YASKAWA

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Yaskawa Group

Green Procurement Guidelines
Ed 5.2

Yaskawa Electric Corporation

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Introduction

The world is increasingly aware of how to protect and maintain the global environment, such as how to deal with climate change, in an organized manner in all areas of activity, including politics, economy, industry, commerce, 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 ("green products"). 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, we have revised these guidelines in order to respond to changes and additions of chemical substances subject to our control, additions of substances of high concern (SVHC) to the list of candidates for the EU_REACH regulation, and U.S.TSCA managements. 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

Hidenori Ohba,
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 Group" 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 in a proactive way.” Yaskawa Group procures materials that have a minimal impact on the environment (“Green Procurement”) to create environmentally conscious products and contribute to realize a sustainable society.

2. Scope of application for guidelines

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

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.

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.

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>

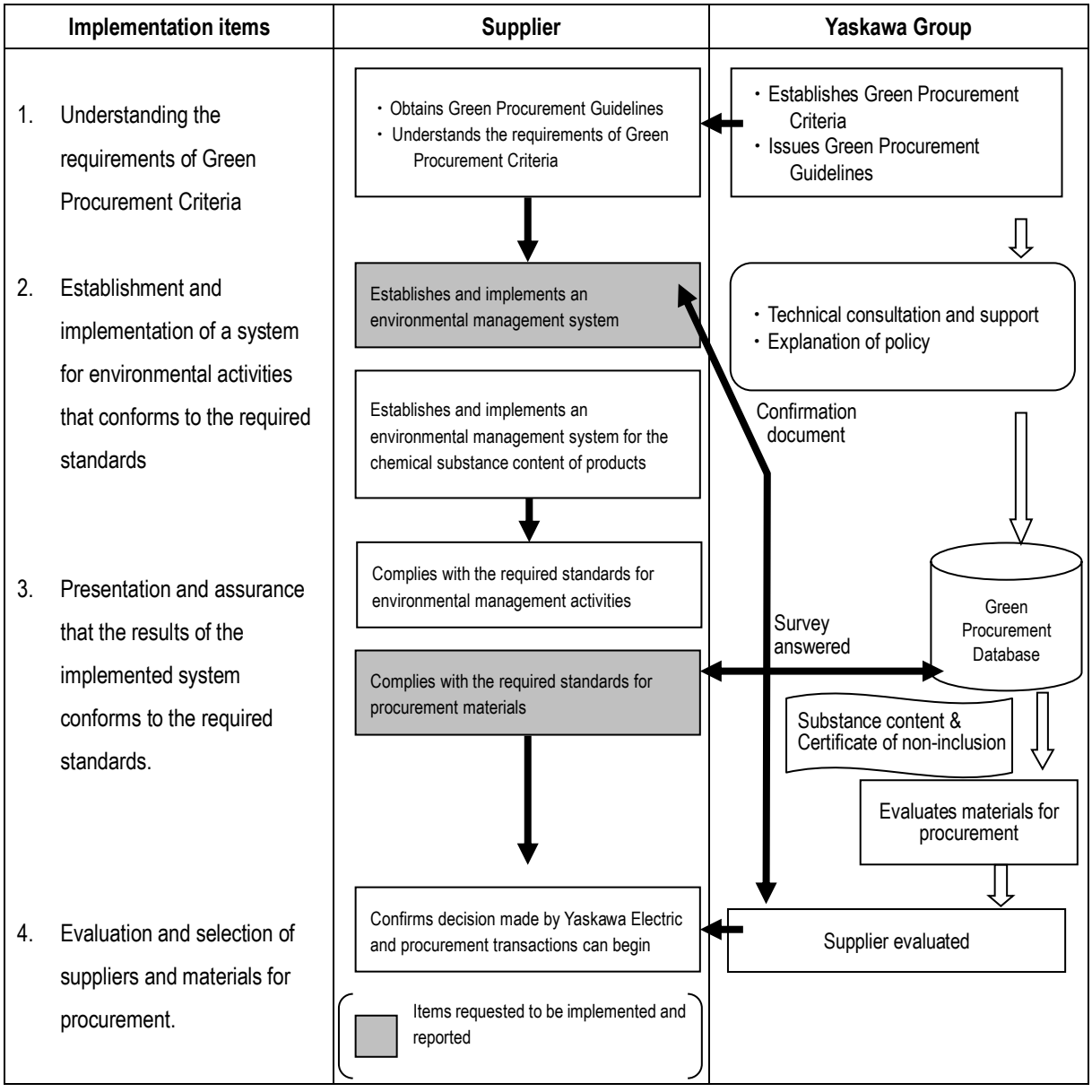
	System for Activities		Results of Activities	
Selection criteria for suppliers	(1)	Has established and implemented an environmental management system	(2)	Complies with environmental laws and regulations
Selection criteria for procured materials	(3)	Has established and implemented a management system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

Reconfirmation may be conducted again at unspecified times.

(2) Compliance with environmental laws and regulations <u>(request for implementation)</u>

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. 4) issued by Joint Article Management Promotion-consortium. The current Guidelines for the Management of Chemical Substances in Products can be downloaded at the following website: <https://chemsherpa.net/docs/guidelines>

In the future, a report concerning the implementation status may be requested. Use Check Sheet 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 Group Controlled Chemical Substances List (Appendix 1) (Hereinafter "Controlled Chemical Substances List"). For more details, please refer to the Controlled Chemical Substances List.

(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 Controlled Chemical Substances List 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). (The report is required to conform to the corporate social responsibility (CSR) guidelines specified in the basic sales transaction agreement and comply with laws and regulations.

