Olympus Group
Control Rules for Chemical Substances Used in Product Annex A: Control Rules for Environment-related Substances Used in Product

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OLYMPUS

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1. Objective

This Annex pertains to environment-related substances used in the products of the Olympus Group. Its purpose is to reduce environmental loads and ensure that all Olympus products comply with laws and guidelines, by identifying substances that should be prohibited immediately, phased-out by a specified time, or used subject to controls.

2. Scope

2.1 Applicable items

(1) Applicable products (products shipped out by Olympus)
- Products designed, manufactured and sold by the Olympus Group
- Products designed and manufactured by a third party(s) and sold under the Olympus brand name
- Products designed and manufactured by the Olympus Group and supplied to a third party as OEM products (however, these rules do not apply to the components or materials specified by the third party)
- Products distributed by the Olympus Group (including gifts) for sales promotion (to anyone, including but not limited to Olympus employees, outsiders and the general public)

(2) Applicable components and materials (products delivered to the Olympus Group: these rules apply to the components, materials and other articles used in the products listed under (1) Applicable products)
- Subassemblies (function units, modules, board assemblies, etc.)
- Components and materials (electrical components, mechanical components, electromechanical components, semiconductors, printed wiring boards, etc.)
- Parts for repair and maintenance services
- Accessories (AC adaptors and other accessories used in equipment)
- Subsidiary materials (solder materials, adhesives, lubricants, reinforcing materials, tapes, paints, inks etc.)
- Printed materials (instruction manuals, brochures, etc.)
- Materials for sales promotion (labels, etc.)

(3) Packaging materials:
- Packaging materials and packaging components used for Olympus Group products and parts
- Subsidiary materials (adhesives, lubricants, reinforcing materials, tapes, paints, inks etc.)

[*Note: If packaging materials used in the procurement and protection of the exempted items listed in (2) and (3) above are disposed of during Olympus manufacturing processes, these are excluded.]

2.2 Order of precedence

These rules are established in accordance with major laws and regulations, however it is difficult for them to completely cover all environment-related substances used in the products of the Olympus Group. Regarding individual products, etc., first priority shall be given to completely complying with the treaties, laws, ordinances, industry standards and other requrements of the regions where the products are sold at the time of sales. The products shall observe these rules.

3. Terms and Definitions

Following definitions are applied to the terms used in these rules.

(1) Environment-related substances

Chemicals included in products that are specified by the Olympus Group as “banned” or “controlled” substances, in accordance with domestic and foreign laws and regulations, including substances that have a significant influence on human health and the environment. These chemicals are grouped into the following three categories for control:

(a) Prohibition level 1 substances

(b) Prohibition level 2 substances

(c) Controlled substances

(2) Inclusion

This is defined as the addition or adhesion of substances to, or mixture of substances with, raw materials, parts or products, whether intentionally or otherwise. This term also refers to substances (impurities) included in natural raw materials, and added, mixed or adhered substances that are technically impossible to remove.

(3) Control values

These values or states are defined by the Olympus Group to ensure that the amounts of the substances contained in Olympus Group products, parts, materials or packaging do not exceed the concentrations regulated in laws and regulations, etc.

(4) Control content

This is a standard value used to ascertain the amount of a controlled substance that is included in an Olympus Group product, component, material or packaging material. If the concentration of a substance exceeds the control content, it is necessary to ascertain whether or not the substance is used, and to monitor the locations in which the substance is used and the amounts included.

(5) Japan Green Procurement Survey Standardization Initiative (JGPSSI)

This organization was established to reduce the effort required of suppliers to investigate chemicals included in purchased components and materials, and to improve the quality of reporting by formulating lists of targeted substances and establishing a common reporting format. The secretariat of the organization was within the Japan Electronics and Information Technology Industries Association (JEITA). As of the end of May 2012, JGPSSI transferred its major activities to the domestic organization (domestic VT62474) of IEC (The International Electrotechnical Commission), and dissolved itself for possible formation into a new organization.

(6) Substance group

This is a generic classification for a chemical substance and its compounds. It also means a group of several substances having a similar chemical structure, toxicity and/or environmental effect.

(7) CAS No.

This is a registration number for chemical substances allocated by the Chemical Abstracts Service (CAS), which is a division of the American Chemical Society. CAS numbers are widely used internationally because of their usefulness for the identification of chemical substances and information searches.

(8) Metal conversion factor

This factor is used to obtain the amount of a metallic element from a metallic compound. The conversion factor is calculated by dividing the total atomic weight of the metallic element in a metallic compound by the molecular weight of the metallic compound. The amount of the metallic element is then obtained by multiplying the weight of the metallic compound by the conversion factor.

(9) REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals)

These are comprehensive regulations concerning the Registration, Evaluation, Authorization and Restriction of Chemical substances. They were established by the European Union (EU) on June 1, 2007, to facilitate safety assessments of new and existing chemical substances.

(10) Candidate List of Substances of Very High Concern in REACH (SVHC)

These are substances identified under the procedures contained in Article 59 of the REACH as having characteristics described in Article 57 (e.g., carcinogenicity, mutagenicity, toxicity for reproduction, persistence, bioaccumulativeness, and toxicity). They are referred to as "Substances of Very High Concern" (SVHC). Once a proposal calling for a substance to be made subject to authorization has been published, there is an obligation to provide information to recipients of any molded product containing more than 0.1% by weight of the substance. The candidate list of SVHC might be updated with short notice on the website of the European Chemicals Agency (ECHA) http://echa.europa.eu/.

Supplementary information:

Substances subject to authorization: These are substances selected from among SVHC substances for inclusion in Annex XIV of the REACH. The marketing of these substances, regardless of quantity, is prohibited without the approval of the European Chemicals Agency.

Substances subject to restriction: These are substances listed in Annex XVII of the REACH. The manufacture, import and use of these substances, regardless of quantity, are prohibited in specific application.

(11) Joint Article Management Promotion-Consortium (JAMP)

The mission of JAMP is to promote cross-industry activities leading to the establishment and dissemination of specific mechanisms to support appropriate management of information about chemical substances, etc., contained in articles (parts, molded products, etc.), and the efficient disclosure and transmission of that information throughout the supply chain. JAMP was established in September 2006 by 17 companies that shared this mission.

(12) JAMP Substance Numbers (JAMP-SN)

For the sake of smoothly managing the chemical information of substances, JAMP introduced the number for some substances that do not have CAS No or that are not identifiable with a CAS No. (substances categorized under a complement group). SN is an acronym of Substance Number.

(13) Intentional use

A situation where a substance is contained in the part, device, or its materials because of deliberate addition, filling, blending, or adhesion, in order to provide a specific characteristic, appearance or quality.

(14) Impurities

Substances (natural impurities) that are included in natural raw materials but technically impossible to be completely removed in the refining process for industrial materials, or substances that are created in the synthetic reaction process but technically impossible to be completely removed. In the case where substances defined as "impurities" are added to a raw material in order to change its characteristics, such impurities are deemed "intentional use," in order to distinguish them from the main ingredients.

(15) Mixture

Means a mixture or solution composed of two or more substances.

(16) Article (REACH Article 3: Definitions)

Means an object which during production is given a special shape, surface or design which determines its function to a greater degree than does its chemical composition.

(17) CMR substances

CMR stands for "carcinogenic, mutagenic or toxic to reproduction," and CMR substances are substances that are either carcinogenic, mutagenic or toxic to reproduction.

(18) Dates of ban on delivery

Dates when the Olympus Group imposes a ban on delivery from business partners to Olympus Group, determined by the Olympus Group as an operational rule to ensure observance of the effective dates when the applicable laws, regulations and industry standards went into force (the dates of ban on delivery, in principle, are dates six months before the effective dates of the applicable laws or regulations). In some cases, business units set their own dates on ban on delivery that are different from the ones herein. These dates set by business units take precedence over the ones herein.

(19) Effective date of an applicable law or regulation

In some cases, the date when a law or regulation went into force differs from the effective date of its application to a group of substances that is subject to that law or regulation. For example, RoHS Directive (2011/65/EU) became effective on July 21, 2011 (20 days after its announcement in the Official Journal on July 1, 2011), but the date when it replaced the former RoHS Directive was January 3, 2013. Regarding medical devices and monitoring and control instruments, RoHS Directive (2011/65/EU) applies to

those that were placed on the market on or after July 22, 2014. In these cases, the effective dates are January 3, 2013 and July 22, 2014 respectively.

4. Rules

4.1 Environment-related substances

The environment-related substances used in the products including components, materials and packaging materials, and specified by the Olympus Group (hereinafter referred to as "Olympus") are listed in Table 1 below. However, the substances that are listed in both the Table 2 section and Exclusions from the RoHS Directive Prohibited Substances, may be used only in the applications for which the control values are defined, as long as such use of the substances does not exceed their control values.

Table 1 Environment-related Substances

Class	Major division	No.	Substance group
(I) Prohibited substances	Metal and metal compounds (including their alloys)	I-1	Cadmium and its compounds
		I-2	Hexavalent chromium compounds
		I-3	Lead and its compounds
		I-4	Mercury and its compounds
		I-5	Trisubstituted organotin compounds (including tributyltin compounds (TBTs) and triphenyltin compounds (TPTs))
		I-6	Dibutyltin compounds (DBT)
		I-7	Dioctyltin compounds (DOT)
		I-8	Nickel and its compounds
	Halogenated organic compounds	I-9	Polybrominated biphenyl (PBBs)
		I-10	Polybrominated diphenyl ether (PBDEs)
		I-11	Polychlorinated biphenyl (PCBs)
		I-12	Polychlorinated terphenyls (PCTs)
		I-13	Polychlorinated naphthalene (with more than 3 chlorine atoms)
		I-14	Short-chained chlorinated paraffin (having the chain length of 10 - 13)
		I-15	Polyvinyl chloride (PVC)
		I-16	Hexabromocyclododecane (HBCDD)
	Others	I-17	Asbestos
		I-18	Azo dyes and pigments (specific amines formed by degrading azo dies and pigments)
		I-19	Ozone depleting substances (listed in Montreal Protocol)
		I-20	Perfluorooctanesulfonic acid (PFOS) and PFOS analogs
		I-21	Specific benzotriazole: 2-(2H-1,2,3-Benzotriazol-2-yl)-4,6-di-tert-butylphenol
		I-22	Formaldehyde
		I-23	Dimethylfumarate (DMF)
		I-24	Fluorinated Greenhouse Gases (PFC, SF6, HFC)
		I-25	Phthalate esters (BBP, DBP, DEHP, DIDP, DINP, DNOP)
		I-26	Perfluorooctanoic acid (PFOA) and its salts and esters
		I-27	Polycyclic aromatic hydrocarbon (PAH)
		I-28	Pentachlorophenol and its salts and esters
		I-29	Certain CMR substances
(II) Controlled substances	Others	II-1	Candidate List of Substances of Very High Concern in REACH(SVHC)

Note: Applications of I-29 "Certain CMR substances" are limited to products that come into contact with human skin to an extent similar to clothing. Please see Table 2-I-29 for details.

4.2 Environment-related substances control criteria

Environment-related substances are defined below.

4.2.1 Classifications for control

Environment-related substances included in Olympus products and their components and materials are classified as prohibited substances (Prohibition Level 1 and Level 2) and controlled substances.

(1) Prohibited substances

Prohibited substances are divided into two levels: Prohibition Level 1 and Level 2.

(a) Prohibition Level 1 substances are the substances whose use in Olympus products, including components, materials and packaging materials, is immediately prohibited except for the following cases.

・If a control value is specified for a certain Level 1 substance, that substance can be used provided that the content does not exceed the control value.

・If the exempt application is specified in Table 2, the use for that application is acceptable provided that the content level and the location of use are identified.

(b) Prohibition Level 2 substances are substances whose use in Olympus products, including components, materials and packaging materials, must be phased out by a specified time.

- The use of such substances is acceptable until the specified time (indicated as the effective date of an applicable regulation), but after that the substances must be treated as Prohibition Level 1 substances and control values must be applied.
- If a substitution technique cannot be found or if an exempted use is permitted under laws and regulations, the specified time limit will be reviewed.

(2) Controlled substances

Controlled substances are chemical substances that require information on the amounts contained in products to be disclosed, and the substances whose use in Olympus products, components, materials and packaging materials must be monitored, with particular attention to the actual circumstances in which these substances are used including recycling and environment loads at the time of disposal. If the concentration of a substance exceeds the control content, it is necessary to ascertain whether or not the substance is used, and to monitor the locations in which the substance is used and the amounts included.

4.2.2 Control value and control content

If nothing is specified, the control value and control content act as the concentration of a certain substance in homogeneous materials (notes1).

- In the case of complex components, the concentration in question is not the concentration in a whole component but the concentration in each constituent material of that component.
- In the case of surface treatment coatings, it is concentration in the coating.
- In case of metal compounds, it is the concentration of each metal element included in that compound, not the concentration of the compound.

More specifically, metal concentration calculations are made by multiplying the metal conversion factor in Table 6 by compound concentration.

・The control value and control content for a substance that is a candidate for listing as a substance subject to authorization under the REACH represent the concentration of that substance in molded items and in metal compounds.

(notes1) Homogeneous materials are any materials that cannot be mechanically separated any more and have a homogeneous composition. Examples of such materials are plastic, ceramics, glass, metals, alloys, paper, boards, resins and coatings. Mechanical separation means separation by mechanical processes, such as removing screws, cutting, crushing, grinding and polishing.

4.2.3 Detailed information about the control of prohibited substances

Dates of ban on delivery, applications, and control values are shown in Table 2. In some cases, business units set their own dates on ban on delivery that are different from the ones herein. These dates set by business units take precedence over the ones herein.

Notes 1: Chemicals are indicated based on the JAMP controlled substance reference list, however because there are several different ways of spelling them, please make sure to check the substances against their CAS numbers.

Notes 2: In each of the tables 2 below, notes are provided on applications, control values, and dates of ban on delivery. Individual notes are identified by an asterisk and number such as "*1".

Table 2-I-1

No. I-1	Substance Group: Cadmium and its compounds			
Prohibition Level	Date of ban on delivery *6	Applications	Control Value	Note
Level 1	Immediate	・Surface processing (e.g., plating) and coating (except for electrical contacts requiring a high level of safety and reliability, and for which no substitute exists) ・Fluorescence lamps and photographic film ・Stabilizer, pigment and dye used for plastics (including rubbers) ・Paints and inks	-Less than 75 ppm in homogeneous material	*1
		・Packaging materials	-Intentional inclusion prohibited -Less than 100 ppm in homogeneous material	*2
	Immediate Exclusions from RoHS Directive: 6 months prior to expiration	・The following applications, other than *1 and *2 ・Electric and electronic equipment in Categories 1 through 10 of Annex I to RoHS Directive (2011/65/EU)	-Less than 100 ppm in homogeneous material	*3
		・The following applications, other than *1 and *2 ・Electric and electronic equipment in Category 11 of Annex I to RoHS Directive (2011/65/EU), and electric and electronic equipment in Categories 1 through 7 and 10 of Annex I that are subject to RoHS Directive		*4
Exemption	Reference: "List of Exclusions from the RoHS Directive Prohibited Substances"			
Note	*1 Because the Danish cadmium control act has been amended to reflect RoHS Directive (2011/65/EU), the control value is set at 100 ppm for products subject to RoHS Directive (2011/65/EU) and 75 ppm for products not covered by RoHS Directive (2011/65/EU). Annex XVII to REACH (restriction), ChemVerbots (Germany) *2 The total concentration of four heavy metals (cadmium, hexavalent chromium, lead and mercury) in packaging materials must be considered. In the case of printing inks used on packaging, the total concentration of these four heavy metals included in the solid ingredients of the inks must be considered. EU Directive on packaging materials and Regulations on Heavy Metals in Packaging (U.S.A.). *3 Electric and electronic equipment in Categories 1 through 7 and 10 of Annex I to RoHS Directive (2011/65/EU), which are subject to RoHS Directive (2002/95/EC), as provided by Article 4-3. *4 Electric and electronic equipment as provided by Article 2-2 of RoHS Directive (2011/65/EU). *5 The date of ban on delivery is set as the date six months before the effective date of an applicable law or regulation.			

If the Control Value column lists "intentional inclusion prohibited" and the control value, both of these requirements must be fulfilled.

Table 2-I-2

No. I-2	Substance Group: Hexavalent chromium compounds			
Prohibition Level	Date of ban on delivery *6	Applications	Control Value	Note
Level 1	Immediate	・Packaging materials	-Intentional inclusion prohibited -Less than 100 ppm in homogeneous material	*1
		・Leather articles and articles containing leather parts, which come into contact with the skin	-Less than 3 mg/kg (0.0003%) of the total dry weight of the leather	*2
		・Substances and mixtures that contain chemicals with the following CAS numbers: Lead (II) chromate: 7758-97-6 Lead chromate molybdate sulphate red: 12656-85-8 Chromium (VI) trioxide: 1333-82-0 Oligomers of chromic acid and dichromic acid: 13530-68-2 Chromic acid: 7738-94-5 Sodium dichromate: 10588-01-9 Sodium dichromate dihydrate: 7789-12-0 Potassium dichromate: 7778-50-9 Ammonium dichromate: 7789-09-5 Potassium chromate: 7789-00-6 Sodium chromate: 7775-11-3	Intentional inclusion prohibited	*3
	Immediate Exclusions from RoHS Directive: 6 months prior to expiration	・The following applications other than *1, *2 and *3 ・Electric and electronic equipment in Categories 1 through 10 of Annex I to RoHS Directive (2011/65/EU)	-Less than 1000 ppm in homogeneous material	*4
		・The following applications other than *1, *2 and *3 ・Electric and electronic equipment in Category 11 of Annex I to RoHS Directive (2011/65/EU), and electric and electronic equipment in Categories 1 through 7 and 10 of Annex I that are subject to RoHS Directive (2011/65/EU)		*5
	Immediate	・Substances and mixtures that contain chemicals with the following CAS numbers: Pentazinc chromate octahydroxide :49663-84-5 Strontium chromate :7789-06-2 Dichromium tris(chromate):24613-89-6 Potassium hydroxyoctaoxodizincatedichromate:11103-86-9	-Intentional inclusion prohibited	*3
Exemption	Reference: “Exclusions from the RoHS Directive Prohibited Substances”			
Note	*1 The total concentration of four heavy metals (cadmium, hexavalent chromium, lead and			

	mercury) in packaging materials must be considered. In the case of printing inks used on packaging, the total concentration of these four heavy metals included in the solid ingredients of the inks must be considered. EU Directive on packaging materials and Regulations on Heavy Metals in Packaging (U.S.A.). *2 Annex XVII to REACH (restriction item 47) *3 Annex XIV to REACH (authorizations) *4 Electric and electronic equipment in Categories 1 through 10 of Annex I to RoHS Directive (2011/65/EU), which are subject to RoHS Directive (2002/95/EC), as provided by Article 4-3. *5 Electric and electronic equipment as provided by Article 2-2 of RoHS Directive (2011/65/EU). *6 The date of ban on delivery is set as the date six months before the effective date of an applicable law or regulation.

