

Panasonic Group

**Chemical Substances Management
Rank Guidelines**

Version 9 (For Products)

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Environment & Quality Center

Panasonic Corporation

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1 Objective of These Guidelines

The purpose of the "Chemical Substances Management Rank Guidelines (For Products)" is to ensure compliance with legislation and to reduce the environmental impact by clarifying the chemical substances that are prohibited and require special management if contained as environmentally impacting substances in products shipped by the Panasonic Group, or components, devices, materials, etc. delivered to the Panasonic Group, by thoroughly advising the Group's internal operations and suppliers of products, components, devices, and materials.

2 Application

2.1 Application to Products (Products shipped by the Panasonic Group)

- (1) Products designed, manufactured, and sold by the Panasonic Group
- (2) Products sold by the Panasonic Group with its trademark (including products outsourced to a third party by the Panasonic Group for design and manufacturing)
- (3) Products purchased by the Panasonic Group from another company and sold as finished products after assembly
- (4) Products contracted to the Panasonic Group from a third party for design and manufacturing (provided, however, that components, devices, materials, etc. specified by the third party are exempted from application of these Guidelines)
- (5) Products used for sales promotion (Products provided to parties outside Panasonic (not limited to general consumers): giveaways, etc.)
- (6) Packaging materials and packaging materials for transportation (pallets, shrink packs etc.).

2.2 Application to Components, Devices, Materials, etc. (Components, devices, materials, etc. delivered to the Panasonic Group)

This rule applies to the components, materials, and other items used for the products mentioned in Section 2.1 Application above.

- (1) Components/materials (including electrical components, mechanical components, electro-mechanical components, semiconductors, printed circuit boards, enclosure components, and packaging materials/components for shipping products by the Panasonic Group)
- (2) Assembled components such as functional unit/module/board assemblies
- (3) Accessories (for using products such as remote controls, AC adaptors, etc.)
- (4) Auxiliary materials, etc. (tape, solder material, adhesive, etc.)
- (5) Operating instructions, warranty certificates, other printed matters enclosed in products
- (6) Spare parts for repair
- (7) Components and materials for sales promotion (e.g. labels)
- (8) Packaging materials used for transport/protection by suppliers of components, devices, materials, etc. (if there is no possibility of transfer or contamination of the subject substance even after direct contact with the components, devices, materials, etc., the substance is not subject to these Guidelines.)

3 Operations and Exemptions

- (1) Although these Guidelines have been developed in accordance with principal laws and regulations, they do not necessarily refer to all relevant regulations. All products shall fully comply with the treaties, laws, ordinances, industry guidelines, and other requirements effective at the time of sales and in the region of sales in addition to these Guidelines.
- (2) When Companies/Business Divisions of the Panasonic Group uniquely set a value stricter than the Regulations by the Panasonic Group in accordance with the Company/Business Divisions circumstances (e.g. requests by a customer), information to that extent shall be communicated to relevant parties (e.g. suppliers).
- (3) With respect to these Guidelines, items where application of these Guidelines may be exempted/postponed, items that require management separate from these Guidelines, and items that can be deemed as out of scope of these Guidelines are separately prescribed in "Detailed Rules for Internal Operation of the Panasonic Group Chemical Substances Management Rank Guidelines (For Products)" (internal document). In the event such items are present, communicate to relevant parties (e.g. suppliers) as necessary.

4 Establishment, Revision, and Abolition

- (1) All items related to these Guidelines are examined by a Working Group consisting of representatives of experts from respective divisions of Companies under the Product Chemical Substance Management Committee, approved by the Product Chemical Substance Management Subcommittee, and authorized by the Director of Environment & Quality Center.
- (2) In case a requirement arises for revision or abolishment of these Guidelines, a request shall be submitted to the Product Chemical Substance Management Subcommittee or the secretariat of the Product Chemical Substance Management Committee.
- (3) These Guidelines shall be discussed and reviewed periodically (once a year) by the Working Group. In the following cases, however, the secretariat will review and obtain approval from the Product Chemical Substance Management Subcommittee for revisions.
 - 1) When the need arises for reflecting a change in social trends such as law amendments
 - 2) When the need arises for reflecting a progress in technological trends (alternative technologies, assessment technologies), threat-related data, exposure data, and risk assessment data, etc.

5 Definition of Terms

The terms used in these Guidelines are based on the following definitions.

5.1 Panasonic Group

Panasonic Corporation and companies where Panasonic Corporation directly or indirectly owns more than half of the voting rights.

5.2 Specified managed substance

Refers to Prohibited substances from Level 1 through 3 and managed substances that have been selected/approved based on the Selection Criteria of Prohibited Substances in the Chemical Substance Management Rank Guidelines.

5.3 Level 1 Prohibited Substances

The substances listed below and those that may be contained in products, components, devices, materials etc. specified in the scope of application are in this rank. Such substances must guarantee the Regulations by the Panasonic Group, and some must be discontinued immediately depending on the substance.

- (1) A substance contained in products that is prohibited by existing laws and regulations; or a substance where the upper limit of concentration is specified.
- (2) A substance that will be prohibited in products by laws and regulations or where the upper limit of concentration will be specified within one year of the revision of these Guidelines.

5.4 Level 2 Prohibited Substances

Any substance other than those specified as a Level 1 Prohibited Substance and shown below falls into this rank.

- (1) Substances that will be prohibited in products after a certain period by a treaty, law, or regulation.
- (2) Substances that are prohibited in products by the Panasonic Group prior to the effective period specified by a treaty, law, or regulation.
- (3) Substances whose use is voluntarily restricted by the Panasonic Group.

Any confirmed content of such substances in products must be remedied by means of an alternative based on the period or restricted condition specified by these Guidelines.

5.5 Level 3 Prohibited Substances

Any substance other than those specified as a Level 1 or Level 2 Prohibited Substance that is reviewed for prohibition by legislation etc., and the clarification of substitution-related issues as well as the timing for prohibition is reviewed by the Panasonic Group in light of future legislation trends. The timing of prohibition of content in products is not set by the Panasonic Group at present.

5.6 Managed Substances

This rank refers to substances whose consumption needs to be monitored and for which consideration needs to be given to human health, safety and hygiene, adequate treatment, etc. The intentional use of these substances is not restricted, but their use and contained concentration must be monitored. Of the applicable managed substances, when they are used "intentionally" or "inclusion is known," such substances need to be identified.

5.7 Inclusion is known

This refers to "information that has been received from the material manufacturer indicating that the raw material contains the managed substance" or "data indicating that content of the managed substances has been confirmed by some other means."

5.8 Contained in Products

Refers to all cases where the substances are contained in products, components, devices, materials, etc. For example, the following conditions are included.

- Condition in which the subject substance is intentionally used
- Condition in which the subject substance is contained as an impurity
- Condition in which the subject substance is used in the manufacturing process and remains on or attached to the finished product or its components or materials (for example, if a product risks being contaminated by a mold, tool, or machine that directly contacts the product during the manufacturing process, said part in contact with the product must not contain prohibited substances).

5.9 Intentional Use

To intentionally use a certain substance during the process of manufacturing a product, component, device, material, etc. when continuous content is desirable for obtaining certain characteristics, appearance, or quality. Cases where the substance is ultimately not contained in the product, component, device, material, are excluded.

5.10 Impurity

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

5.11 Regulations by the Panasonic Group

Contents that should be guaranteed by a business division in the Panasonic Group regarding the content of prohibited substances in products shipped from the Panasonic Group, and/or contents that should be guaranteed by the supplier of components, devices, materials, etc. delivered to the Panasonic Group.

5.12 Regulated Value

Concentration that should be guaranteed by a business division in the Panasonic Group regarding the content of prohibited substances in products shipped from the Panasonic Group, and/or contents that should be guaranteed by the supplier of components, devices, materials, etc. delivered to the Panasonic Group. Concentration includes impurity concentration.

5.13 Controlled Value

This refers to contained concentration for management by the Panasonic Group, which is deemed to not exceed the limit when the non-use control of Level 1 Prohibited Substances is properly managed. If the contained concentration of the Prohibited substance exceeds the controlled value, request the supplier for clarification of the reason of content, and request the supplier to reduce the contained concentration to below the controlled value as necessary. (Warranty for controlled value is not to be requested to suppliers).

5.14 Contained Concentration

Contained concentration refers to the concentration of the substance expressed by the mass of homogeneous material placed in the denominator position. Homogeneous material refers to the material that cannot be mechanically disassembled into different materials. Examples of homogeneous materials are as follows.

- Chemical compound, polymer alloy, metal alloy, etc.
- For raw materials such as paint, adhesive, ink, paste, resin polymer, glass powder, ceramic powder, etc., the final form of each presumed application (e.g., the dried or cured state for paints and adhesives, the molded state for resin polymers, and the fired state for glass and ceramic materials)
- Single layer of painted, printed, or plated surface. In the case of multiple layers, the condition of each single layer must be homogeneous material.

As for packaging material, however, the mass of the part/material comprising the packaging (the part that can be easily separated (e.g. "corrugated board" used for packing the product, "adhesive tape" used for assembly in a corrugated box package, and "label" used for indication are to be considered as separate materials) is to be the denominator, and the total concentration (by weight) of the four metals of lead, cadmium, mercury, and hexavalent chromium is to be the contained concentration.

6 Specified Managed Substances

6.1 Level 1 Prohibited Substances

Level 1 Prohibited Substances have been determined in accordance with the following Japanese and foreign legislation (Table 1). Products shipped from the Panasonic Group, and components, devices, materials, etc. delivered to the Panasonic Group must guarantee the Regulations by the Panasonic Group shown in Table 1.

In addition, if the contained concentration exceeds the controlled value (the concentration deemed to not exceed the limit when the non-use control of Level 1 Prohibited Substances is properly managed) specified in Appendix 3 "Controlled Values for Prohibited Substances," request the supplier to clarify the reason of content, and request reduction of the contained concentration to below the controlled value as necessary.

The content of Level 1 Prohibited Substances must guarantee the Regulations by the Panasonic Group, and must be in a state controlled to be less than the controlled value.

6.1.1 Legislation in Japan and items subject to the requirements

- Class I Specified Chemical Substances (Substances prohibited from manufacturing and importing) determined by the "Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (Chemical Substances Control Law)" (hereafter "**CSCCL**")
- Harmful Substances, etc., Prohibited for Manufacturing as determined by Article 55 (Prohibition of Manufacturing, etc.) of the "Industrial Safety and Health Act" (hereafter "**Ind-safety Law**")
- Specified Substances (excluding HCFC) as determined by the "Act on the Protection of the Ozone Layer Through the Control of Specified Substances and Other Measures (Ozone Layer Protection Law)" (hereafter "**Ozone Layer Law**")
- Substances subject to the obligation to control contained substances and submit information as determined by the "Act on the Promotion of Effective Utilization of Resources" (hereafter "**3R Law**")

6.1.2 Legislation outside Japan, international treaties, and items subject to the requirements

- EU RoHS Directive (Directive 2011/65/EU): Directive 2011/65/EU of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment (hereafter "**EU RoHS**")
- EU REACH (Regulation (EC) No. 1907/2006): Annex XVII (Restrictions) of the Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (hereafter "**EU REACH Annex XVII**")
- EU POPs Regulation (Regulation (EC) No. 850/2004): Annex I of the Regulation (EC) No 850/2004 of the European Parliament and of the Council on persistent organic pollutants (hereafter "**EU POPs Annex I**")
- EU Packaging Directive (Directive 94/62/EC): European Parliament and Council Directive on packaging and packaging waste (hereafter "**EU Packaging Directive**")
- EU ODS Regulation (Regulation (EC) No 1005/2009): Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer (recast) (hereafter "**EU ODS**")
- "Germany Chemicals prohibition ordinance" (hereafter "**DE ChemVerbotsV**")
- "Denmark Formaldehyde Regulation (No. 289, 22 June 1983)" (hereafter "**DK Formaldehyde Regulation**")
- "Specified states in the US: Toxics in Packaging Regulation)" (hereafter "**US Specified States TIP**")
- "The Montreal Protocol on Substances that Deplete the Ozone Layer" (hereafter "**Montreal Protocol**")

- "Environmental Taxes on Ozone-depleting chemicals (ODCs); 26 CFR 52.4682-1-3)"
(hereafter "**US CFC tax**")
- "The Clean Air Act; Title VI - Stratospheric Ozone Protection" (hereafter "**US CAA**")
- "Stockholm Convention on Persistent Organic Pollutants" (hereafter "**POPs Convention**")

Table 1 List of Level 1 Prohibited Substances (Substance Group)

It is required to guarantee the Regulations by the Panasonic Group below. *1

Caution 1: For the analysis method of the major substances, refer to Appendix 4 "Analysis Method of Level 1 Prohibited Substances"

Caution 2: Any substances not included in this list must also be fully compliant if applicable regions or products are individually designated by a treaty, law, ordinance, industry guidelines, etc.

No.	Substance Group Name	Regulations by the Panasonic Group	Major Referenced Laws/ Regulations
1	Polychlorinated biphenyls (PCBs) (see Table 2- 1)	Intentional use prohibited *2	CSCL, EU POPs Annex I
	Polychlorinated terphenyls (PCTs) (see Table 2- 2)	Must be less than 50ppm *2	EU REACH Annex XVII
2	Asbestos (see Table 2- 3)	Intentional use prohibited and concentration must be less than 1000ppm *2	Ind-safety Law, EU REACH Annex XVII
3	Specified organic tin compounds (1) Bis (tributyltin) oxide Tri-substituted organostannic compounds (see Table 2- 4)	Tin concentration *3 must be less than 1000ppm *2	CSCL, EU REACH Annex XVII
4	Specified organic tin compounds (2) Dibutyltin compounds (see Table 2- 5)	Tin concentration *3 must be less than 1000ppm *2*4	EU REACH Annex XVII
5	Specified organic tin compounds (3) Diocetyl tin compounds (see Table 2- 6)	Tin concentration *3 must be less than 1000ppm *2 (The regulation scope is limited)	EU REACH Annex XVII
6	Short-chain paraffin chloride (C10 – 13) (see Table 2- 7)	Intentional use prohibited *2	EU POPs Annex I
7	Specified brominated flame-retardants (PBBs, PBDEs) (see Table 2- 8)	Concentration must be less than 1000ppm *5	CSCL, EU RoHS, EU REACH Annex XVII, EU POPs Annex I

