

**YASKAWA**

Document No. ZKS-014

**Yaskawa Group**

**Green Procurement Guidelines**

**Ed 5**

Yaskawa Electric Corporation

Created: December 15, 2003 (Ed1)  
Revised: December 15, 2010 (Ed4)  
Revised: December 18, 2012 (Ed4.1)  
Revised: December 25, 2013 (Ed4.2)  
Revised: December 9, 2016 (Ed5)

## Introduction

Global awareness of the need to protect and maintain the environment is growing, taking shape in organized efforts in a number of fields including politics, economics, industry, and civic life. To facilitate the creation of a sustainable society, it is imperative that we promote resource conservation, recycling, energy conservation, the prevention of global warming, and the elimination of restricted chemicals, as well as environmentally conscious technological innovations and manufacturing methods.

At Yaskawa Electric Corporation, we are advancing environmentally conscious activities in a wide variety of aspects, from product development to operations in the plant and office. We endeavor to develop products with a minimal environmental impact at every stage of the product life cycle, from raw material procurement, manufacturing, distribution and use, to disposal and recycling. This task, however, cannot be sufficiently handled by our environmental conservation efforts alone. Inevitably, procurement of materials that impose a minimal environmental impact is of great necessity and importance. In order to provide standards to ensure that these activities proceed smoothly, we issued Green Procurement Guidelines in December of 2003. However, these guidelines have been revised in light of Yaskawa Group Controlled Chemical Substances, SVHC of European REACH regulations, and survey of parts for automobile, and to accommodate the ever-increasing environmental demands of customers and society. Thus, we will continue to work with our suppliers to develop environmentally friendly products and advance business activities that address environmental concerns.

We thank you for your understanding of the importance of tackling environmental issues, and look forward to your continued support.

Yaskawa Electric Corporation  
Michiaki HIGUCHI,  
Head of Procurement Department

Satoshi GONDO,  
Head Environmental Management Department

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## I. Yaskawa Group Environmental Policies

### ◆ Environmental Philosophy

Based on the Management Principles of the Yaskawa Group, we recognize that the conservation of the global environment is one of the most important issues for all humankind. In every stage of our business operation, we contribute to the realization of a sustainable society through our proactive environmentally conscious actions.

### ◆ Environmental Action Guidelines

#### **1 Participation by everyone**

We strongly believe that we all should participate and take responsibility in order to achieve realization of biodiversity conservation, and a low-carbon and recycle-based society.

#### **2 Environmental contribution by innovative technologies**

For the future prosperity of society, we will contribute to the improvement of the global environment through our products and services developed by technological innovation that will be useful in a wide range of applications in communities worldwide.

#### **3 Environmental consideration of products and services**

We strive to reduce the environmental impacts of our products and services, for their entire life-cycle, from research and development, product design, procurement, manufacturing, distribution and usage through to end-of-life handling.

#### **4 Aiming for future-oriented goals and objectives**

We aim to heighten social and environmental excellence not only by complying with applicable environmental laws and regulations but also by establishing our own future oriented goals and objectives. We will continue to improve our environmental management and to endeavor to minimize environmental risks.

#### **5 Improvement of environmental awareness**

We strive to improve environmental awareness among all of us by education and enlightenment about our relationship with the environment from a broad perspective so that each of us can independently implement the environmental activities.

#### **6 Information disclosure and communication**

We are committed to disclosing information about our environmental activities and communicate proactively and openly with stakeholders for deep mutual understanding.

## II. Yaskawa Group Green Procurement Guidelines

### 1. Guideline objectives

This document provides guidelines for implementing the Green Procurement Criteria, which was established by Yaskawa group companies (hereafter: "Yaskawa Electric" or simply "we" or "our company") in order to actualize our company's Environmental Protection Policy, which states: "by incorporating environmental conservation efforts in every aspect of our business activities." Yaskawa Electric procures materials that have a minimal impact on the environment ("Green Procurement") to create environmentally conscious products and contribute to the protection of the Earth's environment.

### 2. Scope of application for guidelines

These Guidelines shall apply to all materials procured by all offices of Yaskawa Electric.

#### a) Scope of application to parts and materials

The Guidelines shall apply to the following parts, materials, and other items used (that is, that form part of the structure of the product) in products designed, manufactured, and sold by our company:

- (1) Parts and materials (including electronic parts, processed parts, raw materials, packaging materials, and packing materials)
- (2) Assembly such as function unit, module, and printed circuit board.
- (3) Component materials such as working materials (solder, adhesive, ink, grease, tape, etc.)
- (4) Instruction manuals (including ink, adhesive, labels, and coating materials)
- (5) Packaging materials used to facilitate the transporting of parts and materials to be shipped to our company (items recalled by the supplier are exempt).

#### b) Scope of application to products

- (1) Other company's products that incorporate our company's products into goods that are sold as final products by our company.
- (2) Products that our company outsources the design and manufacturing to a third party and sells under our company's brand name.
- (3) Products for sales promotion purposes (such as free samples to our customers)
- (4) Packaging materials of products and packaging materials used to facilitate the transporting of products to be shipped to our company (items recalled by the supplier are exempt).

### 3. Rationale behind Green Procurement Guidelines & procedures required before procurement transactions can begin.

#### a) Rationale behind Green Procurement Guidelines

Green Procurement Guidelines specify the Selection Criteria for Suppliers and the Selection Criteria for Procured Materials in order ensure the procurement of materials that have a minimal impact on the environment. Yaskawa Electric has a wide open-door policy and provides equal

opportunity to all suppliers. We take into account not only factors such as quality, price, and time of delivery in our selection of suppliers, but also their efforts to reduce environmental impacts in their business activities. In addition, with regard to the selection of materials for procurement, only materials that meet the requirements set forth in the Green Procurement Criteria will be considered for purchasing.

Evaluations of suppliers and materials are carried out according to two variables: whether a system for environmental activities has been established and implemented, and whether the results of those activities meet our company's standards.