If the Control Value column lists "intentional inclusion prohibited" and the control value, both of these requirements must be fulfilled.

Table 2-I-3

No. I-3	Substance Group: Lead and its compounds			
Prohibition Level	Date of ban on delivery *6	Applications	Control Value	Note
Level 1	Immediate	・Packaging materials	-Intentional inclusion prohibited -Less than 100 ppm in homogeneous material	*1
		・Stabilizer used for cable sheaths whose main ingredient is PVC (especially used in the parts of the sheaths touched routinely with hands)	-Less than 300 ppm concentration of lead in the insulating coating in PVC cable	*2
		・Substances and mixtures that contain chemicals with the following CAS numbers: Lead (II) chromate: 7758-97-6 Lead sulfochromate yellow (C.I. Pigment Yellow 34): 1344-37-2 Lead chromate molybdate sulphate red (C.I. Pigment Red 104): 12656-85-8	-Intentional inclusion prohibited	*3
	Immediate Exclusions from RoHS Directive: 6 months prior to expiration	・The following applications other than *1, *2 and *3 ・Electric and electronic equipment in Categories 1 through 10 of Annex I to RoHS Directive (2011/65/EU)	-Less than 1000 ppm in homogeneous material	*4
		・The following applications other than *1, *2 and *3 ・Electric and electronic equipment in Category 11 of Annex I to RoHS Directive (2011/65/EU), and electric and electronic equipment in Categories 1 through 7 and 10 of Annex I that are subject to RoHS Directive (2011/65/EU)		*5
Exemption	Reference: "Exclusions from the RoHS Directive Prohibited Substances"			

Note	*1 The total concentration of four heavy metals (cadmium, hexavalent chromium, lead and mercury) in packaging materials must be considered. In the case of printing inks used on packaging, the total concentration of these four heavy metals included in the solid ingredients of the inks must be considered. EU Directive on packaging materials and Regulations on Heavy Metals in Packaging (U.S.A.). *2 Labeling is required if the inclusion level exceeds the 300 ppm level stipulated in the out-of-court settlement of a lawsuit alleging non-compliance with the warning labeling requirements provided by Proposition 65 in the State of California. The control value, therefore, is set at less than 300 ppm. *3 Annex XIV to REACH (authorizations) *4 Electric and electronic equipment in Categories 1 through 10 of Annex I to RoHS Directive (2011/65/EU), which are subject to RoHS Directive (2002/95/EC), as provided by Article 4-3. Annex XVII to REACH, ChemVerbots (Germany) *5 Electric and electronic equipment as provided by Article 2-2 of RoHS Directive (2011/65/EU). *6 The date of ban on delivery is set as the date six months before the effective date of an applicable law or regulation.

If the Control Value column lists "intentional inclusion prohibited" and the control value, both of these requirements must be fulfilled.

Table 2-I-4

No. I-4	Substance Group: Mercury and its compounds			
Prohibition Level	Date of ban on delivery *5	Applications	Control Value	Note
Level 1	Immediate	・Packaging materials	-Intentional inclusion prohibited -Less than 100 ppm in homogeneous material	*1
		・Use in appliances used fully or partially in water	-Intentional inclusion prohibited -Not detected	*2
	Immediate Exclusions from RoHS Directive: 6 months prior to expiration	・The following applications other than *1 and *2 ・Electric and electronic equipment in Categories 1 through 10 of Annex I to RoHS Directive (2011/65/EU)	-Intentional inclusion prohibited -Less than 1000 ppm in homogeneous material	*3
		・The following applications other than *1 and *2 ・Electric and electronic equipment in Category 11 of Annex I to RoHS Directive (2011/65/EU), and electric and electronic equipment in Categories 1 through 7 and 10 of Annex I that are subject to RoHS Directive (2011/65/EU)		*4
Exemption	Reference: "Exclusions from the RoHS Directive Prohibited Substances"			
Note	*1 The total concentration of four heavy metals (cadmium, hexavalent chromium, lead and mercury) in packaging materials must be considered. In the case of printing inks used on packaging, the total concentration of these four heavy metals included in the solid ingredients of the inks must be considered. EU Directive on packaging materials and Regulations on Heavy Metals in Packaging (U.S.A.). *2 Annex XVII to REACH (restriction), ChemVerbots (Germany) *3 Electric and electronic equipment in Categories 1 through 10 of Annex I to RoHS			

	Directive (2011/65/EU), which are subject to RoHS Directive (2002/95/EC), as provided by Article 4-3. *4 Electric and electronic equipment as provided by Article 2-2 of RoHS Directive (2011/65/EU). *5 The date of ban on delivery is set as the date six months before the effective date of an applicable law or regulation.

If the Control Value column lists "intentional inclusion prohibited" and the control value, both of these requirements must be fulfilled.

Table 2-I-5

No. I-5	Substance Group: Trisubstituted organotin compounds (including bis (tributyltin) oxide (TBTO), tributyltin compounds (TBTs, excluding TBTO) and triphenyltin compounds (TPTs))			
Prohibition Level	Date of ban on delivery	Applications	Control Value	Note
Level 1	Immediate	TBTO (CAS No.: 56-35-9) ・All applications	-Intentional inclusion prohibited	*1
		Trisubstituted organotin compounds except TBTO (CAS No.: 56-35-9) ・All applications	- Less than 1000 ppm (tin conversion) in article or part thereof	*2
Note	*1 Class I Specified Chemical Substances (TBTO: Cas No.56-35-9) designated by the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. *2 Annex XVII to REACH (restriction), ChemVerbots (Germany)			

Table 2-I-6

No. I-6	Substance Group: Dibutyltin compounds			
Prohibition Level	Date of ban on delivery	Applications	Control Value	Note
Level 1	Immediate	・All applications	- Less than 1000 ppm (tin conversion) in mixture, article or part thereof	*1
Note	*1 Annex XVII to REACH (restriction)			

Table 2-I-7

No. I-7	Substance Group: Dioctyltin compounds (DOT)			
Prohibition Level	Date of ban on delivery	Applications	Control Value	Note
Level 1	Immediate	・textile and leather articles intended to come into contact with the skin ・childcare articles ・two-component room temperature vulcanization moulding kits (RTV-2 moulding kits)	- Less than 1000 ppm (tin conversion) in article or part thereof	*1
Note	*1 Annex XVII to REACH (restriction)			

Table 2-I-8

No. I-8	Substance Group: Nickel and its compounds			
Prohibition	Date of ban	Applications	Control Value	Note

Level	on delivery			
Level 1	Immediate	Prohibited in the following types of products that maintain direct, sustained contact with the skin: ・ Earrings, necklaces, bracelets, chains, anklets, rings ・Wristwatch cases, wristwatch bands, rivet buttons used in clothing, belts, rivets, zippers, and metal marks.	-The rate of nickel release from the product is less than 0.5 μg/cm² per week.	*1
Note	*1 Annex XVII to REACH (restriction) The use of products is prohibited if the rate of nickel released from those products equals or exceeds 0.5 μg/cm² per week. (In the case where the above-mentioned products have non-nickel coatings on them, the use of the products will be still prohibited if the rate of nickel released from them under normal usage conditions for at least two years exceeds 0.5 μg/cm²per week.)			

Table 2-I-9

No. I-9	Substance Group: Polybrominated biphenyl (PBBs)			
Prohibition Level	Date of ban on delivery *3	Applications	Control Value	Note
Level 1	Immediate	・All applications other than the items subject to RoHS Directive (2011/65/EU) ・Electric and electronic equipment in Categories 1 through 10 of Annex I to RoHS Directive (2011/65/EU)	-Intentional inclusion prohibited -Less than 1000 ppm in homogeneous material	*1
		・Electric and electronic equipment in Category 11 of Annex I to RoHS Directive (2011/65/EU), and electric and electronic equipment in Categories 1 through 7 and 10 of Annex I that are subject to RoHS Directive (2011/65/EU)		*2
Note	*1 Electric and electronic equipment in Categories 1 through 10 of Annex I to RoHS Directive (2011/65/EU), which are subject to RoHS Directive (2002/95/EC), as provided by Article 4-3. The Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc., Annex XVII to REACH (restriction). *2 Electric and electronic equipment as provided by Article 2-2 of RoHS Directive (2011/65/EU). *3 The date of ban on delivery is set as the date six months before the effective date of an applicable law or regulation.			

If the Control Value column lists “intentional inclusion prohibited” and the control value, both of these requirements must be fulfilled.

Table 2-I-10

No. I-10	Substance Group: Polybrominated diphenyl ethers (PBDEs)			
Prohibition Level	Date of ban on delivery *4	Applications	Control Value	Note
Level 1	Immediate	・All applications other than the items subject to RoHS Directive (2011/65/EU)	-Intentional inclusion prohibited	*1 *3

		・Electric and electronic equipment in Categories 1 through 10 of Annex I to RoHS Directive (2011/65/EU)	-Less than 1000 ppm in homogeneous material	
		・Electric and electronic equipment in Category 11 of Annex I to RoHS Directive (2011/65/EU), and electric and electronic equipment in Categories 1 through 7 and 10 of Annex I that are subject to RoHS Directive (2011/65/EU)		*2
Note	*1 Class I Specified Chemical Substances (POPs) designated by the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.; electric and electronic equipment in Categories 1 through 10 of Annex I to RoHS Directive (2011/65/EU), which are subject to RoHS Directive (2002/95/EC), as provided by Article 4-3; Annex XVII to REACH (restriction) *2 Electric and electronic equipment as provided by Article 2-2 of RoHS Directive (2011/65/EU). *3 Annex XVII to REACH (restriction) *4 The date of ban on delivery is set as the date six months before the effective date of an applicable law or regulation.		

If the Control Value column lists “intentional inclusion prohibited” and the control value, both of these requirements must be fulfilled.

Table 2-I-11

No. I-11	Substance Group: Polychlorinated biphenyl (PCBs)			
Prohibition Level	Date of ban on delivery	Applications	Control Value	Note
Level 1	Immediate	・All applications	-Intentional inclusion prohibited	*1
Note	*1 Class I Specified Chemical Substances by the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.; TSCA(USA)			

Table 2-I-12

No.I-12	Substance Group: Polychlorinated Terphenyls (PCTs)			
Prohibition Level	Date of ban on delivery	Applications	Control Value	Note
Level 1	Immediate	・All applications	-Less than 50 ppm in mixture or finished product	*1
Note	*1 Annex XVII to REACH (restriction)			

If the Control Value column lists “intentional inclusion prohibited” and the control value, both of these requirements must be fulfilled.

Table 2-I-13

No. I-13	Substance Group: Polychlorinated naphthalene (number of chlorine 2or more)			
Prohibition Level	Date of ban on delivery	Applications	Control Value	Note
Level 1	Immediate	・All applications	-Intentional inclusion prohibited	*1

Note	*1 Class I Specified Chemical Substances designated by the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.

Table 2-I-14

No. I-14	Substance Group: Short-chained chlorinated paraffin (having the chain length of 10 - 13)			
Prohibition Level	Date of ban on delivery	Applications	Control Value	Note
Level 1	Immediate	・All applications	-Less than 0.1% in mixture or product	*1
Note	*1 EU POPs regulation			

Substance subject to the regulation			
Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN
塩素化パラフィン(短鎖) (炭素数 10-13)	Alkanes,C10-13,chloro(Short Chain Chlorinated Paraffins)	Unspecified	85535-84-8

Table 2-I-15

No. I-15	Substance Group: Polyvinyl chloride (PVC)			
Prohibition Level	Date of ban on delivery	Applications	Control Value	Note
Level 1	Immediate	・Packaging materials	-Intentional inclusion prohibited	－
Exemption	Other applications are permitted.			

Table 2-I-16

No. I-16	Substance Group: Hexabromocyclododecane (HBCDD)			
Prohibition Level	Date of ban on delivery	Applications	Control Value	Note
Level 1	Immediate	・All applications	-Intentional inclusion prohibited	*1
		・Substances ・Mixtures	-Intentional inclusion prohibited	*2
Exemption	*2 Applications that are submitted to, and approved by, the European Chemicals Agency will be permitted.			
Note	*1 Class I Specified Chemical Substances designated by the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc., EU POPs regulation *2 Annex XIV to REACH (authorizations)			

*1 Substance subject to the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.

Substance (Japanese)	Substance (English)	Chemical formula	CAS No or JAMP-SN
1,2,5,6,9,10-ヘキサブロモシクロドデカン	1,2,5,6,9,10-hexabromocyclododecane	$C_{12}H_{18}Br_6$	3194-55-6
ヘキサブロモシクロドデカン (HBCDD)	Hexabromocyclododecane (HBCDD)	$C_{12}H_{18}Br_6$	25637-99-4
rel-(1R,2R,5S,6R,9R,10S)-1,2,5,6,9,10-ヘキサブロモシクロドデカン; アルファ-ヘキサブロモシクロドデカン	rel-(1R,2R,5S,6R,9R,10S)-1,2,5,6,9,10-Hexabromocyclododecane; Alpha-hexabromocyclododecane	$C_{12}H_{18}Br_6$	134237-50-6

rel-(1R,2S,5R,6R,9R,10S)-1,2,5,6,9,10-ヘキサブロモシクロドデカン; ベータ-ヘキサブロモシクロドデカン	rel-(1R,2S,5R,6R,9R,10S)-1,2,5,6,9,10-hexabromocyclododecane Beta-hexabromocyclododecane	$C_{12}H_{18}Br_6$	134237-51-7
rel-(1R,2R,5R,6S,9S,10R)-1,2,5,6,9,10-ヘキサブロモシクロドデカン; ガンマ-ヘキサブロモシクロドデカン	rel-(1R,2R,5R,6S,9S,10R)-1,2,5,6,9,10-hexabromocyclododecane Gamma-hexabromocyclododecane	$C_{12}H_{18}Br_6$	134237-52-8
rel-(1R,2S,5R,6S,9R,10S)-1,2,5,6,9,10-ヘキサブロモシクロドデカン	rel-(1R,2S,5R,6S,9R,10S)-1,2,5,6,9,10-Hexabromocyclododecane	$C_{12}H_{18}Br_6$	4736-49-6
rel-(1R,2S,5R,6S,9S,10R)-1,2,5,6,9,10-ヘキサブロモシクロドデカン	rel-(1R,2S,5R,6S,9S,10R)-1,2,5,6,9,10-Hexabromocyclododecane	$C_{12}H_{18}Br_6$	65701-47-5
(1R,2R,5R,6S,9S,10S)-1,2,5,6,9,10-ヘキサブロモシクロドデカン	(1R,2R,5R,6S,9S,10S)-1,2,5,6,9,10-Hexabromocyclododecane	$C_{12}H_{18}Br_6$	138257-17-7
(1R,2R,5R,6S,9R,10S)-1,2,5,6,9,10-ヘキサブロモシクロドデカン	(1R,2R,5R,6S,9R,10S)-1,2,5,6,9,10-Hexabromocyclododecane	$C_{12}H_{18}Br_6$	138257-18-8
(1R,2S,5S,6R,9S,10S)-1,2,5,6,9,10-ヘキサブロモシクロドデカン	(1R,2S,5S,6R,9S,10S)-1,2,5,6,9,10-Hexabromocyclododecane	$C_{12}H_{18}Br_6$	138257-19-9
(1R,2S,5S,6S,9S,10R)-1,2,5,6,9,10-ヘキサブロモシクロドデカン	(1R,2S,5S,6S,9S,10R)-1,2,5,6,9,10-Hexabromocyclododecane	$C_{12}H_{18}Br_6$	169102-57-2
(1R,2R,5S,6R,9R,10S)-1,2,5,6,9,10-ヘキサブロモシクロドデカン	(1R,2R,5S,6R,9R,10S)-1,2,5,6,9,10-Hexabromocyclododecane	$C_{12}H_{18}Br_6$	678970-15-5
(1R,2S,5R,6S,9S,10S)-1,2,5,6,9,10-ヘキサブロモシクロドデカン	(1R,2S,5R,6S,9S,10S)-1,2,5,6,9,10-Hexabromocyclododecane	$C_{12}H_{18}Br_6$	678970-16-6
(1R,2R,5R,6S,9S,10R)-1,2,5,6,9,10-ヘキサブロモシクロドデカン	(1R,2R,5R,6S,9S,10R)-1,2,5,6,9,10-Hexabromocyclododecane	$C_{12}H_{18}Br_6$	678970-17-7