- As a rule, reports must be submitted by uploading a shai file (chemSHERPA data) created using chemSHERPA-AI, one of the chemSHERPA molded article data entry support tools. The shai file must include compliance assessment information. Inclusion of composition information in the file is optional.

The shai file will be used as one type of evidence specified in the RoHS harmonized standard EN IEC63000: 2018.

・In light of relevant laws and regulations and/or upon request from our customers, a chemSHERPA-AI file that includes composition information 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.

If a Yaskawa group company that your company has business transactions with has not introduced a Green Procurement System, your company may be requested to provide us with information in agreements or via email.

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

The supplier's management representative(s) shall, on behalf of the supplier, pledge in writing that substances specified as restricted substances in EU RoHS Directive (Directive 2011/65/EU Amended by COMMISSION DELEGATED DIRECTIVE (EU)2015/863(EU)2015/863) and in Controlled Chemical Substances List are not contained in materials to be procured (i.e. RoHS-compliant products). The representative must fill out the required fields in our company's designated Non-inclusion Certificate form (Appendix 2) and submit the form to us.

However, if all of the following conditions are met, the submission of the " Certificate of Non-inclusion of RoHS Directive Restricted Substances in Parts and Components " can be omitted.

・Submit agreement to confirm compliance with RoHS Directive by "chemSHERPA data" (Appendix 3)

・When we have evaluated the response status and description, etc., and determined that RoHS conformance can be confirmed appropriately. (We notify each supplier.)

Our company may expand the scope of this pledge to include the non-inclusion of other substances in addition to the abovementioned substances depending on social conditions and laws and regulations.

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 Yaskawa Group. Each group company shall determine when to implement Guidelines upon conferring with relevant supplier.

b) These Guidelines will 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

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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)

October 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 JGPSSIver4.3, 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))

August 26, 2019	Ed 5.1

(changed target chemical substances, abolished Non-inclusion Certificate (prohibition of inclusion of six substances, review of the scope of application of this guideline, addition of corrections to unify terms)

October 27, 2021	Ed 5.2

(changed target chemical substances, changed Non-inclusion Certificate (prohibition of inclusion of ten substances), added Agreement to confirm compliance with RoHS Directive)

Appendix 1

Yaskawa Group Controlled Chemical Substances

Yaskawa Electric Corporation

1st edition: September 20, 2007

Revised: December 15, 2010

Revised: October 18, 2012

Revised: December 25, 2013

Revised: December 9, 2016

Revised: August 26, 2019

Revised: October 27, 2021

III. Yaskawa Group Environmental Policies

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 based on the IEC 62474 database, the list of chemical substances that must be declared if they are contained in electrotechnical products. However, for automobile parts, refer to GADSL.

3. Definition of terms

(a) 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.

(b) Intentional addition

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

(c) 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.

(d) 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.

For the details on specified regulated values, refer to ”2) Threshold value (level prohibited or controlled)” in 5. Composition of controlled chemical substances list.

(e) Time-limited prohibited substances

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

(f) 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.

(g) 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.

(h) Concentration

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

In the REACH regulation, concentration refers to the concentration value obtained by using the mass of “each molded article” within a composite molded article as a denominator.

(i) IEC 62474

International standards published by International Electrotechnical Commission (IEC). IEC 62474 specifies the standard on material declaration by the electrical and electronics industry for their products. Visit the following site for details, including related lists.

http://std.iec.ch/iec62474/iec62474.nsf/welcome?openpage

(j) 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.