8	Azo dye and pigment forming specified amines (see Table 2- 9)	Concentration must be less than 30 mg/kg (30ppm) (as specified amine) ^{*2} (The regulation scope is limited)	EU REACH Annex XVII
9	Polychloronaphthalene (number of chlorine 3 or more) (see Table 2- 10)	Intentional use prohibited ^{*2}	CSCL, EU POPs Annex I
10	Cadmium and its compounds (see Table 2- 11)	Concentration must be less than 100ppm (Exemptions are provided.)	3R Law, EU RoHS, EU REACH Annex XVII
11	Lead and its compounds (see Table 2- 12)	Concentration must be less than 1000ppm (Exemptions are provided.)	3R Law, EU RoHS, EU REACH Annex XVII
12	Hexavalent chromium compounds (see Table 2- 13)	- Concentration of leather products and leather components must be less than 3ppm ^{*6} - Concentration of items other than the above must be less than 1000ppm (Exemptions are provided.)	3R Law, EU RoHS, EU REACH Annex XVII
13	Mercury and its compounds (see Table 2- 14)	Concentration must be less than 1000ppm (Exemptions are provided.)	3R Law, EU RoHS
-	* No. 10 – 13 Four heavy metals (Cadmium, Lead, Hexavalent chromium, and Mercury) (see Table 2- 15)	Intentional use prohibited and concentration must be less than 100ppm ^{*7} in total with the mass of the materials constituting the packaging as the denominator (Regulated scope is packaging)	EU Packaging Directive, US Specified States TIP
14	Ozone-depleting substances (excluding HCFC) (see Table 2- 16)	Intentional use prohibited ^{*8}	Ozone Layer Law, Montreal Protocol, US CFC tax
15	Hydrochlorofluorocarbons (HCFC) (see Table 2- 17)	Intentional use prohibited ^{*2}	EU ODS, US CAA
16	Formaldehyde (see Table 2- 18)	Aerial concentration must be less than 0.1ppm (DE ChemVerbotsV) ^{*9} Aerial concentration must be less than 0.15 mg/m ³ (DK Formaldehyde Regulation) ^{*9} (The regulation scope is limited)	DE ChemVerbotsV, DK Formaldehyde Regulation

17	Perfluorooctane sulfonate and its salts (see Table 2- 19)	Intentional use prohibited and must be - less than 1000ppm for semifinished goods, articles, and parts ^{*2} - less than 1 µg/m ² for surface treatment ^{*2} (Exemptions are provided.)	CSCL, EU POPs Annex I
18	Specified benzotriazole 2-(2H-1,2,3-benzotriazole-2-yl)-4,6-di-tert-butylphenol (see Table 2- 20)	Intentional use prohibited ^{*2}	CSCL
19	Dimethylfumarate (see Table 2- 21)	Concentration must be less than 0.1ppm ^{*2}	EU REACH Annex XVII
20	Polycyclic aromatic hydrocarbons (PAH) (see Table 2- 22)	Concentration must be less than 1ppm ^{*2} (The regulation scope is limited)	EU REACH Annex XVII
21	Hexabromocyclododecane (HBCD) (see Table 2- 23)	Intentional use prohibited ^{*2}	CSCL, POPs Convention

*1: Spare parts should be in compliance with applicable legislation, as well as handled in accordance with the contents of management for Level 1 Prohibited Substances in the product main body of electric/electronic equipment to which the spare parts are applied.

*2: If compliance with the Regulations by the Panasonic Group is verified by tracing back the supply chain, the analysis for checking non-use of the subject substance is not required.

*3: Tin concentration = (The specified organic tin compound concentration in a homogeneous material) x (Tin conversion coefficient)

$$\text{Tin conversion coefficient} = \frac{118.7^{*A} \times N^{*B}}{[\text{Molecular weight of a specified organic tin compound}]}$$

*A: Tin atomic weight, *B: Number of tin atoms in tin compounds

See Appendix 1 for tin conversion coefficients of major specified organic tin compounds.

*4: If a dibutyltin compound is intentionally used with a concentration of less than 1000ppm, we may request the supplier for the submission of evidence (e.g. analysis data) required for guaranteeing that the concentration is less than the regulated value of 1000ppm.

*5: The regulated value 1000ppm indicates the concentration of each substance group of PBB and PBDE.

*6: Hexavalent chromium with the total dry weight of leather products or leather components must be less than 3ppm by weight. For chrome tanned (including trivalent chromium tanned) leather products and leather components, conduct analysis and confirm that the content rate of hexavalent chromium is less than 3ppm. On the other hand, for leather products and leather components not processed with chrome tanning, track back the supply chain and confirm that the content rate of hexavalent chromium is less than 3ppm; if confirmed, analysis of this substance is unnecessary.

- *7: Content of four heavy metals (lead, cadmium, mercury, and hexavalent chromium) in total with the mass of materials constructing the packaging must be less than 100ppm by weight. Materials constructing the packaging are parts which can be easily separated (e.g. "corrugated board" used for packing the product, "adhesive tape" used for assembly in a corrugated box package, and "label" used for indication are to be considered as separate materials)
- *8: In the latest Green Procurement Standards, use of ozone-depleting substances in production processes (which refers to the use of the relevant substances, even if they are not contained in products or components, including the intentional use of such substances during manufacturing products or components (e.g. in the washing process)) is prohibited.
- *9 Test methods shall comply with individual laws.

Table 2 Regulated Items of Level 1 Prohibited Substances

Table 2- 1

Substance Group Name: Polychlorinated biphenyls (PCBs)
Regulated items
<p>All applications</p> <p>[Applications and use examples] Insulation oil, lubricant oil, electric insulator, solvent, electrolyte, plasticizer, fire-retardant, flame retardant, coating agent for electric wires and cables, dielectric sealant</p>

Table 2- 2

Substance Group Name: Polychlorinated terphenyls (PCTs)
Regulated items
<p>All applications</p> <p>[Applications and use examples] Insulation oil, lubricant oil, electric insulator, solvent, electrolyte, plasticizer, fire-retardant, flame retardant, coating agent for electric wires and cables, dielectric sealant</p>

Table 2- 3

Substance Group Name: Asbestos
Regulated items
<p>All applications</p> <p>[Applications and use examples] Brake lining pad, insulator, filler, abrasive, pigment, pain, talc, thermal insulator</p>

Table 2- 4

Substance Group Name: Specified organic tin compounds (1) Bis (tributyltin) oxide, trisubstituted stannanes
Regulated items
<p>All applications</p> <p>[Applications and use examples] Bis (tributyltin) oxide: Paint, pigment, moisture-proof agent Trisubstituted stannanes: Paint, pigment, stabilizer</p>

Table 2- 5

Substance Group Name: Specified organic tin compounds (2) Dibutyltin (DBT) compounds
Regulated items
All applications [Applications and use examples] Resin stabilizers, hardening catalysts for polyurethane or silicone Glass covering material, rubber modifier

Table 2- 6

Substance Group Name: Specified organic tin compounds (3) Diocetyl tin (DOT) compounds
Regulated items
The following applications: <ul style="list-style-type: none"> – Textile articles intended to come into contact with the skin – Wall and floor coverings – Two-component room temperature vulcanisation moulding kits (RTV-2 moulding kits)

Table 2- 7

Substance Group Name: Short- chain chlorinated paraffins (SCCPs)
Regulated items
All applications [Applications and use examples] Plasticizer for polyvinyl chloride (PVC), flame retardant

Table 2- 8

Substance Group Name: Specified Brominated Flame-retardant (PBB, PBDE) (All PBBs and PBDEs including Deca BDE (deca-bromo-diphenyl-ether))
Regulated items
All applications

Table 2- 9

Substance Group Name: Azo dye and pigment forming specified amines		
Regulated items		
<p>Textiles and leather products that can possibly have direct contact with human skin or oral cavities for an extended period of time</p> <p>Examples: Clothing, bedding, towels, hairpieces, wigs, caps, and other hygiene items, sleeping bags, footwear, gloves, wristwatch bands, earphones, headphones, straps, shoulder belts, etc.</p> <p>The specified amines that must not be generated by reduction or decomposition of Azo dye and pigment are listed below. (EU REACH Regulation Annex XVII Ref. Appendix 8 Entry 43 - Azocolourants - List of aromatic amines)</p>		
Specified amines that must not be generated		
	CAS No.	Substances
1	92-67-1	biphenyl-4-ylamine 4-aminodiphenyl xenylamine
2	92-87-5	Benzidine
3	95-69-2	4-chloro-o-toluidine
4	91-59-8	2-naphthylamine
5	97-56-3	o-aminoazotoluene 4-amino-2',3-dimethylazobenzene 4-o-tolylazo-o-toluidine
6	99-55-8	5-nitro-o-toluidine
7	106-47-8	4-chloroaniline
8	615-05-4	4-methoxy-m-phenylenediamine
9	101-77-9	4,4'-methylenedianiline 4,4'-diaminodiphenylmethane
10	91-94-1	3,3'-dichlorobenzidine 3,3'-dichlorobiphenyl-4,4'-ylenediamine
11	119-90-4	3,3'-dimethoxybenzidine o-dianisidine
12	119-93-7	3,3'-dimethylbenzidine 4,4'-bi-o-toluidine
13	838-88-0	4,4'-methylenedi-o-toluidine
14	120-71-8	6-methoxy-m-toluidine p-cresidine
15	101-14-4	4,4'-methylene-bis-(2-chloro-aniline) 2,2'-dichloro-4,4'-methylene-dianiline
16	101-80-4	4,4'-oxydianiline
17	139-65-1	4,4'-thiodianiline
18	95-53-4	o-toluidine 2-aminotoluene
19	95-80-7	4-methyl-m-phenylenediamine (2,4-toluenediamine)
20	137-17-7	2,4,5-trimethylaniline
21	90-04-0	o-anisidine 2-methoxyaniline
22	60-09-3	4-amino azobenzene

Table 2- 10

Substance Group Name: Polychloronaphthalene (number of chlorine 3 or more)	
Regulated items	
All applications	
[Applications and use examples] Lubricant, paint, stabilizer (electric property, flame-proof property, water-proof property) insulator, flame retardant	

Table 2- 11

Substance Group Name: Cadmium and its compounds	
Regulated items	
All applications except those in the exemptions shown below. (See Table 2- 15 for packaging material.)	
[Applications and use examples] Stabilizer, pigment, dye, paint, ink used for plastics (including rubber, film) Phosphor, alloy, packaging materials, etc.	
Exemptions	<ul style="list-style-type: none"> - Items listed in Appendix 2 "Exempted Items List" - Uses as battery ^{*1*2} (by EU Battery Directive)

*1: Batteries (primary batteries), accumulators (secondary batteries), and battery packs

*2: Confirm the legislation individually when handling batteries.

Table 2- 12

Substance Group Name: Lead and its compounds	
Regulated items ^{*1}	
All applications except those in the exemptions shown below. (See Table 2- 15 for packaging.)	
[Applications and use examples] Paint, pigment, dye, ink, stabilizer in plastic (including rubber) material Solder coating on and packaging material of component external electrode, lead terminal, etc.	
Exemptions	<ul style="list-style-type: none"> - Items listed in Appendix 2 "Exempted Items List" - Uses as battery ^{*2*3} (by EU Battery Directive)

*1: For products sold in North America subject to the California Proposition 65 Settlement Agreement dated September 3, 2002, if lead is intentional added to the surface material covering the cord, or its lead content exceeds 300ppm (0.03%), a warning label is required.

*2: Batteries (primary batteries), accumulators (secondary batteries), and battery packs

*3: Confirm the legislation individually when handling batteries

Table 2- 13

Substance Group Name: Hexavalent chromium compounds	
Regulated items	
(1) Leather products and leather components that have contact with the skin (2) Other than the above: All applications except those in the exemptions shown below. (See Table 2- 15 for packaging.)	
[Applications and use examples] Rust-proof treatment, plastics, paint/pigment/ink, packaging material, leather (e.g. leather parts for exterior parts of products and carrying cases) etc.	
Exemptions	<ul style="list-style-type: none"> – Items listed Appendix 2 "Exempted Items List" – Uses as battery ^{*1*2} (by EU Battery Directive)

*1: Batteries (primary batteries), accumulators (secondary batteries), and battery packs

*2: Confirm the legislation individually when handling batteries

Table 2- 14

Substance Group Name: Mercury and its compounds	
Regulated items	
All applications except those shown in the exemptions. (See Table 2- 15 for packaging.)	
[Applications and use examples] Pigment, dye, paint, ink, indicator such as hour meter, relay, switch, sensor using mercury for electrical contact, harmonizer in plastics, packaging material, etc.	
Exemptions	<ul style="list-style-type: none"> – Items listed Appendix 2 "Exempted Items List" – Uses as battery ^{*1*2} excluding mercury batteries (by EU Battery Directive)

*1: Batteries (primary batteries), accumulators (secondary batteries), and battery packs

*2: Confirm the legislation individually when handling batteries

Table 2- 15

Substance Group Name: Four heavy metals (Cadmium, Lead, Hexavalent chromium, Mercury)	
Regulated items	
All uses in packaging other than listed in the exempted items	
[Applications and use examples] Pigment, dye, paint, ink, packing material, adhesive agent, staple, label	
Exemptions	Clarity of reuse in a closed loop such as palettes. ^{*1}

*1: When a packaging material with a total content of four heavy metals exceeding 100 ppm is reused in a closed loop, confirm and handle each case individually since notification responsibilities etc. may be posed by the US Specified States Toxics in Packaging Regulation.

Table 2- 16

Substance Group Name: Ozone-depleting substances (excluding HCFC)	
Regulated items	
All applications	
[Applications and use examples] Refrigerant, foaming agent, mounted substrate cleaner, etc.	

Table 2- 17

Substance Group Name: Hydrochlorofluorocarbons (HCFC)	
Regulated items	
All applications* ¹	
[Applications and use examples] Refrigerant, foaming agent, mounted substrate cleaner, etc.	

*1: Developing countries to which Article 5 of The Montreal Protocol "Special situation of developing countries" apply shall be handled taking into account technical and economical feasibility.

Table 2- 18

Substance Group Name: Formaldehyde	
Regulated items* ¹ * ²	
Wood products and parts using materials such as particle boards and MDF (medium density fiberboard). The products and parts above shall satisfy the following conditions (E.g. Speaker box, rack). – Less than the regulated values of Table 1 shall be met, not banning intentional use. However, for products destined for regions other than those regulated by law, the application of less than 0.5 mg/L (JIS: desiccator method) may also be possible. The regulated values in building products and housing equipment shall be determined by the applicable Company or Business Division.	

*1: Products sold in North America subject to the California Composite Wood Products ATCM for Formaldehyde must comply with this regulation.

*2: For formaldehyde content in fiber, products sold in Europe subject to the Austria regulates (Austria - BGB I 1990/194: Formaldehydverordnung, regulated amount = 75ppm) must comply with this regulation.