<Rationale behind the Green Procurement Criteria>

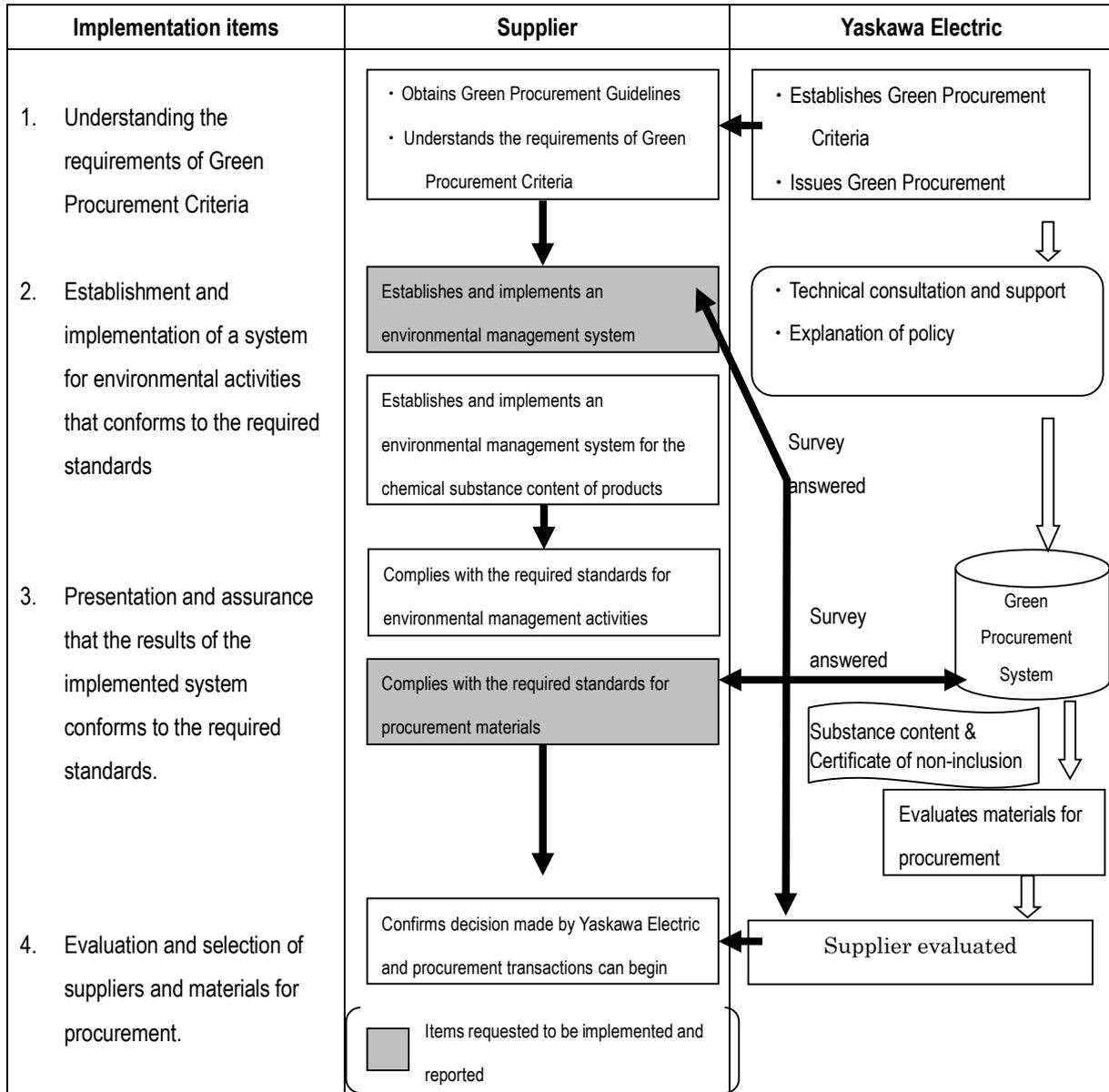
	System for Activities		Results of Activities	
Selection criteria for suppliers	(1)	Has established and implemented an environmental management system	(2)	Complies with environmental laws and regulations
Selection criteria for procured materials	(3)	Has established and implemented a management system for the chemical substances contained in products	(4)	i) The non-inclusion of prohibited substances ii) Report on content of controlled substance(s) in materials ii) Certificate regarding the non-inclusion information

\*A report containing the information in (1) and (4), highlighted in grey, shall be requested.

- b) Procedures required before procurement transactions can begin.

Selection Criteria for Suppliers and Selection Criteria for Procured Materials are laid out on pages 7 - 9 in the Green Procurement Guidelines. Based on the information submitted by the supplier, we will evaluate to what extent the supplier's business activities and materials for procurement comply with the Green Procurement Guidelines. And based on this evaluation, we will procure the materials that comply with the Green Procurement Guidelines from suppliers that comply with the Green Procurement Guidelines.

<Flow leading up to procurement transactions>



#### 4. Green Procurement Criteria

In order to procure materials that have a minimal impact on the environment, we established the Selection Criteria for Suppliers and Selection Criteria for Procured Materials to ensure that only materials that comply with the criteria, from suppliers that comply with the criteria, are procured. Of the items below, we request a report on the following a)-(1) and b)-(2) regarding the results of implemented activities.

##### a) Selection Criteria for Suppliers

##### (1) Establishment and implementation of an environmental management system (request for implementation and report)

Supplier shall be selected by confirming and evaluating whether they have established and implemented an environmental management system based on the report submitted by the supplier to our company. Only suppliers that have fulfilled all requested items will be selected as a Green Procurement Approved Supplier.

However, suppliers who have an environmental management system that conforms to international standards such as ISO 14001 and EMAS (Eco-Management Audit Scheme), or have obtained third party certification such as KES Environmental System Standard, Eco Stage, or Eco Action 21, shall be considered to have fulfilled requirements (a) and (b) below.

The screening process shall be applied to all business institutions of the supplier that manufacture and/or sell materials for procurement to be shipped to our company. It does not apply to business institutions that do not manufacture and sell materials for procurement to be shipped to our company.

Even if a primary supplier is a trading company, that company will, as a rule, require evaluation. In such case, the trading company shall be responsible for evaluating and managing the activities implemented by the dealer or factory where the manufacture of goods to be shipped to our company is outsourced. Our company may verify directly whether such evaluation and management complies with our requested standards, if necessary.

##### (a) Establishment of an environmental management system

Roles, responsibilities, and procedures to implement the following shall be specified in writing.

##### i) Environmental policy

- Create a policy for environmental management activities.
- Disseminate said policy among employees.

##### ii) Planning

- Determine the environmental impact of business activities (environmental aspects survey)

- Survey relevant environmental laws and regulations
- Formulate a plan and targets for reducing environmental impacts in accordance with the results of the environmental aspects survey and environmental laws and regulations survey.

iii) Management of implementation

- Appoint a manager(s) for the environmental management system.
- Create a program to attain targets.
- Disseminate said program among employees.

iv) Evaluation of results and improvements

- Assess the progress of the plan, the state of achievement of targets, and compliance with relevant laws and regulations, and report findings to the management.

v) Management review

- Management shall review said findings, identify problems, and formulate solutions, and if necessary reflect it in the policy and/or plan.

(b) Implementation of environmental management system

Activities shall be implemented in accordance with the roles, responsibilities, and procedures as specified in "Establishment of environmental management system" above, and the results shall be recorded and stored.

(c) Frequency of reports

A questionnaire shall be provided, completed, and returned to our company before new business transactions can begin.

Should any changes be made to the submitted questionnaire, please submit said revisions at that time.

Survey may be conducted again at unspecified times.

(2) Compliance with environmental laws and regulations (request for implementation)

As a result of the establishment and implementation of the environmental management system provided in a) above, compliance with all relevant laws and regulations is requested. In order to do this, supplier must implement the following in each of their business institutions. Submission of periodical reports is not required; however, in the case that a problem (e.g. violation of laws) occurs, an explanation from the standpoint of social responsibility may be requested. This explanation will be taken into consideration when evaluating and selecting suppliers.

(a) Identification and understanding of relevant environmental laws and regulations

During the process of establishing an environmental management system, supplier shall identify all relevant environmental laws and regulations, confirm what said laws require, and incorporate them into the implementation plan (program) for their environmental management system.

(b) Confirmation of compliance with environmental laws and regulations

Supplier shall monitor that relevant environmental laws and regulations are being observed, and assess the status of the compliance with said laws and regulations.

b) Selection criteria for procured materials

(1) Establishment and implementation of management system for chemical substances contained in products (request for implementation)

It is requested that a system to ascertain and manage chemical substances contained in products to be shipped to our company be established and implemented. The contents of the system must conform to the Guidelines for the Management of Chemical Substances in Products (Ver. 3) issued by the Japan Green Procurement Survey Standardization Initiative (JGPSSI) in April 2013. The current Guidelines for the Management of Chemical Substances in Products can be downloaded at the following website:

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

In the future, a report concerning the implementation status may be requested. Use the Action Item & Check Sheet Ver.3 to create the report. This can be downloaded from the same address given above.

(2) Results of implemented management system for chemical substances in products (request for implementation and report)

It is requested that the establishment and implementation of a management system for chemical substances in products as specified in (1) above conform to items (a) – (c) below.

(a) Substances prohibited by our company shall not be used in materials to be procured by our company.

Supplier is requested to perform materials and process management to ensure that no substances are contained in materials to be procured by our company that are prohibited by our company as specified in the Yaskawa Electric Controlled Substances (Appendix 1). The phrase "no substances are contained in materials to be procured by our company that are prohibited" means that the intentional addition, filling, interfusion, attachment, etc., of substances of said List is prohibited, or the amount of prohibited substances must be below the regulated value specified on said List. For more details, please refer to the Yaskawa Electric Controlled Substances (Appendix 1).