No.	chamSHREPA ID CAS number	Substance name	Restricted Substance Classification	RoHS substance	Remarks column	Examples of Use
1	SG006	Cadmium and its compounds	Prohibited	○		Pigment,anticorrosion,surfacetreatment
2	SG008	Hexavalent chromium compounds	Prohibited	○		Pigment, paint, ink,catalyst, plating
3	SG014	Lead and its compounds	Prohibited	○		Rubber hardener,pigment, paint,lubricant
4	SG019	Mercury and its compounds	Prohibited	○		Fluorescent bulb,contact point
5	SG026	Polybrominated biphenyls (PBBs)	Prohibited	○		Flame retardant
6	SG027	Bis (2-ethylhexyl) phthalate (DEHP)	Prohibited	○		Flame retardant
7	117-81-7	Benzylbutyl phthalate (BBP)	Prohibited	○		Plasticizer, dye,pigment, paint, ink
8	84-74-2	Dibutyl phthalate (DBP)	Prohibited	○		Plasticizer, dye,pigment, paint, ink
9	85-68-7	Diisobutyl phthalate (DIBP)	Prohibited	○		Plasticizer, dye,pigment, paint, ink
10	84-69-5	Asbestos	Prohibited	○		Plasticizer, dye,pigment, paint, ink
11	SG001	Azocolourants and azodyes which form certain aromatic amines	Prohibited			Insulator, filler,pigment, paint, talc
12	SG002	Dibutyltin (DBT) compounds	Prohibited			Pigment, dyes,colorants
13	SG009	Dioctyltin (DOT) compounds	Prohibited			Stabilizer for PVC
14	SG010	Dimethyl fumarate	Prohibited			Stabilizer for PVC
15	624-49-7	Fluorinated greenhouse gases (PFC, SF6, HFC)	Prohibited			Biocide
16	SG012	Hexabromocyclododec Refer to ane (HBCDD) and all Attached	Prohibited			Refrigerants, blowing agents
17	SG013	Hexabromocyclododec Refer to ane (HBCDD) and all Attached	Prohibited			Flame retardant
18	SG021	Ozone depleting substances	Prohibited			Refrigerant, foaming agent
19	3846-71-7	2-benzotriazol-2-yl-4,6-di-tert-butylphenol(UV-320)	Prohibited			Adhesives, paints, printing inks, plastics
20	SG023	Perfluorooctane sulfonate (PFOS)	Prohibited			Antistatic agent for films and plastics
21	SG028	Polychlorinated biphenyls (PCBs) and specific substitutes	Prohibited			Insulation oil, lubricant oil
22	SG029	Polychlorinated terphenyls (PCTs)	Prohibited			Insulation oil, lubricant oil
23	SG030	Polychlorinated naphthalenes (PCNs)	Prohibited			paint,lubricant
24	SG031	Radioactive substances	Prohibited			Optical properties (thorium)
25	SG034	Alkanes, C10-13,chloro (Short Chain Chlorinated Paraffins)	Prohibited			Greases,metal treatment liquids
26	207-08-9	Tributyltin oxide(TBTO)	Prohibited			Antiseptic, antifungal,agent, paint
27	SG035	Tri-substiituted organostannic compounds	Prohibited			Stabilizer, antioxidant,antifoulant
28		Polycyclic-aromatic hydrocarbons (PAH)	Prohibited			Pigments in rubber or plastic components
	50-32-8	Benzo[a]pyrene (BaP)	Prohibited			
	192-97-2	Benzo[e]pyrene (BeP)	Prohibited			
	56-55-3	Benzo[a]anthracene (BaA)	Prohibited			
	218-01-9	Chrysen (CHR)	Prohibited			
	205-99-2	Benzo[b]fluoranthene (BbFA)	Prohibited			
	205-82-3	Benzo[j]fluoranthene (BjFA)	Prohibited			
	207-08-9	Benzo[k]fluoranthene (BkFA)	Prohibited			
	53-70-3	Dibenzo[a,h]anthracene,(DBAhA)	Prohibited			
29	SG042 SG054 SG055	Perfluorooctanoic acid(PFOA) and individual salts and esters of PFOA	Prohibited			Photolithography,photo-coating materials
30	SG058	Halogenated Flame Retardants	Prohibited			Flame retardant in electronic displays
31	68937-41-7	Phenol, Isopropylated Phosphate (3:1) (PIP (3:1))	Prohibited after 2022*2		8-Mar-22	Flame retardant for PVC
32	1304-56-9	Beryllium oxide (BeO)	Controlled			Ceramics
33	50-00-0	formaldehyde	Controlled			Stereo cabinets
34	SG004	Brominated flame retardants (other than PBBs,PBDEs, or HBCDD)	Controlled			flame retardant for housing, connectors
35	SG047	Nickel	Controlled			Stainless steel
36	SG022	Perchlorates	Controlled			Coin cell batteries
37	SG024	Selected Phthalates Group 1(BBP, DBP, DEHP)	Controlled*1			Plasticizer, dye,pigment, paint, ink
38	SG025	Selected Phthalates Group 2(DIDP, DINP, DNOP)	Controlled			Plasticizer, dye,pigment, paint, ink
39	SG036	Chlorinated flame retardants	Controlled			flame retardant forhousing, connectors
40	SG041	1,2-Benzenedicarboxylic acid diisodecyl ester (DIDP)	Controlled			Heat-resistant electric wire、Film sheet
41	84-75-3	Di-n-Hexyl Phthalate (DnHP)	Controlled			automobile part、tool handle
42	SG043	Diisononyl phthalate (DINP)	Controlled			Plasticizer
43	80-05-7	4,4'-isopropylidenediphenol	Controlled			Plasticizer
44	SG062	Cobalt/Cobalt compounds	Controlled			Batteries used in computer servers and on-line data storage products
45	-	Polyvinyl chloride (PVC)/PVC copolymer	Controlled			Insulator, chemical resistance
46	-	Candidate SVHC for authorization of REACH	Controlled			-

*1 The category of No.35 Phthalate Esters Group 1 (BBP, DBP, DEHP) is management. However, please note that the No.7-9 substances (DEHP, DBP, BBP) are prohibited.

*2 Prohibited to be sold in USA market from March 8, 2021. In the event the prohibited date is postponed, the applicable date shall be postponed in accordance with the applicable laws and regulations.