*2 Substance subject to REACH

Substance (Japanese)	Substance (English)	Chemical formula	CAS No or JAMP-SN
1,2,5,6,9,10-ヘキサブロモシクロドデカン	1,2,5,6,9,10-hexabromocyclododecane	$C_{12}H_{18}Br_6$	3194-55-6
ヘキサブロモシクロドデカン (HBCDD) アルファ-ヘキサブロモシクロドデカン ベータ-ヘキサブロモシクロドデカン ガンマ-ヘキサブロモシクロドデカン	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified: Alpha-hexabromocyclododecane Beta-hexabromocyclododecane Gamma-hexabromocyclododecane	$C_{12}H_{18}Br_6$	25637-99-4 134237-50-6, 134237-51-7, 134237-52-8

Table 2-I-17

No. I-17	Substance Group: Asbestos			
Prohibition Level	Date of ban on delivery	Applications	Control Value	Note
Level 1	Immediate	・All applications	-Intentional inclusion prohibited	*1
Note	*1 Annex XVII to REACH (restriction), Industrial Safety and Health Law (Japan) (Specified Chemical Substances Class II: Applicable only to Amosite, Chrysotile and Crocidolite)			

Table 2-I-18

No. I-18	Substance Group: Azo dyes and pigments (specific amines formed by degrading azo dyes and pigments)			
Prohibition Level	Date of ban on delivery *3	Applications	Control Value	Note
Level 1	Immediate	・Use of Azo dyes and pigments forming specific amines by degradation of the parts of products being routinely touched by skin for a long time (such as earphones, headphones and straps)	-Less than 30 ppm in product	*1
		・Substances and mixtures that contain the following substances: CAS No.101-77-9: 4,4'-Diaminodiphenylmethane CAS No. 101-14-4: 2,2'-dichloro-4,4'-methylenedianiline	-Intentional inclusion prohibited	*2
Exemption	*2 Applications that are submitted to, and approved by, the European Chemicals Agency will be permitted.			
Note	*1 Annex XVII to REACH (restriction). Consumer Goods Ordinance (Germany) *2 Annex XIV to REACH (authorizations)			

Substance

Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN
4-アミノアゾベンゼン	4-aminoazobenzene	$C_{12}H_{11}N_3$	60-09-3
2-メトキシアニリン; o-アニシジン	2-Methoxyaniline; o-Anisidine	C_7H_9NO	90-04-0
2-ナフチルアミン	2-naphthylamine	$C_{10}H_9N$	91-59-8
3,3'-ジクロロベンジジン	3,3'-dichlorobenzidine	$C_{12}H_{10}Cl_2N_2$	91-94-1
ビフェニル-4-イルアミン; 4-アミノビフェニル	Biphenyl-4-ylamine; 4-aminobiphenyl	$C_{12}H_{11}N$	92-67-1
ベンジジン	Benzidine	$C_{12}H_{12}N_2$	92-87-5
o-トルイジン	o-toluidine	C_7H_9N	95-53-4
o-塩化トルイジン	4-chloro-o-toluidine	C_7H_8ClN	95-69-2
2,4-ジアミノトルエン	4-methyl-m-phenylenediamine(toluene-2,4-diamine)	$C_7H_{10}N_2$	95-80-7
o-アミノアゾトルエン	o-aminoazotoluene	$C_{14}H_{15}N_3$	97-56-3
5-ニトロ-o-トルイジン	5-nitro-o-toluidine	$C_7H_8N_2O_2$	99-55-8
2,2'-ジクロロ-4,4'-メチレンジアニリン	2,2'-dichloro-4,4'-methylenedianiline	$C_{13}H_{12}Cl_2N_2$	101-14-4
4,4'-ジアミノジフェニルメタン	4,4'-diaminodiphenylmethane(MDA);	$C_{13}H_{14}N_2$	101-77-9
4,4'-オキシジアニリン及びその塩	4,4'-oxydianiline and its salts	$C_{12}H_{12}N_2O$	101-80-4
p-クロロアニリン	p-chloroaniline	C_6H_6ClN	106-47-8
3,3'-ジメトキシベンジジン	3,3'-dimethoxybenzidine	$C_{14}H_{16}N_2O_2$	119-90-4
3,3'-ジメチルベンジジン	3,3'-dimethylbenzidine	$C_{14}H_{16}N_2$	119-93-7
6-メトキシ-m-トルイジン	6-methoxy-m-toluidine	$C_8H_{11}NO$	120-71-8
2,4,5-トリメチルアニリン	2,4,5-trimethylaniline	$C_9H_{13}N$	137-17-7
4,4'-ジアミノジフェニルスルフィド	4,4'-thiodianiline	$C_{12}H_{12}N_2S$	139-65-1
2,4-ジアミノアニソール	2,4-diaminoanisole	$C_7H_{10}N_2O$	615-05-4
4,4'-メチレンビス(o-トルイジン)	4,4'-methylenedi-o-toluidine	$C_{15}H_{18}N_2$	838-88-0

Table 2-I-19

No. I-19	Substance Group: Ozone depleting substances

Prohibition Level	Date of ban on delivery	Applications	Control Value	Note
Level 1	Immediate	・All applications	-Intentional inclusion prohibited	*1
Note	*1 Montreal Protocol, Section 611 on the Clean Air Act Amendments of 1990(U.S.A.), (EC)No 2037/2000, (EC)No 1005/2009, Law Concerning the Protection of the Ozone Layer.			
Controlled substances: Listed in Table 3.				

Table 2-I-20

No. I-20	Substance Group: Perfluorooctanesulfonic acid (PFOS) and PFOS analogs			
Prohibition Level	Date of ban on delivery	Applications	Control Value	Note
Level 1	Immediate	・All applications	-Intentional inclusion prohibited	*1
Note	*1 Class I Specified Chemical Substances designated by the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc., EU POPs Regulation, Canadian Environmental Protection Act(CEPA 1999 SOR)			

Table 2-I-21

No. I-21	Substance Group: Specific benzotriazole: 2-(2H-1,2,3-Benzotriazol-2-yl)-4,6-di-tert-butylphenol CAS No: 3846-71-7			
Prohibition Level	Date of ban on delivery	Applications	Control Value	Note
Level 1	Immediate	Anti-UV materials and UV absorbers used in following applications ・Molded plastic parts ・Decorative laminates ・Photographic paper ・Adhesives (excluding animal and plant-based adhesives), putties, stopping and sealing fillers ・Paints and printing inks	-Intentional inclusion prohibited	*1
Note	*1 Class I Specified Chemical Substances designated by the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.			

Table 2-I-22

No. I-22	Substance Group: Formaldehyde CAS No: 50-00-0			
Prohibition Level	Date of ban on delivery	Applications	Control Value	Note
Level 1	Immediate	・Wood products and parts (excluding packaging materials) using materials such as particle boards and MDF (medium density fiberboard)	-Less than 0.05ppm as gas discharge from product	*1
		・Fabrics	-Less than 75 ppm in product	*2
Note	*1 ChemVerbots (Germany), Formaldehyde Regulations (Denmark), California USA CARB Regulations, U.S. federal law 111-199/TSCA Article 601 *2 Australia BGB I 1990/194, Formaldehyde Regulation §2, 12/2/1990			

	Lithuanian Health Standard NH 96:2000 (health standards and regulations)

Table 2-I-23

No. I-23	Substance Group: Dimethylfumarate (DMF) CAS No: 624-49-7			
Prohibition Level	Date of ban on delivery	Applications	Control Value	Note
Level 1	Immediate	・All applications	-Less than 0.1ppm in product or part thereof	*1
Note	*1 Annex XVII to REACH (restriction)			

Table 2-I-24

No. I-24	Substance Group: Fluorinated Greenhouse Gases (PFC, SF6, HFC)			
Prohibition Level	Date of ban on delivery	Applications	Control Value	Note
Level 1	Immediate	1) SF6, HFC ・All applications	-Intentional inclusion prohibited	*1
		2) PFC ・All applications listed below Disposable containers, cooling systems containing refrigerants, fire prevention systems and fire extinguishers, household windows, other windows, shoes, tires, one-component foaming agents		
Note	*1 (EC)No 842/2006 The Regulation on certain fluorinated greenhouse gases.			
Prohibited substance: Listed in Table 4.				

Table 2-I-25

No. I-25	Substance Group: Phthalate esters (BBP, DBP, DEHP, DIDP, DINP, DNOP)			
Prohibition Level	Date of ban on delivery *4	Applications	Control Value	Note
Level 1	Immediate	・BBP, DBP, DEHP: Prohibited in children's toy or child care article ・DIDP,DINP,DNOP: Prohibited in children's toy or child care article that can be placed in a child's mouth	-Less than 1000 ppm in plasticized material	*1
		・Substances and Mixtures that contain DEHP, BBP, DBP and/or DIBP	-Intentional inclusion prohibited	*2
	January 22, 2019	-DEHP, BBP, DBP, DIBP: Articles specified in Categories 1 through 7, 10, and 11 of Annex I to RoHS Directive (2011/65/EU)	-Less than 1000 ppm in homogeneous material	*3
Level 2	January 22, 2021	-DEHP, BBP, DBP, DIBP: Articles specified in Categories 8 and 9 of Annex I to RoHS Directive (2011/65/EU)		

	January 7, 2020	-Articles containing plasticized material that includes DEHP, BBP, DBP and/or DIBP "Plasticized material" means any of the following homogeneous materials: - polyvinyl chloride (PVC), polyvinylidene chloride (PVDC), polyvinyl acetate (PVA), polyurethanes, - any other polymer (including inter alia polymer foams and rubber material) except silicone rubber and natural latex coatings, - surface coatings, non-slip coatings, finishes, decals, printed designs, - adhesives, sealants, paints and inks.	-Less than 1000 ppm total of these four substances in homogeneous material	*5
Exemption	*2 Applications that are submitted to, and approved by, the European Chemicals Agency will be permitted. *5 Exempted applications are as follows: ・ electrical and electronic equipment subject to RoHS Directive (2011/65/EU), ・ medical devices, or parts thereof, subject to Medical Device Directive (93/42/EEC), In-Vitro Diagnostic Devices Directive (98/79/EC) and Active Implantable Medical Devices Directive (90/385/EEC), ・ articles exclusively for industrial or agricultural use, or for use exclusively in the open air, provided that no plasticized material comes into contact with human mucous membranes or prolonged contact with human skin, ・ measuring devices for laboratory use, or parts thereof.			
Note	*1 Annex XVII to REACH (restriction), U.S. Consumer Product Safety Improvement Act *2 Annex XIV to REACH (authorizations) *3 Annex II to RoHS Directive (2011/65/EU), addition of prohibited substances, (EU) 2015/863 *4 The date of ban on delivery is set as the date six months before the effective date of an applicable law or regulation. *5 Annex XVII to REACH (restriction)			

Table 2-I-26

No.I-26	Substance Group: Perfluorooctanoic acid (PFOA) and its salts and esters			
Prohibition Level	Date of ban on delivery	Applications	Control Value	Note
Level 1	Immediate	・Substances or mixtures	-Less than 10ppm in substance or mixture	*1
		・Fibers, carpets and other coated consumer products that contain certain PFOAs whose inclusion levels in individual product parts are 1μg/m^2 or higher	-Less than 1μg/m^2 in product	
		・Consumer products that contain certain PFOAs whose inclusion levels in individual product parts are 0.1% or higher	-Less than 0.1% in part	
		・Adhesive foils or tapes in semiconductors ・Films, coating for paper, screens and photos		
Level 2	January 4, 2020	・Substances or mixtures ・Products other than medical devices	・Less than 25ppb as PFOA including salts, or less than 1ppm as a total of all	*2 *3
	January 4,	・Medical devices other than implantable		

	2032	ones	PFOA-related substances, in mixture or product (intentional inclusion prohibited)	
Exemption	Implantable medical devices			
Note	*1 Norwegian Product Regulations *2 Annex XVII to REACH (restriction) *3 The definitions of medical devices and implantable medical devices are as provided by the Medical Device Directive 93/42/EEC. *4 The date of ban on delivery is set as the date six months before the effective date of an applicable law or regulation.			

Substance			
Substance (Japanese)	Substance (English)	Chemical formula	CAS No or JAMP-SN
ペルフルオロオクタン酸	Pentadecafluorooctanoic acid; PFOA - perfluorooctanoic acid	$C_8HF_{15}O_2$	335-67-1
ペンタデカフルオロオクタン酸フルオリド	Pentadecafluorooctyl fluoride	C8F16O	335-66-0
ペンタデカフルオロオクタン酸銀(I)	Pentadecafluorooctanoic acid silver(I) salt	$C_8AgF_{15}O_2$	335-93-3
ペンタデカフルオロオクタン酸ナトリウム	Perfluorooctanoic acid sodium salt; Sodium salt of PFOA	$C_8F_{15}NaO_2$	335-95-5
ペンタデカフルオロオクタン酸メチル	Methyl perfluorooctanoate	$C_9H_3F_{15}O_2$	376-27-2
ペルフルオロオクタン酸カリウム	Potassium salt of PFOA	$C_8F_{15}KO_2$	2395-00-8
ペンタデカフルオロオクタン酸エチル	Ethyl perfluorooctanoate	$C_{10}H_5F_{15}O_2$	3108-24-5
ペンタデカフルオロオクタン酸アンモニウム	Ammonium pentadecafluorooctanoate (APFO); Ammonium salt of PFOA	$C_8H_4F_{15}NO_2$	3825-26-1
PFOA とその塩	PFOA and its salts	-	JAMP-SN0036

Table 2-I-27

No.I-27	Substance Group: Polycyclic-aromatic hydrocarbons (PAH)			
Prohibition Level	Date of ban on delivery	Applications	Control Value	Note
Level 1	Immediate	・Rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with human skin or the oral cavity under normal or reasonably foreseeable conditions of use	-Less than 1mg/kg of any of the listed PAHs in components of products for the general public (less than 0.0001% [1ppm] of the weight of such components)	*1
Note	*1 Annex XVII to REACH (restriction)			

Substance (Japanese)	Substance (English)	Chemical formula	CAS No.or JAMP-SN
ベンゾ(a)ピレン	Benzo[a]pyrene (BaP)	$C_{20}H_{12}$	50-32-8
ベンゾ(e)ピレン	Benzo[e]pyrene (BeP)	$C_{20}H_{12}$	192-97-2
ベンゾ(a)アントラセン	Benzo[a]anthracene (BaA)	$C_{20}H_{12}$	56-55-3
クリセン	Chrysene (CHR)	$C_{20}H_{12}$	218-01-9
ベンゾ(b)フルオランテン	Benzo[b]fluoranthene (BbFA)	$C_{20}H_{12}$	205-99-2
ベンゾ(j)フルオランテン	Benzo[j]fluoranthene (BjFA)	$C_{20}H_{12}$	205-82-3

ベンゾ(k)フルオランテン	Benzo[k]fluoranthene (BkFA)	$C_{20}H_{12}$	207-08-9
ジベンズ(a,h)アントラセン	Dibenzo[a,h]anthracene (DBAhA)	$C_{22}H_{14}$	53-70-3

Table 2-I-28

No. I-28	Subject Group: Pentachlorophenol and its salts and esters			
Prohibition Level	Date of ban on delivery	Applications	Control Value	Note
Level 1	Immediate	-All applications	Intentional inclusion prohibited	*1
Note	*1 Class I Specified Chemical Substances (POPs) designated by the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.)			