(b) In the case that prohibited substances are contained in materials to be procured, the content shall be ascertained and reported.

In the case that prohibited substances specified in the Yaskawa Electric Controlled Substances (Appendix 1) are contained in materials to be procured by our company (including the inclusion of prohibited substances below the regulated value), supplier shall ascertain and report the content of said substance(s).

- As a rule, reports must be submitted using the JGPSSI Survey Response Tools. Please upload the JGP file created by the Tools.
- In light of relevant laws and regulations and/or upon request from our customers, a report in chemSHERPA file or JAMP AIS tool file may be requested.

About automobile parts, we may ask for IMDS Input or submission of JAMA sheet.

Refer to our Green Procurement System Operational Manual for details on how to access and use our Green Procurement System.

(c) Supplier shall pledge to not use substances prohibited by our company in materials to be procured by our company

Supplier's management representative(s) shall, on behalf of the supplier, pledge in writing that the prohibited substances specified in Yaskawa Electric Controlled Substances (Appendix 1) are not contained in materials to be procured by our company. Representative must fill out the required fields in our company's designated Non-inclusion Certificate form and submit it to us.

Submission of a Non-inclusion Certificate regarding the ten substances restricted by European RoHS is mandatory for materials to be procured for our company's European RoHS compliant products. However, for those that are difficult to respond to at the present moment, submission of a Non-inclusion Certificate regarding the six substances is acceptable, and it is requested to resubmit a Non-inclusion Certificate regarding the ten

substances by March 2018.

- Six substances (lead, cadmium, mercury, hexavalent chromium (chromium VI), polybrominated biphenyls (PBB), polybrominated diphenyl ethers (PBDE)
- Ten substances (lead, cadmium, mercury, hexavalent chromium (chromium VI), polybrominated biphenyls (PBB), polybrominated diphenyl ethers (PBDE), Bis (2-ethylhexyl)phthalate (DEHP), butyl benzyl phthalate (BBP), dibutyl phthalate (DBP), diisobutyl phthalate (DIBP)

Our company may expand the scope of this pledge to include the non-inclusion of other prohibited substances if necessary.

Note 1) How to answer survey in the case that supplier uses components designated by our company:

An answer must be given for all items to be shipped to our company, including said designated components.

Note 2) How to answer in the case that supplier uses items supplied from our company:

Do not include items supplied by our company in your responses.

Note 3) Notification of changes:

Supplier cannot make changes to materials specifications without notifying our company in advance, even if said changes are the result of improvements. Any changes to specifications or 4M must be submitted to us through a formal application for change. In the case that changes are made to the chemical substance content, said changes must be indicated in the application form.

## 5. Implementation of Green Procurement Guidelines

- a) These Guidelines shall also apply to the following companies in the Yaskawa Group: Each company shall determine when to implement Guidelines upon conferring with relevant supplier.

Yaskawa Controls Co., Ltd.

Yaskawa Motor Corporation

Yaskawa Logistec Corporation

The application of these Guidelines shall be expanded sequentially to other companies in the Yaskawa Group.

- b) These Guidelines will be revised as necessary in accordance with changes in relevant laws and regulations and social trends.

- c) Any information provided by suppliers will be handled with the utmost care.

## 6. Contact details

Parts Management Section, Procurement Division, Yaskawa Electric Corporation

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Edition History	Established	December 15, 2003	1st edition
	Revised	July 15, 2004	2nd edition
		September 20, 2007	3rd edition
		July 4, 2008	3rd edition (ver.2)
		(corrected CAS No. of chromium VI and certain ozone-depleting substances)	
		October 3, 2008	3rd edition (ver.3)
		(incorporated elimination of items removed from the RoHS Directive regarding PBDE)	
		December 15, 2010	Ed 4
		(addressed REACH regulations, conformed to JIG-101 Ed 3.1, changed system)	
		December 18, 2012	Ed 4.1
		(addressed REACH regulations, conformed to JIG-101 Ed 4.1, changed system)	
		December 25, 2013	Ed 4.2
		(conformed to JGPSS1ver4.3, addressed REACH regulations, automobile parts survey)	
		December 9, 2016	Ed 5
		(changed target chemical substances, added Non-inclusion Certificate (prohibition of inclusion of ten substances))	

## Appendix 1

### Yaskawa Group Controlled Chemical Substances

Yaskawa Electric Corporation

1st edition: September 20, 2007

Revised: December 15, 2010

Revised: December 18, 2012

Revised: December 25, 2013

Revised: December 9, 2016

## **Yaskawa Electric Controlled Chemical Substances**

### **1. Purpose**

This document aims to explain the chemical substances subject to this survey, and the handling of said substances that are contained in any parts, products, and materials to be shipped to our company from supplier.

### **2. Basic rationale behind selection of chemical substances**

This list of "controlled chemical substances" was created in conformity with the JIG (Joint Industry Guide) list of chemical substances that must be declared if they are contained in electrotechnical products, and selected from a part of the IEC 62474 database. However, for automobile parts, refer to GADSL.

### **3. Definition of terms**

#### **(a) JIG (Joint Industry Guide)**

A supply chain communication guide on declarable material composition in electrotechnical products released jointly by the Consumer Electronics Association (CEA), Digital Europe, and Japanese Green Procurement Survey Standardization Initiative (JGPSSI).

JIG complies with the requirements of laws and regulations regarding the declaration of the material composition of electrotechnical products across the supply chain, including chemical substances dealt with in REACH—the European Union regulations concerning the registration, evaluation, authorization and restriction of chemical substances.

#### **(b) CEA: Consumer Electronics Association (US)**

#### **(c) DIGITAL EUROPE: European industry association (formerly called the EICTA)**

#### **(d) JGPSSI: Japanese Green Procurement Survey Standardization Initiative**

#### **(e) Substances contained in products**

The content of chemical substances used in products, parts, materials and other items. This includes the addition, filling, interfusion, and attachment of chemical substances.

#### **(f) Intentional use**

Refers to the use of chemical substances in products, parts, materials, and packaging to actualize capabilities concerning specific functions, appearance, and quality.

#### **(g) Impurities**

Refers to substances contained in natural materials that cannot be completely removed with current technological standards in the refinement process of materials used, as well as to substances that cannot be completely removed with current technological standards such as by-products and catalytic residue in the manufacturing process. This does not include substances used intentionally.

#### **(h) Prohibited substances**

Refers to chemical substances that must not be contained in our company's products. These chemical substances consist of materials and chemical substances that are prohibited, restricted, or must be reported under current laws and regulations if used in products or parts. The intentional

use of these substances in materials for procurement is prohibited, and if a regulated value has been established for a substance, the concentration of said substance, including impurities, in materials for procurement must be below the specified regulated value.

(i) Time-limited prohibited substances

Refer to chemical substances the inclusion of which is prohibited after a fixed time limit.

(j) Controlled substances

Refers to chemical substances in which the content, and whether or not it is used in our company's products, must be ascertained in order to facilitate proper management in regard to environmental, health, and safety concerns, and disposal. The intentional use of these substances is not prohibited. If the concentration of a controlled substance exceeds the threshold value, or if said substance is intentionally included under the threshold value, the ascertainable concentration must be reported.

(k) Regulated value

Refers to the concentration of prohibited substances in materials for procurement that must be guaranteed when delivered to our company. This includes impurities.

(l) Concentration

Refers to the homogeneous material mass that contains the substance in question, represented as a denominator. "Homogeneous material" means each material that cannot be broken down mechanically (e.g. chemical compound, polymer alloy, metal alloy, or single layer of paint, print, or plating).

(m) IEC 62474

International Electrotechnical Commission. IEC 62474 - Material Declaration for Products of and for the Electrotechnical Industry.

(n) GADSL

Global Automotive Declarable Substance List.