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 there are substances that belong to other substance groups other than the CAS No. 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 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		1.0.01 mass% of total Cd in homogenous material 2.0.001% by weight of 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, Packaging materials	3R Law, EU RoHS,CN 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 31119-53-6			
	Other cadmium compounds	-			
2	Hexavalent chromium compounds		0.1 mass% of total Cr+6 in homogenous material	Pigment, paint, ink, catalyst, plating, anticorrosion surface treatment, dye, paint dryer, paints adhesion enhancement, Packaging materials	3R Law, EU RoHS,CN RoHS, EU REACH Annex XVII
	Chromium (VI) oxide	1333-82-0			
	Barium chromate	10294-40-3			
	Calcium chromate	13765-19-0			
	Chromium trioxide	1333-82-0			
	Lead (II) chromate	7758-97-6			
	Lead chromate molybdate sulphatered	12656-85-8			
	Lead sulfochromate yellow	1344-37-2			
	Sodium chromate	7775-11-3			
	Sodium dichromate	10588-01-9			
	Strontium chromate	7789-06-2			
	Potassium dichromate	7778-50-9			
	Potassium chromate	7789-00-6			
	Zinc chromate	13530-65-9			
	Other hexavalent chromiumcompounds	-			
3	Lead and its compounds		1.0.01 mass% of total Pb in homogenous material 2.0.03 mass% of surface coating materia. 3.0.004 mass% of 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,CN RoHS, EU REACH Annex XVII EU Battery Directive, U.S. Proposition 65 CN GB24427/2009
	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	12656-85-8			
	Lead hydroxidcarbonate	1319-46-6			
	Lead acetate	301-04-2			
	Lead (II) acetate, trihydrate	6080-56-4			
	Lead phosphate	7446-27-7			
	Lead selenide	12069-00-0			
	Lead (IV) oxide	1309-60-0			
	Lead (II,IV) oxide	1314-41-6			
	Lead (II) sulfide	1314-87-0			
	Lead (II) oxide	1317-36-8			
	Lead(II) carbonate basic	1319-46-6			
	Lead hydroxidcarbonate	1344-36-1			
	Lead(II) phosphate	7446-27-7			
	Lead sulfochromate yellow	1344-37-2			
	Lead(II) titanate	12060-00-3			
	Lead sulfate,sulphuric acid, lead salt	15739-80-7			
	Lead sulphate,tribasic	12202-17-4			
	Lead stearate	1072-35-1			
	Other lead compounds	-			
4	Mercury and its compounds		1. Intentionally added 2.0.1 mass% of total Hg in homogenous material 3.Intentionally added or 0.0001 mass% of battery	Fluorescent bulb, contact point material, pigment, anticorrosion, switches, antibacterial treatment Packaging materials Batteries	3R Law, EU RoHS,CN RoHS, EU REACH Annex XVII EU Battery Directive, U.S. Proposition 65, CN GB24427/2009
	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	-			

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
5	Polybrominatedbiphenyls (PBBs)		0.1 mass% in homogenous material	Flame retardant	CSCL, EU RoHS,CN 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			
	Pentabrphenyl	56307-79-0			
	Hexabromobiphenyl	59080-40-9			
	hexabromo-1,1-biphenyl	36355-01-8			
	Firemaster FF-1	67774-32-7			
	Heptabromobiphenyl	35194-78-6			
	Octabromobiphenyl	61288-13-9			
	Nonabiphenyl	27753-52-2			
	Decabromobiphenyl	13654-09-6			
6	Polybrominated diphenyl ethers (PBDEs)		1. Intentionally added 2. 0.1 mass% in homogenous material	Flame retardant	CSCL, EU RoHS,CN 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			
	Pentabromodidphenyl ether	32534-81-9			
	(note: Commercially available PeBDPO is a comple x 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	0.1 mass% in homogenous material	Plasticizer, dye, pigment, paint, ink, adhesive, lubricant	EU RoHS EU REACH Annex XIV
8	Benzylbutyl phthalate (BBP)	85-68-7	0.1 mass% in homogenous material	Plasticizer, dye, pigment, paint, ink, adhesive, lubricant	EU RoHS EU REACH Annex XIV
9	Dibutyl phthalate (DBP)	84-74-2	0.1 mass% in homogenous material	Plasticizer, dye, pigment, paint, ink, adhesive, lubricant	EU RoHS EU REACH Annex XIV
10	Diisobutyl phthalate (DIBP)	84-69-5	0.1 mass% in homogenous material	Plasticizer, dye, pigment, paint, ink, adhesive, lubricant	EU RoHS EU REACH Annex XIV
11	Asbestos		Intentionally added	Insulator, filler, pigment, paint, talc, adiabatic material	Ind-safety Law EU REACH Annex XVII U.S. TSCA Swiss ORRChim
	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
12	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			
	Benzidine	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			
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	-			
14	Dioctyltin (DOT) compounds		1.0.1 mass% of tin in the part 2.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
	Dioctyl Tin Oxide	870-08-6			
	Dioctyltin dilaurate	3648-18-8			
	Other Dioctyltin compounds	-			
15	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

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
16	Fluorinated greenhouse gases (PFC, SF6, HFC)		Intentionally added.	Refrigerants, blowing agents, extinguishing agents, cleaning agents, insulating media, caustic gas	(EU) No 517/2014
	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 (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			
17	Hexabromocyclododec Refer to ane (HBCDD) and all Attached		1. Intentionally added 2. 0.1 mass% of article	Flame retardant	CSCL, EU REACH Annex XVII EU POPs Annex I (EC) No 850/2004
	Hexabromocyclododecane (HBCDD)	25637-99-4			
		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			

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
	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			
	1,1,2,2-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)	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			
	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			