Table 2-I-29

No. I-29	Subject Group: Certain CMR substances			
Prohibition Level	Date of ban on delivery	Applications	Control Value	Note
Level 2	May 1, 2020	・Clothing or related accessories such as bags (shoulder bags), neck straps and hand straps, ・Textiles other than clothing which, under normal or reasonably foreseeable conditions of use, come into contact with human skin to an extent similar to clothing, ・Footwear.	・Control values vary among controlled substances. For details, please refer to the control value of each substance.	*1
Exemption	・Medical devices subject to Medical Devices Regulation((EU) 2017/745) ・Personal protective equipment subject to Personal Protective Equipment Regulation ((EU) 2016/425) ・Clothing, related accessories or footwear, or parts of clothing, related accessories or footwear, made exclusively of natural leather, fur or hide ・Non-textile fasteners and non-textile decorative attachments ・Second-hand clothing, related accessories, textiles other than clothing, or footwear ・Wall-to-wall carpets and textile floor coverings for indoor use, rugs and runners			
Note	*1: Annex XVII to REACH (restriction)			

Substance (Japanese)	Substance (English)	Control value	CAS No. or JAMP-SN
カドミウム及びその化合物	Cadmium and its compounds	・1 mg/kg after extraction (expressed as Cd metal that can be extracted from the material)	Please see Table 6-I-1.
六価クロム化合物	Chromium VI compounds	・1 mg/kg after extraction (expressed as Cr VI that can be extracted from the	Please see Table 6-I-2.

		material)	
ヒ素化合物	Arsenic compounds	・1 mg/kg after extraction (expressed as As metal that can be extracted from the material)	Please see Table 6-I-29.
鉛及びその化合物	Lead and its compounds	・1 mg/kg after extraction (expressed as Pb metal that can be extracted from the material)	Please see Table 6-I-3.
ベンゼン	Benzene	・Less than 5ppm	71-43-2
ベンゾ[a]アントラセン	Benz[a]anthracene	・Less than 1ppm	56-55-3
ベンゾ[b]フルオランテン	Benz[e]acephenanthrylene	・Less than 1ppm	205-99-2
ベンゾ[a]ピレン ベンゾ[def]クリセン	benzo[a]pyrene; benzo[def]chrysene	・Less than 1ppm	50-32-8
ベンゾ[e]ピレン	Benzo[e]pyrene	・Less than 1ppm	192-97-2
ベンゾ[j]フルオランテン	Benzo[j]fluoranthene	・Less than 1ppm	205-82-3
ベンゾ[k]フルオランテン	Benzo[k]fluoranthene	・Less than 1ppm	207-08-9
クリセン	Chrysene	・Less than 1ppm	218-01-9
ジベンゾ[a,h]アントラセン	Dibenz[a,h]anthracene	・Less than 1ppm	53-70-3
p-(トリクロロメチル)クロロベンゼン	α, α,α,4-tetrachlorotoluene; p-chlorobenzotrichloride	・Less than 1ppm	5216-25-1
トリクロロメチルベンゼン	α, α,α-trichlorotoluene; benzotrichloride	・Less than 1ppm	98-07-7
クロロメチルベンゼン	α-chlorotoluene; benzyl chloride	・Less than 1ppm	100-44-7
ホルムアルデヒド	Formaldehyde	・Less than 75ppm	50-00-0
ジアルキル(c=6,7(主成分),8,分岐型)=フタラート	1,2-benzenedicarboxylic acid; di-C 6-8-branched alkylesters, C 7-rich	・Less than 1000ppm	71888-89-6
ビス(2-メトキシエチル)=フタラート	Bis(2-methoxyethyl) phthalate	・Less than 1000ppm	117-82-8
ジイソペンチル=フタラート	Diisopentylphthalate	・Less than 1000ppm	605-50-5
ジペンタル-1-イル=フタラート(DPP)	Di-n-pentyl phthalate (DPP)	・Less than 1000ppm	131-18-0
ジヘキサン-1-イル=フタラート(DnHP)	Di-n-hexyl phthalate (DnHP)	・Less than 1000ppm	84-75-3
1-メチル-2-ピロリドン(NMP)	N-methyl-2-pyrrolidone; 1-methyl-2-pyrrolidone (NMP)	・Less than 3000ppm	872-50-4
N,N-ジメチルアセトアミド(DMAC)	N,N-dimethylacetamide (DMAC)	・Less than 3000ppm	127-19-5
N,N-ジメチルホルムアミド	N,N-dimethylformamide; dimethyl formamide (DMF)	・Less than 3000ppm	68-12-2
1,4,7,8-テトラアミノアントラキノン; C.I.ディスパーブルー1	1,4,5,8-tetraaminoanthraquinone; C.I. Disperse Blue 1	・Less than 50ppm	2475-45-8
4,4-(4-イミノシクロヘキサ-2,5-ジエニデンメチレン)ジアニリン塩酸塩	Benzenamine, 4,4′-(4-iminocyclohexa-2,5-dienylidenemethylene)dianiline hydrochloride; C.I. Basic Red 9	・Less than 50ppm	569-61-9

C.I.ベーシックバイオレット 3	[4-[4,4′-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride; C.I. Basic Violet 3 with ≥ 0,1 % of Michler's ketone (EC no. 202-027-5)	・Less than 50ppm	548-62-9
4-クロロ-2-メチルアニリウム=クロリド	4-chloro-o-toluidinium chloride	・Less than 30ppm	3165-93-3
2-ナフタレンアミン・酢酸	2-Naphthylammoniumacetate	・Less than 30ppm	553-00-4
硫酸 2,4-ジアミノエーテル	4-methoxy-m-phenylene diammonium sulphate; 2,4-diaminoanisole sulphate	・Less than 30ppm	39156-41-7
2,4,5-トリミチルアニリン・塩酸塩	2,4,5-trimethylaniline hydrochloride	・Less than 30ppm	21436-97-5
キノリン	Quinoline	・Less than 50ppm	91-22-5

Table 3　I-19　Ozone depleting substances

Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN
・Annex A　Group I：CFC			
トリクロロフルオロメタン；CFC-11	Trichlorofluoromethane ; CFC-11	$CFCl_3$	75-69-4
ジクロロジフルオロメタン；CFC-12	Dichlorodifluoromethane ; CFC-12	CF_2Cl_2	75-71-8
トリクロロトリフルオロエタン；1,1,2トリクロロ-1,2,2トリフルオロエタン；CFC-113	Trichlorofluoroethane ; 1,1,2 Trichloro-1,2,2 trifluoroethane ; CFC-113	$C_2F_3Cl_3$	354-58-5 76-13-1
ジクロロテトラフルオロエタン；CFC-114	Dichlorotetrafluoroethane ; CFC-114	$C_2F_4Cl_2$	1320-37-2 76-14-2
モノクロロペンタフルオロエタン；CFC-115	Monochloropentafluoroethane ; CFC-115	C_2F_5Cl	76-15-3
・Annex A　Group II：Halons			
ブロモクロロジフルオロメタン；ハロン-1211	Bromochlorodifluoromethane ; Halon 1211	CF_2BrCl	353-59-3
ブロモトリフルオロメタン；ハロン-1301	Bromotrifluoromethane ; Halon 1301	CF_3Br	75-63-8
ジブロモテトラフルオロエタン；ハロン-2402	Dibromotetrafluoroethane ; Halon 2402	$C_2F_4Br_2$	124-73-2
・Annex B　Group I:Other CFCs			
塩化フッ化メタン；CFC-13	Chlorotrifluoromethane ; CFC-13	CF_3Cl	75-72-9
ペンタクロロフルオロエタン；CFC-111	Pentachlorofluoroethane ; CFC-111	C_2FCl_5	354-56-3
テトラクロロジフルオロエタン；CFC-112	Tetrachlorodifluoroethane ; CFC-112	$C_2F_2Cl_4$	28605-74-5 76-12-0
1.1.1.2-テトラクロロ-2.2-ジフオロエタン；CFC-112a	1,1,1,2-Tetrachloro-2,2- difluoroethane ; CFC-112a	$C_2F_2Cl_4$	76-11-9
ヘプタクロロフルオロプロパン；CFC-211	Heptachlorofluoropropane ; CFC-211	C_3FCl_7	135401-87-5 422-78-6
1.1.1.2.3.3.3-ヘプタクロロ-2-フルオ	1,1,1,2,3,3,3-Heptachloro-2-fluoropropane ;	C_3Cl_7F	422-81-1

ロプロパン；CFC-211ba	CFC-211ba		
ヘキサクロロジフルオロプロパン；CFC-212	Hexachlorodifluoropropane；1,1,1,3,3,3-Hexachlor-2,2-difluoropropane；CFC-212	$C_3F_2Cl_6$	3182-26-1
ペンタクロロトリフルオロプロパン；CFC-213	Pentachlorotrifluoropropane；CFC-213	$C_3F_3Cl_5$	134237-31-3 2354-06-5
テトラクロロテトラフルオロプロパン；CFC-214	Tetrachlorotetrafluoropropane；CFC-214	$C_3F_4Cl_4$	29255-31-0
1,1,1,3-テトラクロロテトラフルオロプロパン	1,1,1,3-Tetrachlorotetrafluoropropane	$C_3Cl_4F_4$	2268-46-4
トリクロロペンタフルオロプロパン；CFC-215	Trichloropentafluoropropane；1,2,2-trichloropentafluoropropane; CFC-215	$C_3F_5Cl_3$	1599-41-3
1,2,3-トリクロロペンタフルオロプロパン；CFC-215ba	1,2,3-trichloropentafluoropropane；CFC-215ba	$C_3Cl_3F_5$	76-17-5
1,1,2-トリクロロペンタフルオロプロパン；CFC-215bb	1,1,2-trichloropentafluoropropane；CFC-215bb	$C_3HCl_3F_4$	812-30-6
1,1,3-トリクロロペンタフルオロプロパン；CFC-215ca	1,1,3-trichloropentafluoropropane；CFC-215ca	$C_3Cl_3F_5$	1652-81-9
1,1,1-トリクロロペンタフルオロプロパン；CFC-215cb	1,1,1-trichloropentafluoropropane；CFC-215cb	$C_3Cl_3F_5$	4259-43-2
ジクロロヘキサフルオロプロパン；CFC-216	Dichlorohexafluoropropane；1,2-Dichloro-1,1,2,3,3,3-hexafluoropropane；CFC-216	$C_3F_6Cl_2$	661-97-2
モノクロロヘプタフルオロプロパン；CFC-217	Monochloroheptafluoropropane；CFC-217	C_3F_7Cl	422-86-6
・Annex B　Group II :tetrachloride			
四塩化炭素（テトラクロロメタン）	Carbon tetrachloride	CCl_4	56-23-5
・Annex B　Group III :1,1,1-Trichloroethane			
1,1,1-トリクロロエタン	1,1,1-trichloroethane	$C_2H_3Cl_3$	71-55-6
・Annex C　Group II :HBFC			
ジブロモフルオロメタン	Dibromofluoromethane	$CHFBr_2$	1868-53-7
ブロモジフルオロメタンおよび異性体(HBFC類)	Bromodifluoromethane and Isomers (HBFCs)	CHF_2Br	1511-62-2
ブロモフルオロメタン	Bromofluoromethane	CH_2FBr	373-52-4
テトラブロモフルオロエタン	Tetrabromofluoroethane	C_2HFBr_4	306-80-9
トリブロモジフルオロエタン	Tribromodifluoroethane	$C_2HF_2Br_3$	-
ジブロモトリフルオロエタン	Dibromotrifluoroethane; 1,2-Dibromo-1,1,2-trifluoroethane	$C_2HF_3Br_2$	354-04-1
ブロモテトラフルオロエタン	Bromotetrafluoroethane	C_2HF_4Br	124-72-1
トリブロモフルオロエタン	Tribromofluoroethane	$C_2H_2FBr_3$	-
ジブロモジフルオロエタン	Dibromodifluoroethane	$C_2H_2F_2Br_2$	75-82-1
ブロモトリフルオロエタン	Bromotrifluoroethane	$C_2H_2F_3Br$	421-06-7
ジブロモフルオロエタン	Dibromofluoroethane	$C_2H_3FBr_2$	358-97-4
ブロモジフルオロエタン	Bromodifluoroethane	$C_2H_3F_2Br$	420-47-3
2-ブロモ-1,1-ジフルオロエタン	2-Bromo-1,1-difluoroethane	$C_2H_3F_2Br$	359-07-9
ブロモフルオロエタン	Bromofluoroethane	C_2H_4FBr	762-49-2
ヘキサブロモフルオロプロパン	Hexabromofluoropropane	C_3HFBr_6	-
ペンタブロモジフルオロプロパン	Pentabromodifluoropropane	$C_3HF_2Br_5$	-

テトラブロモトリフルオロプロパン	Tetrabromotrifluoropropane	$C_3HF_3Br_4$	-
トリブロモテトラフルオロプロパン	Tribromotetrafluoropropane	$C_3HF_4Br_3$	666-48-8
ジブロモペンタフルオロプロパン	Dibromopentafluoropropane	$C_3HF_5Br_2$	431-78-7
ブロモヘキサフルオロプロパン	Bromohexafluoropropane	C_3HF_6Br	2252-79-1 2252-78-0
ペンタブロモフルオロプロパン	Pentabromofluoropropane	$C_3H_2FBr_5$	-
テトラブロモジフルオロプロパン	Tetrabromodifluoropropane	$C_3H_2F_2Br_4$	148875-98-3
トリブロモトリフルオロプロパン	Tribromotrifluoropropane	$C_3H_2F_3Br_3$	-
ジブロモテトラフルオロプロパン	Dibromotetrafluoropropane	$C_3H_2F_4Br_2$	-
ブロモペンタフルオロプロパン	Bromopentafluoropropane	$C_3H_2F_5Br$	460-88-8
テトラブロモフルオロプロパン	Tetrabromofluoropropane	$C_3H_3FBr_4$	148875-95-0
トリブロモジフルオロプロパン	Tribromodifluoropropane	$C_3H_3F_2Br_3$	70192-80-2
ジブロモトリフルオロプロパン	Dibromotrifluoropropane	$C_3H_3F_3Br_2$	70192-83-5 431-21-0
ブロモテトラフルオロプロパン	Bromotetrafluoropropane	$C_3H_3F_4Br$	679-84-5
トリブロモフルオロプロパン	Tribromofluoropropane	$C_3H_4FBr_3$	75372-14-4
ジブロモジフルオロプロパン	Dibromodifluoropropane	$C_3H_4F_2Br_2$	460-25-3
ブロモトリフルオロプロパン	Bromotrifluoropropane	$C_3H_4F_3Br$	421-46-5
ジブロモフルオロプロパン	Dibromofluoropropane	$C_3H_5FBr_2$	51584-26-0
ブロモジフルオロプロパン	Bromodifluoropropane	$C_3H_5F_2Br$	-
ブロモフルオロプロパン	Bromofluoropropane	C_3H_6FBr	1871-72-3
1-ブロモ-3-フルオロプロパン	1-Bromo-3-fluoropropane	C_3H_6FBr	352-91-0
・Annex C　Group III :Bromochloromethane			
ブロモクロロメタン	Bromochloromethane	CH_2BrCl	74-97-5
・Annex E　Group I :Bromomethane			
ブロモメタン(臭化メチル)	Bromomethane (Methyl Bromide)	CH_3Br	74-83-9
・Annex C　Group I :HCFCs			
ジクロロフルオロメタン；HCFC-21	Dichlorofluoromethane；HCFC-21	$CHFCl_2$	75-43-4
クロロジフルオロメタン；HCFC-22	Chlorodifluoromethane；HCFC-22	CHF_2Cl	75-45-6
クロロフルオロメタン；HCFC-31	Chlorofluoromethane；HCFC-31	CH_2FCl	593-70-4
テトラクロロフルオロエタン；HCFC-121	Tetrachlorofluoroethane　；HCFC-121	C_2HFCl_4	134237-32-4
1,1,1,2-テトラクロロ-2-フルオロエタン；HCFC-121a	1,1,1,2-tetrachloro-2-fluoroethane；HCFC 121a	C_2HCl_4F	354-11-0
1,1,2,2-テトラクロロ-1-フルオロエタン	1,1,2,2-tetracloro-1-fluoroethane	C_2HCl_4F	354-14-3
トリクロロジフルオロエタン；HCFC-122	Trichlorodifluoroethane；HCFC-122	$C_2HF_2Cl_3$	41834-16-6
1,2,2-トリクロロ-1,1-ジフルオロエタン；HCFC-122	1,2,2-trichloro-1,1-difluoroethane；HCFC-122	$C_2HCl_3F_2$	354-21-2
1,1,2-トリクロロ-1,2-ジフルオロエタン；HCFC-122a	Ethane, 1,2-difluoro-1,1,2-trichloro-；HCFC-122a	$C_2HF_2Cl_3$	354-15-4
1,1,1-トリクロロ-2,2-ジフルオロエタン；HCFC-122b	1,1,1-trichloro-2,2-difluoroethane；HCFC-122b	$C_2HF_2Cl_3$	354-12-1
ジクロロトリフルオロエタン；HCFC-123	Dichlorotrifluoroethane；HCFC-123	$C_2HF_3Cl_2$	34077-87-7
2,2-ジクロロ-1,1,1-トリフルオロエタン；HCFC-123	2.2-dichloro1,1,1-fluoroethane；HCFC-123	$C_2HCl_2F_3$	306-83-2
ジクロロ-1,1,2-トリフルオロエタン	Dichloro-1,1,2-trifluoroethane	$C_2HCl_2F_3$	90454-18-5
1,2-ジクロロ-1,1,2-トリフルオロエタン；HCFC-123a	1,2-dichloro-1,1,2-trifluroethane；HCFC-123a	$C_2HCl_2F_3$	354-23-4

1,1-ジクロロ-1,2,2-トリフルオロエタン；HCFC-123b	1,1-dichloro-1,2,2-trifluroethane；HCFC-123b	$C_2HCl_2F_3$	812-04-4
その他のジクロロトリフルオロエタン	Other dichlorotrifluoroethane	-	-
2-クロロ-1,1,1,2-テトラフルオロエタン；HCFC-124	2-chloro-1,1,1,2-tetrafluoroethane；HCFC-124	C_2HF_4Cl	2837-89-0
クロロテトラフルオロエタン；HCFC-124	Chlorotetrafluoroethane；HCFC-124	$CHFClCF_3$	63938-10-3
1-クロロ-1,1,2,2-テトラフルオロエタン；HCFC-124a	1-chloro-1,1,2,2-tetrafluoroethane；HCFC 124a	C_2HClF_4	354-25-6
その他のクロロテトラフルオロエタン	Other chlorotetrafluoroethane	-	-
トリクロロフルオロエタン；HCFC-131	Trichlorofluoroethane；HCFC-131	$C_2H_2FCl_3$	134237-34-6 27154-33-2
1-フルオロ-1,2,2-トリクロロエタン；HCFC-131	1-Fluoro-1,2,2-trichloroethane ；HCFC131	$C_2H_2Cl_3F$	359-28-4
1,1,2-トリクロロ-1-フルオロエタン；HCFC-131a	1,1,2-trichloro-1-fluoroethane；HCFC131a	$C_2H_2Cl_3F$	811-95-0
1,1,1-トリクロロ-2-フルオロエタン；HCFC-131b	Ethane, 1,1,1-trichloro-2-fluoro-；HCFC131b	$C_2H_2Cl_3F$	2366-36-1
ジクロロジフルオロエタン；HCFC-132	Dichlorodifluoroethane；HCFC-132	$C_2H_2F_2Cl_2$	25915-78-0
1,2-ジクロロ-1,1-ジフルオロエタン；HCFC-132b	1,2-dichloro-1,1-difluoroethane；HCFC 132b	$C_2H_2Cl_2F_2$	1649-08-7
1,1-ジクロロ-1,2-ジフルオロエタン；HCFC-132c	1,1-dichloro-1,2-difluoroethane；HFCF 132c	$C_2H_2Cl_2F_2$	1842-05-3
1,1-ジクロロ-2,2-ジフルオロエタン	1,1-dichloro-2,2-difluoroethane	$C_2H_2Cl_2F_2$	471-43-2
1,2-ジクロロ-1,2-ジフルオロエタン	1,2-dichloro-1,2-difluoroethane	$C_2H_2Cl_2F_2$	431-06-1
クロロトリフルオロエタン；1-クロロ-1,2,2-トリフルオロエタン；HCFC-133	Chlorotrifluoroethane；1-chloro-1,2,2-trifluoroethane；HCFC 133	$C_2H_2F_3Cl$	1330-45-6 431-07-2
2-クロロ-1,1,1-トリフルオロエタン；HCFC-133a	2-chloro-1,1,1-trifluoroethane ；HCFC-133a	$C_2H_2F_3Cl$	75-88-7
1-クロロ-1,1,2-トリフルオロエタン；HCFC-133b	1-chloro-1,1,2-trifluoroethane；HCFC-133b	$C_2H_2F_3Cl$	421-04-05
ジクロロフルオロエタン；HCFC-141	Dichlorofluoroethane；HCFC-141	$C_2H_3FCl_2$	25167-88-8
1,2-ジクロロ-1-フルオロエタン；HCFC-141	1,2-dichloro-1-fluoroethane；HCFC-141	$C_2H_3FCl_2$	430-57-9
1,1-ジクロロ-2-フルオロエタン；HCFC-141a	1,1-dichloro-2-fluoroethane；HCFC-141a	$C_2H_3FCl_2$	430-53-5
1,1-ジクロロ-1-フルオロエタン；HCFC-141b	1,1-dichloro-1-fluoroethane；HCFC-141b	CH_3CFCl_2	1717-00-6
その他のジクロロフルオロエタン	Other dichlorofluoroethane	-	-
クロロジフルオロエタン；HCFC-142	ChlorodiFluoroethane；HCFC-142	$C_2H_3F_2Cl$	25497-29-4
2-クロロ-1,1-ジフルオロエタン；HCFC-142	2-Chloro-1,1-difluoroethane；HCFC-142	CH_3CF_2Cl	338-65-8
1-クロロ-1,1-ジフルオロエタン；HCFC-142b	1-chloro-1,1-difluoroethane；HCFC-142b	CH_3CF_2Cl	75-68-3
1-クロロ-1,2-ジフルオロエタン；HCFC-142a	1-Chloro-1,2-difluoroethane；HCFC-142a	CH_3CF_2Cl	338-64-7
その他のクロロジフルオロエタン	Other chlorodifluoroethane	-	-
クロロフルオロエタン；HCFC-151	chlorofluoroethane；HCFC-151	C_2H_4FCl	110587-14-9
1-クロロ-2-フルオロエタン；HCFC-151	1-chloro-2-fluoroethane；HCFC-151	C_2H_4FCl	762-50-5