Table 2- 19

Substance Group Name: Perfluorooctane sulfonate and its salts Molecular formula C ₈ F ₁₇ SO ₂ X (X = other derivatives including OH, metallic salts, halogen compounds, amides, or polymers)	
Regulated items	
All applications other than those shown in the Exemptions below	
Exemptions	– Photoresist for photolithography processes or – Photo-coating material for printing originals on film or paper

Table 2- 20

Substance Group Name: Specified benzotriazole (2- (2H-1,2,3-benzotriazole-2-il) -4, 6-di-tert-butylphenol)
Regulated items
All applications [Applications and use examples] UV absorption agent for plastic resin, plastic building materials Sublimation transfer type photo-coating resin

Table 2- 21

Substance Group Name: Dimethylfumarate (DMF)
Regulated items
All applications [Applications and use examples] Moisture-proof agent, mildew-proof agent

Table 2- 22

Substance Group Name: Polycyclic aromatic hydrocarbons (PAH)																											
Regulated Items																											
<p>Rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity.</p> <p>Examples: Sport equipment such as bicycles, golf clubs, racquets, household utensils, trolleys, walking frames, tools for domestic use, clothing, footwear, gloves and sportswear, watch-straps, wrist-bands, masks, head-bands etc.</p>																											
Covered substances																											
<table border="1"> <thead> <tr> <th></th> <th>CAS No.</th> <th>Substances</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>50-32-8</td> <td>Benzo[a]pyrene (BaP)</td> </tr> <tr> <td>2</td> <td>192-97-2</td> <td>Benzo[e]pyrene (BeP)</td> </tr> <tr> <td>3</td> <td>56-55-3</td> <td>Benzo[a]anthracene (BaA)</td> </tr> <tr> <td>4</td> <td>218-01-9</td> <td>Chrysen (CHR)</td> </tr> <tr> <td>5</td> <td>205-99-2</td> <td>Benzo[b]fluoranthene (BbFA)</td> </tr> <tr> <td>6</td> <td>205-82-3</td> <td>Benzo[j]fluoranthene (BjFA)</td> </tr> <tr> <td>7</td> <td>207-08-9</td> <td>Benzo[k]fluoranthene (BkFA)</td> </tr> <tr> <td>8</td> <td>53-70-3</td> <td>Dibenzo [a, h] anthracene (DBAhA)</td> </tr> </tbody> </table>		CAS No.	Substances	1	50-32-8	Benzo[a]pyrene (BaP)	2	192-97-2	Benzo[e]pyrene (BeP)	3	56-55-3	Benzo[a]anthracene (BaA)	4	218-01-9	Chrysen (CHR)	5	205-99-2	Benzo[b]fluoranthene (BbFA)	6	205-82-3	Benzo[j]fluoranthene (BjFA)	7	207-08-9	Benzo[k]fluoranthene (BkFA)	8	53-70-3	Dibenzo [a, h] anthracene (DBAhA)
	CAS No.	Substances																									
1	50-32-8	Benzo[a]pyrene (BaP)																									
2	192-97-2	Benzo[e]pyrene (BeP)																									
3	56-55-3	Benzo[a]anthracene (BaA)																									
4	218-01-9	Chrysen (CHR)																									
5	205-99-2	Benzo[b]fluoranthene (BbFA)																									
6	205-82-3	Benzo[j]fluoranthene (BjFA)																									
7	207-08-9	Benzo[k]fluoranthene (BkFA)																									
8	53-70-3	Dibenzo [a, h] anthracene (DBAhA)																									

Table 2- 23

Substance Group Name: Hexabromocyclododecane (HBCD)
Regulated items
All applications [Applications and use examples] Flame retardant

6.2 Level 2 Prohibited Substances

Refer to substances other than those specified as the Level 1 Prohibited Substances, substances whose use will be phased out after a certain period by a treaty, law, or regulation, substances prohibited to be used in products by the Panasonic Group prior to a period specified by a treaty, law, or regulation, and substances restricted for use on a voluntary basis by the Panasonic Group. If detected, the use of the substances must be substituted based on the period or restriction conditions specified by these guidelines.

Table 3 List of Level 2 Prohibited Substances (Substance Group)

No	Substance Group	Major Laws Referenced	Use Prohibited Date
1	Polyvinyl chloride (PVC) and its mixtures (see Table 4- 1)	Panasonic Group's voluntary restriction	From April 2011 onwards
2	Phthalates (Four kinds) Bis(2-ethylhexyl) phthalate (DEHP) Benzyl butyl phthalate (BBP) Dibutyl phthalate (DBP) Diisobutyl phthalate (DIBP) (see Table 4- 2)	EU RoHS	From July 2016 onwards (Starting date of prohibition will be reviewed as necessary when officially added in the EU RoHS)

Table 4 Regulated Items of Level 2 Prohibited Substances

Table 4- 1

Substance Group Name: Polyvinylchloride (PVC) and its mixtures	
Regulated Items	
<p>Use in the following applications other than those specified in the exemptions:</p> <ol style="list-style-type: none"> (1) Internal wiring in equipment* of new electrical and electronic equipment. (2) Packaging materials used for products and accessories, etc. that come with products <p>The method of handling restricted individual components and materials shall comply with the request by each Company/Business Division of the Panasonic Group. The substitute polyvinyl chloride material shall be halogen-free (excluding fluorine) and shall not contain red phosphorus as a rule from the viewpoint of product safety.</p> <p>*However, cables considered as equipment under the EU RoHS Directive are excluded.</p>	
Exemptions	– In cases where: quality such as safety cannot be maintained; procurement is difficult; materials are specified by law or regulation; materials are specified by the customer, etc.

Table 4- 2

Substance Group Name: Phthalates (Four kinds) Bis(2-ethylhexyl) phthalate (DEHP), Benzyl butyl phthalate (BBP), Dibutyl phthalate (DBP), Diisobutyl phthalate (DIBP)
Regulated items
All applications [Applications and use examples] Plasticizer for rubber, elastomer, and resin (particularly polyvinyl chloride (PVC))

6.3 Level 3 Prohibited Substances

Any substance other than those specified as a Level 1 or Level 2 Prohibited Substance that is reviewed for prohibition by legislation etc., and the clarification of substitution-related issues as well as the timing for prohibition is reviewed by the Panasonic Group in light of future legislation trends. The timing of prohibition of content in products is not set by the Panasonic Group at present.

Table 5 List of Level 3 Prohibited Substances (Substance Group)

Substances	Major law referenced
Phthalates other than the phthalates (Four kinds) specified as Level 2 prohibited substances ^{*1}	EU REACH Annex XVII (Covered toys) California Proposition 65
Tris(2-chloroethyl)phosphate	EU REACH Annex XIV (Substances subject to authorisation)
Diarsenic trioxide, Diarsenic pentaoxide	EU REACH Annex XIV (Substances subject to authorisation)
Cobalt dichloride	EU REACH Annex XIV (Substances subject to authorisation) Draft proposal
Refractory Ceramic Fibres	EU REACH (Substances subject to authorisation) Draft proposal
Beryllium oxide	Substance subject to reporting of information to WEEE recyclers
Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA	Norwegian product regulation

*1: E.g. Diisononyl phthalate (DINP), Di-n-pentyl phthalate, Diisopentyl phthalate (DIPP), Dioctyl phthalate, Bis(2-methoxyethyl) phthalate, Di-"isodecyl" phthalate (DIDP), etc.

6.4 Managed Substances

This rank refers to substances whose consumption needs to be monitored and for which consideration needs to be given to human health, safety and hygiene, adequate treatment, etc. The use of these substances is not restricted, but their use and contained concentration must be monitored. Of the applicable managed substances, when they are used "intentionally" or "inclusion is known," such substances need to be identified*1.

- *1: Reporting of contents of "managed substances" in the packaging used by component manufacturers for transportation/protection is not required if legal compliance etc. is unnecessary (e.g. when components subject to REACH regulations are exported to the EU along with packaging materials)

The managed substances in these Guidelines are equivalent to the substances listed in the legal regulations, industry standards etc. shown in Table 6. These substances are equivalent to the applicable substances in the "JAMP Declarable Substance Ver. (latest Version)" specified by the Joint Article Management Promotion Consortium (JAMP), excluding the prohibited substances specified by these guidelines.

Substances subject to management must fully be compliant if applicable regions or products are individually designated by a treaty, law, ordinance, industry guidelines, etc.

Table 6 Legal Regulations, Industry Standards etc. relating to the Managed Substances

Target regulations	Remarks
Japan Chemical Substances Control Law (Class 1 specified substances)	Excluding the prohibited substances specified in these Guidelines
Japan Industrial Safety and Health Law (Substances that are prohibited from manufacture)	Excluding the prohibited substances specified in these Guidelines
Japan Poisonous and Deleterious Substances Control Law (Specified toxic substances)	
EU CLP Regulation (Regulation on Classification, Labeling and Packaging of Substances and Mixtures) Annex VI Table 3.2 CMR-Cat 1, 2 and Table 3.1 CMR-Cat. 1A, 1B	Regulation (EC) No 1272/2008
EU REACH Annex XVII (Restrictions) [excluding CLP Regulations Annex VI, Table 3.2, CMR-Cat. 1, 2 and Table 3.1 CMR-Cat. 1A, 1B]	Excluding the prohibited substances specified in these Guidelines
EU REACH Regulation Candidate substances for authorization (Substances of Very High Concern (SVHC))	Excluding the prohibited substances specified in these Guidelines
EU POPs Regulation Annex I	Excluding the prohibited substances specified in these Guidelines
ESIS PBT (Substances that fulfill determination criteria for PBT) (European Chemical Substances Information System)	Excluding the prohibited substances specified in these Guidelines
GADSL (Automotive industry) Global Automobile Declarable Substances List	Excluding the prohibited substances specified in these Guidelines
IEC 62474 (Electrical and electronic) Material Declaration for Products of and for the Electrotechnical Industry	Excluding the prohibited substances specified in these Guidelines

6.5 Substances List Specified by These Guidelines

A list of sample substances considered "prohibited substances" is shown in Appendix 1. Because this list only shows examples of applicable substances, any substance not included in this list but classified as a "prohibited substance" shall be reported.

Refer to the following document and list for sample substances considered "prohibited substances" and "managed substances" as specified in these guidelines, in accordance with legal regulations and industry standards.

- "JAMP List of Target Substances under Management: Instruction Manual"*
- "JAMP Declarable Substances Reference List (latest version)"*

* Reference addresses of the materials and list:

Japanese <http://www.jamp-info.com/list>

English, Chinese <http://www.jamp-info.com/english/list>

6.6 Reference

In order to check the applicability of the "managed substances," the following search software may be used. However, this software is only considered an auxiliary means of checking the applicability of the substance. Even if the input supporting tool does not indicate applicability, the substance still needs to be reported if it is known to be subject to legal regulations.

- "JAMP AIS Input Supporting Tool (latest version)"*
- "JAMP MSDSplus Input Supporting Tool (latest version)"*

* Acquisition of the materials and tools:

Japanese <http://www.jamp-info.com/ais>

<http://www.jamp-info.com/msds>

English, Chinese <http://www.jamp-info.com/english/ais>

<http://www.jamp-info.com/english/msds>

7 Major Changes from Version 8.2 to Version 9

(1) Level 1 Prohibited Substances

- Added "Hydrochlorofluorocarbons (HCFC)" to "Level 1 Prohibited Substances"
- Added "Polycyclic aromatic hydrocarbons (PAH)" to "Level 1 Prohibited Substances"
- Added " Hexabromocyclododecane (HBCD)" to "Level 1 Prohibited Substances"
- Revised the regulation by the Panasonic Group of "Hexavalent chromium compounds" (Added note (*6) in the margin)

(2) Level 2 Prohibited Substances

Added Phthalates (Four kinds) "Bis(2-ethylhexyl) phthalate (DEHP), Benzyl butyl phthalate (BBP), Dibutyl phthalate (DBP), and Diisobutyl phthalate (DIBP)" to "Level 2 Prohibited Substances"

(3) Other revisions

Location	Revised Content
2.1 (4) and 2.2	Changed “components and materials” to “components, devices, materials, etc.”
2.1 (6)	Changed “Packaging materials used for products and for packaging materials for transportation” to “Packaging materials and packaging materials for transportation”
3 (2)	Added description regarding the possibility of Companies/Business Divisions setting stricter regulated values in accordance with their unique circumstances in operation
5.5	Deleted the possibility of Companies uniquely setting the values (Moved to 3 (2))
5.14	Revised language on glass and ceramic (Omitted)
5.14, and 6.1 Table 1	Added ““label” used for indication” to the examples of materials comprising packaging
6.1.1	Revised the names of legislation according to The Ministry of Justice
6.1.2	Added “EU ODS,” “US CAA,” and “POPs Convention”
6.1 Table 1	Deleted the possibility of Companies uniquely setting the values (Moved to 3 (2)) No. 12: Revised regulated contents and referenced law for "Hexavalent chromium compounds" No. 15: Added “Hydrochlorofluorocarbons (HCFC)” No. 20: Added “Polycyclic aromatic hydrocarbons (PAH)” No. 21: Added “Hexabromocyclododecane (HBCD)” Added *6 regarding leather products and leather components
6.1 Table 2- 5	Deleted description on exemption
6.1 Table 2- 13	Changed the regulated items in connection with the change in the contents of Regulations by the Panasonic Group. Added “leather” to Application and use examples
6.1 Table 2- 17, 2- 22, and 2- 23	Added table
6.2 Table 3	Deleted Hydrochlorofluorocarbons (HCFC) and Polycyclic aromatic hydrocarbons (PAH) Added Phthalates (Four kinds)
6.2 Table 4- 1	Added supplementary description on internal wiring

6.2 Table 4- 2 and 4- 3	Deleted Table 4-2 (Hydrochlorofluorocarbons (HCFC)) and Table 4-3 (Polycyclic aromatic hydrocarbons (PAH)) Added Table 4-2 (Phthalates (Four kinds))
6.3 Table 5	Deleted the possibility of Companies uniquely setting the values (Moved to 3 (2)) Deleted Bis(2-ethylhexyl) phthalate (DEHP), Benzyl butyl phthalate (BBP), Dibutyl phthalate (DBP), Diisobutyl phthalate (DIBP), and Hexabromocyclododecane (HBCD)
Overall	Moved Table 7. List of sample substances considered as “Prohibited Substances” of the Rank Guidelines Ver. 8.2 to “Appendix 1.” Accordingly, the numbering of Appendices 1-3 have changed to Appendices 2-4.