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
	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 (trifluoromethyliodide)	2314-97-8			
	Chloromethane (methyl chloride)	74-87-5			
	Dibromofluoromethane (HBFC-21B2)	1868-53-7			
	Bromodifluoromethane (HBFC-22B1)	1511-62-2			
	Bromofluoromethane (HBFC-31 B1)	373-52-4			
	Tetrabromofluoroethane (HBFC-121 B4)	306-80-9			
	Tribromodifluoroethane (HBFC-122 B3)	-			
	Dibromotrifluoroethane (HBFC-123 B2)	354-04-1			
	Bromotetrafluoroethane (HBFC-124 B1)	124-72-1			
	Tribromofluoroethane (HBFC-131 B3)	-			
	Dibromodifluoroethane (HBFC-132 B2)	75-82-1			
	Bromotrifluoroethane (HBFC-133 B1)	421-06-7			
	Dibromofluoroethane (HBFC-141 B2)	358-97-4			
	Bromodifluoroethane (HBFC-142 B1)	420-47-3			
	Bromofluoroethane (HBFC-151 B1)	762-49-2			
	Hexabromofluoropropane (HBFC-221 B6)	-			
	Pentabromodifluoropropane (HBFC-222 B5)	-			
	Tetrabromotrifluoropropane (HBFC-223 B4)	-			
	Tribromotetrafluoropropane (HBFC-224 B3)	-			
	Dibromopentafluoropropane (HBFC-225 B2)	431-78-7			
	Bromohexafluoropropane (HBFC-226 B1)	2252-78-0			
	Pentabromofluoropropane (HBFC-231 B5)	-			
	Tetrabromodifluoropropane (HBFC-232 B4)	-			
	Tribromotrifluoropropane (HBFC-233 B3)	-			
	Dibromotetrafluoropropane (HBFC-234 B2)	-			
	Bromopentafluoropropane (HBFC-235 B1)	460-88-8			
	Tetrabromofluoropropane (HBFC-241 B4)	-			
	Tribromodifluoropropane (HBFC-242 B3)	70192-80-2			
	Dibromotrifluoropropane (HBFC-243 B2)	431-21-0			
	Bromotetrafluoropropane (HBFC-244 B1)	679-84-5			
	Tribromofluoropropane (HBFC-251 B3)	75372-14-4			
	Dibromodifluoropropane (HBFC-252 B2)	460-25-3			
	Bromotrifluoropropane (HBFC-253 B1)	421-46-5			
	Dibromofluoropropane (HBFC-261 B2)	51584-26-0			
	Bromodifluoropropane (HBFC-262 B1)	-			
	Bromofluoropropane (HBFC-271 B1)	1871-72-3			
	Dichlorofluoromethane (HCFC-21)	75-43-4			

No		Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
18		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 (HFCF-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			
	1,1,1-Trichloro-3,3,3-trifluoropropane (HCFC-233fb)	7125-83-9			
	Dichlorotetrafluoropropane (HCFC-234)	127564-83-4			

No		Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
		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-Dicloro-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-fluoro-propane (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			
19		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

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
20	Perfluorooctane sulfonate (PFOS)		1. Intentionally added 2. 0.1 mass% of the part (as the sum of PFOS)	Antistatic agent for films and plastics	EU POPs Annex I, EU REACH Annex XIV CSCL, POPs Convention
	Perfluoroctane Sulfonates (PFOS) C8F17SO2X, where X = OR, NR or other derivative	–			
	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			
21	Polychlorinated biphenyls (PCBs) and specific substitutes		Intentionally added.	Insulation oil, lubricant oil, electrical insulationmedium, 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			
22	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)			
23	Polychlorinated naphthalenes (PCNs)		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	-			
24	Radioactive substances		Intentionally added	Optical properties (thorium), measuring devices, gauges, detector	EU-D 96/29/Euratom, 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	-			
25	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, EU REACH Annex XVII
	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	-			

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
26	Tributyltin oxide(TBTO)	56-35-9	1. Intentionally added 2. 0.1 mass% of article	Antiseptic, antifungal agent, paint, pigment, antistaining, refrigerant, foaming agent, extinguishant, solvent cleaner	CSCL, EU REACH Annex XVII
27	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, Ndimethyldithiocarbamate	1803-12-9			
	Triphenyltinfluoride	379-52-2			
	Triphenyltinacetate	900-95-8			
	Triphenyltinchloride	639-58-7			
	Triphenyltinhydroxide	76-87-9			
	Triphenyltin fattyacid((9-11)salt)	18380-71-7			
		18380-72-8			
		47672-31-1			
		94850-90-5			
	Triphenyltinchloroacetate	7094-94-2			
	Tributyltinmethacrylate	2155-70-6			
	Bis(tributyltin)fumalate	6454-35-9			
	Tributyltinfluoride	1983-10-4			
	Bis(tributyltin)2,3-dibromosuccinate	31732-71-5			
	Tributyltinacetate	56-36-0			
	Tributyltinlaurate	3090-36-6			
	Bis(tributyltin)phthalate	4782-29-0			
	Coplymer of alkyl(c=8)acrylate,methyl methacrylate andtributyltin methacrylate	67772-01-4			
	Tributyltinsulfamate	6517-25-5			
	Bis(tributyltin)maleate	14275-57-1			
	Tributyltinchloride	1461-22-9, 7342-38-3			
	Tributyltin cyclopentanecarbonate=mixture	85409-17-2			
	Tributyltin-1, 2,3,4,4a, 4b,5,6,10,10a-decahydro-7-isoplopyl-1,4a-dimethyl-1-phenanthrencarboxylatemix	26239-64-5			
	Other tri-substituted organostannic compounds	-			
28	Polycyclic-aromatic hydrocarbons (PAH)		1. Intentionally added 2.0.1 mass% of article	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			

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
29	Perfluorooctanoic acid(PFOA) and individual salts and esters of PFOA		1. Intentionally added 2. 0.1 mass% of the part (as the sum of PFOA) 3.0.0000025 mass% of PFOA including its salts in article or mixture 4.Combination of one or multiple PFOA-related substances, concentration must be less than 1ppm(1000ppb) in total of the PFOA, its salts and PFOA-related substances.	Photolithography, photo-coating materials, coating materials for paper	EU REACH Annex XVII Norwegian product regulation
	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			
	3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-Heptadecafluordecan-1-ol	678-39-7			
30	Halogenated Flame Retardants	-	Intentionally added.	Flame retardant in electronic displays	EU Commission Regulation (EU) 2019/2021
31	Phenol, Isopropylated Phosphate (3:1) (PIP (3:1))	68937-41-7	Intentionally added.	Flame retardant for PVC	U.S. Toxic Substances Control Act (TSCA)
32	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
33	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