1-クロロ-1-フルオロエタン；HCFC-151	1-chloro-1-fluoroethane；HCFC-151	C_2H_4FCl	1615-75-4
ヘキサクロロフルオロプロパン；HCFC-221	Hexachlorofluoropropane；HCFC-221	C_3HFCl_6	134237-35-7 29470-94-8
1,1,1,2,2,3-ヘキサクロロ-1-フルオロプロパン；HCFC-221ab	1,1,1,2,2,3-Hexachloro-1-fluoropropane；HCFC-221ab	C_3HFCl_6	422-26-4
ペンタクロロジフルオロプロパン；HCFC-222	Pentachlorodifluoropropane；HCFC-222	$C_3HF_2Cl_5$	134237-36-8
1,1,1,3,3,-ペンタクロロ-2,2-ジフルオロプロパン；HCFC-222ca	1,1,1,3,3-Pentachloro-2,2-difluoropropane；HCFC-222ca	$C_3HF_2Cl_5$	422-49-1
1,2,2,3,3-ペンタクロロ-1,1-ジフルオロプロパン；HCFC-222aa	1,2,2,3,3-Pentachloro-1,1-difluoropropane；HCFC-222aa	$C_3HF_2Cl_5$	422-30-0
テトラクロロトリフルオロプロパン；HCFC-223	Tetrachlorotrifluoropropane；HCFC-223	$C_3HF_3Cl_4$	134237-37-9
1,1,3,3-テトラクロロ-1,2,2-トリフルオロプロパン	1,1,3,3-Tetrachloro-1,2,2-trifluoropropane	$C_3HF_3Cl_4$	422-52-6
1,1,1,3-テトラクロロ-2,2,3-トリフルオロプロパン	1,1,1,3-Tetrachloro-2,2,3-trifluoropropane	$C_3HF_3Cl_4$	422-50-4
トリクロロテトラフルオロプロパン；HCFC-224	Trichlorotetrafluoropropane；HCFC-224	$C_2HF_4Cl_3$	134237-38-0
1,3,3-トリクロロ-1,1,2,2,-テトラフルオロプロパン；HCFC-224	1,3,3-Trichloro-1,1,2,2-tetrafluoropropane；HCFC-224	$C_2HF_4Cl_3$	422-54-8
1,1,3-トリクロロ-1,2,2,3-テトラフルオロプロパン	1,1,3-Trichloro-1,2,2,3-tetrafluoropropane	$C_2HF_4Cl_3$	422-53-7
1,1,1-トリクロロ-2,2,3,3-テトラフルオロプロパン	1,1,1-Trichloro-2,2,3,3-tetrafluoropropane	$C_3HF_4Cl_3$	422-51-5
ジクロロペンタフルオロプロパン；HCFC-225	Dichloropentafluoropropane；HCFC-225	$C_3HF_5Cl_2$ -	127564-92-5
2,2-ジクロロ-1,1,1,3,3,-ペンタフルオロプロパン；HCFC-225aa	2,2-Dichloro-1,1,1,3,3-pentafluoropropane；HCFC-225aa	$C_3HF_5Cl_2$	128903-21-9
2,3-ジクロロ-1,1,1,2,3-ペンタフルオロプロパン；HCFC-225ba	2,3-dichloro-1,1,1,2,3-pentafluoropropane；HCFC-225ba	$C_3HF_5Cl_2$	422-48-0
1,2-ジクロロ-1,1,2,3,3-ペンタフルオロプロパン；HCFC-225bb	1,2-dichloro-1,1,2,3,3-pentafluoropropane；HCFC-225bb	$C_3HF_5Cl_2$	422-44-6
3,3-ジクロロ-1,1,1,2,2-ペンタフルオロプロパン；HCFC-225ca	3.3-dichloro-1,1,1,2,2-pentafluoropropane；HCFC-225ca	$C_3HCl_2F_5$	422-56-0
1,3-ジクロロ-1,2,2,3,3,-ペンタフルオロプロパン；HCFC-225cb	1,3-dichloro-1,1,2,2,3-pentafluoropropane；HCFC-225cb	$C_3HCl_2F_5$	507-55-1
1,1-ジクロロ-1,2,2,3,3-ペンタフルオロプロパン；HCFC-225cc	1,1-dichloro-1,2,2,3,3-pentafluoropropane；HCFC-225cc	$C_3HCl_2F_5$	13474-88-9
1,2-ジクロロ-1,1,3,3,3-ペンタフルオロプロパン；HCFC-225da	1,2-dichloro-1,1,3,3,3-pentafluoropropane；HCFC-225da	$C_3HCl_2F_5$	431-86-7
1,3-ジクロロ-1,1,2,3,3-ペンタフルオロプロパン；HCFC-225ea	1,3-dichloro-1,1,2,3,3-pentafluoropropane；HCFC-225ea	$C_3HCl_2F_5$	136013-79-1
1,1-ジクロロ-1,2,3,3,3-ペンタフルオロプロパン；HCFC-225eb	1,1-dichloro-1,2,3,3,3-pentafluoropropane；HCFC-225eb	$C_3HCl_2F_5$	111512-56-2
その他のジクロロペンタフルオロプロパン	Other dichloropentafluoropropane	-	-
クロロヘキサフルオロプロパン；HCFC-226	Chlorohexafluoropropane；HCFC-226	C_3HF_6Cl	134308-72-8
2-クロロ-1,1,1,3,3,3-ヘキサフルオロプロパン；HCFC-226da	2-Chloro-1,1,1,3,3,3-hexafluoropropane；HCFC-226da	C_3HF_6Cl	431-87-8

ペンタクロロフルオロプロパン；HCFC-231	Pentachlorofluoropropane；HCFC-231	$C_3H_2FCl_5$	134190-48-0
1,1,1,2,3-ペンタクロロ-2-フルオロプロパン	1,1,1,2,3-Pentachloro-2-fluoropropane	$C_3H_2FCl_5$	421-94-3
テトラクロロジフルオロプロパン；HCFC-232	Tetrachlorodifluoropropane；HCFC-232	$C_3H_2F_2Cl_4$	134237-39-1
1,1,1,3-テトラクロロ-3,3-ジフルオロプロパン	1,1,1,3-Tetrachloro-3,3-difluoropropane	$C_3H_2F_2Cl_4$	460-89-9
トリクロロトリフルオロプロパン；HCFC-233	Trichlorotrifluoropropane；HCFC-233	$C_3H_2F_3Cl_3$	134237-40-4
1,1,1-トリクロロ-3,3,3-トリフルオロプロパン	1,1,1-trichloro-3,3,3-trifluoropropane	$C_3H_2F_3Cl_3$	7125-83-9
ジクロロテトラフルオロプロパン；HCFC-234	Dichlorotetrafluoropropane；HCFC-234	$C_3H_2F_4Cl_2$	127564-83-4
1,2-ジクロロ-1,2,3,3-テトラフルオロプロパン	1,2-Dichloro-1,2,3,3-tetrafluoropropane	$C_3H_2F_4Cl_2$	425-94-5
クロロペンタフルオロプロパン；HCFC-235	Chloropentafluoropropane；HCFC-235	$C_3H_2F_5Cl$	134237-41-5
1-クロロ-1,1,3,3,3-ペンタフルオロプロパン	1-chloro-1,1,3,3,3-pentafluoropropane	$C_3H_2F_5Cl$	460-92-4
テトラクロロフルオロプロパン；HCFC-241	Tetrachlorofluoropropane；HCFC-241	$C_3H_3FCl_4$	134190-49-1
1,1,2,3-テトラクロロ-1-フルオロプロパン	1,1,2,3-Tetrachloro-1-fluoropropane	$C_3H_3FCl_4$	666-27-3
トリクロロジフルオロプロパン；HCFC-242	Trichlorodifluoropropane；HCFC-242	$C_3H_3F_2Cl_3$	134237-42-6
1,3,3-トリクロロ-1,1-ジフルオロプロパン	1,3,3-Trichloro-1,1-difluoropropane	$C_3H_3F_2Cl_3$	460-63-9
ジクロロトリフルオロプロパン；HCFC-243	Dichlorotrifluoropropane；HCFC-243	$C_3H_3F_3Cl_2$	134237-43-7
1,1-ジクロロ-1,2,2-トリフルオロプロパン	1,1-dichloro-1,2,2-trifluoropropane	$C_3H_3F_3Cl_2$	7125-99-7
2,3-ジクロロ-1,1,1-トリフルオロプロパン	2,3-dichloro-1,1,1-trifluoropropane	$C_3H_3F_3Cl_2$	338-75-0
3,3-ジクロロ-1,1,1-トリフルオロプロパン	3,3-Dichloro-1,1,1-trifluoropropane	$C_3H_3F_3Cl_2$	460-69-5
クロロテトラフルオロプロパン；HCFC-244	Chlorotetrafluoropropane；HCFC-244	$C_3H_3F_4Cl$	134190-50-4
3-クロロ-1,1,2,2-テトラフルオロプロパン	3-chloro-1,1,2,2-tetrafluoropropane	$C_3H_3F_4Cl$	679-85-6
1-クロロ-1,1,2,2-テトラフルオロプロパン	1-chloro-1,1,2,2-tetrafluoropropane	$C_3H_3F_4Cl$	421-75-0
トリクロロフルオロプロパン；HCFC-251	Trichlorofluoropropane；HCFC-251	$C_3H_4FCl_3$	134190-51-5
1,1,3-トリクロロ-1-フルオロプロパン	1,1,3-trichloro-1-fluoropropane	$C_3H_4FCl_3$	818-99-5
1,1,2-トリクロロ-1-フルオロプロパン；HCFC-251dc	1,1,2-trichloro-1-fluoropropane；HCFC-251dc	$C_3H_4FCl_3$	421-41-0
ジクロロジフルオロプロパン；HCFC-252	Dichlorodifluoropropane；HCFC-252	$C_3H_4F_2Cl_2$	134190-52-6
1,3-ジクロロ-1,1-ジフルオロプロパン；HCFC-252fb	1,3-Dichloro-1,1-difluoropropane；HCFC-252fb	$C_3H_4F_2Cl_2$	819-00-1
クロロトリフルオロプロパン；	Chlorotrifluoropropane；HCFC-253	$C_3H_4F_3Cl$	134237-44-8

HCFC-253			
3-クロロ-1,1,1-トリフルオロプロパン;HCFC253fb	3-chloro-1,1,1-trifluoropropane；HCFC 253fb	$C_3H_4F_3Cl$	460-35-5
ジクロロフルオロプロパン；HCFC-261	Dichlorofluoropropane；HCFC-261	$C_3H_5FCl_2$	134237-45-9
1,1-ジクロロ-1-フルオロプロパン	1,1-dichloro-1-fluoropropane	$C_3H_5FCl_2$	7799-56-6
1,2-ジクロロ-2-フルオロプロパン；HCFC-261b	1,2-dichloro-2-fluoropropane；HCFC-261b	$C_3H_5FCl_2$	420-97-3
クロロジフルオロプロパン；HCFC-262	Chlorodifluoropropane；HCFC-262	$C_3H_5F_2Cl$	134190-53-7
1-クロロ-2,2-ジフルオロプロパン	1-chloro-2,2-difluoropropane	$C_3H_5F_2Cl$	420-99-5
2-クロロ-1,3-ジフルオロプロパン	2-chloro-1,3-difluoropropane	$C_3H_5F_2Cl$	102738-79-4
1-クロロ-1,1-ジフルオロプロパン；HCFC-262fc	1-chloro-1,1-difluoropropane；HCFC-262fc	$C_3H_5F_2Cl$	421-02-3
クロロフルオロプロパン；HCFC-271	Chlorofluoropropane；HCFC-271	C_3H_6FCl	134190-54-8
2-クロロ-2-フルオロプロパン	2-chloro-2-fluoropropane	C_3H_6FCl	420-44-0
1-クロロ-1-フルオロプロパン	1-chloro-1-fluoropropane	-	430-55-7
・Others			
ジフルオロジブロモメタン	Difluorodibromomethane	CBr_2F_2	75-61-6
1-ブロモプロパン(臭化n-プロピル)	1-Bromopropane (n-propyl bromide)	C_3H_7Br	106-94-5
ブロモエタン(臭化エチル)	Bromoethane (ethyl bromide)	C_2H_5Br	74-96-4
トリフルオロイオドメタン(ヨウ化トリフルオロメチル)	Trifluoroiodomethane (trifluoromethyl iodide)	CF_3I	2314-97-8
クロロメタン(塩化メチル)	Chloromethane (methyl chloride)	CH_3Cl	74-87-3

Table 4　I-24　Fluorinated Greenhouse Gases (PFC, SF6, HFC)

Substance (Japanese)	Substance (English)	CAS No. or JAMP No.
テトラフルオロメタン (4 フッ化炭素、PFC-14)	Tetrafluoromethane (Carbon tetrafluoride, PFC-14)	75-73-0
ヘキサフルオロエタン(PF C-116)	Hexafluoroethane (PFC-116)	76-16-4
オクタフルオロプロパン(PFC-218)	Octafluoropropane (PFC-218)	76-19-7
デカフルオロブタン(PFC-31-10)	Decafluorobutane (PFC-31-10)	355-25-9
ドデカフルオロペンタン(PFC-41-12)	Dodecafluoropentane (PFC-41-12)	678-26-2
テトラデカフルオロヘキサン(PFC-51-14)	Tetradecafluorohexane (PFC-51-14)	355-42-0
オクタフルオロシクロブタン(PFC-c318)	Octafluorocyclobutane (PFC-c318)	115-25-3
6 フッ化硫黄(SF6)	Sulfur Hexafluoride (SF6)	2551-62-4
トリフルオロメタン	Trifluoromethane	75-46-7
ジフルオロメタン	Difluoromethane	75-10-5
フルオロメタン	Methyl fluoride	593-53-3
1,1,1,2,2,3,4,5,5,5-デカフルオロペンタン(HFC-43-10mee)	Pentane, 1,1,1,2,2,3,4,5,5,5-decafluoro-(HFC-43-10mee)	138495-42-8
ペンタフルオロエタン	Ethane, pentafluoro-	354-33-6
1,1,2,2-テトラフルオロエタン　(HFC-134)	1,1,2,2-Tetrafluoroethane (HFC-134)	359-35-3
1,1,1,2-テトラフルオロエタン (HFC-134a)	1,1,1,2-Tetrafluoroethane　(HFC-134a)	811-97-2
1,1-ジフルオロエタン　(HFC-152a)	1,1-Difluoroethane　(HFC-152a)	75-37-6
1,1,2-トリフルオロエタン(H FC-143)	1,1,2-Trifluoroethane.(HFC-143)	430-66-0
1,1,1-トリフルオロエタン	Ethane, 1,1,1-trifluoro-	420-46-2
1,1,1,2,3,3,3-ヘプタフルオロプロパン	Propane, 1,1,1,2,3,3,3-heptafluoro-	431-89-0
1,1,1,2,2,3-ヘキサフルオロプロパン	1,1,1,2,2,3-hexafluoro-propane (HFC-236cb)	677-56-5

(HFC-236cb)		
1,1,1,2,3,3-ヘキサフルオロプロパン (HFC-236ea)	1,1,1,2,3,3-Hexafluoropropane (HFC-236ea)	431-63-0
1,1,1,3,3,3-ヘキサフルオロプロパン (HFC-236fa)	1,1,1,3,3,3-Hexafluoropropane (HFC-236fa)	690-39-1
1,1,2,2,3-ペンタフルオロプロパン (HFC-245ca)	1,1,2,2,3-Pentafluoropropane (HFC-245ca)	679-86-7
1,1,1,3,3-ペンタフルオロプロパン	1,1,1,3,3-Pentafluoropropane	460-73-1
1,1,1,3,3-ペンタフルオロブタン	1,1,1,3,3-Pentafluorobutane	406-58-6

4.2.4 Detailed information about the control of controlled substances

The names and control values of controlled substances are shown in Table 5.