#### 4. Composition of controlled chemical substances

Controlled chemical substances are divided into prohibited substances, time-limited prohibited substances, and controlled substances.

In light of relevant laws and regulations and/or upon request of customer, a report on the substance content in materials and/or restriction of chemical substances not contained in the list of controlled substances may be requested.

	Substance name	Restricted Substance Classification	RoHS substances	remarks column	Examples of Use
1	Cadmium and its compounds	Prohibited	⊙		Pigment, anticorrosion,surfacetreatment
2	Hexavalent chromium compounds	Prohibited	⊙		Pigment, paint, ink,catalyst, plating
3	Lead and its compounds	Prohibited	⊙		Rubber hardener,pigment, paint,lubricant
4	Mercury and its compounds	Prohibited	⊙		Fluorescent bulb,contact point
5	Polybrominated biphenyls (PBBs)	Prohibited	⊙		Flame retardant
6	Polybrominated diphenyl ethers (PBDEs)	Prohibited	⊙		Flame retardant
7	Bis (2-ethylhexyl) phthalate (DEHP)	Prohibited after 2018	○	April-18	Plasticizer, dye,pigment, paint, ink
8	Benzylbutyl phthalate (BBP)	Prohibited after 2018	○	April-18	Plasticizer, dye,pigment, paint, ink
9	Dibutyl phthalate (DBP)	Prohibited after 2018	○	April-18	Plasticizer, dye,pigment, paint, ink
10	Diisobutyl phthalate (DIBP)	Prohibited after 2018	○	April-18	Plasticizer, dye,pigment, paint, ink
11	Tributyltin oxide(TBTO)	Prohibited			Antiseptic, antifungal,agent, paint, pigment
12	Tri-substituted organostannic compounds	Prohibited			Stabilizer, antioxidant,antifoulant
13	Dibutyltin (DBT) compounds	Prohibited			Stabilizer for PVC
14	Diocetyl tin (DOT) compounds	Prohibited			Stabilizer for PVC
15	Polychlorinated biphenyls (PCBs) and specific substitutes	Prohibited			Insulation oil, lubricant oil
16	Polychlorinated terphenyls (PCTs)	Prohibited			Insulation oil, lubricant oil
17	Polychlorinated naphthalenes (more than 1 chlorine atoms)	Prohibited			Lubricant, paint, stabilizer
18	Perfluorooctane sulfonate (PFOS)	Prohibited			Antistatic agent for film and plastic
19	Fluorinated greenhouse gases (PFC, SF6, HFC)	Prohibited			Refrigerants, blowing agents
20	Radioactive substances	Prohibited			Optical properties (thorium)
21	Ozone depleting substances	Prohibited			Refrigerant, foaming agent, extinguishant
22	Asbestos	Prohibited			Insulator, filler,pigment, paint, talc
23	Azocolourants and azodyes which form certain aromatic amines	Prohibited			Pigment, dyes,colorants
24	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	Prohibited			Adhesives, paints, printing inks, plastics
25	Dimethyl fumarate	Prohibited			Biocide
26	Hexabromocyclododec Refer to ane (HBCDD) and all Attached	Prohibited			Flame retardant
27	Alkanes, C10-13,chloro (Short Chain Chlorinated Paraffins)	Prohibited			Greases,metal treatment liquids
28	Benzenamine, N-phenyl-, reaction products with styrene and 2,4,4-trimethylpentene; BNST	Prohibited			antioxidants in rubber,lubricants
29	Polycyclic-aromatic hydrocarbons (PAH)	Prohibited			Pigments in rubber or plastic components
30	Nickel	Controlled			Stainless steel
31	Beryllium oxide (BeO)	Controlled			Ceramics
32	Brominated flame retardants (other than PBBs,PBDEs, or HBCDD)	Controlled			flame retardant for housing, connectors
33	Perchlorates	Controlled			Coin cell batteries
34	Polyvinyl chloride (PVC)/PVC copolymer	Controlled			Insulator, chemical resistance
35	formaldehyde	Controlled			Stereo cabinets
36	Selected Phthalates Group 1(BBP, DBP, DEHP)	Controlled			Plasticizer, dye,pigment, paint, ink
37	Selected Phthalates Group 2 (DIDP, DINP, DNOP)	Controlled			Plasticizer, dye,pigment, paint, ink
38	Chlorinated flame retardants	Controlled			flame retardant forhousing, connectors
39	1,2-Benzenedicarboxylic acid diisodecyl ester (DIDP)	Controlled			Heat-resistant electric wire, Film sheet
40	Di-n-Hexyl Phthalate (DnHP)	Controlled			automobile part, tool handle
41	Perfluorooctanoic acid(PFOA) and individual salts and esters of PFOA	Controlled			Photolithography,photo-coating materials
42	Red phosphorus	Controlled			Flame retardant in the resin
43	Candidate SVHC for authorization of REACH	Controlled		Add at any time	

## 5. Composition of controlled chemical substances list

### 1) Substance name /CAS No.

Typical substance names in each substance group and the CAS No. (No. to identify chemical substance) are listed. Note that substance groups contain other substances not on the list.

### 2) Threshold value (level prohibited or controlled)

Establishes conditions (e.g. threshold value level) requiring a report for substances contained in materials to be procured by our company.

Substances that do not have a threshold value are prohibited from intentional use. Even if the substance content (concentration) does not exceed the threshold value, if concentration is ascertainable, we request that it be reported to the extent possible.

### 3) Relevant laws and regulations

The relevant laws and regulations which form the main reason for the prohibition of the substance in materials to be procured by our company. There may be other reasons for prohibition besides the reasons listed, such as conforming to industry (self-imposed) initiatives or contracts between customers and our company.

### 4) REACH SVHC candidate substances

Current REACH SVHC candidate substances are summarized for reference.

Through the application of the IEC 62474 REACH screening method, only the substances related to electrical and electronics industries are selected.

Since REACH SVHC candidate substances are added regularly, they must be controlled in reference to the latest laws and regulations.

## 6. List of controlled chemical substances

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
1	Cadmium and its compounds		1.Any rate of content greater than 100 ppm (0.01% by weight) in homogeneous material 2.Any rate of content greater than 10 ppm (0.001% by weight) in battery	Pigment, anticorrosion surface treatment, electric and electronic materials, optical material, stabilizer, plating, pigment for resin, fluorescent, electrode, solder, electric contact, contact point, zinc plating, stabilizer for PVC, Batteries	3R Law, EU RoHS, EU REACH Annex XVII
	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	-			
2	Hexavalent chromium compounds		Any rate of content greater than 1000 ppm (0.1% by weight) in homogeneous material	Pigment, paint, ink, catalyst, plating, anticorrosion surface treatment, dye, paint dryer, paints adhesion enhancement,  Packaging materials	3R Law, EU RoHS, EU REACH Annex XVII
	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 (C.I. Pigment Red 104)	12656-85-8			
	C.I.Pigment Yellow 34	1344-37-2			
	Sodium chromate	7775-11-3			
	Sodium dichromate	10588-01-9			
	Strontium chromate	7789-06-2			
	Potassium dichromate	7778-50-9			
	Potassium chromate	7789-00-6			
	Zinc chromate	13530-65-9			
	Other hexavalent chromium compounds	-			
3	Lead and its compounds		1.Any rate of content greater than 1000 ppm (0.1% by weight) in homogeneous material 2.Any rate of content greater than 300 ppm (0.03% by weight) for surface contact layer of cables/cords (thermoset/ hermoplastic coating). 3.Any rate of content greater than 40ppm (0.004% by weight) in battery	Rubber hardener, pigment, paint, lubricant, plastic stabilizer, materials for battery, freemachining alloy, freecutting steels, optical materials, X-ray shielding in CRT glass, electrical solder material, mechanical solder materials, curing agent, vulcanizing agent, ferroelectrics, resin stabilizer, plating, metal alloy, resin Pigment, paint, stabilizer, colorant Cables/cords, Batteries, Packaging materials	3R Law, EU RoHS, EU REACH Annex XVII
	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 (C.I. Pigment Red	12656-85-8			
	Lead hydroxidcarbonate	1319-46-6			
	Lead acetate	301-04-2			
	Lead (II) acetate, trihydrate	6080-56-4			
	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(II) phosphate	7446-27-7			
	C.I.Pigment Yellow 34	1344-37-2			
	Lead(II) titanate	12060-00-3			
	Lead sulfate, sulphuric acid, lead salt	15739-80-7			
Tetralead trioxide sulfate (Lead	12202-17-4				
Lead stearate	1072-35-1				
Other lead compounds	-				
4	Mercury and its compounds		1. Intentionally added 2. Any rate of content greater than 1000 ppm (0.1% by weight) in homogeneous material 3.Any rate of content greater than 1ppm (0.0001% by weight) in battery	Fluorescent bulb, contact point material, pigment, anticorrosion, switches, antibacterial treatment Packaging materials Batteries	3R Law, EU RoHS EU Battery Directive
	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	-				
5	Polybrominated biphenyls (PBBs)		Any rate of content greater than 1000 ppm (0.1% by weight) in homogeneous material.	Flame retardant	CSCL, EU RoHS EU REACH Annex XVII EU POPs Annex I
	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			
	Pentabromophenyl	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				