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
	Brominated flame retardants (other than PBBs,PBDEs, or HBCDD)	IEC 61249-2-21	1.0.1 mass% of bromine in plastic material 2.0.09 mass% total bromine content in laminate	flame retardant for housing, connectors, package molding sealing Printed wiring board laminate	JS709, IEC 61249-2-21 IPC-4101
	Brominated flame retardant which comes under notation of ISO 1043-4code number FR(14)[Aliphatic/alicyclic brominated compounds]	-			
	Brominated flame retardant which comes under notation of ISO 1043-4code number FR(15)[Aliphatic/alicyclic brominated compounds in combination with antimony compounds]	-			
	Brominated flame retardant which comes under notation of ISO 1043-4code number FR(16)[Aromatic brominated compounds excludingbrominated diphenyl ether and biphenyls)]	-			
	Brominated flame retardant which comes under notation of ISO 1043-4code number FR(17)[Aromatic brominated compounds excludingbrominated diphenyl ether and biphenyls) in combination with antimony compounds]	-			
	Brominated flame retardant which comes under notation of ISO 1043-4code number FR(22)[Aliphatic/alicyclic chlorinated and brominated compounds]	-			
	Brominated flame retardant which comes under notation of ISO 1043-4code 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 ATBBA)	79-94-7			
	TBBA, unspecified	30496-13-0			
	TBBA-epichlorhydrin oligomer	40039-93-8			
	TBBA-TBBA-diglycidyl-etheroligomer	70682-74-5			
	TBBA carbonate oligomer	28906-13-0			
	TBBA carbonate oligomer, phenoxyend capped	94344-64-2			
	TBBA carbonate oligomer, 2,4,6-tribromo-phenol terminated	71342-77-3			
	TBBA-bisphenol A-phosgenepolymer	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			

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
34	TBBA-dimethyl-ether	37853-61-5			
	Tetrabromo-bisphenol S	39635-79-5			
	TBBS-bis-(2,3-dibromo-propyl-ether)	42757-55-1			
	2,4-Dibromo-phenol	615-58-7			
	2,4,6-tribromo-phenol	118-79-6			
	Pentabromo-phenol	608-71-9			
	2,4,6-Tribromo-phenyl-alltl-ether	3278-89-5			
	Tribromo-phenyl-allyl-ether, unspecified	26762-91-4			
	Bis(methyl)tetrabromo-phtalate	55481-60-2			
	Bis(2-ethlhexyl)tetrabromo-phtalate	26040-51-7			
	2-Hydroxy-propyl-2-(2-hydroxyethoxy)-ethyl-TBP	20566-35-2			
	TBPA, glycol-and propylene-oxideesters	75790-69-1			
	N,N'-Ethylene –bis-(tetrabromophthalimide)	32588-76-4			
	Ethylene-bis(5,6-dibromonorbornane-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 esther	125997-20-8			
	Pentabromo-toluene	87-83-2			
	Pentabromo-benzyl bromide	38521-51-6			
	1,3-Butadiene homopolymer,brominated	68441-46-3			
	Pentabromo-benzyl-acrylate,monomer	59447-55-1			
	Pentabromo-benzyl-acrylate,polymer	59447-57-3			
	Decabromo-diphenyl-ethane	84852-53-9			

No	Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
	Tribromo-bisphenyl-maleinimide	59789-51-4			
	Octabromo-1,1,3-trimethyl-1-phenylindane (FR-1808)	155613-93-7			
	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			
	Other Brominated Flame Retardants	-			
35	Nickel	7440-02-0	Intentionally added.	Stainless steel, plating; example application for prolonged skin contact is an ear bud (headphone), mobile phone	EU REACH Annex XVII
36	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	-			
37	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			
38	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 68515-49-1			
	Diisononyl phthalate (DINP)	28553-12-0 68515-48-0			
	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
39	Chlorinated flame retardants		1.0.1 mass% of bromine in plastic material 2.0.09 mass% total bromine content in laminate	flame retardant for housing, connectors, package molding sealing	JS709, IEC 61249-2-21 IPC-4101
	Tetrakis(2-chloroethyl)dichloroisopentyldiphosphate	38051-10-4			
	Tris(2,3-dichloro-1-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			
	1,4:7,10-Dimethanodibenzo[a,e]cyclooctene, 1,2,3,4,7,8,9,10,13,13,14,14-dodecachloro-1,4,4a,5,6,6a,7,10,10a,11,12,12a-dodecahydro-	13560-89-9			
	1,4:7,10-Dimethanodibenzo[a,e]cyclooctene, 1,2,3,4,7,8,9,10,13,13,14,14-dodecachloro-1,4,4a,5,6,6a,7,10,10a,11,12,12a-dodecahydro-, (1R,4S,4aS,6aS,7S,10R,10aR,12aR)-rel-	135821-74-8			
	1,4:7,10-Dimethanodibenzo[a,e]cyclooctene, 1,2,3,4,7,8,9,10,13,13,14,14-dodecachloro-1,4,4a,5,6,6a,7,10,10a,11,12,12a-dodecahydro-, (1R,4S,4aS,6aR,7R,10S,10aS,12aR)-rel-	135821-03-3			
	Other Chlorinated Flame Retardants	-			
40	1,2-Benzenedicarboxylic acid diisodecyl ester (DIDP)	68515-49-1	Intentionally added	Heat-resistant electric wire、Film sheet	EU REACH Annex XVII (EC) No 1907/2006
		26761-40-0			
41	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
42	Diisononyl phthalate (DINP)	28553-12-0, 68515-48-0	Intentionally added		U.S.Proposition 65, REACH Regulation (EC) No.1907/2006
43	4,4'-isopropylidenediphenol	80-05-7	1.Intentionally added 2.0.1 mass% of article		U.S.Proposition 65, REACH Regulation (EC) No.1907/2006
44	Cobalt/Cobalt compounds	-	Intentionally added	Batteries used in computer servers and on-line data storage products	[EU] Ecodesign requirements (EU) 2021/341 and (EU) 2019/424 pursuant to Directive 2009/125/EC
45	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	-			