Table 5-II-1

No. II-1	Substance Group: Candidate List of Substances of Very High Concern in REACH (SVHC)		
Applications		Control Value	Note
・All applications		- Substances that exceed 0.1%	*1
Note	*1 The candidate list of substances of very high concern in REACH (SVHC) will be periodically updated. Please refer to the website of the European Chemicals Agency (ECHA). (https://www.echa.europa.eu/candidate-list-table)		

5. Reference: Examples of environment-related substances

Major chemicals classified as environment-related substances are listed in Table 6. The substances in Table 6 are illustrative only, as they may exist under other names, and Table 6 does not contain all the information about them

Table 6-I-1 Cadmium and its compounds

①Examples of substances (The table below does not cover all the substances in this substance group.)

Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN	Metal conversion factor
カドミウム	Cadmium	Cd	7440-43-9	1.000
酸化カドミウム(II)	Cadmium oxide	CdO	1306-19-0	0.875
硫化カドミウム	Cadmium sulfide	CdS	1306-23-6	0.778
塩化カドミウム	Cadmium chloride	$CdCl_2$	10108-64-2	0.613
硫酸カドミウム(II)	Cadmium sulfate	$CdSO_4$	10124-36-4 31119-53-6	0.539
		$CdH_6O_{16}S_4$	119222-01-4	0.224
硝酸カドミウム	Cadmium Nitrate	$Cd(NO_3)_2$	10325-94-7	0.475
炭酸カドミウム	Cadmium carbonate	$CdCO_3$	513-78-0	0.652
硫セレン化カドミウム	Cadmium selenide sulfide	Cd_2SSe	12214-12-9	0.669
セレン化カドミウム	Cadmium Selenide	CdSe	1306-24-7	0.587
テルル化カドミウム	Cadmium Telluride	CdTe	1306-25-8	0.468

水酸化カドミウム	Cadmium Hydroxide	$Cd(OH)_2$	21041-95-2	0.768
ステアリン酸カドミウム	Cadmium Stearate	$Cd(C_{17}H_{35}COO)_2$	2223-93-0	0.166
フッ化カドミウム	Cadmium fluoride	CdF_2	7790-79-6	0.747
その他のカドミウム化合物	Other cadmium compounds	-	JAMP-SN0016	-

②Principal uses for substances

Part	Purpose
Corrosion-resistant plating, decorative coatings, printing inks, NiCd batteries, vinyl chloride sheaths for wires and cords, fuses, fluorescent materials, optical glasses (filters)	Anticorrosion surface treatment, pigments, battery and electrical materials, plastic stabilizers, optical materials

Table 6-I-2 Hexavalent chromium compounds

①Examples of substances (The table below does not cover all the substances in this substance group.)

Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN	Metal conversion factor
重クロム酸ナトリウム	Sodium dichromate	$Na_2Cr_2O_7$	10588-01-9	0.349
重クロム酸ナトリウム・２水和物	Sodium dichromate, dihydrate	$Na_2Cr_2O_7$ 、$2H_2O$	7789-12-0	0.349
酸化クロム(VI)	Chromium (VI) trioxide	CrO_3	1333-82-0	0.520
クロム酸カルシウム	Calcium chromate	$CaCrO_4$	13765-19-0	0.333
クロム酸鉛(II)	Lead (II) chromate	$PbCrO_4$	7758-97-6	0.161
重クロム酸カリウム	Potassium dichromate	$K_2Cr_2O_7$	7778-50-9	0.354
クロム酸カリウム	Potassium chromate	K_2CrO_4	7789-00-6	0.268
クロム酸バリウム	Barium chromate	$BaCrO_4$	10294-40-3	0.205
クロム酸ナトリウム	Sodium chromate	Na_2CrO_4	7775-11-3	0.321
クロム酸ストロンチウム(II)	Strontium chromate	$SrCrO_4$	7789-06-2	0.255
クロム酸亜鉛(II)	Zink chromate	$ZnCrO_4$	13530-65-9	0.287
クロム酸鉛(C.Iピグメントイエロー34)	Lead sulfochromate yellow (C.I.Pigment Yellow 34)	Unspecified	1344-37-2	-
塩基性クロム酸鉛	C.I. Pigment Orange 21	Unspecified	1344-38-3	-
クロム酸	Chromic acid	CrH_2O_4	7738-94-5	0.441
クロム酸及び重クロム酸オリゴマー	Oligomers of chromic acid and dichromic acid	-	JAMP-SN0071	
重クロム酸、二クロム酸	Dichromic acid; Chromic acid	$H_2Cr_2O_7$	13530-68-2	0.477
クロム酸銅	Copper chromite	$Cu_2Cr_2O_5$	12053-18-8	0.334
二クロム酸アンモニウム	Ammonium dichromate	$(NH_4)_2Cr_2O_7$	7789-09-5	0.413
硫酸モリブデン酸クロム酸鉛(C.Iピグメントレッド104)	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	Unspecified	12656-85-8	-
トリス(クロム酸)二クロム(III)	Dichromium tris(chromate)	Cr_5O_{12}	24613-89-6	0.575
クロム酸八水酸化五亜鉛	Pentazinc chromate octahydroxide	$CrH_8O_{12}Zn_5$	49663-84-5	0.090
ヒドロキシオクタオキソ二亜鉛酸二クロム酸カリウム	Potassium hydroxyoctaoxodizincatedichromate	$Cr_2K_2O_8Zn$	11103-86-9	0.277

その他の六価クロム化合物	Other hexavalent chromium compounds	-	JAMP-SN0019	-

②Principal uses for substances

Part	Purpose
Metal corrosion-proof chromate treatment (galvanizing, electrode plating, alloys, die-casting), alumite dyes, anticorrosion paints, black chrome plating	Anticorrosion surface treatment, pigments, anticorrosion pigments, paint desiccants

Table 6-I-3 Lead and its compounds

①Examples of substances (The table below does not cover all the substances in this substance group.)

Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN	Metal conversion factor
鉛	Lead	Pb	7439-92-1	1.000
炭酸鉛	Lead carbonate	$PbCO_3$	598-63-0	0.775
二酸化鉛	Lead (IV) oxide	PbO_2	1309-60-0	0.866
四三酸化鉛	Orange lead (Lead tetroxide)	Pb_3O_4	1314-41-6	0.907
硫化鉛	Lead (II) sulfide	PbS	1314-87-0	0.866
一酸化鉛	Lead monoxide (Lead oxide) ; Lead (II) oxide	PbO	1317-36-8	0.928
水酸化炭酸鉛(II)	Trilead bis(carbonate)dihydroxide	$C_2H_2O_8Pb_3$	1319-46-6	0.801
水酸化炭酸鉛(2)	Lead (II) hydroxidcarbonate	$C_2H_2O_6Pb$	1344-36-1	0.629
硫酸鉛	Lead sulfate	$PbSO_4$	7446-14-2	0.683
燐酸鉛	Trilead bis(orthophosphate)	$Pb_3(PO_4)_2$	7446-27-7	0.766
クロム酸鉛(II)	Lead chromate	$PbCrO_4$	7758-97-6	0.641
チタン酸鉛	Lead titanate	$PbTiO_3$	12060-00-3	0.684
硫酸鉛	Lead sulfate	Pb_XSO_4	15739-80-7	-
三塩基性硫酸鉛	Tetralead trioxide sulphate	$Pb_4O_3(SO_4)$	12202-17-4	0.852
ステアリン酸鉛	Lead stearate	$Pb(C_{17}H_{35}COO)_2$	1072-35-1	0.268
ステアリン酸二鉛	Dibasic lead stearate	$2PbO・Pb(C_{17}H_{35}COO)_2$	56189-09-4	0.409
酢酸鉛(II)	Lead di(acetate)	$Pb(CH_3COO)_2$	301-04-2	0.637
酢酸鉛(II)・三水和物	Lead (II) acetate trihydrate	$Pb(CH_3COO)_2・3H_2O$	6080-56-4	0.546
セレン化鉛	Lead selenide	PbSe	12069-00-0	0.724
ジルコン酸鉛	Lead zirconate	$PbZrO_3$	12060-01-4	0.598
水酸化鉛	Hydroxylead	$Pb(OH)_2$	1311-11-1	0.859
硝酸鉛	Lead dinitrate	$Pb(NO_3)_2$	10099-74-8	0.626
ヒ酸鉛(II)	Trilead diarsenate	$Pb_3(AsO_4)_2$	3687-31-8	0.691
酸性ヒ酸鉛	Lead hydrogen arsenate	$AsH_3O_4.Pb$	7784-40-9	0.593
トリニトロレゾルシン鉛	Lead styphnate	$C_6HN_3O_8Pb$	15245-44-0	0.460
アジ化鉛	Lead diazide	N_6Pb	13424-46-9	0.711

ピクリン酸鉛(II)	Lead dipicrate	$C_{12}H_4N_6O_{14}Pb$	6477-64-1	0.312
メタンスルホン酸鉛(II)	Lead (II) bis(methanesulfonate)	$C_2H_6O_6PbS_2$	17570-76-2	0.521
硫酸モリブデン酸クロム酸鉛(C.Iピグメントレッド104)	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	Unspecified	12656-85-8	-
クロム酸鉛(C.Iピグメントイエロー34)	Lead sulfochromate yellow (C.I.Pigment Yellow 34)	Unspecified	1344-37-2	-
ジオキソ（フタラト）三鉛	[Phthalato(2-)]dioxotrilead	$C_8H_4O_6Pb_3$	69011-06-9	0.760
ケイ酸とバリウムの塩(1：1)(鉛ドープ)	Silicic acid (H2Si2O5), barium salt (1:1), lead-doped	Unspecified	68784-75-8	
ケイ酸と鉛の塩	Silicic acid, lead salt	Unspecified	11120-22-2	
シアナミド鉛	Lead cyanamidate	CH_2N_2Pb	20837-86-9	0.831
ジオキソビス(ステアリン酸)三鉛	Dioxobis(stearato)trilead	$C_{36}H_{70}O_6Pb_3$	12578-12-0	0.509
ジルコン酸チタン酸鉛	Lead titanium zirconium oxide	Unspecified	12626-81-2	
四エチル鉛	Tetraethyllead	$C_8H_{20}Pb$	78-00-2	0.641
ピグメントエロー41	Pyrochlore, antimony lead yellow	Unspecified	8012-00-8	
四フッ化ホウ酸鉛(II)	Lead bis(tetrafluoroborate)	B_2F_8Pb	13814-96-5	0.544
塩基性クロム酸鉛	C.I. Pigment Orange 21	Unspecified	1344-38-3	
塩基性亜硫酸鉛	Sulfurous acid, lead salt, dibasic	Unspecified	62229-08-7	
塩基性酢酸鉛	Acetic acid, lead salt, basic	Unspecified	51404-69-4	
塩基性硫酸鉛	Lead oxide sulfate (Pb2O(SO4))	$Pb_2O(SO_4)$	12036-76-9	0.787
塩基性硫酸鉛	Pentalead tetraoxide sulphate; Lead oxide sulfate (Pb5O4(SO4))	$Pb_5O_4(SO_4)$	12065-90-6	0.866
脂肪酸鉛塩(炭素数16～18)	Fatty acids, C16-18, lead salts	-	91031-62-8	
二塩基性リン酸鉛	Trilead dioxide phosphonate; ; Lead oxide phosphonate (Pb3O2(HPO3))	$Pb_3O_2(HPO_3)$	12141-20-7	0.847
その他の鉛化合物	Other lead compounds	-	JAMP-SN0023	-

②Principal uses for substances

Part	Purpose
Electrodes for lead accumulators, optical glasses (lens, filters), structural parts (steel, aluminum, copper), vinyl chloride sheaths for wires and cords, paints, inks, X-ray shield plastic plates, CRTs for monitor, electro soldering, die bonding, mechanical soldering, vulcanized rubber molded items, manganese cells, alkaline button cells	Battery materials, free-machining alloy materials, optical materials, plastic stabilizers, pigments, radiation shielding materials, electric solder materials, mechanical solder materials, rubber vulcanizing agents

Table 6-I-4　Mercury and its compounds

①Examples of substances (The table below does not cover all the substances in this substance group.)

Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN	Metal conversion factor
水銀	Mercury	Hg	7439-97-6	1.000

塩化第二水銀	Mercury dichloride	$HgCl_2$	7487-94-7	0.739
酸化水銀(II)	Mercury (II) oxide	HgO	21908-53-2	0.926
硫酸第二水銀	Mercury sulphate	$HgSO_4$	7783-35-9	0.676
硝酸水銀(II)	Mercury (II) nitrate	$Hg(NO_3)_2$	10045-94-0	0.618
硫化第二水銀	Mercury (II) sulfide	HgS	1344-48-5	0.862
酸化水銀(I)(黒色)	Mercury(I) oxide (black)	Hg_2O	15829-53-5	0.962
ジメチル水銀	Dimethyl mercury	$(CH_3)_2Hg$	593-74-8	0.870
塩化第一水銀	Mercury chloride	Hg_2Cl_2	10112-91-1	0.850
その他の水銀化合物	Other mercury compounds	-	JAMP-SN0024	-

②Principal uses for substances

Part	Purpose
Lamps (mercury lamps, fluorescent tubes, back lights for liquid crystal displays), electrodes, batteries, electric contacts, plastics, paints, printing inks	Fluorescent materials, electrical contact materials, mercury batteries, color pigments

Table 6-I-5 Trisubstituted organotin compounds (including bis (tributyltin) oxide (TBTO), tributyltin compounds (TBTs, excluding TBTO) and triphenyltin compounds (TPTs))

①Examples of substances (The table below does not cover all the substances in this substance group.)

Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN	Metal conversion factor
ビス(トリブチルスズ)=オキシド (TBTO)	Bis(tri-n-butyltin) oxide	$O(Sn(C_4H_9)_3)_2$	56-35-9	0.398
トリフェニルスズ=N,N-ジメチルジチオカルバマート	Triphenyltin dimethyldithiocarbamate	$(C_6H_5)_3Sn(CH_3)_2NCS_2$	1803-12-9	0.252
トリフェニルスズ=フルオリド	Triphenyltin fluoride	$(C_6H_5)_3SnF$	379-52-2	0.322
酢酸トリフェニルスズ	Triphenyltin acetate	$(C_6H_5)_3SnOCOCH_3$	900-95-8	0.290
トリフェニルスズ=クロリド	Triphenyltin chloride	$(C_6H_5)_3SnCl$	639-58-7	0.308
トリフェニルスズ=ヒドロキシド	Triphenyltin hydroxide	$(C_6H_5)_3SnOH$	76-87-9	0.323
トリフェニル［（２，２，４，４－テトラメチル－１－オキソペンチル）オキシ］スタンナン	Stannane, triphenyl[(2,2,4,4-tetramethyl-oxopentyl)oxy]-	$C_{27}H_{32}O_2Sn$	18380-71-7	0.234
［［２，３－ジメチル－２－（１－メチルエチル）－１－オキソブチル］トリフェニルスタンナン	Stannane, [[2,3-dimethyl-2-(1-methylethyl)-oxobutyl]oxy]triphenyl-	$C_{27}H_{32}O_2Sn$	18380-72-8	0.234
［（１－オキソデシル）オキシ］トリフェニルスタンナン	Stannane, [(1-oxodecyl)oxy]triphenyl-	$C_{28}H_{34}O_2Sn$	47672-31-1	0.228
［（１－オキソウンデシル）オキシ］トリフェニルスタンナン	Stannane, [(1-oxoundecyl)oxy]triphenyl-	$C_{29}H_{36}O_2Sn$	94850-90-5	0.222
トリフェ ニルスズ=クロロアセタート	Triphenyltin chloroacetate	$(C_6H_5)_3SnOCOCH_2Cl$	7094-94-2	0.268

トリブチルスズ=メタクリラート	Tributyltin methacrylate	$(C_4H_9)_3SnC_4H_5O_2$	2155-70-6	0.317
ビス(トリブチルスズ)=フマラート	Bis(tributyltin) fumarate	$C_2H_2(COO)_2((C_4H_9)_3Sn)_2$	6454-35-9	0.342
トリブチルスズ=フルオリド	Tributyltin fluoride	$(C_4H_9)_3SnF$	1983-10-4	0.384
トリブチルスズ=2,3-ジブロモスクシナート	Bis(tributyltin) meso-2,3-dibromosuccinate	$((C_4H_9)_3Sn)_2C_2H_2(Br)_2(COO)_2$	31732-71-5	0.278
トリブチルスズ=アセタート	Tributyltin acetate	$(C_4H_9)_3SnOCOCH_3$	56-36-0	0.340
トリブチルスズ=ラウラート	Tributyltin laurate	$(C_4H_9)_3SnC_{12}H_{23}O_2$	3090-36-6	0.243
ビス(トリブチルスズ)=フタラート	Bis(tributyltin) phthalate	$(C_6H_4)(COO)_2((C_4H_9)_3Sn)_2$	4782-29-0	0.319
アルキル=アクリラート・メチル=メタクリラート・トリブチルスズ=メタクリラート、共重合物(アルキル=アクリラートのアルキル基の炭素数が8のものに限る)	Copolymer of alkyl acrylate, methyl-methacrylate and tributyltin-methacrylate(alkyl; C=8)	-	67772-01-4	
トリブチルスズ=スルファマート	Tributyltin sulfamate	$(C_4H_9)_3SnSO_3NH_2$	6517-25-5	0.307
ビス(トリブチルスズ)=マレアート	Bis(tributyltin) maleate	$C_2H_2(COO)_2((C_4H_9)_3Sn)_2$	14275-57-1	0.342
トリブチルスズ=クロリド	Tributyltin chloride	$(C_4H_9)_3SnCl$	1461-22-9 7342-38-3	0.365
トリブチルスズ=シクロペンタンカルボキシラート及びこの類縁化合物の混合物	Mixture of tributyltin -cyclopentanecarboxylate and its –analogs (Tributyltin naphthenate)	$(C_4H_9)_3SnCO_3C_5H_9$	85409-17-2	-
トリブタン-1-イルスタンニル=(1R,4aR,4bR,10aR)-7-イソプロピル-1,4a-ジメチル-1,2,3,4,4a,4b,5,6,10,10a-デカヒドロフェナントレン-1-カルボキシラート	Tributan-1-ylstannyl (1R,4aR,4bR,10aR)-7-isopropyl-1,4a-dimethyl-1,2,3,4,4a,4b,5,6,10,10a-decahydrophenanthrene-1-carboxylate	$C_{32}H_{56}O_2Sn$	26239-64-5	0.201
その他の三置換有機スズ化合物	Other Trisubstituted organotin compounds	-	JAMP-SN0068	-

②Principal uses for substances

Part	Purpose
Paints, printing inks	Antifouling (sterilization) pigments, paint, stabilizer, antioxidant

Table 6-I-6 Dibutyltin compounds

①Examples of substances (The table below does not cover all the substances in this substance group.)

Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN	Metal conversion factor

ジブチルスズオキシド	Dibutyltin oxide	$C_8H_{18}OSn$	818-08-6	0.477
ジブチルスズ二酢酸	Dibutyltin diacetate	$C_{12}H_{24}O_4Sn$	1067-33-0	0.338
ジブチル［(1-オキソドデシル)オキシ］スズ；ジブチルスズジラウレート	Dibutyltin dilaurate	$C_{32}H_{64}O_4Sn$	77-58-7	0.188
マレイン酸ジ-n-ブチルスズ	Dibutyltin maleate	$C_{12}H_{20}O_4Sn$	78-04-6	0.342
ジブチルスズジクロライド（DBTC）	Dibutyltin dichloride (DBTC)	$C_8H_{18}Cl_2Sn$	683-18-1	0.391
その他のジブチルスズ化合物	Other dibutyltin compounds	-	JAMP-SN0072	-

②Principal uses for substances

Part	Purpose
Stabilizer for PVC, curing catalyst for silicone resin and urethane resin	Stabilizer for PVC, curing catalyst for silicone resin and urethane resin

Table 6-I-7　Dioctyltin compounds (DOT)

①Examples of substances (The table below does not cover all the substances in this substance group.)

Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN	Metal conversion factor
ジオクチルスズオキシド	Dioctyltin oxide	$C_{16}H_{34}OSn$	870-08-6	0.326
ジオクチルビス［(1-オキソドデシル)オキシ］スズ	Dioctyltin dilaurate	$C_{40}H_{80}O_4Sn$	3648-18-8	0.160
ジオクチルスズビス(2－エチルヘキシルチオグリコラート)	'Dioctyltin bis(2-ethylhexyl thioglycolate)	$C_{36}H_{72}O_4S_2Sn$	15571-58-1	0.158
その他のジオクチルスズ化合物	Other Dioctyltin compounds	-	-	-

②Principal uses for substances

Part	Purpose
Stabilizer for PVC, curing catalyst for silicone resin and urethane resin	Stabilizer for PVC, curing catalyst for silicone resin and urethane resin

Table 6-I-8　Nickel and its compounds

①Examples of substances (The table below does not cover all the substances in this substance group.)

Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN	Metal conversion factor
一酸化ニッケル	Nickel oxide	NiO	1313-99-1	0.786
炭酸ニッケル	Nickel carbonate	$NiCO_3$	3333-67-3	0.494
硫酸ニッケル	Nickel Sulphate	$NiSO_4$	7786-81-4	0.379
ニッケル	Nickel	Ni	7440-02-0	1.000
塩化第一ニッケル	Nickel (II) chloride	$NiCl_2$	7718-54-9	0.453
その他のニッケル化合物	Other nickel compounds	-	JAMP-SN0027	-

②Principal uses for substances

Part	Purpose
An ear bud(headphone), mobile phone	Stainless steel, plating

Table 6-I-9 Polybrominated biphenyl (PBBs)

①Examples of substances (The table below does not cover all the substances in this substance group.)

Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN	Metal conversion factor
ポリ臭化ビフェニル類	Polybrominated Biphenyls		59536-65-1 JAMP-SN0065	-
4,4'-ジブロモビフェニル	4,4'-Dibromobiphenyl	$C_6H_4BrC_6H_4Br$	92-86-4	-
2-ブロモビフェニル	2-Bromobiphenyl	$C_6H_5C_6H_4Br$	2052-07-5	-
3-ブロモビフェニル	3-Bromobiphenyl	$C_6H_5C_6H_4Br$	2113-57-7	-
4-ブロモビフェニル	4-Bromobiphenyl	$C_6H_5C_6H_4Br$	92-66-0	-
トリブロモビフェニル	1,1'-Biphenyl, 2,2',5-tribromo-	$C_{12}H_7Br_3$	59080-34-1	-
テトラブロモビフェニル	Tetrabromobiphenyl	$C_{12}H_6Br_4$	40088-45-7	-
ペンタブロモビフェニル	Pentabromobiphenyl	$C_{12}H_5Br_5$	56307-79-0	
2,2',4,4',5,5'-ヘキサブロモビフェニル	2,2',4,4',5,5'-Hexabromobiphenyl Hexabromobiphenyl	$C_6H_2Br_3C_6H_2Br_3$	59080-40-9	-
ヘキサブロモ-1,1-ビフェニル	Hexabromo-1,1-biphenyl	$C_6H_2Br_3C_6H_2Br_3$	36355-01-8	-
ファイアーマスターFF-1	Firemaster FF-1	$C_{12}H_4Br_6$	67774-32-7	-
ヘプタブロモビフェニル	Heptabromobiphenyl	$C_6Br_5C_6H_3Br_2$	35194-78-6	-
オクタブロモビフェニル	Octabromobiphenyl	$C_6HBr_4C_6HBr_4$	61288-13-9	-
ノナブロモ-1,1-ビフェニル	Nonabiphenyl	$C_{12}HBr_9$	27753-52-2	-
デカブロモビフェニル	Decabromobiphenyl	$C_6BrC_6Br_5$	13654-09-6	-

②Principal uses for substances

Part	Purpose
Flame-retardant plastic enclosure molded items	Plastic flame retardants

Table 6-I-10 Polybrominated diphenyl ethers (PBDEs)

①Examples of substances (The table below does not cover all the substances in this substance group.)

Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN	Metal conversion factor
ポリ臭化ジフェニルエーテル類	Polybrominated diphenyl ethers	$C_{12}H_XBr_{(10-X)}O$	JAMP-SN0066	-
ブロモジフェニルエーテル	Bromodiphenyl ether	$Br(C_6H_4)O(C_6H_5)$	101-55-3	-
ジブロモジフェニルエーテル	Dibromodiphenyl ethers	$C_6H_4BrOC_6H_4Br$	2050-47-7	-
トリブロモジフェニルエーテル	Tribromodiphenyl ether	$C_{12}H_7Br_3O$	49690-94-0	-

テトラブロモジフェニルエーテル	Tetrabromobiphenyl ethers	$C_{12}H_6Br_4O$	40088-47-9	-
ペンタブロモジフェニルエーテル（注:市販のPeBDPDは、種々の臭素化ジフェニルオキシドを含む複雑な反応混合物である）	Pentabromodiphenyl ether (note:Commercially available PeBDPD is a complex reaction mixture containing a variety of brominated diphenyloxides)	-	32534-81-9 (CAS No. used for commercial grades of PeBDPD)	-
ヘキサブロモジフェニルエーテル	Hexabromodiphenyl ether	$C_{12}H_4Br_6O$	36483-60-0	-
ヘプタブロモジフェニルエーテル	Heptabromodiphenyl ether	$C_{12}H_3Br_7O$	68928-80-3	-
オクタブロモジフェニルエーテル	Octabromobiphenyl ether	$C_{12}H_2Br_8O$	32536-52-0	-
ノナブロモジフェニルエーテル	Nonabromodiphenyl ether	$C_{12}HBr_9O$	63936-56-1	-
デカブロモジフェニルエーテル (DecaBDE)	Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)	$Br_5C_6OC_6Br_5$	1163-19-5	-

②Principal uses for substances

Part	Purpose
Flame-retardant plastic enclosure molded items	Plastic flame retardants

Table 6-I-11　Polychlorinated biphenyl (PCBs)

①Examples of substances (The table below does not cover all the substances in this substance group.)

Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN	Metal conversion factor
ポリクロロビフェニル	Polychlorobiphenyl	Unspecified	1336-36-3	-
アロクロール(Aroclor)	Aroclor	$(C_6\text{-}C_6)HxCly$	12767-79-2	-
クロロジフェニル(アロクロール1260)	Aroclor 1260	-	11096-82-5	-
クロロビフェニル	Chlorobiphenyl	$C_{12}H_9Cl$	27323-18-8	-
アロクロール 1254	Aroclor 1254	Unspecified	11097-69-1	-
モノメチル -テトラクロロ-ジフェニルメタン(Ugilec 141)	Monomethyl-tetrachloro-diphenyl methane (Ugilec 141)	$C_{14}H_{10}Cl_4$	76253-60-6	-
モノメチル -ジクロロ -ジフェニルメタン（Ugilec121, Ugilec21)	Monomethyl-dichloro-diphenyl methane (Ugilec 121, Ugilec 21)	-	81161-70-8	-
モノメチル -ジブロモ -ジフェニルメタン（DBBT)	Monomethyl-dibromo-diphenyl methane (DBBT)	-	99688-47-8	-

②Principal uses for substances

Part	Purpose
Insulating oil for transformers and capacitors	Electrical insulation medium, solvents

Table 6-I-12 Polychlorinated Terphenyls (PCTs)

①Examples of substances (The table below does not cover all the substances in this substance group.)

Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN	Metal conversion factor
ポリ塩化ターフェニル;PCTs (全ての異性体および同族体)	Polychlorinated terphenyls (PCTs; all isomers and congeners)	Unspecified	61788-33-8	-
テルフェニル類	Terphenyls	$C_6H_4(C_6H_5)_2$	26140-60-3	-

②Principal uses for substances

Part	Purpose
Insulating oil for transformers and capacitors	Electrical insulation medium, solvents

Table 6-I-13 Polychlorinated naphthalene (number of chlorine 2 or more)

①Examples of substances (The table below does not cover all the substances in this substance group.)

Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN	Metal conversion factor
ポリ塩化ナフタレン(塩素数が2以上)	Polychlorinated Naphthalenes(Cl≥2)	Unspecified	70776-03-3	-
2塩化ナフタレン	Dichloronaphtalene	$C_{10}H_6Cl_2$	28699-88-9	-
3塩化ナフタレン	Trichloronaphtalene	$C_{10}H_5Cl_3$	1321-65-9	-
4塩化ナフタレン	Tetrachloronaphtalene	$C_{10}H_4Cl_4$	1335-88-2	-
5塩化ナフタレン	Pentachloronaphtalene	$C_{10}H_3Cl_5$	1321-64-8	-
その他のポリ塩化ナフタレン(塩素数が2以上)	Other polychlorinated Naphthalenes (Cl≥2)	-	-	-

②Principal uses for substances

Part	Purpose
Flexible rubber, elastomer belts, rolls, packing, sealing materials, insulating oil for capacitors	Plastic stabilizers (electrical characteristics, flame-proofing, water-proofing, biotical), electrical insulation medium

Table 6-I-14 Short-chained chlorinated paraffin

①Relevant substances are listed in Table 2-I-14.

②Principal uses for substances

Part	Purpose
Flexible polyvinyl chloride molded items	Polyvinyl chloride plasticizers

Table 6-I-15 Polyvinyl chloride (PVC)

①Examples of substances (The table below does not cover all the substances in this substance group.)

Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN	Metal conversion factor
塩化ビニル、クロロエチレン	Chloroethene	-	75-01-4	-
ポリ塩化ビニル(PVC)およびその混合物	Poly vinyl chloride (PVC) and its mixture	$(CH_2CHCl)_n$	9002-86-2	-
ポリ塩化ビニル酢酸ビニル共重合体	Vinyl chrolide/vinyl acetate copolymer	-	9003-22-9	-

②Principal uses for substances

Part	Purpose
Coated wiring codes, electric insulation molded items, chemical-resistant molded parts, plumbing components, transparent covers	Electrical insulation medium, chemical-resistance, transparency

Table 6-I-16 Hexabromocyclododecane (HBCDD)

①Relevant substances are listed in Table 2-I-16.

②Principal uses for substances

Part	Purpose
Expanded polystyrene molded parts, adhesive agents, fiber coating	Fire-retardant for resins and fibers

Table 6-I-17 Asbestos

①Examples of substances (The table below does not cover all the substances in this substance group.)

Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN	Metal conversion factor
アクチノライト	Actinolite	Unspecified	77536-66-4	-
アモサイト	Amosite	Unspecified	12172-73-5	-
アンソフィライト	Anthophyllite	Unspecified	77536-67-5	-
クリソタイル	Chrysotile	Unspecified	12001-29-5 132207-32-0	-
クロシドライト	Crocidolite	Unspecified	12001-28-4	-
トレモライト	Tremolite	Unspecified	77536-68-6	-
アスベスト繊維	Asbestos fibres	-	1332-21-4 JAMP-SN0056	-

②Principal uses for substances

Part	Purpose
Brake lining pads, electrical insulation parts, seals for chemical installations	Friction material, insulation materials, fillers

Table 6-I-18 Azo dyes and pigments (specific amines formed by degrading azo dies and pigments)

①Relevant substances are listed in Table 2-I-18.

②Principal uses for substances

Part	Purpose

Fiber products, printing inks	Dyes and pigments

Table 6-I-19 Ozone depleting substances

①Relevant substances are listed in Table 3.

②Principal uses for substances

Part	Purpose
Compressors, foamed plastics, fire extinguishers	Refrigerants, foaming agents, extinguishants (Labeling requirements apply not only to products, but also to cleaning agents and other items used in production processes.)

Table 6-I-20 Perfluorooctanesulfonic acid (PFOS) and PFOS analogs

①Examples of substances (The table below does not cover all the substances in this substance group.)

Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN	Metal conversion factor
ペルフルオロ-1-オクタンスルホン酸カリウム(PFOS)	Perfluorooctane sulfonate potasium salt	$C_8F_{17}SO_2X$ (X = Other derivatives including hydroxyls, metal salts, halogenated compounds, amides and polymers)	2795-39-3 JAMP-SN0035	-

②Principal uses for substances

Part	Purpose
Paints, coating materials, industrial cleaning agents, semiconductor manufacturing processes, electroplating processes	Smoothing agents, surfactants, foaming agents

Table 6-I-21 Specific benzotriazole:2-(2H-1,2,3-Benzotriazol-2-yl)-4,6-di-tert-butylphenol

①Relevant substances are listed in Table 2-I-21.

②Principal uses for substances

Part	Purpose
Anti-UV materials and UV absorbers used in molded plastic parts, decorative laminates, photographic paper, adhesives (excluding animal and plant-based adhesives), putties, stopping and sealing fillers, paints and printing inks	Anti-UV materials and UV absorbers

Table 6-I-22 Formaldehyde

①Relevant substances are listed in Table 2-I-22.

②Principal uses for substances

Part	Purpose

Wood products and parts using materials such as particle boards and MDF (medium density fiberboard)	Adhesive, preservative

Table 6-I-23 Dimethylfumarate (DMF)

①Relevant substances are listed in Table 2-I-23.

②Principal uses for substances

Part	Purpose
Biocide, electronic leather seats, including recliners, massage chairs	Biocide, mold treatment

Table 6-I-24 Fluorinated Greenhouse Gases (PFC, SF6, HFC)

①Applicable substances are indicated to table 4

②Principal uses for substances

Part	Purpose
Tire, window, fire extinguisher, shoes, throwaway container, aerosol	Refrigerants, blowing agents, extinguishants, cleaning agents, insulating media, caustic gas

Table 6-I-25 Phthalate esters (BBP, DBP, DEHP, DIDP, DINP, DNOP, DIBP)

①Examples of substances

Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN	Metal conversion factor
フタル酸n-ブチル=ベンジル(BBP)	Benzyl butyl phthalate (BBP)	$C_{19}H_{20}O_4$	85-68-7	-
フタル酸ジ-n-ブチル(DBP)	Dibutyl phthalate (DBP)	$C_{16}H_{22}O_4$	84-74-2	-
フタル酸ビス(2-エチルヘキシル)(DEHP)	Bis (2-ethylhexyl)phthalate (DEHP)	$C_{24}H_{38}O_4$	117-81-7	-
フタル酸ジイソデシル(DIDP)	Di-"isodecyl" phthalate	$C_{28}H_{46}O_4$	26761-40-0	-
	1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich		68515-49-1	-
フタル酸ジイソノニル(DINP)	Diisononyl phthalate	$C_{24}H_{38}O_4$	28553-12-0	-
			68515-48-0	
フタル酸ジ-n-オクチル(DNOP)	Bis(n-octyl)Phthalate	$C_6H_4(COOC_8H_{17})_2$	117-84-0	-
フタル酸ジイソブチル(DIBP)	Diisobutyl phthalate	$C_{16}H_{22}O_4$	84-69-5	-

②Principal uses for substances

Part	Purpose
Flexible polyvinyl chloride molded items, rubber, elastomer	Plastic plasticizers, dye, pigment, paint, ink, adhesive, lubricant

Table 6-I-26 Perfluorooctanoic acid (PFOA) and its salts and esters

①Relevant substances are listed in Table 2-I-26.

