tetrachloronaphthalene	55720-41-7
	1,3,6,7-Tetrachloronaphthalene	55720-42-8
	1,4,6,7-Tetrachloronaphthalene	55720-43-9
	1,2,3,4,5,6,7-Heptachloronaphthalene	58863-14-2
	1,2,3,4,5,6,8-Heptachloronaphthalene	58863-15-3
	1,2,3,4,5,6-Hexachloronaphthalene	58877-88-6
	1,2,4,7-Tetrachloronaphthalene	67922-21-8
	1,2,5,6-Tetrachloronaphthalene	67922-22-9
	1,2,5,7-Tetrachloronaphthalene	67922-23-0
	1,2,6,8-Tetrachloronaphthalene	67922-24-1
	1,2,3,4,5-Pentachloronaphthalene	67922-25-2
	1,2,3,4,6-Pentachloronaphthalene	67922-26-3
	1,2,3,4,5,7-Hexachloronaphthalene	67922-27-4
	1,2,4,5,6,8-Hexachloronaphthalene	90948-28-0
	1,2,4,5,7,8-Hexachloronaphthalene	103426-92-2
	1,2,3,4,5,8-Hexachloronaphthalene	103426-93-3
	1,2,3,5,7,8-Hexachloronaphthalene	103426-94-4
	1,2,3,5,6,8-Hexachloronaphthalene	103426-95-5
	1,2,3,4,6,7-Hexachloronaphthalene	103426-96-6
	1,2,3,5,6,7-Hexachloronaphthalene	103426-97-7
	1,2,3,6-Tetrachloronaphthalene	149864-78-8
	1,2,6,7-Tetrachloronaphthalene	149864-79-9
	1,2,5,8-Tetrachloronaphthalene	149864-80-2
	1,2,3,8-Tetrachloronaphthalene	149864-81-3
	1,2,7,8-Tetrachloronaphthalene	149864-82-4
	1,2,3,7,8-Pentachloronaphthalene	150205-21-3
	1,3,6,8-Tetrachloronaphthalene	150224-15-0
	1,2,3,6,7-Pentachloronaphthalene	150224-16-1
	1,2,4,6,7-Pentachloronaphthalene	150224-17-2
	1,2,3,5,6-Pentachloronaphthalene	150224-18-3
	1,2,4,5,7-Pentachloronaphthalene	150224-19-4
	1,2,4,5,6-Pentachloronaphthalene	150224-20-7
	1,2,4,7,8-Pentachloronaphthalene	150224-21-8
	1,2,4,6,8-Pentachloronaphthalene	150224-22-9
1,2,3,6,8-Pentachloronaphthalene	150224-23-0	
1,2,3,5,8-Pentachloronaphthalene	150224-24-1	
1,2,4,5,8-Pentachloronaphthalene	150224-25-2	
Other polychlorinated Naphthalenes	–	
⑪ Polychlorinated Terphenyls (PCTs)	Polychlorinated Terphenyls (all isomers and congeners)	61788-33-8
⑫ 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 RN®	
⑲ 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	–	
⑳ Tri-substituted organostannic compounds	Triphenyltin=N, Ndimethyldithiocarbamate	1803-12-9	
	Triphenyltin fluoride	379-52-2	
	Triphenyltin acetate	900-95-8	
	Triphenyltin chloride	639-58-7	
	Triphenyltin hydroxide	76-87-9	
	Triphenyltin fattyacid((9-11)salt)	18380-71-7 18380-72-8 47672-31-1 94850-90-5	
	Triphenyltinchloroacetate	7094-94-2	
	Tributyltinmethacrylate	2155-70-6	
	Bis(tributyltin)fumalate	6454-35-9	
	Tributyltinfluoride	1983-10-4	
	Bis(tributyltin)2,3-dibromosuccinate	31732-71-5	
	Tributyltinacetate	56-36-0	
	Tributyltinlaurate	3090-36-6	
	Bis(tributyltin)phthalate	4782-29-0	
	Copolymer of alkyl(c=8) acrylate,methyl methacrylate and tributyltin methacrylate	67772-01-4	
	Tributyltinsulfamate	6517-25-5	
	Bis(tributyltin)maleate	14275-57-1	
	Tributyltinchloride	1461-22-9 7342-38-3	
	Tributyltin cyclopentane carbonate=mixture	85409-17-2	
	Tributyltin-1, 2,3,4,4a, 4b, 5,6,10,10adecahydro-7- isopropyl-1, 4a-dimethyl-1-phenanthrenecarboxylatemix	26239-64-5	
	Other tri-substituted organostannic compounds	–	
㉑ Dibutyltin (DBT) compounds	Dibutyltin oxide	818-08-6	
	Dibutyltin diacetate	1067-33-0	
	Dibutyltin dilaurate	77-58-7	
	Dibutyltin maleate	78-04-6	
	Dibutyltin dichloride	683-18-1	
	Other dibutyltin compounds	–	
㉒ Dioctyltin (DOT) compounds	Dioctyl Tin Oxide	870-08-6	
	Dioctyltin dilaurate	3648-18-8	
	Other Dioctyltin compounds	–	
㉓ Hexabromocyclododecane(HBCDD) and all major diastereoisomers	Hexabromocyclododecane (HBCDD)	25637-99-4 3194-55-6 4736-49-6 65701-47-5 138257-17-7 138257-18-8 138257-19-9 169102-57-2 678970-15-5 678970-16-6 678970-17-7	
	alpha-hexabromocyclododecane	134237-50-6	
	beta-hexabromocyclododecane	134237-51-7	
	gamma-hexabromocyclododecane	134237-52-8	
	㉔ Nickel/Nickel Compounds	Nickel	7440-02-0
		Nickel(II) oxide	1313-99-1
		Nickel(II) carbonate	3333-67-3
		Nickel(II) sulfate	7786-81-4