No	Substance name		CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
	Candidate SVHC for authorization of REACH			0.1 mass% of article [ReportingLevel:Article]	-	EU REACH (EC) No 1907/2006
	1	Boric acid	10043-35-3 11113-50-1			
	2	Chromium (VI) Compounds	(SG008)			
	3	Disodium tetraborates	(SG011)			
	4	Hexabromocyclododecane (HBCDD)	(SG013)			
	5	Aluminosilicate Refractory Ceramic Fibresa	(SG032)			
	6	Zirconia Aluminosilicate Refractory Ceramic Fibresb	（SG033)			
	7	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	(SG034)			
	8	Hexahydromethylphthalic anhydride	(SG039)			
	9	4-Nonylphenol, branched and linear, ethoxylated [substances with a linear and/or branched alkyl	（SG040)			
	10	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters or mixed decyl and hexyl and octyl diesters	（SG044)			
	11	Perfluorononan-1-oic-acid and its sodium and ammonium salts	(SG045)			
	12	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	(SG046)			
	13	Perfluorohexane-1-sulphonic acid and its salts	(SG048)			
	14	Chrysene	(SG049)			
	15	Benz[a]anthracene	(SG050)			
	16	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene (“Dechlorane Plus”™)	(SG051)			
	17	Fluoranthene	(SG052)			
	18	Pyrene	(SG053)			
	19	Lead dinitrate	10099-74-8			
	20	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4			
	21	Potassium hydroxyoctaoxodizincate dichromatea	11103-86-9			
	22	Bis(2-methoxyethyl) ether	111-96-6			
	23	1,3-propanesultone	1120-71-4			
	24	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2			
	25	Tris(2-chloroethyl) phosphate (TCEP)	115-96-8			

No		Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
46	26	Bis(pentabromophenyl) ether (decabromodiphenyl ether) (DecaBDE)	1163-19-5			
	27	Bis (2-ethylhexyl) phthalate (DEHP)	117-81-7			
	28	Bis(2-methoxyethyl) phthalate	117-82-8			
	29	Disodium octaborate	12008-41-2			
	30	Lead oxide sulfate	12036-76-9			
	31	Lead(II) titanate	12060-00-3			
	32	Pentalead tetraoxide sulphat	12065-90-6			
	33	Trilead dioxide phosphonate	12141-20-7			
	34	Tetralead trioxide sulfate (Lead sulfate)	12202-17-4			
	35	Dioxobis(stearato)trilead	12578-12-0			
	36	Lead titanium zirconium oxide	12626-81-2			
	37	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	12656-85-8			
	38	Diarsenic pentoxide	1303-28-2			
	39	Diboron trioxide	1303-86-2			
	40	Cadmium oxide	1306-19-0			
	41	Cadmium sulfide	1306-23-6			
	42	Dipentyl phthalate (DPP)	131-18-0			
	43	Lead (II,IV) oxide	1314-41-6			
	44	Diarsenic trioxide	1327-53-3			
	45	C.I.Pigment Yellow 34	1344-37-2			
	46	4-(1,1,3,3-tetramethylbutyl)phenol (4-tert-Octylphenol)	140-66-9			
	47	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	15571-58-1			
	48	Benzo[ghi]perylene	191-24-2			
	49	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			
	50	Benzo[k]fluoranthene	207-08-9			
	51	Lead cyanamidate	20837-86-9			
	52	Cadmium hydroxide	21041-95-2			
	53	Trixylyl Phosphate	25155-23-1			
	54	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1			
	55	Pentadecafluorooctanoic Acid (PFOA)	335-67-1			
	56	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl) phenol (UV-350)	36437-37-3			
	57	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1			

No		Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
	58	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7			
	59	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1			
	60	Pentazinc chromateoctahydroxide	49663-84-5			
	61	Benzo[a]pyrene	50-32-8			
	62	Dodecamethylcyclohexasiloxane	540-97-6			
	63	Decamethylcyclopentasiloxane	541-02-6			
	64	Octamethylcyclotetrasiloxane	556-67-2			
	65	Bis(tributyltin) oxide (TBTO)	56-35-9			
	66	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate)(C.I. DirectRed 28)	573-58-0			
	67	4-aminoazobenzene	60-09-3			
	68	Diisopentylphthalate (DIPP)	605-50-5			
	69	Terphenyl, hydrogenated	61788-32-7			
	70	Sulfurous acid, lead salt, dibasic	62229-08-7			
	71	1,2-Diethoxyethane	629-14-1			
	72	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6			
	73	N,N-dimethylformamide	68-12-2			
	74	Dibutyltin dichloride (DBTC)	683-18-1			
	75	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	68515-42-4			
	76	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear (DiHP）	68515-50-4			
	77	Silicic acid (H2Si2O5), barium salt (1:1)	68784-75-8			
	78	[Phthalato(2-)]dioxotrilead	69011-06-9			
	79	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6			
	80	Lead	7439-92-1			
	81	Cadmium	7440-43-9			
	82	Cobalt Dichloride	7646-79-9			
	83	Lead (II) chromate	7758-97-6			
	84	N-pentyl-isopentylphthalate	776297-69-9			
	85	Strontium chromate	7789-06-2			
	86	4,4'-isopropylidenediphenol	80-05-7			
	87	C.I.Pigment yellow 41	8012-00-8			
	88	Dicyclohexyl phthalate	84-61-7			
	89	Diisobutyl phthalate (DIBP)	84-69-5			
	90	Dibutyl phthalate (DBP)	84-74-2			
	91	Di-n-hexyl Phthalate (DnHP)	84-75-3			
	92	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0			
	93	Phenanthrene	85-01-8			
	94	Benzylbutyl phthalate (BBP)	85-68-7			
	95	Fatty acids, C16-18, lead salts	91031-62-8			