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
6	Polybrominated diphenyl ethers (PBDEs)		1. Intentionally added 2. Any rate of content greater than 1000 ppm (0.1% by weight) in homogeneous material.	Flame retardant	CSCL, EU RoHS EU REACH Annex XVII EU POPs Annex I
	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			
	(note: Commercially available PeBDPO is a complex reaction mixture containing a variety of brominated diphenyloxides.)				
	Hexabromodiphenyl ether	36483-60-0			
	Heptabromodiphenylether	68928-80-3			
	Octabromodiphenyl ether	32536-52-0			
Nonabromodiphenylether	63936-56-1				
Decabromodiphenyl ether	1163-19-5				
7	Bis (2-ethylhexyl) phthalate (DEHP)	117-81-7	Any rate of content greater than 1000 ppm (0.1% by weight) in homogeneous material.	Plasticizer, dye, pigment, paint, ink, adhesive, lubricant	EU RoHS
8	Benzylbutyl phthalate (BBP)	85-68-7	Any rate of content greater than 1000 ppm (0.1% by weight) in homogeneous material.	Plasticizer, dye, pigment, paint, ink, adhesive, lubricant	EU RoHS
9	Dibutyl phthalate (DBP)	84-74-2	Any rate of content greater than 1000 ppm (0.1% by weight) in homogeneous material.	Plasticizer, dye, pigment, paint, ink, adhesive, lubricant	EU RoHS
10	Diisobutyl phthalate (DIBP)	84-69-5	Any rate of content greater than 1000 ppm (0.1% by weight) in homogeneous material.	Plasticizer, dye, pigment, paint, ink, adhesive, lubricant	EU RoHS
11	Tributyltin oxide (TBTO)	56-35-9	1. Intentionally added 2. Any rate of content greater than 1000ppm (0.1% by weight) in a survey unit	Antiseptic, antifungal agent, paint, pigment, antistaining, refrigerant, foaming agent, extinguishant, solvent cleaner	CSCL, EU REACH Annex XVII
12	Tri-substituted organostannic compounds		1. Intentionally added 2. Any rate of content greater than 1000ppm (0.1% by weight) in tin in homogeneous material	Stabilizer, antioxidant, antibacterial and antifungal agents, antifoulant, antiseptic, anti-fungal agent, paint, pigment, antistaining	CSCL, EU REACH Annex XVII
	Triphenyltin=N,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)fumarate	6454-35-9			
	Tributyltinfluoride	1983-10-4			
	Bis(tributyltin)2,3-	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 andtributyltin methacrylate	67772-01-4			
	Tributyltinsulfamate	6517-25-5			
Bis(tributyltin)maleate	14275-57-1				
Tributyltinchloride	1461-22-9,				
Tributyltin cyclopentanecarbonate=mixture	85409-17-2				
Tributyltin-1, 2,3,4,4a, 4b,5,6,10,10a-decahydro-7-isopropyl-1,4a-dimethyl-1-phenanthrenecarboxylatemix	26239-64-5				
Other tri-substituted organostannic compounds	-				
13	Dibutyltin (DBT) compounds		Any rate of content greater than 1000ppm (0.1% by weight) in mass of tin in homogeneous material	Stabilizer for PVC, curing catalyst for silicone resin and urethane resin	EU REACH Annex XVII
	Dibutyltin oxide	818-08-6			
	Dibutyltin diacetate	1067-33-0			
	Dibutyltin dilaurate	77-58-7			
	Dibutyltin maleate	78-04-6			
	Other dibutyltin compounds	-			

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
14	Diocetyl tin (DOT) compounds		In textile and leather articles intended to come into contact with the skin, child care article or in two component room temperature vulcanization moulding kits (RTV-2 moulding kits) Any rate of content greater than 1000ppm (0.1% by weight) in mass of tin in homogeneous material	Stabilizer for PVC, curing catalyst for silicone resin and urethane resin	EU REACH Annex XVII
	Diocetyl Tin Oxide	870-08-6			
	Diocetyl tin dilaurate	3648-18-8			
	Other Diocetyl tin compounds	-			
15	Polychlorinated biphenyls (PCBs) and specific substitutes		Intentionally added.	Insulation oil, lubricant oil, electrical insulation medium, solvent, electrolytic solution, plasticizers, fire retardants, coatings for electrical wire and cable, dielectric sealants	CSCL, POPs Convention EU POPs Annex I
	Polychlorinated Biphenyls (all isomers and congeners)	1336-36-3			
	Monomethyl-tetrachloro-diphenylmethane (Ugilec 141)	76253-60-6			
	Monomethyl-dichloro-diphenylmethane (Ugilec 121, Ugilec 21)	81161-70-8			
	Monomethyl-dibromo-diphenylmethane (DBBT)	99688-47-8			
16	Polychlorinated terphenyls (PCTs)		Any rate of content greater than 50 ppm (0.005% by weight) in homogeneous material	Insulation oil, lubricant oil, electrical insulation medium, solvent, electrolytic solution, plasticizers, fire retardants, coatings for electrical wire and cable, dielectr	EU REACH Annex XVII
	Polychlorinated terphenyls (all isomers and congeners)	61788-33-8 (all isomers and congeners)			
17	Polychlorinated naphthalenes (more than 1 chlorine atoms)		Intentionally added.	Lubricant, paint, stabilizer (electric characteristic, flameresistant, waterresistant) insulator, flame retardan	EU POPs Annex I CSCL, POPs Convention
	Polychlorinated Naphthalenes	70776-03-3			
	Other polychlorinated Naphthalenes	-			
18	Perfluorooctane sulfonate (PFOS)		1. Intentionally added 2. Any rate of content greater than 1000ppm (0.1% by weight) in homogeneous material	Antistatic agent for films and plastics	EU POPs Annex I CSCL, POPs Convention
	Perfluorooctane Sulfonates (PFOS) C <sub>8</sub> F <sub>17</sub> SO <sub>2</sub> X, where X = OR, NR or other derivative	-			
19	Fluorinated greenhouse gases (PFC, SF <sub>6</sub> , HFC)		Intentionally added.	Refrigerants, blowing agents, extinguishing agents, cleaning agents, insulating media, caustic gas	(EC) No. 842/2006
	Tetrafluoromethane (Carbontetrafluoride, 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 (SF <sub>6</sub> )	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				