Substance group	substance name	CAS RN®
②⑤ Polycyclic aromatic hydrocarbon (PAH)	Benzo[a]pyren	50-32-8
	Benzo[e]pyren	192-97-2
	Benzo[a]anthracen	56-55-3
	Benzo[b]fluoranthen	205-99-2
	Benzo[j]fluoranthen	205-82-3
	Benzo[k]fluoranthen	207-08-9
	Chrysen	218-01-9
	Dibenzo[a,h]anthracen	53-70-3
	Benzo[ghi]perylen	191-24-2
	Indeno[1,2,3-cd]pyren	193-39-5
	Acenaphthylen	208-96-8
	Acenaphthen	83-32-9
	Fluoren	86-73-7
	Phenanthren	85-01-8
	Pyren	129-00-0
	Anthracen	120-12-7
	Fluoranthen	206-44-0
Naphthalin	91-20-3	
②⑥ C9-C14 PFCAs, their salts and C9-C14 PFCA-related substances	Perfluorononan-1-oic-acid (PFNA :C9-PFCA)	375-95-1
	Nonadecafluorodecanoic acid (PFDA :C10-PFCA)	335-76-2
	Perfluoroundecanoic acid (PFUnDA :C11-PFCA)	2058-94-8
	Perfluorododecanoic acid (PFDoDA :C12-PFCA)	307-55-1
	Perfluorotridecanoic acid (PFTTrDA :C13-PFCA)	72629-94-8
	Perfluorotetradecanoic acid (PFTDA :C14-PFCA)	376-06-7
	Sodium salt of perfluorononan-1-oicacid	21049-39-8
	Ammonium salt of perfluorononan-1-oic-acid	4149-60-4
	Decanoic acid, nonadecafluoro-,sodium salt	3830-45-3
	Ammonium nonadecafluorodecanoate	3108-42-7

## Appendix 4 List of sample substances considered as "Reportable substances"

物質群	例示物質名 ( 英文名 )	CAS RN®
① 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]	—
	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	94334-64-2
	TBBA carbonate oligomer, 2,4,6-tribromo-phenol terminated	71342-77-3
	TBBA-bisphenol A-phosgene polymer	32844-27-2
	Brominated epoxy resin end-capped with tribromophenol	139638-58-7
	Brominated epoxy resin end-capped with tribromophenol	135229-48-0
	TBBA-(2,3-dibromo-propyl-ether)	21850-44-2
	TBBA bis-(2-hydroxy-ethyl-ether)	4162-45-2
	TBBA-bis-(allyl-ether)	25327-89-3
	TBBA-dimethyl-ether	37853-61-5
	Tetrabromo-bisphenol S	39635-79-5
	TBBS-bis-(2,3-dibromo-propyl-ether)	42757-55-1
	2,4-Dibromo-phenol	615-58-7
	2,4,6-tribromo-phenol	118-79-6
	Pentabromo-phenol	608-71-9
	2,4,6-Tribromo-phenyl-alltl-ether	3278-89-5
	Tribromo-phenyl-allyl-ether, unspecified	26762-91-4
	Bis(methyl)tetrabromo-phtalate	55481-60-2
	Bis(2-ethylhexyl)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-dicarboximide)	52907-07-0	
2,3-Dibromo-2-butene-1,4-diol	3234-02-4	