No		Substance name	CAS No.	Threshold value (level prohibited or requiring a report)	Examples of Use	Relevant laws and regulations
	96	Imidazolidine-2-thione, (2-imidazoline-2-thiol)	96-45-7			
	97	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)	（SN0084)			
	98	Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with ≥ 0.1% w/w of 4-nonylphenol, branched and linear (4-NP)	（SG056）			
	99	Perfluorobutane sulfonic acid (PFBS) and its salts	（SG057）			
	100	Dioctyltin dilaurate, stannane, dioctyl-, bis(coco acyloxy) derivs., and any other stannane, dioctyl-, bis(fatty acyloxy) derivs. wherein C12 is the predominant carbon number of the fatty acyloxy moiety	（SG059）			
	101	Medium-chain chlorinated paraffins (MCCP)	（SG060）			
	102	orthoboric acid, sodium salt	（SG061）			
	103	Pyrene	129-00-0			
	104	Bis(2-(2-methoxyethoxy)ethyl)ether	143-24-8			
	105	Fluoranthene	206-44-0			
	106	Dibutylbis(pentane-2,4-dionato-O,O')tin	22673-19-4			
	107	Diisohexyl phthalate	71850-09-4			
	108	4,4'-(1-methylpropylidene)bisphenol	77-40-7			

Appendix 2

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

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

(10 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

Revised: August 26, 2019

Revised: October 27, 2021

Document Control No.

Date: 20 / /

To: YASKAWA Electric Corporation

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

(10 substance groups)

Company Name:

Department/Position:

Name of Person Responsible:

Phone:

Seal or signature:

Our company certifies that no substance restricted by the RoHS Directive is contained in materials and products to be shipped to Yaskawa Electric Corporation, in accordance with Yaskawa Group Green Procurement Guidelines (Ed 5.2).

1. Substances restricted by the RoHS Directive (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 (this includes the inclusion of impurities). However, materials not restricted by the RoHS Directive are exempt. For more detailed information such as definitions, refer to Yaskawa Group Green Procurement Guidelines(Ed 5.2), IEC 62474 standard and Directive 2011/65/EU amended by (EU)2015/863.

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

	Yaskawa Parts Code (Material number)	Yaskawa Name of Part (Description)	Supplier product or part code	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 threshold, but the Yaskawa Parts Code (Material number) remains unchanged, the shipping start date must be indicated to notify us of the time the change occurred.

文書管理No.

Appendix 3

Agreement to confirm compliance with RoHS Directive by "chemSHERPA data"

Date: 20 / /

To: Yaskawa Electric Corporation

Agreement to confirm compliance with RoHS Directive by "chemSHERPA data"

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

1. Our company submits "chemSHERPA data" as the green procurement survey response to Yaskawa Electric Corporation.

2. The "chemSHERPA data" will be prepared based on information from suppliers, the Company's own knowledge and achievements, and scientific knowledge in accordance with the "Rules for using information on chemical substances contained in chemSHERPA products" through the utmost efforts.
This information will be transmitted after approval by the person responsible for the management of chemical substances contained in products in accordance with the procedures established by the organization.

3.If the European RoHS Directive Restricted Substances are contained in our products, our company will describe the concentration of the restricted substances, exempted uses, etc. in the "chemSHERPA data".

4. We authorize YASKAWA Electric to use the description of the European RoHS Directive * in the "chemSHERPA data" as one of the evidences indicated in the European RoHS Directive matching standard EN IEC 63000: 2018.
In other words, "chemSHERPA data" is used to certify compliance with the European RoHS Directive.

5. The scope of the description regarding the European RoHS Directive in "chemSHERPA data" is as follows.
・ Targets the product itself
・ Targets restricted substances of the European RoHS Directive that are applied at the time of data submission

Example: If submitted on June 30, 2020
*European RoHS Directive: "Directive 2011/65/EU" (Includes amendments by Commission Delegated Directive (EU) 2015/863)
Restricted substances:
lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB), polybrominated diphenyl ethers (PBDE), di -2 ethylhexyl phthalate (DEHP), BBP, di-n-butyl phthalate (DBP), diisobutyl phthalate (DIBP)

6. Management of Products Compliant with the European RoHS Directive
・ At the time of product shipment, direct contact between in-process contaminants and products is prevented, and the concentration of products is controlled so that they do not exceed the European RoHS Directive *.
・ Packaging materials that come into direct contact with products at the time of shipment shall be those that do not exceed the concentration specified in the European RoHS Directive