Appendix 1 List of sample substances considered as "Prohibited Substances"

Rank	substance group	CAS No.	substance name	Synonyms	Japan's Laws			Overseas Laws					Tin conversion coefficient			
					Class 1 Specified Chemicals in Chem-sub Law	Production-Prohibited Chemicals in Article 55, Ind. Safety Law	Ozone Layer Law	EU REACH Annex XVII (EC) No 1907/2006		EU POPs Annex I (EC) No 850/2004		ChemVerbsV		RoHS		
					Applicable, use limited and its threshold	Applicable, use limited and its threshold	Applicable	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable		Use limited and its threshold	Applicable	
			This list shows examples of applicable substances. Any substance not included in this list but classified as a "prohibited substance" shall be reported.													
Yes			PCBs	1336-36-3	Polychlorinated biphenyls	PCB	Yes				Yes	Prohibited: intentional use in mixtures and articles	Yes	Prohibited: content exceeding 50 mg/kg, content in mixtures and in articles		
Yes			PCTs	61788-33-8	Polychlorinated terphenyls	PCT				Yes	Prohibited: content exceeding 50 mg/kg, content in mixtures and in articles			Yes		
Yes			Asbestos	1332-21-4	Asbestos, unspecified			Yes	Yes	Prohibited: intentional use in articles prohibited			Yes	Prohibited: content exceeding 0.1wt%, content in mixtures and in articles		
Yes			Asbestos	12172-73-5	Amosite			Yes	Yes	Prohibited: intentional use in articles prohibited			Yes			
Yes			Asbestos	12001-29-5	Chrysotile				Yes	Prohibited: intentional use in articles prohibited			Yes			
Yes			Asbestos	12001-28-4	Crocidolite			Yes	Yes	Prohibited: intentional use in articles prohibited			Yes			
Yes			Asbestos	77536-66-4	ACTINOLITE				Yes	Prohibited: intentional use in articles prohibited			Yes			
Yes			Asbestos	77536-67-5	ANTHOPHYLLITE				Yes	Prohibited: intentional use in articles prohibited			Yes			
Yes			Asbestos	77536-68-6	TREMOLITE				Yes	Prohibited: intentional use in articles prohibited			Yes			
Yes			Specified organic tin compounds (1)	56-35-9	Bis(tri-n-butyltin)oxide		Yes, antimold, antiseptic agents, paints									0.3983
Yes			Specified organic tin compounds (1)	1066-44-0	Bromotrimethylstannane				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.4871
Yes			Specified organic tin compounds (1)	1066-45-1	Trimethyltin chloride				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.5957
Yes			Specified organic tin compounds (1)	1067-52-3	Tributyltin methoxide				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.3697
Yes			Specified organic tin compounds (1)	1067-97-6	Tributyltin hydroxide				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.3866
Yes			Specified organic tin compounds (1)	1118-03-2	Trimethyltin azide				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.5767
Yes			Specified organic tin compounds (1)	1118-14-5	Trimethyltin acetate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.5327
Yes			Specified organic tin compounds (1)	13302-06-2	tributyltin methanesulphonate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.3082
Yes			Specified organic tin compounds (1)	13331-52-7	Tributyltin Acrylate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.3287
Yes			Specified organic tin compounds (1)	14275-57-1	(Z)-5,5,12,12-tetrabutyl-7,10-dioxo-6,11-dioxo-5,12-distannahexadec-8-ene				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.3420
Yes			Specified organic tin compounds (1)	1461-22-9	Tributyltin chloride; tributylchlorostannane				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.3647
Yes			Specified organic tin compounds (1)	1461-23-0	Tributyltin bromide				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.3209
Yes			Specified organic tin compounds (1)	1529-30-2	Triethyltin phenoxide				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.3970
Yes			Specified organic tin compounds (1)	1803-12-9	Triphenyltin dimethyldithiocarbamate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.2524
Yes			Specified organic tin compounds (1)	18380-71-7	Stannane, triphenyl[(2,2,4,4-tetramethyl-oxopentyl)oxy]-				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.2340
Yes			Specified organic tin compounds (1)	18380-72-8	Stannane, [[2,3-dimethyl-2-(1-methylethyl)-oxobutyl]oxy]triphenyl-				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.2340
Yes			Specified organic tin compounds (1)	1907-13-7	Triethyltin acetate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.4481
Yes			Specified organic tin compounds (1)	1983-10-4	Tributyltin fluoride				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.3841
Yes			Specified organic tin compounds (1)	20369-63-5	Tributyltin dimethyldithiocarbamate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.2893
Yes			Specified organic tin compounds (1)	2155-70-6	Tributyltin methacrylate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.3164
Yes			Specified organic tin compounds (1)	2179-92-2	tributyltin cyanide				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.3756
Yes			Specified organic tin compounds (1)	2279-76-7	Tripropyltin chloride				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.4188
Yes			Specified organic tin compounds (1)	24124-25-2	Tributyltin linoleate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.2084

Appendix 1 List of sample substances considered as "Prohibited Substances"

Rank	substance group	CAS No.	substance name	Synonyms	Japan's Laws			Overseas Laws					Tin conversion coefficient			
					Class 1 Specified Chemicals in Chem-sub Law	Proction-Prohibited Chemicals in Article 55, Ind Safety Law	Ozone Layer Law	EU REACH Annex XVII (EC) No 1907/2006		EU POPs Annex I (EC) No 850/2004		ChemVerbsV		RoHS		
Prohibited Sub Level 1	Prohibited Sub Level 2	Prohibited Sub Level 3			Applicable, use limited and its threshold	Applicable, use limited and its threshold	Applicable	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable		
Yes			Specified organic tin compounds (1)	25711-26-6	Butanedioic acid, 2-methylene-, 1,4-bis(tributylstanny) ester; Bis(tributyltin)itaconate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.3352	
Yes			Specified organic tin compounds (1)	26239-64-5	Tributan-1-ylstanny (1R,4aR,4bR,10aR)-7-isopropyl-1,4a-dimethyl-1,2,3,4,4a,4b,5,6,10,10a-decahydrophenanthrene-1-carboxylate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof						0.2007
Yes			Specified organic tin compounds (1)	27147-18-8	Tributyltin cinnamate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2715	
Yes			Specified organic tin compounds (1)	2767-61-5	Tripropyltin bromide				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.3621	
Yes			Specified organic tin compounds (1)	2943-86-4	Triethyltin iodide				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.3567	
Yes			Specified organic tin compounds (1)	3090-35-5	Tributy(oleoyloxy)stannane				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2077	
Yes			Specified organic tin compounds (1)	3090-36-6	Tributyltinlaurate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2426	
Yes			Specified organic tin compounds (1)	31732-71-5	(R*,S*)-8,9-dibromo-5,5,12,12-tetrabutyl-7,10-dioxo-6,11-dioxo-5,12-distannahehexadecane				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2780	
Yes			Specified organic tin compounds (1)	3267-78-5	Tripropyltin acetate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.3867	
Yes			Specified organic tin compounds (1)	33550-22-0	Tributyltin gamma-chlorobutyrate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2884	
Yes			Specified organic tin compounds (1)	3644-32-4	P-NITROPHENOXYTRIBUTYLTIN				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2773	
Yes			Specified organic tin compounds (1)	3644-37-9	(2-biphenyloxy)tributyltin				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2585	
Yes			Specified organic tin compounds (1)	36631-23-9	tributyltin naphthenate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2740	
Yes			Specified organic tin compounds (1)	379-52-2	Triphenyltinfluoride				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.3217	
Yes			Specified organic tin compounds (1)	4027-14-9	Tributyltin nonanoate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2654	
Yes			Specified organic tin compounds (1)	4027-17-2	tributyltin cyanate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.3575	
Yes			Specified organic tin compounds (1)	4027-18-3	2-Butenoic acid 4-oxo-4-((tributylstannyloxy)but-2-enoic acid				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2930	
Yes			Specified organic tin compounds (1)	4154-35-2	Tripropyltin methacrylate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.3564	
Yes			Specified organic tin compounds (1)	4342-30-7	Tri-n-butyl tin salicylate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2779	
Yes			Specified organic tin compounds (1)	4342-36-3	Tributyltin benzoate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2887	
Yes			Specified organic tin compounds (1)	4638-25-9	Trimethyltin thiocyanate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.5350	
Yes			Specified organic tin compounds (1)	47672-31-1	Stannane, [(1-oxodecyl)oxy]triphenyl-				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2277	
Yes			Specified organic tin compounds (1)	4782-29-0	Bis(tributyltin)phthalate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.3190	
Yes			Specified organic tin compounds (1)	5035-67-6	Tributyltin 2-ethylhexanoate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2740	
Yes			Specified organic tin compounds (1)	53404-82-3	tributyltin isopropylsuccinate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2643	
Yes			Specified organic tin compounds (1)	53466-85-6	Tributyltin monopropylene glycol maleate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2563	
Yes			Specified organic tin compounds (1)	56-24-6	Trimethyltin hydroxide				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.6565	
Yes			Specified organic tin compounds (1)	56-36-0	Tributyltin acetate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.3400	
Yes			Specified organic tin compounds (1)	56573-85-4	Tributyltin				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.3647	
Yes			Specified organic tin compounds (1)	57808-37-4	Tripropyltin laurate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2654	
Yes			Specified organic tin compounds (1)	5847-52-9	tributyltin chloroacetate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.3095	

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

Appendix 1 List of sample substances considered as "Prohibited Substances"

Rank	substance group	CAS No.	substance name	Synonyms	Japan's Laws			Overseas Laws				Tin conversion coefficient		
					Class 1 Specified Chemicals in Chem-sub Law	Proction-Prohibited Chemicals in Article 55, Ind Safety Law	Ozone Layer Law	EU REACH Annex XVII (EC) No 1907/2006		EU POPs Annex I (EC) No 850/2004			ChemVerbsV	RoHS
Prohibited Sub Level 1	Prohibited Sub Level 2	Prohibited Sub Level 3			Applicable, use limited and its threshold	Applicable, use limited and its threshold	Applicable	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable
<p>This list shows examples of applicable substances. Any substance not included in this list but classified as a "prohibited substance" shall be reported.</p>														
Yes			Specified organic tin compounds (1)	63869-87-4	Trimethyltin sulphate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.4550
Yes			Specified organic tin compounds (1)	639-58-7	Triphenyl tin chloride				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.3080
Yes			Specified organic tin compounds (1)	6454-35-9	(E)-5,5,12,12-tetrabutyl-7,10-dioxo-6,11-dioxo-5,12-distannahexadec-8-ene				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.3420
Yes			Specified organic tin compounds (1)	6517-25-5	Tributyltin sulfamate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.3074
Yes			Specified organic tin compounds (1)	67772-01-4	Copolymer of alkyl(c=8) acrylate,methyl methacrylate and tributyltin methacrylate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.180*
Yes			Specified organic tin compounds (1)	681-99-2	Tributyltin isothiocyanate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.3575
Yes			Specified organic tin compounds (1)	688-73-3	Tributyltin (and salts and esters)				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.4078
Yes			Specified organic tin compounds (1)	69226-47-7	tributyltin undecylenate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.2573
Yes			Specified organic tin compounds (1)	7094-94-2	Triphenyltinchloroacetate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.2677
Yes			Specified organic tin compounds (1)	7342-38-3	triisobutyltin chloride; chloro(triisobutyl)stannane				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.3647
Yes			Specified organic tin compounds (1)	7342-45-2	Tripropyltin iodide				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.3167
Yes			Specified organic tin compounds (1)	7342-47-4	Tributyltin iodide				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.2847
Yes			Specified organic tin compounds (1)	73927-91-0	Tributyltin iodoacetate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.2499
Yes			Specified organic tin compounds (1)	73927-92-1	Tripropyltin iodoacetate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.2742
Yes			Specified organic tin compounds (1)	73927-93-2	tributyltin o-iodobenzoate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.2210
Yes			Specified organic tin compounds (1)	73927-95-4	Tributyltin .beta.-iodopropionate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.2427
Yes			Specified organic tin compounds (1)	73927-97-6	Tributyltin isooctylthioacetate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.2406
Yes			Specified organic tin compounds (1)	73940-88-2	tributyltin p-iodobemzoate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.2210
Yes			Specified organic tin compounds (1)	73940-89-3	Tributyltin .alpha.-(2,4,5-trichlorophenoxy) propionate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.2125
Yes			Specified organic tin compounds (1)	752-58-9	1,3,5-tris(tributyltin)-S-triazine-2,4,6-trione				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.3575
Yes			Specified organic tin compounds (1)	76-87-9	Triphenyltin hydroxide				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.3234
Yes			Specified organic tin compounds (1)	811-73-4	Trimethyltin iodide				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.4083
Yes			Specified organic tin compounds (1)	85409-17-2	Tributyltin naphthenate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.4199
Yes			Specified organic tin compounds (1)	892-20-6	Triphenyltin hydride				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.3382
Yes			Specified organic tin compounds (1)	894-09-7	Triphenyltin iodide				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.2489
Yes			Specified organic tin compounds (1)	900-95-8	Triphenyltinacetate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.2902
Yes			Specified organic tin compounds (1)	94850-90-5	Stannane, [(1-oxoundecyl)oxy]triphenyl-				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.2218
Yes			Specified organic tin compounds (1)	994-31-0	Triethyltin chloride				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.4919
Yes			Specified organic tin compounds (1)	994-32-1	Triethyltin hydroxide				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.5326
Yes			Specified organic tin compounds (1)	1262-21-1	Bis(triphenyltin) oxide				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.3316
Yes			Specified organic tin compounds (1)	13435-05-7	Tris(tributyltin) phosphate; 5,5,9,9-Tetrabutyl-7-[(tributylstannyloxy]-6,8-dioxo-7-phospha-5,9-distannatridecane-7-oxide				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.3690
Yes			Specified organic tin compounds (1)	15082-85-6	Tribenzyltin hydroxide; Tribenzylhydroxystannane				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof				0.2902

*Adopt the maximum value because the tin conversion coefficient varies in accordance with the copolymerization composition ratio.

Appendix 1 List of sample substances considered as "Prohibited Substances"

Rank	substance group	CAS No.	substance name	Synonyms	Japan's Laws			Overseas Laws					Tin conversion coefficient		
					Class 1 Specified Chemicals in Chem-sub Law	Proction-Prohibited Chemicals in Article 55, Ind Safety Law	Ozone Layer Law	EU REACH Annex XVII (EC) No 1907/2006		EU POPs Annex I (EC) No 850/2004		ChemVerbotsV		RoHS	
Prohibited Sub Level 1	Prohibited Sub Level 2	Prohibited Sub Level 3			Applicable, use limited and its threshold	Applicable, use limited and its threshold	Applicable	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable	
			This list shows examples of applicable substances. Any substance not included in this list but classified as a "prohibited substance" shall be reported.												
Yes			Specified organic tin compounds (1)	1954-36-5	Phthalic acid bis(triphenyltin(IV)) salt; [1,2-Phenylene bis(carboxyloxy)] bistrphenyl stannane				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2747
Yes			Specified organic tin compounds (1)	3644-29-9	Triphenyl tin laurate; [(1-Oxododecyl)oxy]triphenylstannane				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2161
Yes			Specified organic tin compounds (1)	3644-38-0	Tributyltin pentachlorophenolate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2137
Yes			Specified organic tin compounds (1)	4756-53-0	Tributyltin terephthalate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.3190
Yes			Specified organic tin compounds (1)	5847-51-8	Tri-n-butyl tin formate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.3543
Yes			Specified organic tin compounds (1)	668-34-8	Triphenyltin				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.3391
Yes			Specified organic tin compounds (1)	682-00-8	Tributyltin ethoxide				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.3542
Yes			Specified organic tin compounds (1)	68725-14-4	Tri-n-butyltin trifluoromethanesulfonic acid				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2703
Yes			Specified organic tin compounds (1)	910-06-5	Triphenyltin benzoate; Triphenylstannyl benzoate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2520
Yes			Short-chane paraffin chloride (C10-13)	85535-84-8	Short-chane paraffin chloride(C10-13)	SCCP					Yes	Prohibited: content exceeding 1 wt%, content in mixtures Prohibited: intentional use in articles prohibited	Yes	Prohibited: content exceeding 1 wt%, content in mixtures as application for processing metal and leather	
Yes			PBBs and PBDEs	59536-65-1 (67774-32-7)	Polybrominated biphenyls	PBB			Yes	Prohibited: content in textiles that come into contact with the skin					Yes
Yes			PBBs and PBDEs	40088-47-9	Tetrabromodiphenyl ether	PBDE	Yes				Yes	- Prohibited: intentional use - Prohibited (as unintentional use, contaminant): concentration exceeding 10 ppm, content in mixtures, articles, flame-retarded parts (For EEE, prioritize the RoHS Directive. When using recycled material, the concentration must be less than 0.1%)			Yes
Yes			PBBs and PBDEs	32534-81-9	Pentabromodiphenyl ether	PBDE	Yes			Yes	Prohibited: content exceeding 0.1wt%, content in mixtures and in articles		Yes		Yes
Yes			PBBs and PBDEs	36483-60-0	Hexabromodiphenyl ether	PBDE	Yes			Yes					Yes
Yes			PBBs and PBDEs	68928-80-3	Heptabromodiphenyl ether	PBDE	Yes			Yes					Yes
Yes			PBBs and PBDEs	32536-52-0	Octabromodiphenyl Ether	PBDE			Yes	Prohibited: content exceeding 0.1wt% and content in articles			Yes	Prohibited: content exceeding 0.1wt%, content in mixtures and in articles	Yes
Yes			PBBs and PBDEs	63936-56-1	Nonabromodiphenyl ether	PBDE									Yes
Yes			PBBs and PBDEs	1163-19-5	Decabromodiphenyl ether	PBDE									Yes
Yes			azo dyes and pigments forming specified amines	JAMP-SN0011	azo dyes and pigments forming specified amines				Yes	Prohibited: content exceeding 30 mg/kg, content in textiles that may come into contact with the skin or mouth and leather products					
Yes			polychloronaphthalene	1321-65-9	Trichloronaphthalene		Yes, lubricant, cutting oil, paints				Yes	Prohibited: intentional use in mixtures and articles			
Yes			polychloronaphthalene	1335-88-2	Tetrachloronaphthalene		Yes, lubricant, cutting oil, paints				Yes	Prohibited: intentional use in mixtures and articles			
Yes			polychloronaphthalene	1321-64-8	Pentachloronaphthalene		Yes, lubricant, cutting oil, paints				Yes	Prohibited: intentional use in mixtures and articles			
Yes			polychloronaphthalene	2234-13-1	Octachloronaphthalene		Yes, lubricant, cutting oil, paints				Yes	Prohibited: intentional use in mixtures and articles			
Yes			ozone depleting substnces	75-71-8	Dichlorodifluoromethane	CF2Cl2	CFC-12		Yes						
Yes			ozone depleting substnces	354-58-5 76-13-1	Trichlorotrifluoroethane	C2F3Cl3	CFC-113		Yes						
Yes			ozone depleting substnces	75-69-4	Trichlorofluoromethane	CFC13	CFC-11		Yes						
Yes			ozone depleting substnces	28605-74-5 76-12-0	tetrachlorodifluoroethane	C2F2Cl4	CFC-112		Yes						
Yes			ozone depleting substnces	1320-37-2 76-14-2	dichlorotetrafluoroethane	C2F4Cl2	CFC-114		Yes						
Yes			ozone depleting substnces	76-15-3	Chloropentafluoroethane	C2F5Cl	CFC-115		Yes						
Yes			ozone depleting substnces	75-72-9	Chlorotrifluoromethane	CF3Cl	CFC-13		Yes						