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
	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			
20	Radioactive substances		Intentionally added	Optical properties (thorium), measuring devices, gauges, detector	Law for the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors
	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	-				
	Ozone depleting substances		Intentionally added	Refrigerant, foaming agent, extinguishant, solvent cleaner	Ozone Layer Law Montreal Protocol US CFC tax
	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			
	1,1,1,2-Tetrachloro-2,2-difluoroethane (CFC-112a)	76-11-9			
	Trichlorotrifluoroethane (CFC-113)	76-13-1			
	1,1,2-Trichloro-1,2,2-trifluoroethane(CFC-113)	76-13-1			
	1,1,1-Trichloro-2,2,2-trifluoroethane(CFC-113a)	354-58-5			
	Dichlorotetrafluoroethane (CFC-114)	76-14-2			
	Monochloropentafluoroethane (CFC-115)	76-15-3			
	Heptachlorofluoropropane (CFC-211)	422-78-6, 135401-87-5			
	1,1,1,2,2,3,3-Heptachloro-3-fluoropropane (CFC-211aa)	422-78-6			
	1,1,1,2,3,3,3-Heptachloro-2-fluoropropane (CFC-211ba)	422-81-1			
	Hexachlorodifluoropropane (CFC-212)	3182-26-1			
	Pentachlorotrifluoropropane (CFC-213)	2354-06-5, 134237-31-3			
	Tetrachlorotetrafluoropropane (CFC-214)	29255-31-0			
	1,2,2,3-Tetrachloro-1,1,3,3-tetrafluoropropane (CFC-214aa)	2268-46-4			
	1,1,1,3-Tetrachloro-2,2,3,3-tetrafluoropropane(CFC-214cb)	-			
	Trichloropentafluoropropane (CFC-215)	1599-41-3			
	1,2,2-Trichloropentafluoropropane(CFC-215aa)	1599-41-3			
	1,2,3-Trichloropentafluoropropane(CFC-215ba)	76-17-5			
	1,1,2-Trichloropentafluoropropane(CFC-215bb)	-			
	1,1,3-Trichloropentafluoropropane(CFC-215ca)	-			
	1,1,1-Trichloropentafluoropropane(CFC-215cb)	4259-43-2			
	Dichlorohexafluoropropane (CFC-216)	661-97-2			
Chloroheptafluoropropane (CFC-217)	422-86-6				
Bromochloromethane (Halon-1011)	74-97-5				

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
	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)	74-87-5			
	Dibromofluoromethane (HBFC-21B2)	1868-53-7			
	Bromodifluoromethane (HBFC-22B1)	1511-62-2			
	Bromofluoromethane (HBFC-31B1)	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			

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
21	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-			
	1,1,2-Trichloro-2-fluoroethane(HCFC-131)	359-28-4			
	1,1,2-Trichloro-1-fluoroethane(HCFC131a)	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, 431-07-2			
	1-Chloro-1,2,2-trifluoroethane (HCFC-133)	1330-45-6			
	2-Chloro-1,1,1-trifluoroethane (HCFC-133a)	75-88-7			
	1-Chloro-1,1,2-trifluoroethane (HCFC-133b)	421-04-5			
	Dichlorofluoroethane(HCFC-141)	1717-00-6; (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				

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
	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)	422-51-7			
	Dichloropentafluoropropane (HCFC-225)	127564-92-5			
	2,2-Dichloro-1,1,1,3,3-pentafluoropropane (HCFC-225aa)	128903-21-9			
	2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC-225ba)	422-48-0			
	1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225bb)	422-44-6			
	3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)	422-56-0			
	1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)	507-55-1			
	1,1-Dichloro-1,2,2,3,3-pentafluoropropane (HCFC-225cc)	13474-88-9			
	1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC-225da)	431-86-7			
	1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225ea)	136013-79-1			
	1,1-Dichloro-1,2,3,3,3-pentafluoropropane (HCFC-225eb)	111512-56-2			
	Chlorohexafluoropropane (HCFC-226)	134308-72-8			
	2-Chloro-1,1,1,3,3,3-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			

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
	1,1,1-Trichloro-3,3,3-trifluoropropane(HCFC-233fb)	7125-83-9			
	Dichlorotetrafluoropropane (HCFC-234)	127564-83-4			
	1,2-Dichloro-1,2,3,3-tetrafluoropropane (HCFC-234db)	425-94-5			
	Chloropentafluoropropane (HCFC-235)	134237-41-5			
	1-Chloro-1,1,3,3,3-pentafluoropropane (HCFC-235fa)	460-92-4			
	Tetrachlorofluoropropane (HCFC-241)	134190-49-1			
	1,1,2,3-Tetrachloro-1-fluoropropane(HCFC-241db)	666-27-3			
	Trichlorodifluoropropane (HCFC-242)	134237-42-6			
	1,3,3,Trichloro-1,1-difluoropropane(HCFC-242fa)	460-63-9			
	Dichlorotrifluoropropane (HCFC-243)	134237-43-7			
	1,1-Dichloro-1,2,2-trifluoropropane(HCFC-243cc)	7125-99-7			
	2,3-Dichloro-1,1,1-trifluoropropane(HCFC-243db)	338-75-0			
	3,3-Dichloro-1,1,1-trifluoropropane(HCFC-243fa)	460-69-5			
	Chlorotetrafluoropropane (HCFC-244)	134190-50-4			
	3-Chloro-1,1,2,2-tetrafluoropropane(HCFC-244ca)	679-85-6			
	1-Chloro-1,1,2,2-tetrafluoropropane(HCFC-244cc)	421-75-0			
	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)	421-02-03			
Chlorofluoropropane (HCFC-271)	134190-54-8				
2-Chloro-2-fluoropropane (HCFC-271ba)	420-44-0				
1-Chloro-1-fluoropropane (HCFC-271fb)	430-55-7				
22	Asbestos		Intentionally added	Insulator, filler, pigment, paint, talc, adiabatic material	Ind-safety Law EU REACH Annex XVII
	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				

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
23	Azocolourants and azodyes which form certain aromatic amines		Any rate of content greater than 30 ppm (0.003% by weight) in finished textile or leather articles	Pigment, dyes, colorants	EU REACH Annex XVII
	biphenyl-4-ylamine	92-67-1			
	Benzdine	92-87-5			
	23+C382:F399	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				
24	2-benzotriazol-2-yl-4,6-di-tert-butylphenol(UV-320)	3846-71-7	1. Intentionally added 2. Any rate of content greater than 1000ppm (0.1% by weight) in homogeneous material	Adhesives, paints, printing inks, plastics, inked ribbons, putty, caulking or sealing fillers	CSCL
25	Dimethyl fumarate	624-49-7	Any rate of content greater than 0.1 ppm (0.00001% by weight) in homogeneous material	Biocide, mold treatment of electronic leather seats, including recliners, massage chairs	EU REACH Annex XVII (EC) No 1907/2006
26	Hexabromocyclododecane Refer to ane (HBCDD) and all Attached Hexabromocyclododecane (HBCDD)	25637-99-4	1. Intentionally added 2. Any rate of content greater than 1000ppm (0.1% by weight) in homogeneous material	Flame retardant	CSCL, EU POPs Annex I (EC) No 850/2004
		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			
	1,2,5,6,9,10-hexabromocyclododecane	3194-55-6			
	α-hexabromocyclododecane	134237-50-6			
	β-hexabromocyclododecane	134237-51-7			
	γ-hexabromocyclododecane	134237-52-8			
27	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)		1. Intentionally added 2. Any rate of content greater than 1000ppm (0.1% by weight) in a survey unit	Greases, metal treatment liquids, flame retardants, plasticizer	EU POPs Annex I
28	Benzenamine, N-phenyl-, reaction products with styrene and 2,4,4-trimethylpentene; BNST	68921-45-9	ntentionally added (an exemption is made for addition to rubber, except for tires)	antioxidants in rubber, lubricants	CEPA 1999
29	Polycyclic-aromatic hydrocarbons (PAH)		1. Intentionally added 2. Any rate of content greater than 1000ppm (0.1% by weight) in a survey unit	Pigments in rubber or plastic components (as impurity)	EU REACH Annex XVII (EC) No 1907/2006
	Benzo[a]pyrene (BaP)	50-32-8			
	Benzo[e]pyrene (BeP)	192-97-2			
	Benzo[a]anthracene (BaA)	56-55-3			
	Chrysen (CHR)	218-01-9			
	Benzo[b]fluoranthene (BbFA)	205-99-2			
	Benzo[j]fluoranthene (BjFA)	205-82-3			
	Benzo[k]fluoranthene (BkFA)	207-08-9			
Dibenzo[a,h]anthracene, (DBAhA)	53-70-3				
30	Nickel	7440-02-0	Intentionally added.	Stainless steel, plating; example application for prolonged skin contact is an ear bud (headphone), mobile	EU REACH Annex XVII