物質群	例示物質名 ( 英文名 )	CAS RN®
① Brominated flame retardants (other than PBBs, PBDEs, or HBCDD) (con'd)	Dibromo-neopentyl-glycol	3296-90-0
	Dibromo-propanol	96-13-9
	Tribromo-neopentyl-alcohol	36483-57-5
	Poly tribromo-styrene	57137-10-7
	Tribromo-styrene	61368-34-1
	Dibromo-styrene grafted PP	171091-06-8
	Poly-dibromo-styrene	31780-26-4
	Bromo-/Chloro-paraffins	68955-41-9
	Bromo-/Chloro-alpha-olefin	82600-56-4
	Vinylbromide	593-60-2
	Tris-(2,3-dibromo-propyl)-isocyanurate	52434-90-9
	Tris(2,4-Dibromo-phenyl) phosphate	49690-63-3
	Tris(tribromo-neopentyl) phosphate	19186-97-1
	Chlorinated and brominated phosphate ester	125997-20-8
	Pentabromo-toluene	87-83-2
	Pentabromo-benzyl bromide	38521-51-6
	1,3-Butadiene homopolymer,brominated	68441-46-3
	Pentabromo-benzyl-acrylate, monomer	59447-55-1
	Pentabromo-benzyl-acrylate, polymer	59447-57-3
	Decabromo-diphenyl-ethane	84852-53-9
	Tribromo-bisphenyl-maleinimide	59789-51-4
	Tetrabromo-chyco-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	—
② 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
	Tris(1,3-dichloro-2-propyl)phosphate	13674-87-8
	Other Chlorinated Flame Retardants	—
③ Perchlorates	Lithium perchlorate	7791-03-9
	Ammonium perchlorate	7790-98-9
	Barium perchlorate	13465-95-7
	Lead perchlorate	13637-76-8
	Magnesium Perchlorate	10034-81-8
	Perchloric acid, cobalt (2+) salt	13455-31-7
	Perchloric acid, mercury(2+) salt	7616-83-3
	Perchloric acid, nickel(2+) salt, hexahydrate	13520-61-1
	Nickel perchlorate	13637-71-3
	Potassium Perchlorate	7778-74-7
	Sodium Perchlorate	7601-89-0
Thallium(3+) perchlorate	15596-83-5	
④ Polyvinyl Chloride (PVC) and PVC Copolymers	Polyvinyl chloride (PVC)	9002-86-2
	Other Polyvinyl chlorides	—
	PVC Copolymers	—
⑤ REACH Regulation Substances of SVHC Candidate List	Cobalt dichloride	7646-79-9
	Diarsenic pentoxide	1303-28-2
	Diarsenic trioxide	1327-53-3
	Tris(2-chloroethyl)phosphate	115-96-8
This list shows substances in the IEC62474 database only among substances on the candidate substance list of REACH regulation. (Excep the substances included "Prohibited substances" on Appendix 2.)		



物質群	例示物質名 ( 英文名 )	CAS RN®
⑤ REACH Regulation Substances of SVHC Candidate List (con'd)	Boric Acid	10043-35-3 11113-50-1
	Disodium tetraborate, anhydrous	1330-43-4
	Disodium tetraborate, pentahydrate	12179-04-3
	Disodium tetraborate, decahydrate	1303-96-4
	Tetraboron disodium heptaoxide, hydrate	12267-73-1
	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4
	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6
	Bis(2-methoxyethyl) ether	111-96-6
	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9
	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2
	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4
	Diboron trioxide	1303-86-2
	Hexahydromethylphthalic anhydride	25550-51-0
	Hexahydro-4-methylphthalic anhydride	19438-60-9
	Hexahydro-1-methylphthalic anhydride	48122-14-1
	Hexahydro-3-methylphthalic anhydride	57110-29-9
	N,N-dimethylformamide	68-12-2
	Lead titanium zirconium oxide	12626-81-2
	Silicic acid (H <sub>2</sub> Si <sub>2</sub> O <sub>5</sub> ), barium salt (1:1), lead-doped	68784-75-8
	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0
	N-pentyl-isopentylphthalate	776297-69-9
	1,2-Diethoxyethane	629-14-1
	Lead oxide sulfate	12036-76-9
	[Phthalato(2-)]dioxotrilead	69011-06-9
	Dioxobis(stearato)trilead	12578-12-0
	Fatty acids, C16-18, lead salts	91031-62-8
	Lead cyanamidate	20837-86-9
	Pentalead tetraoxide sulphate	12065-90-6
	Pyrochlore, antimony lead yellow	8012-00-8
	Sulfurous acid, lead salt, dibasic	62229-08-7
	Trilead dioxide phosphonate	12141-20-7
	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0
	Disodium 4-amino-3'-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7
	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7
	Trixylyl phosphate	25155-23-1
	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4
	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1
	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	15571-58-1
	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate (EC No. 201-559-5)	68515-51-5, 68648-93-1
	1,3-propanesultone	1120-71-4
	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1
	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3

物質群	例示物質名 ( 英文名 )	CAS RN®
⑤ REACH Regulation Substances of SVHC Candidate List (con'd)	Perfluorohexane-1-sulphonic acid	355-46-4
	Decamethylcyclopentasiloxane	541-02-6
	Dicyclohexyl phthalate	84-61-7
	Disodium octaborate	12008-41-2
	Dodecamethylcyclohexasiloxane	540-97-6
	Octamethylcyclotetrasiloxane	556-67-2
	Terphenyl, hydrogenated	61788-32-7
	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6
	Diisohexyl phthalate	71850-09-4
	Dibutylbis(pentane-2,4-dionato-O,O')tin	22673-19-4
	Bis(2-(2-methoxyethoxy)ethyl)ether	143-24-8
	Stannane, dioctyl-, bis(coco acyloxy) derivs.	91648-39-4
	dioctyltin dilaurate; stannane, dioctyl-, bis(coco acyloxy) derivs.	-
	⑥ Dechlorane Plus™ TM [covering any of its individual anti- and syn- isomers or any combination thereof]	Escapeflam DK-15(Dechloran A)
Dechlorane Plus Anti		135821-74-8
Dechlorane Plus Syn		135821-03-3

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