Appendix 1 List of sample substances considered as "Prohibited Substances"

Rank	substance group	CAS No.	substance name	Synonyms	Japan's Laws			Overseas Laws					Tin conversion coefficient		
					Class 1 Specified Chemicals in Chem-sub Law	Production-Prohibited Chemicals in Article 55, Ind. Safety Law	Ozone Layer Law	EU REACH Annex XVII (EC) No 1907/2006		EU POPs Annex I (EC) No 850/2004		ChemVerbotV		RoHS	
Prohibited Sub Level 1	Prohibited Sub Level 2	Prohibited Sub Level 3	This list shows examples of applicable substances. Any substance not included in this list but classified as a "prohibited substance" shall be reported.		Applicable, use limited and its threshold	Applicable, use limited and its threshold	Applicable	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable	
Yes			ozone depleting substnces	354-56-3	Pentachlorofluoroethane	C2FCI5	CFC-111								
Yes			ozone depleting substnces	135401-87-5	Heptachlorofluoropropane	C3FCI7	CFC-211								
Yes			ozone depleting substnces	3182-26-1	Hexachlorodifluoropropane	C3F2CI6	CFC-212								
Yes			ozone depleting substnces	2354-06-5	Pentachlorotrifluoropropane	C3F3CI5	CFC-213								
Yes			ozone depleting substnces	29255-31-0 2268-46-4	Tetrachlorotetrafluoropropane	C3F4CI4	CFC-214								
Yes			ozone depleting substnces	1599-41-3 1652-81-9	Trichloropentafluoropropane	C3F5CI3	CFC-215								
Yes			ozone depleting substnces	661-97-2	Dichlorohexafluoropropane	C3F6CI2	CFC-216								
Yes			ozone depleting substnces	422-86-6	Heptafluoropropyl chloride	C3F7CI	CFC-217								
Yes			ozone depleting substnces	1511-62-2	Bromodifluoromethane	CHF2Br	HBFC-22B1								
Yes			ozone depleting substnces	1868-53-7	Dibromofluoromethane	CHFBr2									
Yes			ozone depleting substnces	373-52-4	Bromofluoromethane	CH2FBr									
Yes			ozone depleting substnces	306-80-9	Tetrabromofluoroethane	C2HFBr4									
Yes			ozone depleting substnces	----	Tribromodifluoroethane	C2HF2Br3									
Yes			ozone depleting substnces	354-04-1	Dibromotrifluoroethane	C2HF3Br2									
Yes			ozone depleting substnces	124-72-1	Bromotetrafluoroethane	C2HF4Br									
Yes			ozone depleting substnces	----	Tribromofluoroethane	C2H2FBr3									
Yes			ozone depleting substnces	75-82-1	Dibromodifluoroethane	C2H2F2Br2									
Yes			ozone depleting substnces	421-06-7	1,1,1-Trifluoro-2-bromoethane										
Yes			ozone depleting substnces	358-97-4	Dibromofluoroethane	C2H3FBr2									
Yes			ozone depleting substnces	----	Bromodifluoroethane	C2H3F2Br									
Yes			ozone depleting substnces	762-49-2	Bromofluoroethane	C2H4FBr									
Yes			ozone depleting substnces	----	Hexabromofluoropropane	C3HFBr6									
Yes			ozone depleting substnces	----	Tribromotetrafluoropropane	C3HF4Br3									
Yes			ozone depleting substnces	----	Tribromotrifluoropropane	C3H2F3Br3									
Yes			ozone depleting substnces	431-78-7	Dibromopentafluoropropane	C3HF5Br2									
Yes			ozone depleting substnces	2252-79-1	Bromohexafluoropropane	C3HF6Br									
Yes			ozone depleting substnces	----	Pentabromodifluoropropane	C3HF2Br5									
Yes			ozone depleting substnces	----	Tetrabromotrifluoropropane	C3HF3Br4									
Yes			ozone depleting substnces	----	Pentabromofluoropropane	C3H2FBr5									
Yes			ozone depleting substnces	----	Tetrabromodifluoropropane	C3H2F2Br4									
Yes			ozone depleting substnces	----	Dibromotetrafluoropropane	C3H2F4Br2									
Yes			ozone depleting substnces	460-88-8	Bromopentafluoropropane	C3H2F5Br									
Yes			ozone depleting substnces	----	Tetrabromofluoropropane	C3H3FBr4									
Yes			ozone depleting substnces	70192-80-2	Tribromodifluoropropane	C3H3F2Br3									
Yes			ozone depleting substnces	70192-83-5	Dibromotrifluoropropane	C3H3F3Br2									
Yes			ozone depleting substnces	679-84-5	Bromotetrafluoropropane	C3H3F4Br									

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Rank	substance group	CAS No.	substance name	Synonyms	Japan's Laws			Overseas Laws					Tin conversion coefficient		
					Class 1 Specified Chemicals in Chem-sub Law	Proction-Prohibited Chemicals in Article 55, Ind Safety Law	Ozone Layer Law	EU REACH Annex XVII (EC) No 1907/2006		EU POPs Annex I (EC) No 850/2004		ChemVerbotsV		RoHS	
Prohibited Sub Level 1	Prohibited Sub Level 2	Prohibited Sub Level 3	This list shows examples of applicable substances. Any substance not included in this list but classified as a "prohibited substance" shall be reported.		Applicable, use limited and its threshold	Applicable, use limited and its threshold	Applicable	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable	
Yes			ozone depleting substnces	75372-14-4	Tribromofluoropropane	C3H4FBr3									
Yes			ozone depleting substnces	460-25-3	Dibromodifluoropropane	C3H4F2Br2									
Yes			ozone depleting substnces	51584-26-0	Dibromofluoropropane	C3H5FBr2									
Yes			ozone depleting substnces	421-46-5	bromotrifluoropropane	C3H4F3Br									
Yes			ozone depleting substnces	353-59-3	Bromochlorodifluoromethane	CF2BrCl	halon-1211								
Yes			ozone depleting substnces	74-97-5	Bromochloromethane	CH2BrCl									
Yes			ozone depleting substnces	75-63-8	Bromotrifluoromethane	CF3Br	halon-1301								
Yes			ozone depleting substnces	----	Bromodifluoropropane	C3H5F2Br									
Yes			ozone depleting substnces	352-91-0	Bromofluoropropane	C3H6FBr									
Yes			ozone depleting substnces	124-73-2	1,2-Dibromotetrafluoroethane	C2F4Br2	halon-2402								
Yes			ozone depleting substnces	56-23-5	Carbon tetrachloride										
Yes			ozone depleting substnces	71-55-6	1,1,1-trichloroethane										
Yes			formaldehyde	50-00-0	formaldehyde							Yes	Wooden products or furniture discharging 0.1ppm or more gas		
Yes			Cadmium and its compounds	7440-43-9	Cadmium				Yes						Yes
Yes			Cadmium and its compounds	10108-64-2	Cadmium chloride				Yes						Yes
Yes			Cadmium and its compounds	1306-19-0	Cadmium oxide				Yes						Yes
Yes			Cadmium and its compounds	10325-94-7	Cadmium Nitrate				Yes						Yes
Yes			Cadmium and its compounds	513-78-0	Cadmium carbonate				Yes						Yes
Yes			Cadmium and its compounds	1306-23-6	Cadmium sulfide				Yes						Yes
Yes			Cadmium and its compounds	10124-36-4	Cadmium sulfate				Yes						Yes
Yes			Cadmium and its compounds	12214-12-9	Cadmium selenide sulfide				Yes						Yes
Yes			Cadmium and its compounds	1306-24-7	Cadmium Selenide				Yes						Yes
Yes			Cadmium and its compounds	1306-25-8	Cadmium Telluride				Yes						Yes
Yes			Cadmium and its compounds	21041-95-2	Cadmium Hydroxide				Yes						Yes
Yes			Cadmium and its compounds	2223-93-0	Cadmium Stearate				Yes						Yes
Yes			Cadmium and its compounds	JAMP-SN0016	Cadmium compounds [group]				Yes						Yes
Yes			Lead and its compounds	7439-92-1	Lead				Yes						Yes
Yes			Lead and its compounds	6080-56-4	Lead(II) acetate trihydrate				Yes						Yes
Yes			Lead and its compounds	7446-27-7	Lead(II) phosphate				Yes						Yes
Yes			Lead and its compounds	12069-00-0	Lead selenide				Yes						Yes
Yes			Lead and its compounds	1309-60-0	Lead(IV) oxide				Yes						Yes
Yes			Lead and its compounds	1314-41-6	Lead oxide				Yes						Yes
Yes			Lead and its compounds	1344-36-1	Lead subcarbonate				Yes						Yes
Yes			Lead and its compounds	7758-97-6	Lead(II) chromate				Yes						Yes
Yes			Lead and its compounds	12202-17-4	Lead oxide sulfate				Yes						Yes

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Rank				substance group	CAS No.	substance name	Synonyms	Japan's Laws			Overseas Laws					Tin conversion coefficient	
Prohibited Sub Level 1	Prohibited Sub Level 2	Prohibited Sub Level 3	Class 1 Specified Chemicals in Chem-sub Law					Prodction-Prohibited Chemicals in Article 55, Ind Safety Law	Ozone Layer Law	EU REACH Annex XVII (EC) No 1907/2006		EU POPs Annex I (EC) No 850/2004		ChemVerbotsV			RoHS
			Applicable, use limited and its threshold					Applicable, use limited and its threshold	Applicable	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold		Applicable
				<p>This list shows examples of applicable substances. Any substance not included in this list but classified as a "prohibited substance" shall be reported.</p>													
Yes				Lead and its compounds	1319-46-6	Lead(II) carbonate, basic					Yes	- Prohibited: intentional use in paint			Yes	Prohibited: intentional use in paint	Yes
Yes				Lead and its compounds	598-63-0	Lead carbonate					Yes	- Prohibited: Pb concentration exceeding 0.05 wt%, content in accessories			Yes	Prohibited: intentional use in paint	Yes
Yes				Lead and its compounds	7446-14-2	Lead (II) Sulfate					Yes				Yes	Prohibited: intentional use in paint	Yes
Yes				Lead and its compounds	1072-35-1	Lead stearate					Yes						Yes
Yes				Lead and its compounds	12060-00-3	lead titanate					Yes						Yes
Yes				Lead and its compounds	12060-01-4	Lead (II) zirconate					Yes						Yes
Yes				Lead and its compounds	1311-11-1	Lead hydroxide oxide					Yes						Yes
Yes				Lead and its compounds	19783-14-3	Lead(II) hydroxide					Yes	Prohibited: Pb concentration exceeding 0.05 wt%, content in accessories					Yes
Yes				Lead and its compounds	1317-36-8	Lead (II) oxide					Yes						Yes
Yes				Lead and its compounds	301-04-2	Lead acetate					Yes						Yes
Yes				Lead and its compounds	10099-74-8	Lead (II) nitrate					Yes						Yes
Yes				Lead and its compounds	1314-87-0	Lead (II) Sulfide					Yes						Yes
Yes				Lead and its compounds	JAMP-SN0023	lead compounds [group]					Yes						Yes
Yes				Hexavalent chromium compounds	1344-38-3	basic lead chromate	Pigment Orange 21				Yes						Yes
Yes				Hexavalent chromium compounds	1344-37-2	Lead Chromate	Pigment Yellow 34				Yes						Yes
Yes				Hexavalent chromium compounds	13530-68-2	Dichromic acid					Yes						Yes
Yes				Hexavalent chromium compounds	7778-50-9	Potassium dichromate					Yes	Prohibited: Cr(VI) concentration exceeding 3 mg/kg, content in leather articles coming into contact with the skin and articles containing leather parts coming into contact with the skin (To be applied from May 1, 2015 onwards)					Yes
Yes				Hexavalent chromium compounds	10588-01-9	Sodium dichromate					Yes						Yes
Yes				Hexavalent chromium compounds	1333-82-0	Chromium trioxide					Yes						Yes
Yes				Hexavalent chromium compounds	10294-40-3	Barium Chromate					Yes						Yes
Yes				Hexavalent chromium compounds	12053-18-8	Copper chromite					Yes						Yes
Yes				Hexavalent chromium compounds	7789-06-2	strontium chromate					Yes						Yes
Yes				Hexavalent chromium compounds	JAMP-SN0019	Chromium (VI) compounds					Yes						Yes
Yes				Mercury and its compounds	7439-97-6	Mercury											Yes
Yes				Mercury and its compounds	7487-94-7	Mercury bichloride; Mercuric chloride											Yes
Yes				Mercury and its compounds	21908-53-2	Mercury (II) oxide											Yes
Yes				Mercury and its compounds	15829-53-5	Mercurous Oxide											Yes
Yes				Mercury and its compounds	593-74-8	Dimethyl mercury											Yes
Yes				Mercury and its compounds	10112-91-1	Mercury chloride											Yes
Yes				Mercury and its compounds	33631-63-9	Cyclohexylmethylmercuric chloride											Yes
Yes				Mercury and its compounds	7783-35-9	Mercury(II) sulfate											Yes
Yes				Mercury and its compounds	10045-94-0	Mercuric nitrate											Yes
Yes				Mercury and its compounds	1344-48-5	Mercuric sulfide											Yes
Yes				Mercury and its compounds	JAMP-SN0024	Mercury compounds [group]											Yes