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
31	Beryllium oxide (BeO)	1304-56-9	Any rate of content greater than 1000ppm (0.1% by weight) in a survey unit	Ceramics	EU WEEE Directive 2002/96/EC Article 11
32	Brominated flame retardants (other than PBBs, PBDEs, or HBCDD)		1. Any rate of bromine content greater than 1000ppm (0.1% by weight) in plastic material (other than printed wiring board laminate) 2. Any rate of content greater than 900ppm (0.09% by weight) in the printed wiring board laminate (excluding parts)	flame retardant for housing, connectors, package molding sealing  Printed wiring board laminate	JS709
	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-diphenoxybenzene	58965-66-5			
	1,2-Bis(2,4,6-tribromo-phenoxy)ethane	37853-59-1			
	3,5,3',5'-Tetrabromo-bisphenol (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			
	TBBA-(2,3-dibromo-propyl-ether)	21850-44-2			
	TBBA bis-(2-hydroxy-ethyl-ether)	4162-45-2			
	TBBA-bis-(allyl-ether)	25327-89-3			
	TBBA-dimethyl-ether	37853-61-5			
	Tetrabromo-bisphenol S	39635-79-5			
	TBBS-bis-(2,3-dibromo-propyl-ether)	42757-55-1			
	2,4-Dibromo-phenol	615-58-7			
	2,4,6-tribromo-phenol	118-79-6			
Pentabromo-phenol	608-71-9				
2,4,6-Tribromo-phenyl-allyl-ether	3278-89-5				
Tribromo-phenyl-allyl-ether, unspecified	26762-91-4				
Bis(methyl)tetrabromo-phthalate	55481-60-2				

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
	Bis(2-ethylhexyl)tetrabromophthalate	26040-51-7			
	2-Hydroxy-propyl-2-(2-hydroxyethoxy)-ethyl-TBP	20566-35-2			
	TBPA, glycol-and propylene-oxideesters	75790-69-1			
	N,N'-Ethylene-bis-(tetrabromophthalimide)	32588-76-4			
	Ethylene-bis(5,6-dibromonorborene-2,3-dicarboximide)	52907-07-0			
	2,3-Dibromo-2-butene-1,4-diol	3234-02-4			
	Dibromo-neopentyl-glycol	3296-90-0			
	Dibromo-propanol	96-13-9			
	Tribromo-neopentyl-alcohol	36483-57-5			
	Poly tribromo-styrene	57137-10-7			
	Tribromo-styrene	61368-34-1			
	Dibromo-styrene grafted PP	171091-06-8			
	Poly-dibromo-styrene	31780-26-4			
	Bromo-/Chloro-paraffins	68955-41-9			
	Bromo-/Chloro-alpha-olefin	82600-56-4			
	Vinylbromide	593-60-2			
	Tris-(2,3-dibromo-propyl)-isocyanurate	52434-90-9			
	Tris(2,4-Dibromo-phenyl)phosphate	49690-63-3			
	Tris(tribromo-neopentyl)phosphate	19186-97-1			
	Chlorinated and brominated phosphate ester	125997-20-8			
	Pentabromo-toluene	87-83-2			
	Pentabromo-benzyl bromide	38521-51-6			
	1,3-Butadiene homopolymer, brominated	68441-46-3			
	Pentabromo-benzyl-acrylate, monomer	59447-55-1			
	Pentabromo-benzyl-acrylate, polymer	59447-57-3			
	Decabromo-diphenyl-ethane	84852-53-9			
	Tribromo-bisphenyl-maleinimide	59789-51-4			
	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	-			
33	Perchlorates		Any rate of content greater than 0.006ppm (0.0000006% by weight) in a survey unit	Coin cell batteries	Perchlorate Contamination Prevention Act of 2003
	Lithium perchlorate	7791-03-9			
	Other perchlorate compounds	-			
34	Polyvinyl chloride (PVC)/PVC copolymer	JS709	Any rate of chlorine content greater than 1000ppm (0.1% by weight) in plastic material (other than printed wiring board laminate)	Insulator, chemical resistance, transparency, sheath material	JS709
	Polyvinyl chloride (PVC)	9002-86-2			
	Other Polyvinyl chlorides	-			
35	formaldehyde	50-00-0	1. Intentionally added. 2. Any rate of chlorine content greater than 1000ppm (0.1% by weight) in plastic material (other than printed wiring board laminate)	Stereo cabinets, kiosk enclosures, Textiles	ChemVerbotsV Denmark Formaldehyde Regulation
36	Selected Phthalates Group 1 (BBP, DBP, DEHP)		Children's toy or child care article Any rate of content greater than 1000ppm (0.1% by weight) in plasticized material	Plasticizer, dye, pigment, paint, ink, adhesive, lubricant	EU REACH Annex XVII (EC) No 1907/2006 Consumer Product Safety improvement Act
	Benzylbutyl phthalate (BBP)	85-68-7			
	Dibutyl phthalate (DBP)	84-74-2			
	Bis (2-ethylhexyl) phthalate (DEHP)	117-81-7			
37	Selected Phthalates Group 2 (DIDP, DINP, DNOP)		Children's toy or child care article Any rate of content greater than 1000ppm (0.1% by weight) in plasticized material	Plasticizer, dye, pigment, paint, ink, adhesive, lubricant	EU REACH Annex XVII (EC) No 1907/2006 Consumer Product Safety improvement Act
	1,2-Benzenedicarboxylic acid diisodecyl ester (DIDP)	26761-40-0			
	Diisononyl phthalate (DINP)	68515-49-1			
	Diisononyl phthalate (DINP)	28553-12-0			
	Di-n-octyl phthalate (DNOP)	117-84-0			