②Principal uses for substances

Part	Purpose

Surface coating agents, extinguishants	Additives, leveling agents for paints, aqueous film-forming foam extinguishants, surfactants

Table 6-I-27 Polycyclic aromatic hydrocarbon (PAH)

①Relevant substances are listed in Table 2-I-27.

②Principal uses for substances

Part	Purpose
Byproducts generated by combustion of petroleum products Volatile PAHs are contained in some industrial products (essential oils, lubricants, biocides, adhesives, and paints)	-

Table 6-I-28 Pentachlorophenol and its salts and esters

①Examples of substances (The table below does not cover all the substances in this substance group.)

Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN	Metal conversion factor
ペンタクロロフェノール	Pentachlorophenol	C_6Cl_5OH	87-86-5	-
ペンタクロロフェノールナトリウム	Sodium pentachlorophenol	C_6Cl_5NaO	131-52-2	-
ペンタクロロフェノールナトリウム一水和物	Sodium pentachlorophenol monohydrate	$C_6Cl_5NaO \cdot H_2O$	27735-64-4	-
ペンタクロロフェニルラウレート	Pentachlorophenyl laurate	$C_{18}H_{23}Cl_5O_2$	3772-94-9	-
ペンタクロロアニソール	Pentachloreanisole	$C_7H_3Cl_5O$	1825-21-4	-

②Principal uses for substances

Part	Purpose
Wood products, leather products	Preservative

Table 6-I-29 Certain CMR substances

1) Examples of arsenic compounds among certain CMR substances (The table below does not cover all the substances in this substance group.)

Substance (Japanese)	Substance (English)	Chemical formula	CAS No. or JAMP-SN	Metal conversion factor
ヒ素	Arsenic	As	7440-38-2	1.000
ヒ酸	Arcenic acid	AsH3O4	7778-39-4	0.528
亜ヒ酸銀	Trisilverarsenite	Ag.1/3AsH3O3	7784-08-9	0.167
亜ヒ酸鉛	Lead arsenite	As2O4Pb	10031-13-7	0.356
ヒ酸鉛	Lead arsenate	Pb3(AsO4)2	10102-48-4	0.267
ヒ酸鉄(III)	Ferric arsenate	AsFeO4	10102-49-5	0.384

亜ヒ酸鉛(II)	Zinc arsenite	As2O4Zn	10326-24-6	0.537
ヒ化マンガン	Manganese arsenide	MnAs	12005-95-7	0.577
ヒ化亜鉛	Zinc arsenide	Zn3As3	12006-40-5	0.433
ヒ化スズ	Tin arsenide	SnAs	12044-32-5	0.386
ヒ化ガリウム	Gallium arsenide	AsGa	1303-00-0	0.518
五酸化二ヒ素	Arsenic pentoxide	As2O5	1303-28-2	0.652
三酸化二ヒ素	Diarsenic trioxide	As2O3	1327-53-3	0.757
ヒ酸トリエチル	Triethyl arsenate	C6H15AsO4	15606-95-8	0.331
亜ヒ酸カルシウム	Calcium arsenite	As2Ca3O6	27152-57-4	0.409
ビス(ヒ酸)三鉛(II)	Trilead diarsenate	As2O8Pb3	3687-31-8	0.167
ビス(ヒ酸)三カルシウム	Calcium arsenate	As2Ca3O8	7778-44-1	0.376
ヒ酸水素鉛(II)	Lead hydrogen arsenate	AsH3O4.Pb	7784-40-9	0.215
ヒ酸二水素カリウム	Potassium arsenate	AsH2KO4	7784-41-0	0.416
ヒ酸及びその塩	arsenic acid and its salts	-	JAMP-SN0009	-
その他のヒ素化合物	Arsenic compounds	-	JAMP-SN0010	-

2) Principal uses for substances

Part	Purpose
Clothing or accessories such as bags, textiles, footwear	Pigments, germicides, biocides

6. Major Revisions to Annex A

Ver.	Date	Article of Annex A	Contents and reason for revisions
13	2018.03.31	3	3. Terms and Definitions ・"CMR substances" was added to explain the new prohibited substances. ・"RoHS2 Directive" was replaced with "RoHS Directive (2011/65/EU)" to clearly indicate the applicable regulation.
		4.1	Table 1 Environment-related Substances ・In keeping with the new regulation, "I-29 Certain CMR substances" was added. A note was also added to the table, in order to clearly indicate the applications of "I-29 Certain CMR substances."
		4.2.3	Table 2-I ・With regard to cadmium, hexavalent chromium, lead, mercury, PBB, PBDE and phthalate esters, the timing of the application of RoHS Directive was incorporated. Accordingly, cadmium, hexavalent chromium, lead, mercury, PBB, PBDE are categorized as Level 1, and phthalate esters as Level 2. ・With regard to cadmium, hexavalent chromium, lead, mercury, PBB, PBDE and phthalate esters, "RoHS2 Directive" was replaced with "RoHS Directive (2011/65/EU)" to clearly indicate the applicable regulation. ・In Europe, all the information contained in Annex B, except for "Date of ban on delivery," is public information. Therefore, regarding cadmium, hexavalent chromium, lead and mercury, "Annex B" was deleted from the "Exemption," and "Exclusions from RoHS Directive: 6 months prior to expiration" was added to "Date of ban on delivery." Table 2-I-2 (Hexavalent chromium compounds) ・The timing of the application of the REACH regulation to Level-2 substances was incorporated, and the prohibition level was changed to Level 1. Table 2-I-25 (Phthalate esters) ・Regarding "the restriction of plasticized material that includes DEHP, BBP, DBP and/or DIBP," which are four substances newly added to Annex XVII to REACH (restriction), their effective dates of REACH regulation, dates of ban on delivery, applications and control values were added to the Level-2 boxes. Additional information was also provided in "Exemption" and "Note." ・Table 2-I-29 (Certain CMR substances) This new table was created in keeping with the addition of "Certain CMR substances" to Annex XVII to REACH (restriction).
		5	"Table 6-I-29 Certain CMR substances" was added to provide examples of arsenic compounds among certain CMR substances. The sentence of "The table below does not cover all the substances in this substance group" was added to Tables

			6-I-1 - 6-I-29 to clearly indicate that these examples are provided for illustrative purposes only.
12	2018.06.01	4.1	Table 1 (Environment-related Substances) ・Table 1 I-28: “Benzenamine, N-phenyl-, Reaction Products with Styrene and 2,4,4-Trimethylpentene (BNST)” was deleted because these substances became exempt from the “Prohibition of Certain Toxic Substances Regulations, 2012” of Canada.
		4.2.3	Table 2-I ・With regard to cadmium, hexavalent chromium, lead, mercury, PBB and PBDE, the timing of the application of RoHS2 Directive was incorporated. Table 2-I-2 (Hexavalent chromium compounds) ・“Intentional inclusion prohibited” was deleted from the Control Value column for Level-1 electric and electronic equipment subject to RoHS2 Directive. ・Regarding the four Level-2 substances that will become subject to applicable regulations on January 22, 2019 (Annex XIV to REACH), their control value was changed to “Intentional inclusion prohibited.” Table 2-I-10 (PBDEs) ・“Annex XVII to REACH (restriction)” was added. Table 2-I-12 (PCTs) ・“Intentional inclusion prohibited” was deleted from the Control Value column, and “mixture” was replaced with “mixture or finished product.” Table 2-I-20 (PFOS and PFOS analogs) ・The Exemption row was deleted to reflect the review of exemption from “Class I Specified Chemical Substances designated by the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.” Table 2-I-26 (PFOA and its salts and esters) ・“Annex XVII to REACH (restriction)” was added. Table 2-I-28 (BNST) was deleted. Table 6-I-5 (Trisubstituted organotin compounds) ・“JAMP-SN0024” was added in the CAS No. or JAMP-SN column. Table 6-I-6 (Dibutyltin compounds) ・“JAMP-SN0072” was added in the CAS No. or JAMP-SN column. Table 6-I-7 (Dioctyltin compounds) ・“JAMP-SN0073” was added in the CAS No. or JAMP-SN column. Table 6-I-10 (PBDEs) ・In the Substance (Japanese) column, “PBDE 類” was spelled out as “ポリ臭化ジフェニルエーテル類” in keeping with the use of unabbreviated names for PBBs. Tabl 6-I-17 (Asbestos) ・“JAMP-SN0056” was added in the CAS No. or JAMP-SN column. Table 6-I-28 (BNST) was deleted because these substances became exempt from the “Prohibition of Certain Toxic Substances Regulations, 2012” of Canada.
11	2017.04.01	4.2.3	Table 2-I: With regard to cadmium, hexavalent

			chromium, lead, mercury, PBB and PBDE, incorporated the timing of the application of RoHS2 Directive. Table 2-I-2 (Hexavalent chromium compounds): The prohibition level of nine hexavalent chromium compounds was changed from 2 to 1. Table 2-I-13 (Polychlorinated naphthalene): The information on "2 chlorine atoms" was integrated with that on "3 or more chlorine atoms".
10	2016.04.04	4.1	・The number of chlorine atoms of polychlorinated naphthalene was changed from 3 or more to 2 or more. ・"and its salts and esters" was added to perfluorooctanoic acid (PFOA), which was also added to the relevant parts in other pages. ・I-29: "Pentachlorophenol and its salts and esters" was added.
		4.3	In Table 2-I-13 (Polychlorinated naphthalene) , ・The number of chlorine atoms of polychlorinated naphthalene was changed from 3 or more to 2 or more. In Table 2-I-14 (Short-chained chlorinated paraffin), ・*1: (EC)No.850/2004 was added to EU POPs regulation ・*2: Norwegian Product Regulations was deleted. ・From the examples of substances listed in Table 6-1-14, only chlorinated paraffins (short chain) (number of carbon from 10 to 13) was added. In Table 2-I-16 (hexabromocyclododecane), ・EU POPs regulation (EC)No.850/2004 was added to Note *1. In Table 2-I-25 (Phthalate esters), ・Categories" was deleted from the RoHS directive categories for level 2 applications. ・In Note *3, TBT notification was replaced with. (EU)2015/863. In Table 2-I-18 (BNST), ・Under Applications, description was changed to incorporate the exemption. ・In the note, the name of regulation was changed to Canadian Prohibition of Certain Toxic Substances Regulations, 2012. Table 2-I-29 (Pentachlorophenol) was added. In Table 3-I-19 (Ozone depleting substances), ・Under Chemical formula, chemical formula was added to a blank field. In Table 6-1-9 (PBBs), ・Under Chemical formula, chemical formula was added to a blank field. In Table 6-I-14 (Short-chained chlorinated paraffin), ・The examples of substances were removed and were incorporated into Table 2-I-14 as reference.

9	2015.06.05	3	Definition of terms: “preparation” was replaced with “mixture”.
		4.1	Table 1, I-28: “Benzenamine, *N-phenyl-*, Reaction Products with Styrene and 2,4,4-Trimethylpentene (BNST)” was added.
		4.2.3	Table 2-I: With regard to cadmium, hexavalent chromium, lead, mercury, PBB, and PBDE, incorporated the timing of the adoption of RoHS2 Directive. Table 2-I-2: The regulation on leather products was added to hexavalent chromium. Table 2-I-6: The exemptions for dibutyltin compounds were removed. Table 2-I-25, Phthalate esters: Removed the Danish regulation, and addressed the official publication that has added prohibited substances to RoHS2. Table 2-I-28: “Benzenamine, *N-phenyl-*, Reaction Products with Styrene and 2,4,4-Trimethylpentene (BNST)” was added. REACH Regulation: Added SVHC as examples to the corresponding substance tables, and reviewed descriptions.
8	2014.02.20	4.1	Table 1: “I-26 Perfluorooctanoic acid (PFOA)” and “I-27 Polycyclic aromatic hydrocarbon (PAH)” were added.
		4.2.3	“In some cases, business units set their own dates on ban on delivery that are different from the ones herein. These dates set by business units take precedence over the ones herein” was added.
			Table 2: “Intentional use prohibited” was replaced with “intentional inclusion prohibited” in each table. “If the Control Value column lists “intentional inclusion prohibited” and the control value, both of these requirements must be fulfilled” was also added.
			“Intentional use prohibited” was deleted from Table 2 for cadmium, lead, dioctyltin, nickel, and azo compounds. The denominators as the standard for the control values were defined.
			In Table 2-I-16, Level 1 was established in accordance with the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc., and applicable substances were added.
			In Table 2-I-24, the applications of PFC were defined.
		2, 6	Tables 2 and 6 were revised in accordance with the JAMP－AIS format.
7	2013.09.05	4.2.3	In Table 2-I-6, “Intentional use prohibited” was deleted.
			In Table 2-I-18, date of ban on delivery at Level 2 was corrected.
6	2013.05.17	2	・The code for RoHS2 was corrected: 2010/65/EU ⇒ 2011/65/EU ・Substance names followed the spelling used by JAMP. ・Regarding the control on phthalate esters in Demark, it was difficult to impose a ban on delivery six months before the deadline of December 2013. Therefore, a date three months before was set as the date of the ban

			on delivery. As for products subject to RoHS2, a date 12 months before was set as the date of ban on delivery, mainly because of the amount of inventory on the market.
5	2012.06.12	3	The explanations on the terms (a), (b) and (c) under (1) Environment-related substances were repeated in Section 4.2.1. For this reason, these explanations were deleted from the Terms and Definitions section.
		3	(14) Intentionally added, (15) Impurities, (16) Preparation and (17) Article were added.
		4.1	Table 1 was reviewed and the following changes were made: (I) Prohibited substances TBTO was included into trisubstituted organotin compounds. Radioactive substances, acrylamide and musk xylene were deleted, and hexabromocyclododecane was added. (II) Controlled substances Antimony, arsenic, beryllium, bismuth, selenium, brominated flame retardants (except prohibited substances), perchlorates, phthalate esters (except prohibited substances) and PRTR substances were deleted.
		2.3	In Section 4.2.3, "Detailed information about the control of prohibited substances," a separate table was made for each prohibited substance group. "Intentionally added" was added to the control value column. Prohibited substances were reviewed and their substance groups were renumbered.
		4.2.3	"I-19 Ozone depleting substances" were extracted from the examples and separately presented as Table 3.
		4.2.3	In Table 3, because the CAS number for Tribromodifluoroethane, 128903-21-9, was an error in writing, it was replaced with "-".
		4.2.3	"I-24 Fluorinated greenhouse gasses (PFC, SF6, HFC)" were extracted from the examples and separately presented as Table 4.
		4.2.4	Section 4.2.4 on controlled substances was devoted to substances of very high concern in REACH (SVHC).
		5	Examples and principal uses were listed for each substance.
4	2011.07.22	All	・REACH Regulation Annex 16: Addressed 6 substances added to "Approved Substances" and 7 substances added to the "List of Candidate Substances for Approval". ・REACH Regulation Annex 17: Addressed additions to "Limited Substances", and confirmed/revised exemptions. ・Incorporated the latest information from JIG (Joint Industry Guidelines) Ver4.0 and JAMP. ・Revised description to make it easier to understand. Corrected table errors.
3	2011.03.04	2	Scope has been amended to "Olympus Group" and "These rules apply to domestic Olympus, OGZ, OSZ and OPI. Products manufactured and sold in other regions shall be subject to these rules" has been deleted.

			8 substances of Very High Concern have been added to Table 5 and Table 6.
2	2010.12.17	2	”Dibutyltin compounds (DBT), Dioctyltin compounds (DOT), Nickel, Dimethylfumarate (DMF), Fluorinated Greenhouse Gases (PFC, SF6, HFC), partial phthalate esters” have been added as “Prohibited substances”. “Perchlorates” has been added as “Controlled substances”. “Tributyltin (TBTs), Triphenyltin (TPTs)” has been amended to “Trisubstituted organotin compounds”.
		All	"Products used for sales promotion" has been added in 2.1 Applicable items.
			Exclusions from RoHS Directive was revised under Commission Decision 2009/425/EC.
			Table 6: Examples of environment-related substances was revised by reference to JIG-101Ed3.1
Versions before 2	December 2010: Revisions of REACH ANNEX 14 (candidate substances for approval) were accepted, "Hexabromocyclododecane (HBCDD)" and "Musk xylene" were newly added as "prohibited substances", and the prohibited usage and thresholds were reviewed for "Azo dyes and pigments (specific amines formed by degrading azo dies and pigments)" and "Phthalate esters". Revisions of REACH ANNEX 17 (limited substances) were accepted, and "Acrylamide" was made a "prohibited substance". August 2010: Examples of environment-related substances in Table 6 were revised by reference to JIG-101Ed3.1. This revision included the addition of substances and name changes. October 2009: “Formaldehyde” was classified as a “prohibited substance” according to the regulations of various countries as well as social needs. June 2009: Directive 76/769/EEC (on restrictions on the marketing and use of certain dangerous substances and preparations) was repealed with effect. Any amendment to the restrictions adopted under Directive 76/769/EEC from June 1, 2007 were incorporated in Annex XVII, EC 1907/2006. (Article 137, Article 139 of the REACH) October 2008: Following the publication of 15 Substances of Very High Concern that were added to the candidate list, additional substances were classified as “controlled substances.” June 2008: The 30th amendment directive (2006/122/EC) concerning Directive 76/769/EEC (PFOS and PFOS analogs) came into effect. November 2007: Specific benzotriazole was designated as a Class I designated chemical substance pursuant to a partial amendment of the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. August 2007: The Joint Industry Guidelines (JIG) came into force. Therefore, regarding the five substances that had been designated under the JGPSS, their designation was cancelled and deleted from the list of “prohibited substances.” June 2007: The REACH came into force.		