Appendix 1 List of sample substances considered as "Prohibited Substances"

Rank				substance group	CAS No.	substance name	Synonyms	Japan's Laws			Overseas Laws					Tin conversion coefficient				
Prohibited Sub Level 1	Prohibited Sub Level 2	Prohibited Sub Level 3	Class 1 Specified Chemicals in Chem-sub Law					Production-Prohibited Chemicals in Article 55, Ind. Safety Law	Ozone Layer Law	EU REACH Annex XVII (EC) No 1907/2006		EU POPs Annex I (EC) No 850/2004		ChemVerbotsV			RoHS			
			Applicable, use limited and its threshold					Applicable, use limited and its threshold	Applicable	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold		Applicable			
				<p>This list shows examples of applicable substances. Any substance not included in this list but classified as a "prohibited substance" shall be reported.</p>																
Yes				Perfluorooctane sulfonate and its salts (PFOS)	307-35-7	1-Octanesulphonyl fluoride, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	376-14-7	2-Propenoic acid, 2-methyl-, 2-[ethyl[(heptafluorooctyl)sulphonyl]amino]ethyl ester		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	383-07-3	2-Propenoic acid, 2-[butyl[(heptafluorooctyl)sulphonyl]amino]ethyl ester		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	423-82-5	2-Propenoic acid, 2-[ethyl[(heptafluorooctyl)sulphonyl]amino]ethyl ester		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	423-86-9	1-Octanesulphonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-N-2-propenyl-		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	754-91-6	1-Octanesulphonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	1652-63-7	1-Propanaminium, 3-[[[(heptafluorooctyl)sulphonyl]amino]-N,N,N-trimethyl-, iodide		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	1691-99-2	1-Octanesulphonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-N-(2-hydroxyethyl)-		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	1763-23-1	1-Octanesulphonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	1869-77-8	Glycine, N-ethyl-N-[(heptafluorooctyl)sulphonyl]-, ethyl ester		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	2250-98-8	1-Octanesulphonamide, N,N',N''-[phosphinyldinetris(oxy-2,1-ethanedyl)]tris[N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-		Yes						Yes	-Prohibited: intentional use - (as unintentional use, contaminant): concentration exceeding 0.1 wt%, semi-finished products, articles, or parts, amount exceeding 1 µg/m2, content in surface treatment					
Yes				Perfluorooctane sulfonate and its salts (PFOS)	2263-09-4	1-Octanesulphonamide, N-butyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-N-(2-hydroxyethyl)-		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	2795-39-3	1-Octanesulphonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-, potassium salt		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	2991-50-6	Glycine, N-ethyl-N-[(heptafluorooctyl)sulphonyl]-		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	2991-51-7	Glycine, N-ethyl-N-[(heptafluorooctyl)sulphonyl]-, potassium salt		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	3820-83-5	1-Octanesulphonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-N-[2-(phosphonoxy)ethyl]-		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	3871-50-9	Glycine, N-ethyl-N-[(heptafluorooctyl)sulphonyl]-, sodium salt		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	4151-50-2	1-Octanesulphonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	13417-01-1	1-Octanesulphonamide, N-[3-(dimethylamino)propyl]-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	14650-24-9	2-Propenoic acid, 2-methyl-, 2-[[[(heptafluorooctyl)sulphonyl]methylamino]ethyl ester		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	24448-09-7	1-Octanesulphonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-N-(2-hydroxyethyl)-N-methyl-		Yes						Yes						

Appendix 1 List of sample substances considered as "Prohibited Substances"

Rank			substance group	CAS No.	substance name	Synonyms	Japan's Laws			Overseas Laws					Tin conversion coefficient			
Prohibited Sub Level 1	Prohibited Sub Level 2	Prohibited Sub Level 3					Class 1 Specified Chemicals in Chem-sub Law	Production-Prohibited Chemicals in Article 55, Ind. Safety Law	Ozone Layer Law	EU REACH Annex XVII (EC) No 1907/2006		EU POPs Annex I (EC) No 850/2004		ChemVerbotsV		RoHS		
							Applicable, use limited and its threshold	Applicable, use limited and its threshold	Applicable	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable		Use limited and its threshold	Applicable	
			<p>This list shows examples of applicable substances. Any substance not included in this list but classified as a "prohibited substance" shall be reported.</p>															
Yes			Perfluorooctane sulfonate and its salts (PFOS)	24924-36-5	1-Octanesulphonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-N-2-propenyl-		Yes											
Yes			Perfluorooctane sulfonate and its salts (PFOS)	25268-77-3	2-Propenoic acid, 2-[[[(heptadecafluorooctyl)sulphonyl]methylamino]ethyl] ester		Yes											
Yes			Perfluorooctane sulfonate and its salts (PFOS)	29081-56-9	1-Octanesulphonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, ammonium salt		Yes											
Yes			Perfluorooctane sulfonate and its salts (PFOS)	29117-08-6	Poly(oxy-1,2-ethanediyl), alpha-[2-[ethyl[[[(heptadecafluorooctyl)sulphonyl]amino]ethyl]-omega-hydroxy		Yes											
Yes			Perfluorooctane sulfonate and its salts (PFOS)	29457-72-5	1-Octanesulphonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, lithium salt		Yes											
Yes			Perfluorooctane sulfonate and its salts (PFOS)	30295-51-3	1-Octanesulphonamide, N-[3-(dimethyloxoamino)propyl]-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-		Yes											
Yes			Perfluorooctane sulfonate and its salts (PFOS)	30381-98-7	1-Octanesulphonamide, N,N'-[phosphinicobis(oxy-2,1-ethanediyl)]bis[N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, ammonium salt		Yes											
Yes			Perfluorooctane sulfonate and its salts (PFOS)	31506-32-8	1-Octanesulphonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-methyl-		Yes											
Yes			Perfluorooctane sulfonate and its salts (PFOS)	38006-74-5	1-Propanaminium, 3-[[[(heptadecafluorooctyl)sulphonyl]amino]-N,N',N''-trimethyl-, chloride		Yes											
Yes			Perfluorooctane sulfonate and its salts (PFOS)	50598-29-3	1-Octanesulphonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-(phenylmethyl)-		Yes											
Yes			Perfluorooctane sulfonate and its salts (PFOS)	52550-45-5	Poly(oxy-1,2-ethanediyl), a-[2-[[[(heptadecafluorooctyl)sulphonyl]propylamino]ethyl]-omega-hydroxy-		Yes											
Yes			Perfluorooctane sulfonate and its salts (PFOS)	56773-42-3	Ethanaminium, N,N',N''-triethyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulphonic acid (1:1)		Yes											
Yes			Perfluorooctane sulfonate and its salts (PFOS)	57589-85-2	Benzoic acid, 2,3,4,5-tetrachloro-6-[[[3-[[[(heptadecafluorooctyl)sulphonyl]oxy]phenyl]amino]carbonyl]-, monopotassium salt		Yes											
Yes			Perfluorooctane sulfonate and its salts (PFOS)	58920-31-3	2-Propenoic acid, 4-[[[(heptadecafluorooctyl)sulphonyl]methylamino]butyl] ester		Yes											
Yes			Perfluorooctane sulfonate and its salts (PFOS)	61577-14-8	2-Propenoic acid, 2-methyl-, 4-[[[(heptadecafluorooctyl)sulphonyl]methylamino]butyl] ester		Yes											
Yes			Perfluorooctane sulfonate and its salts (PFOS)	61660-12-6	1-Octanesulphonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-[3-(trimethoxysilyl)propyl]-		Yes											
Yes			Perfluorooctane sulfonate and its salts (PFOS)	67939-42-8	1-Octanesulphonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-[3-(trichlorosilyl)propyl]-		Yes											
Yes			Perfluorooctane sulfonate and its salts (PFOS)	67969-69-1	1-Octanesulphonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-[2-(phosphonoxy)ethyl]-, diammonium salt		Yes											
Yes			Perfluorooctane sulfonate and its salts (PFOS)	67939-88-2	1-Octanesulphonamide, N-[3-(dimethylamino)propyl]-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, monohydrochloride		Yes											
Yes			Perfluorooctane sulfonate and its salts (PFOS)	68081-83-4	Carbamic acid, (4-methyl-1,3-phenylene)bis-, bis[2-[ethyl[[perfluoro-C4-8-alkyl)sulphonyl]amino]ethyl] ester		Yes											

Appendix 1 List of sample substances considered as "Prohibited Substances"

Rank				substance group	CAS No.	substance name	Synonyms	Japan's Laws			Overseas Laws					Tin conversion coefficient	
Prohibited Sub Level 1	Prohibited Sub Level 2	Prohibited Sub Level 3	Class 1 Specified Chemicals in Chem-sub Law					Production-Prohibited Chemicals in Article 55, Ind Safety Law	Ozone Layer Law	EU REACH Annex XVII (EC) No 1907/2006		EU POPs Annex I (EC) No 850/2004		ChemVerbotsV			RoHS
			Applicable, use limited and its threshold					Applicable, use limited and its threshold	Applicable	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold		Applicable
Yes				Perfluorooctane sulfonate and its salts (PFOS)	68298-11-3	1-Propanaminium, 3-[[heptadecafluorooctyl)sulphonyl](3-sulphopropyl)amino]-N-(2-hydroxyethyl)-N,N-dimethyl-, hydroxide, inner salt		Yes					Yes				
Yes				Perfluorooctane sulfonate and its salts (PFOS)	68329-56-6	2-Propenoic acid, eicosyl ester, polymer with 2-[[heptadecafluorooctyl)sulphonyl]methylamino]ethyl 2-propenoate, hexadecyl 2-propenoate, 2-[methyl[(nonafluorobutyl)sulphonyl]amino]ethyl 2-propenoate, 2[methyl[(pentadecafluoroheptyl)sulphonyl]amino]ethyl 2-propenoate, 2-[methyl[(tridecafluoroheptyl)sulphonyl]amino]ethyl 2-propenoate, 2-[methyl[(undecafluoropentyl)sulphonyl]amino]ethyl 2-propenoate and octadecyl 2-propenoate		Yes					Yes				
Yes				Perfluorooctane sulfonate and its salts (PFOS)	68239-73-6	1-Octanesulphonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-(4-hydroxybutyl)-N-methyl-		Yes					Yes				
Yes				Perfluorooctane sulfonate and its salts (PFOS)	68310-75-8	1-Propanaminium, 3-[[heptadecafluorooctyl)sulphonyl]amino]-N,N',N''-trimethyl-, iodide, ammonium salt		Yes					Yes				
Yes				Perfluorooctane sulfonate and its salts (PFOS)	68541-80-0	2-Propenoic acid, polymer with 2-[ethyl[(heptadecafluorooctyl)sulphonyl]amino]ethyl 2-methyl-2-propenoate and octadecyl 2-propenoate		Yes					Yes				
Yes				Perfluorooctane sulfonate and its salts (PFOS)	68555-90-8	2-Propenoic acid, butyl ester, polymer with 2-[[heptadecafluorooctyl)sulphonyl]methylamino]ethyl 2-propenoate, 2-[methyl[(nonafluorobutyl)sulphonyl]amino]ethyl 2-propenoate, 2-[methyl[(pentadecafluoroheptyl)sulphonyl]amino]ethyl 2-propenoate, 2-[methyl[(tridecafluoroheptyl)sulphonyl]amino]ethyl 2-propenoate and 2-[methyl[(undecafluoropentyl)sulphonyl]amino]ethyl 2-propenoate		Yes					Yes	-Prohibited: intentional use - (as unintentional use, contaminant): concentration exceeding 0.1 wt%, semi-finished products, articles, or parts, amount exceeding 1 µg/m2, content in surface treatment			
Yes				Perfluorooctane sulfonate and its salts (PFOS)	68555-91-9	2-Propenoic acid, 2-methyl-, 2-[ethyl[(heptadecafluorooctyl)sulphonyl]amino]ethyl ester, polymer with 2-[ethyl[(nonafluorobutyl)sulphonyl]amino]ethyl 2-methyl-2-propenoate, 2-[ethyl[(pentadecafluoroheptyl)sulphonyl]amino]ethyl 2-methyl-2-propenoate, 2-[ethyl[(tridecafluoroheptyl)sulphonyl]amino]ethyl 2-methyl-2-propenoate, 2-[ethyl[(undecafluoropentyl)sulphonyl]amino]ethyl 2-methyl-2-propenoate and octadecyl 2-methyl-2-propenoate		Yes					Yes				
Yes				Perfluorooctane sulfonate and its salts (PFOS)	68555-92-0	2-Propenoic acid, 2-methyl-, 2-[[heptadecafluorooctyl)sulfonyl]methylamino]ethyl ester, polymer with 2-[methyl[(nonafluorobutyl)sulfonyl]amino]ethyl 2-methyl-2-propenoate, 2-[methyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl 2-methyl-2-propenoate, 2-[methyl[(tridecafluoroheptyl)sulfonyl]amino]ethyl 2-methyl-2-propenoate, 2-[methyl[(undecafluoropentyl)sulfonyl]amino]ethyl 2-methyl-2-propenoate and octadecyl 2-methyl-2-propenoate		Yes					Yes				
Yes				Perfluorooctane sulfonate and its salts (PFOS)	68608-14-0	Sulphonamides, C4-8-alkane, perfluoro, N-ethyl-N-(hydroxyethyl), reaction products with 1,1'-methylenebis[4-isocyanatobenzene]		Yes					Yes				