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
38	Chlorinated flame retardants		1.Any rate of chlorine content greater than 1000ppm (0.1% by weight) in plastic material (other than printed wiring board laminate) 2.Any rate of chlorine content greater than 900ppm (0.09% by weight) in the laminate (except components)	flame retardant for housing, connectors, package molding sealing	JS709
	Tetrakis(2-chloroethyl)dichloroisopentylidiphosphate	38051-10-4			
	Tris(2,3-dichloro-1-propyl)phosphate	13674-84-5			
	Tris(2,3-dichloro-1-propyl)phosphate	66108-37-0			
39	1,2-Benzenedicarboxylic acid diisodecyl ester (DIDP)	68515-49-1 26761-40-0	Intentionally added	Heat-resistant electric wire, Film sheet	EU REACH Annex XVII (EC) No 1907/2006
40	Di-n-Hexyl Phthalate (DnHP)	84-75-3	Intentionally added	automobile part, tool handle, Basket for dishwasher, Flooring, Tarpaulin, Collar for catching fleas	Proposition 65
41	Perfluorooctanoic acid(PFOA) and individual salts and esters of PFOA		1. Intentionally added 2. Any rate of content greater than 1000ppm (0.1% by weight) in homogeneous material	Photolithography, photo-coating materials, coating materials for paper	Norwegian product regulation PFOA Self-Elimination Program
	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				
42	Red phosphorus	7723-14-0	Intentionally added	Flame retardant in the resin	voluntary restriction
	Candidate SVHC for authorization of REACH		Any rate of content greater than 1000ppm (0.1% by weight) in a survey unit	-	EU REACH (EC) No 1907/2006
1	Diarsenic pentoxide	1303-28-2			
2	Diarsenic trioxide	1327-53-3			
3	Cobalt dichloride (CoCl2)				
4	Bis (2-ethylhexyl) phthalate (DEHP)	117-81-7			
5	Benzylbutyl phthalate (BBP)	85-68-7			
6	Dibutyl phthalate (DBP)	84-74-2			
7	Diisobutyl phthalate (DIBP)	84-69-5			
8	Lead (II) chromate	7758-97-6			
9	Lead chromate molybdate	12656-85-8			
10	C.I.Pigment Yellow 34	1344-37-2			
11	Aluminosilicate Refractory Ceramic Fibresa	-			
12	Zirconia Aluminosilicate Refractory Ceramic Fibresb	-			
13	Tris(2-chloroethyl) phosphate (TCEP)	115-96-8			
14	Boric acid	10043-35-3 11113-50-1			
15	Disodium tetraborates				
	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			
16	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6			
17	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	68515-42-4			
18	Strontium chromate	7789-06-2			
19	Pentazinc chromateoctahydroxide	49663-84-5			
20	Potassium hydroxyoctaoxodizincate dichromatea	11103-86-9			
21	Bis(2-methoxyethyl) phthalate	117-82-8			
22	Bis(2-methoxyethyl) ether	111-96-6			
23	4-(1,1,3,3-tetramethylbutyl)phenol (4-tert-Octylphenol)	140-66-9			

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
24	Diboron trioxide	1303-86-2			
25	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2			
26	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4			
27	Lead (II,IV) oxide	1314-41-6			
28	Lead oxide sulfate	12036-76-9			
29	Sulfurous acid, lead salt, dibasic	62229-08-7			
30	Tetralead trioxide sulfate (Lead sulfate)	12202-17-4			
31	Pentalead tetraoxide sulphat	12065-90-6			
32	Lead dinitrate	10099-74-8			
33	Lead(II) titanate	12060-00-3			
34	Lead titanium zirconium oxide	12626-81-2			
35	Trilead dioxide phosphonate	12141-20-7			
36	Silicic acid (H <sub>2</sub> Si <sub>2</sub> O <sub>5</sub> ), barium salt (1:1)	68784-75-8			
37	Fatty acids, C16-18, lead salts	91031-62-8			
38	Dioxobis(stearato)trilead	12578-12-0			
39	Lead cyanamidate	20837-86-9			
40	[Phthalato(2-)]dioxotrilead	69011-06-9			
41	C.I.Pigment yellow 41	8012-00-8			
43	42 Dibutyltin dichloride (DBTC)	683-18-1			
43	43 Diisopentylphthalate (DIPP)	605-50-5			
44	44 N-pentyl-isopentylphthalate	776297-69-9			
45	45 Hexahydromethylphthalic anhydride	-			
46	46 1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0			
47	47 1,2-Diethoxyethane	629-14-1			
48	48 N,N-dimethylformamide	68-12-2			
49	49 4-aminoazobenzene	60-09-3			
50	50 Cadmium	7440-43-9			
51	51 Cadmium oxide	1306-19-0			
52	52 Cadmium sulfide	1306-23-6			
53	53 Dipentyl phthalate (DPP)	131-18-0			
54	54 4-Nonylphenol, branched and linear, ethoxylated [substances with a linear and/or branched alkyl]	-			
55	55 Trixylyl Phosphate	25155-23-1			
56	56 Imidazolidine-2-thione, (2-imidazoline-2-thiol)	96-45-7			
57	57 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			
58	58 Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate)(C.I. DirectRed 28)	573-58-0			
59	59 1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear (DiHP)	68515-50-4			
60	60 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1			
61	61 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	15571-58-1			

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
62	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl] thio]-4-octyl-7-oxo-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)	-			
63	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			
64	1,3-propanesultone	1120-71-4			
65	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1			
66	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl) phenol (UV-350)	36437-37-3			
67	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1			

-Appendix 2-

**Form for Certificate of Non-Inclusion of RoHS Directive Restricted Substances**  
**in Parts and Components**

1. Certificate of Non-Inclusion of RoHS Directive(2) Restricted Substances in Parts and Components  
(10 substance groups )
  
2. Certificate of Non-Inclusion of RoHS Directive(2) Restricted Substances in Parts and Components  
(6 substance groups )

Yaskawa Electric Corporation  
1st edition: September 12, 2007  
Revised: December 15, 2010  
Revised: October 18, 2012  
Revised: December 25, 2013  
Revised: December 9, 2016

To: Yaskawa Group

Certificate of Non-Inclusion of RoHS Directive(2) Restricted Substances in Parts and Components  
(10 substance groups )

Company Name:
Department/Position:
Name of Person Responsible:
Phone:
<b>Seal or signature:</b> _____

Our company (including subsidiaries and affiliated companies) certifies that no substance restricted by the RoHS Directive(2) is contained in materials and products (including accessories and items that compose other products or materials) to be shipped to Yaskawa Electric Corporation, in accordance with Yaskawa Group Green Procurement Guidelines ( Ed 5).

1. Substances restricted by the RoHS Directive(2) (10 substance groups):

lead, cadmium, mercury, chromium VI, polybrominated biphenyls (PBBs), polybrominated diphenyl ethers (PBDEs), Bis (2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutylphthalate (DBP), and Diisobutyl Phthalate(DIBP)

\* "Non-inclusion" means that the concentration of restricted substances is below the regulated value of the RoHS Directive(2), regardless of whether the inclusion is intentional or unintentional (this includes the inclusion of impurities). However, materials not restricted by the RoHS Directive(2) are exempt. For more detailed information such as definitions, refer to Yaskawa Group Green Procurement Guidelines(Ed 5), IEC 62474 standard and Directive 2011/65/EU.

2. Applicable Products ( ) indicates the name used in our company's system

	Yaskawa Parts Code (Item code)	Yaskawa Name of Part (Item text)	Model of supplier product or part	Shipping start date (Fill in only if the conditions in *1 are met.)
1				
2				
3				
4				
5				

\* If the number of items exceed what can be written on this form, please attach the list of applicable products on a separate sheet. (Write the Document Control No. on that sheet as well.)

\*1: If the substance content of an item is changed so that it is less than the RoHS Directive(2) regulated value, but the Yaskawa Parts Code (Item code) remains unchanged, the shipping start date must be indicated to notify us of the time the change occurred.

To: Yaskawa Group

Certificate of Non-Inclusion of RoHS Directive(2) Restricted Substances in Parts and Components  
(6 substance groups )

Company Name:
Department/Position:
Name of Person Responsible:
Phone:
Seal or signature:

Our company (including subsidiaries and affiliated companies) certifies that no substance restricted by the RoHS Directive(2) is contained in materials and products (including accessories and items that compose other products or materials) to be shipped to Yaskawa Electric Corporation, in accordance with Yaskawa Group Green Procurement Guidelines ( Ed 5).

1. Substances restricted by the RoHS Directive(2) (6 substance groups):

lead, cadmium, mercury, chromium VI,  
polybrominated biphenyls (PBBs), and polybrominated diphenyl ethers (PBDEs)

\* "Non-inclusion" means that the concentration of restricted substances is below the regulated value of the RoHS Directive(2), regardless of whether the inclusion is intentional or unintentional (this includes the inclusion of impurities). However, materials not restricted by the RoHS Directive(2) are exempt. For more detailed information such as definitions, refer to Yaskawa Group Green Procurement Guidelines(Ed 5), IEC 62474 standard and Directive 2011/65/EU.

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	Yaskawa Parts Code (Item code)	Yaskawa Name of Part (Item text)	Model of supplier product or part	Shipping start date (Fill in only if the conditions in *1 are met.)
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