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Rank				substance group	CAS No.	substance name	Synonyms	Japan's Laws			Overseas Laws					Tin conversion coefficient		
Prohibited Sub Level 1	Prohibited Sub Level 2	Prohibited Sub Level 3	Class 1 Specified Chemicals in Chem-sub Law					Production-Prohibited Chemicals in Article 55, Ind Safety Law	Ozone Layer Law	EU REACH Annex XVII (EC) No 1907/2006		EU POPs Annex I (EC) No 850/2004		ChemVerbotsV			RoHS	
			Applicable, use limited and its threshold					Applicable, use limited and its threshold	Applicable	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold		Applicable	
				<p>This list shows examples of applicable substances. Any substance not included in this list but classified as a "prohibited substance" shall be reported.</p>														
Yes				Perfluorooctane sulfonate and its salts (PFOS)	68649-26-3	1-Octanesulfonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-(2-hydroxyethyl)-, reaction products with N-ethyl-1,1,2,2,3,3,4,4,4-nonafluoro-N-(2-hydroxyethyl)-1-butanedisulfonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-N-(2-hydroxyethyl)-1-heptanesulfonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-N-(2-hydroxyethyl)-1-hexanesulfonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,5-undecafluoro-N-(2-hydroxyethyl)-1-pentanesulfonamide, polymethylenepolyphenylene isocyanate and stearyl alc.		Yes					Yes					
Yes				Perfluorooctane sulfonate and its salts (PFOS)	68867-60-7	2-Propenoic acid, 2-[[[(heptadecafluorooctyl)sulfonyl]methylamino]ethyl ester, polymer with 2-[methyl[(nonafluorobutyl)sulfonyl]amino]ethyl 2-propenoate, 2-[methyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl 2-propenoate, 2-[methyl[(tridecafluorohexyl)sulfonyl]amino]ethyl 2-propenoate, 2-[methyl[(undecafluoropentyl)sulfonyl]amino]ethyl 2-propenoate and alpha-(1-oxo-2-propenyl)-omega-methoxypoly(oxy-1,2-ethanediyl)		Yes						Yes				
Yes				Perfluorooctane sulfonate and its salts (PFOS)	68877-32-7	2-Propenoic acid, 2-methyl-, 2-[ethyl[(heptadecafluorooctyl)sulphonyl]amino]ethyl ester, polymer with 2-[ethyl[(nonafluorobutyl)sulphonyl]amino]ethyl 2-methyl-2-propenoate, 2-[ethyl[(pentadecafluoroheptyl)sulphonyl]amino]ethyl 2-methyl-2-propenoate, 2-[ethyl[(tridecafluorohexyl)sulphonyl]amino]ethyl 2-methyl-2-propenoate, 2-[ethyl[(undecafluoro-pentyl)sulphonyl]amino]ethyl 2-methyl-2-propenoate and 2-methyl-1,3-butadiene		Yes						Yes	-Prohibited: intentional use - (as unintentional use, contaminant): concentration exceeding 0.1 wt%, semi-finished products, articles, or parts, amount exceeding 1 µg/m ² , content in surface treatment			
Yes				Perfluorooctane sulfonate and its salts (PFOS)	68891-96-3	Chromium, diaquatetrachloro[.mu.-[N-ethyl-N-[(heptadecafluorooctyl)sulphonyl] glycinato-.kappa.O:.kappa.O]]-.mu.-hydroxybis(2-methylpropano)di-		Yes						Yes				
Yes				Perfluorooctane sulfonate and its salts (PFOS)	68909-15-9	2-Propenoic acid, eicosyl ester, polymers with branched octyl acrylate, 2-[[[(heptadecafluorooctyl)sulfonyl]methylamino]ethyl acrylate, 2-[methyl[(nonafluorobutyl)sulfonyl]amino]ethyl acrylate, 2-[methyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl acrylate, 2-[methyl[(tridecafluorohexyl)sulfonyl]amino]ethyl acrylate, 2-[methyl[(undecafluoropentyl)sulfonyl]amino]ethyl acrylate, polyethylene glycol acrylate Me ether and stearyl acrylate		Yes						Yes				
Yes				Perfluorooctane sulfonate and its salts (PFOS)	68958-61-2	Poly(oxy-1,2-ethanediyl), .alpha.-[2-[ethyl[(heptadecafluorooctyl)sulphonyl]amino]ethyl]-.omega.-methoxy-		Yes						Yes				
Yes				Perfluorooctane sulfonate and its salts (PFOS)	70225-14-8	1-Octanesulphonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, compd. with 2,2'-iminobis[ethanol] (1:1)		Yes						Yes				

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			Applicable, use limited and its threshold					Applicable, use limited and its threshold	Applicable	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold		Applicable	
				This list shows examples of applicable substances. Any substance not included in this list but classified as a "prohibited substance" shall be reported.														
Yes				Perfluorooctane sulfonate and its salts (PFOS)	70776-36-2	2-Propenoic acid, 2-methyl-, octadecyl ester, polymer with 1,1-dichloroethene, 2-[[[heptadecafluorooctyl)sulfonyl]methylamino]ethyl 2-propenoate, N-(hydroxymethyl)-2-propenamide, 2-[methyl((nonafluorobutyl)sulfonyl)amino]ethyl 2-propenoate, 2-[methyl((pentadecafluoroheptyl)sulfonyl)amino]ethyl 2-propenoate, 2-[methyl((tridecafluorohexyl)sulfonyl)amino]ethyl 2-propenoate and 2-[methyl((undecafluoropentyl)sulfonyl)amino]ethyl 2-propenoate		Yes						Yes				
Yes				Perfluorooctane sulfonate and its salts (PFOS)	71463-78-0	Phosphonic acid, [3-[ethyl((heptadecafluorooctyl)sulphonyl)amino]propyl]-		Yes						Yes				
Yes				Perfluorooctane sulfonate and its salts (PFOS)	71463-80-4	Phosphonic acid, [3-[ethyl((heptadecafluorooctyl)sulphonyl)amino]propyl]-, diethyl ester		Yes						Yes				
Yes				Perfluorooctane sulfonate and its salts (PFOS)	71487-20-2	2-Propenoic acid, 2-methyl-, methylester, polymer with ethenylbenzene, 2-[[[heptadecafluorooctyl)sulfonyl]methylamino]ethyl 2-propenoate, 2-[methyl((nonafluorobutyl)sulfonyl)amino]ethyl 2-propenoate, 2-[methyl((pentadecafluoroheptyl)sulfonyl)amino]ethyl 2-propenoate, 2-[methyl((tridecafluorohexyl)sulfonyl)amino]ethyl 2-propenoate, 2-[methyl((undecafluoropentyl)sulfonyl)amino]ethyl 2-propenoate and 2-propenoic acid		Yes						Yes				
Yes				Perfluorooctane sulfonate and its salts (PFOS)	91081-99-1	Sulphonamides, C4-8-alkane, perfluoro, N-(hydroxyethyl)-N-methyl, reaction products with epichlorohydrin, adipates (esters)		Yes						Yes				
Yes				Perfluorooctane sulfonate and its salts (PFOS)	92265-81-1	Ethanaminium, N,N,N-trimethyl-2-[(2-methyl-1-oxo-2-propenyl)oxy]-, chloride, polymer with 2-ethoxyethyl 2-propenoate, 2-[[[heptadecafluorooctyl)sulphonyl]methylamino]ethyl 2-propenoate and oxiranylmethyl 2-methyl-2-propenoate		Yes						Yes				
Yes				Perfluorooctane sulfonate and its salts (PFOS)	94133-90-1	1-Propanesulphonic acid, 3-[[[3-(dimethylamino)propyl]((heptadecafluorooctyl)sulphonyl)amino]-2-hydroxy-, monosodium salt		Yes						Yes				
Yes				Perfluorooctane sulfonate and its salts (PFOS)	94313-84-5	Carbamic acid, [5-[[[2-[[[heptadecafluorooctyl)sulphonyl]methylamino]ethoxy]carbonyl]amino]-2-methylphenyl]-, 9-octadecenyl ester, (Z)-		Yes						Yes				
Yes				Perfluorooctane sulfonate and its salts (PFOS)	98999-57-6	Sulphonamides, C7-8-alkane, perfluoro, N-methyl-N-[2-[(1-oxo-2-propenyl)oxy]ethyl], polymers with 2-ethoxyethyl acrylate, glycidyl methacrylate and N,N,N-trimethyl-2-[(2-methyl-1-oxo-2-propenyl)oxy]ethanaminium chloride		Yes						Yes				
Yes				Perfluorooctane sulfonate and its salts (PFOS)	127133-66-8	2-Propenoic acid, 2-methyl-, polymers with Bu methacrylate, lauryl methacrylate and 2-[methyl((perfluoro-C4-8-alkyl)sulphonyl)amino]ethyl methacrylate		Yes						Yes				

Appendix 1 List of sample substances considered as "Prohibited Substances"

Rank				substance group	CAS No.	substance name	Synonyms	Japan's Laws				Overseas Laws					Tin conversion coefficient			
Prohibited Sub Level 1	Prohibited Sub Level 2	Prohibited Sub Level 3	Class 1 Specified Chemicals in Chem-sub Law					Production-Prohibited Chemicals in Article 55, Ind Safety Law	Ozone Layer Law	EU REACH Annex XVII (EC) No 1907/2006		EU POPs Annex I (EC) No 850/2004		ChemVerbotsV		RoHS				
			Applicable, use limited and its threshold					Applicable, use limited and its threshold	Applicable	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable				
				This list shows examples of applicable substances. Any substance not included in this list but classified as a "prohibited substance" shall be reported.																
Yes				Perfluorooctane sulfonate and its salts (PFOS)	129813-71-4	Sulphonamides, C4-8-alkane, perfluoro, N-methyl-N-(oxiranylmethyl)		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	148240-78-2	Fatty acids, C18-unsatd., trimers, 2-[[heptadecafluorooctyl)sulphonyl]methylamino]ethyl esters		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	148684-79-1	Sulphonamides, C4-8-alkane, perfluoro, N-(hydroxyethyl)-N-methyl, reaction products with 1,6-diisocyanatohexane homopolymer and ethylene glycol		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	160901-25-7	Sulphonamides, C4-8-alkane, perfluoro, N-ethyl-N-(hydroxyethyl), reaction products with 2-ethyl-1-hexanol and polymethylenepolyphenylene isocyanate		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	178094-69-4	1-Octanesulphonamide, N-[3-(dimethyloxidoamino)propyl]-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-potassium salt		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	178535-22-3	Sulphonamides, C4-8-alkane, perfluoro, N-ethyl-N-(hydroxyethyl)-, polymers with 1,1'-methylenebis[4-isocyanatobenzene] and polymethylenepolyphenylene isocyanate, 2-ethylhexyl esters, Me Et ketone oxime-blocked		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	182700-90-9	1-Octanesulphonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-methyl-, reaction products with benzene-chlorine-sulphur chloride (S2Cl2) reaction products chlorides		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	192662-29-6	Sulphonamides, C4-8-alkane, perfluoro, N-[3-(dimethylamino)propyl], reaction products with acrylic acid		Yes						Yes	-Prohibited: intentional use - (as unintentional use, contaminant); concentration exceeding 0.1 wt%, semi-finished products, articles, or parts, amount exceeding 1 µg/m2, content in surface treatment					
Yes				Perfluorooctane sulfonate and its salts (PFOS)	251099-16-8	1-Decanaminium, N-decyl-N,N-dimethyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulphonic acid (1:1)		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	306973-46-6	Fatty acids, linseed-oil, dimers, 2-[[heptadecafluorooctyl)sulphonyl]methylamino]ethyl esters		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	306973-47-7	Sulphonamides, C4-8-alkane, perfluoro, N-(hydroxyethyl)-N-methyl, reaction products with 12-hydroxystearic acid and 2,4-TDI, ammonium salts		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	306974-19-6	Sulphonamides, C4-8-alkane, perfluoro, N-methyl-N-[[3-octadecyl-2-oxo-5-oxazolidinyl)methyl]		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	306974-28-7	Siloxanes and Silicones, di-Me, mono[3-[(2-methyl-1-oxo-2-propenyl)oxy]propyl]group]-terminated, polymers with 2-[methyl]((perfluoro-C4-8-alkyl)sulphonyl)amino]ethyl acrylate and stearyl methacrylate		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	306974-45-8	Sulphonic acids, C6-8-alkane, perfluoro, compounds with polyethylene-polypropylene glycol bis(2-aminopropyl) ether		Yes						Yes						
Yes				Perfluorooctane sulfonate and its salts (PFOS)	306974-63-0	Fatty acids, C18-unsatd., dimers, 2-[methyl]((perfluoro-C4-8-alkyl)sulphonyl)amino] ethyl esters		Yes						Yes						

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Rank			substance group	CAS No.	substance name	Synonyms	Japan's Laws			Overseas Laws					Tin conversion coefficient			
Prohibited Sub Level 1	Prohibited Sub Level 2	Prohibited Sub Level 3					Class 1 Specified Chemicals in Chem-sub Law	Production-Prohibited Chemicals in Article 55, Ind Safety Law	Ozone Layer Law	EU REACH Annex XVII (EC) No 1907/2006		EU POPs Annex I (EC) No 850/2004		ChemVerbotsV		RoHS		
							Applicable, use limited and its threshold	Applicable, use limited and its threshold	Applicable	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable		Use limited and its threshold	Applicable	
			This list shows examples of applicable substances. Any substance not included in this list but classified as a "prohibited substance" shall be reported.															
Yes			Perfluorooctane sulfonate and its salts (PFOS)	306975-56-4	Propanoic acid, 3-hydroxy-2-(hydroxymethyl)-2-methyl-, polymer with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol and N,N',2-tris(6-isocyanatoheptyl)imidodicarbonic diamide, reaction products with N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-(2-hydroxyethyl)-1-octanesulfonamide and N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-N-(2-hydroxyethyl)-1-heptanesulfonamide, compds. with triethylamine		Yes						Yes					
Yes			Perfluorooctane sulfonate and its salts (PFOS)	306975-57-5	Propanoic acid, 3-hydroxy-2-(hydroxymethyl)-2-methyl-, polymer with 1,1'-methylenebis[4-isocyanatobenzene] and 1,2,3-propanetriol, reaction products with N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-(2-hydroxyethyl)-1-octanesulfonamide and N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-N-(2-hydroxyethyl)-1-heptanesulfonamide, compds. with morpholine		Yes						Yes					
Yes			Perfluorooctane sulfonate and its salts (PFOS)	306975-62-2	2-Propenoic acid, 2-methyl-, dodecyl ester, polymers with 2-[methyl(perfluoro-C4-8-alkyl)sulphonyl]amino]ethyl acrylate and vinylidene chloride		Yes							Yes				
Yes			Perfluorooctane sulfonate and its salts (PFOS)	306975-84-8	Poly(oxy-1,2-ethanediyl), .alpha.-hydro.-omega.-hydroxy-, polymer with 1,6-diisocyanatohexane, N-(hydroxyethyl)-N-methyl perfluoro C4-8-alkane sulphonamides-		Yes						Yes	-Prohibited: intentional use - (as unintentional use, contaminant): concentration exceeding 0.1 wt%, semi-finished products, articles, or parts, amount exceeding 1 µg/m2, content in surface treatment				
Yes			Perfluorooctane sulfonate and its salts (PFOS)	306975-85-9	2-Propenoic acid, 2-methyl-, dodecyl ester, polymers with N-(hydroxymethyl)-2-propenamide, 2-[methyl(perfluoro-C4-8-alkyl)sulphonyl]amino]ethyl methacrylate, stearyl methacrylate and vinylidene chloride		Yes						Yes					
Yes			Perfluorooctane sulfonate and its salts (PFOS)	306976-25-0	1-Hexadecanaminium, N,N-dimethyl-N-[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl]-, bromide, polymers with Bu acrylate, Bu methacrylate and 2-[methyl(perfluoro-C4-8-alkyl)sulphonyl]amino]ethyl acrylate		Yes						Yes					
Yes			Perfluorooctane sulfonate and its salts (PFOS)	306976-55-6	2-Propenoic acid, 2-methyl-, 2-methylpropyl ester, polymer with 2,4-diisocyanato-1-methylbenzene, 2-ethyl-2-(hydroxymethyl)-1,3-propanediol and 2-propenoic acid, N-ethyl-N-(hydroxyethyl)perfluoro-C4-8-alkanesulphonamides-blocked		Yes						Yes					
Yes			Perfluorooctane sulfonate and its salts (PFOS)	306977-58-2	2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, polymers with acrylic acid, 2-[methyl(perfluoro-C4-8-alkyl)sulphonyl]amino]ethyl acrylate and propylene glycol monoacrylate, hydrolysed, compounds with 2,2'-(methylimino)bis[ethanol]		Yes						Yes					
Yes			Perfluorooctane sulfonate and its salts (PFOS)	306978-04-1	2-Propenoic acid, butyl ester, polymers with acrylamide, 2-[methyl(perfluoro-C4-8-alkyl)sulphonyl]amino]ethyl acrylate and vinylidene chloride		Yes						Yes					

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Rank				substance group	CAS No.	substance name	Synonyms	Japan's Laws			Overseas Laws					Tin conversion coefficient	
Prohibited Sub Level 1	Prohibited Sub Level 2	Prohibited Sub Level 3	Class 1 Specified Chemicals in Chem-sub Law					Production-Prohibited Chemicals in Article 55, Ind Safety Law	Ozone Layer Law	EU REACH Annex XVII (EC) No 1907/2006		EU POPs Annex I (EC) No 850/2004		ChemVerbotsV			RoHS
			Applicable, use limited and its threshold					Applicable, use limited and its threshold	Applicable	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold		Applicable
Yes				Perfluorooctane sulfonate and its salts (PFOS)	306978-65-4	Hexane, 1,6-diisocyanato-, homopolymer, N-(hydroxyethyl)-N-methyl perfluoro-C4-8-alkane sulphonamides- and stearyl alc.-blocked		Yes									
Yes				Perfluorooctane sulfonate and its salts (PFOS)	306979-40-8	Poly(oxy-1,2-ethanediyl), .alpha.-[2-(methylamino)ethyl]-.omega.-[1,1,3,3-tetramethylbutyl]phenoxy]-, N-[(perfluoro-C4-8-alkyl)sulphonyl]		Yes									
Yes				Perfluorooctane sulfonate and its salts (PFOS)	306980-27-8	Sulphonamides, C4-8-alkane, perfluoro, N,N'-[1,6-hexanediybis[(2-oxo-3,5-oxazolinediyl)methylene]]bis[N-methyl-		Yes									
Yes				Perfluorooctane sulfonate and its salts (PFOS)	JAMP-SN0035	Perfluorooctane sulfonates(PFOS) C8F17SO2X (X = OH, Metal salt (O-M+), halide, amide, and other derivatives including polymers) [group]		Yes									
Yes				Specified benzotriazole	3846-71-7	Phenol, 2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl)-		Yes									
Yes				dimethylfumarate	624-49-7	dimethylfumarate					Yes	Prohibited: content exceeding 0.1 mg/kg, content in articles or a part thereof					
Yes				Specified organic tin compounds (2): DBTs	1002-53-5	Dibutyl stannane					Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.5052
Yes				Specified organic tin compounds (2): DBTs	10192-92-4	Dibutyltin dimaleate					Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.2564
Yes				Specified organic tin compounds (2): DBTs	1067-33-0	Dibutyltin diacetate					Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.3382
Yes				Specified organic tin compounds (2): DBTs	1185-81-5	Dibutyltin dilauryl mercaptide					Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.1867
Yes				Specified organic tin compounds (2): DBTs	13173-04-1	3,8,10-Trioxa-9-stannatetradeca-5,12-dien-14-oic acid, 9,9-dibutyl-4,7,11-trioxo-, ethyl ester, (Z,Z)-					Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.2286
Yes				Specified organic tin compounds (2): DBTs	13323-62-1	Dibutyltin dioleate					Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.1492
Yes				Specified organic tin compounds (2): DBTs	13323-63-2	Dibutyltin dipalmitate					Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.1596
Yes				Specified organic tin compounds (2): DBTs	14214-24-5	Dibutyltin disalicylate					Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.2341
Yes				Specified organic tin compounds (2): DBTs	15546-11-9	Di-n-butyltin bis(methyl maleate)					Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.2417
Yes				Specified organic tin compounds (2): DBTs	15546-12-0	Dibutyltin di(2-ethylhexyl maleate)					Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.1727
Yes				Specified organic tin compounds (2): DBTs	15546-16-4	Di-n-butyltin di(monobutyl)maleate					Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.2063
Yes				Specified organic tin compounds (2): DBTs	163206-28-8	Tin, dibutyl(1,2-ethanediamine-N,N')bis(monoisooctyl 2-butenedioato-O'-)					Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.1588
Yes				Specified organic tin compounds (2): DBTs	17523-06-7	Bis (acetato) dibutyltin					Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.3382
Yes				Specified organic tin compounds (2): DBTs	19704-60-0	Dibutyltin dihexanoate					Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.2563
Yes				Specified organic tin compounds (2): DBTs	22535-42-8	3,8,10-Trioxa-9-stannatetradeca-5,12-dien-14-oic acid, 9,9-dibutyl-2-methyl-4,7,11-trioxo-, 1-methylethyl ester, (Z,Z)-					Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.2169

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Rank			substance group	CAS No.	substance name	Synonyms	Japan's Laws			Overseas Laws					Tin conversion coefficient		
Prohibited Sub Level 1	Prohibited Sub Level 2	Prohibited Sub Level 3					Class 1 Specified Chemicals in Chem-sub Law	Production-Prohibited Chemicals in Article 55, Ind. Safety Law	Ozone Layer Law	EU REACH Annex XVII (EC) No 1907/2006		EU POPs Annex I (EC) No 850/2004		ChemVerbsV		RoHS	
							Applicable, use limited and its threshold	Applicable, use limited and its threshold	Applicable	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable		Use limited and its threshold	Applicable
Yes			Specified organic tin compounds (2): DBTs	22673-19-4	Tin, dibutylbis(2,4-pentanedionato-O,O')-, (OC-6-11)-				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.2753		
Yes			Specified organic tin compounds (2): DBTs	25168-24-5	Dibutyltin bis(isooctyl mercaptoacetate)				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.1856		
Yes			Specified organic tin compounds (2): DBTs	26636-01-1	Dibutyltin S,S'-bis (isooctyl mercaptoacetate)				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.2137		
Yes			Specified organic tin compounds (2): DBTs	26761-46-6	Dibutyltin di(isooctyl 3-mercaptoacetate)				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.1778		
Yes			Specified organic tin compounds (2): DBTs	2781-09-1	Dibutyltin bis(octylthioglycolate)				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.1856		
Yes			Specified organic tin compounds (2): DBTs	2781-10-4	Di-n-butyltin di-2-ethylhexanoate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.2286		
Yes			Specified organic tin compounds (2): DBTs	29881-72-9	Dibutyltin bis(oleyl maleate)				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.1231		
Yes			Specified organic tin compounds (2): DBTs	32011-18-0	Acetate, S,S'-bis(isooctylmercapto-, dibutyltin				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.1856		
Yes			Specified organic tin compounds (2): DBTs	32011-19-1	Tin, dibutylbis(methyl 3-mercaptoacetate-O,S)-				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.2519		
Yes			Specified organic tin compounds (2): DBTs	33466-31-8	5,7,12-Trioxa-6-stannatetracos-2,9-dienoic acid, 6,6-dibutyl-4,8,11-trioxo-, dodecyl ester, (Z,Z)-				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.1484		
Yes			Specified organic tin compounds (2): DBTs	3349-36-8	Dibutyltin dibutoxide				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.3131		
Yes			Specified organic tin compounds (2): DBTs	4731-77-5	Dibutyltin dioctanoate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.2286		
Yes			Specified organic tin compounds (2): DBTs	51287-83-3	Dibutyltin bis(lauryl .beta.-mercaptoacetate)				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.1522		
Yes			Specified organic tin compounds (2): DBTs	53202-61-2	Dibutyltin bis(2-ethylhexyl-3-mercaptoacetate)				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.1778		
Yes			Specified organic tin compounds (2): DBTs	54581-65-6	Dibutylbis (ethyl 3-oxobutyrato-O1,O3)tin				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.2417		
Yes			Specified organic tin compounds (2): DBTs	5847-54-1	Dibutyltin dibenzoate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.2498		
Yes			Specified organic tin compounds (2): DBTs	5847-55-2	Dibutyltin distearate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.1484		
Yes			Specified organic tin compounds (2): DBTs	61947-30-6	Diisobutyltin oxide				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.4769		
Yes			Specified organic tin compounds (2): DBTs	67924-24-7	Tin, dibutylbis(N,N-diethylethanamine)difluoro-				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.2508		
Yes			Specified organic tin compounds (2): DBTs	68239-46-3	Tin, dibutyl[N-(carboxymethyl)-N-(2-hydroxyethyl)glycinato(2-)]-				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.2909		
Yes			Specified organic tin compounds (2): DBTs	683-18-1	Dibutyltin dichloride				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.3907		
Yes			Specified organic tin compounds (2): DBTs	7324-74-5	Dibutyltin bis(benzyl maleate)				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.1845		
Yes			Specified organic tin compounds (2): DBTs	75113-37-0	Dibutyltin hydrogen borate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.4055		
Yes			Specified organic tin compounds (2): DBTs	77-58-7	Dibutyltin dilaurate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.1880		

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							Applicable, use limited and its threshold	Applicable, use limited and its threshold	Applicable	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable		Use limited and its threshold	Applicable
			This list shows examples of applicable substances. Any substance not included in this list but classified as a "prohibited substance" shall be reported.														
Yes			Specified organic tin compounds (2): DBTs	78-04-6	Dibutyltin maleate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.3421		
Yes			Specified organic tin compounds (2): DBTs	78-06-8	Dibutyltin mercaptopropionate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.3522		
Yes			Specified organic tin compounds (2): DBTs	78-20-6	Dibutyltin mercaptoacetate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.3675		
Yes			Specified organic tin compounds (2): DBTs	818-08-6	Dibutyltin oxide				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.4769		
Yes			Specified organic tin compounds (2): DBTs	85391-79-3	Dibutyltin linoleate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.1499		
Yes			Specified organic tin compounds (2): DBTs	85702-74-5	Dibutyltin isooctanoate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.2286		
Yes			Specified organic tin compounds (2): DBTs	95873-60-2	Dibutyltin linolenate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.1507		
Yes			Specified organic tin compounds (2): DBTs	25168-21-2	Dibutyltin bis(isooctylmaleate)				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.1727		
Yes			Specified organic tin compounds (2): DBTs	10584-98-2	Dibutyltinbis(2-ethylhexyl mercaptoacetate); 2-Ethylhexyl-4,4-dibutyl-10-ethyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.1856		
Yes			Specified organic tin compounds (2): DBTs	28660-63-1	Dibutyltin dibutyrate; Bis(butanoyloxy)dibutylstannane				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.2916		
Yes			Specified organic tin compounds (2): DBTs	59963-28-9	Dibutyltin diisostearate; Dibutylbis[(1-oxoisooctadecyl)oxy]stannane				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in mixtures and in articles or a part thereof					0.1484		
Yes			Specified organic tin compounds (3): DOTs	870-08-6	Diocetyl tin oxide; Diocetyl oxostannane				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.3287		
Yes			Specified organic tin compounds (3): DOTs	15571-58-1	Diocetyl tin bis(2-ethylhexyl thioglycolate)				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.1579		
Yes			Specified organic tin compounds (3): DOTs	16091-18-2	Diocetyl tin maleate				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2585		
Yes			Specified organic tin compounds (3): DOTs	26401-97-8	Diocetyl tin				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.1579		
Yes			Specified organic tin compounds (3): DOTs	33568-99-9	Diocetyl tin bis(isooctyl maleate)				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.1484		
Yes			Specified organic tin compounds (3): DOTs	3542-36-7	Diocetyl tin dichloride				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.2853		
Yes			Specified organic tin compounds (3): DOTs	22205-30-7	Bis(dodecylthio)diocetyl stannane; Diocetyl tin bis(dodecylmercaptide)				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.1587		
Yes			Specified organic tin compounds (3): DOTs	3648-18-8	Diocetyl tin dilaurate; Diocetyl bis[(1-oxododecyl)oxy] stannane				Yes	Prohibited: tin concentration exceeding 0.1 wt%, content in articles or a part thereof					0.1596		

Appendix 1 List of sample substances considered as "Prohibited Substances"

Rank			substance group	CAS No.	substance name	Synonyms	Japan's Laws			Overseas Laws					Tin conversion coefficient		
Prohibited Sub Level 1	Prohibited Sub Level 2	Prohibited Sub Level 3					Class 1 Specified Chemicals in Chem-sub Law	Proction-Prohibited Chemicals in Article 55, Ind Safety Law	Ozone Layer Law	EU REACH Annex XVII (EC) No 1907/2006		EU POPs Annex I (EC) No 850/2004		ChemVerbotV		RoHS	
			This list shows examples of applicable substances. Any substance not included in this list but classified as a "prohibited substance" shall be reported.				Applicable, use limited and its threshold	Applicable, use limited and its threshold	Applicable	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable	
Yes			Polycyclic aromatic hydrocarbons (PAH)	50-32-8	Benzo[a]pyrene (BaP)	BaP				Yes							
Yes			Polycyclic aromatic hydrocarbons (PAH)	192-97-2	Benzo[e]pyrene (BeP)	BeP				Yes							
Yes			Polycyclic aromatic hydrocarbons (PAH)	56-55-3	Benzo[a]anthracene (BaA)	BaA				Yes	Prohibited: concentration exceeding 1 mg/kg, content in rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity (To be applied from December 27, 2015 onwards)						
Yes			Polycyclic aromatic hydrocarbons (PAH)	218-01-9	Chrysen (CHR)	CHR				Yes							
Yes			Polycyclic aromatic hydrocarbons (PAH)	205-99-2	Benzo[b]fluoranthene (BbFA)	BbFA				Yes							
Yes			Polycyclic aromatic hydrocarbons (PAH)	205-82-3	Benzo[j]fluoranthene (BjFA)	BjFA				Yes							
Yes			Polycyclic aromatic hydrocarbons (PAH)	207-08-9	Benzo[k]fluoranthene (BkFA)	BkFA				Yes							
Yes			Polycyclic aromatic hydrocarbons (PAH)	53-70-3	Dibenzo [a, h] anthracene (DBAhA)	DBAhA				Yes							
Yes			Polycyclic aromatic hydrocarbons (PAH)														
Yes			Hydrochlorofluorocarbons (HCFC)	75-45-6	Chlorodifluoromethane	CHClF ₂	HCFC-22										
Yes			Hydrochlorofluorocarbons (HCFC)	1717-00-6	1,1-dichloro-1-fluoroethane	C ₂ H ₃ Cl ₂ F	HCFC-141b										
Yes			Hydrochlorofluorocarbons (HCFC)	JAMP-SN0061	Hydrochlorofluorocarbons (HCFC's) [group]												
Yes			Hexabromocyclododecane (HBCD)	3194-55-6, 25637-99-4, 134237-50-6, 134237-51-7, 134237-52-8, 4736-49-6, 65701-47-5, 138257-17-7, 138257-18-8, 138257-19-9, 169102-57-2, 678970-15-5, 678970-16-6, 678970-17-7	Hexabromocyclododecane	HBCD, HBCDD	Yes										
Yes			PVC and its mixtures	9002-86-2	PVC and its mixture												
Yes			Phthalates	117-81-7	Bis(2-ethylhexyl) phthalate	DEHP				Yes	Prohibited: content exceeding 0.1wt% and content in toys and childcare articles as plasticized material						
Yes			Phthalates	85-68-7	Benzyl butyl phthalate	BBP				Yes							
Yes			Phthalates	84-74-2	Dibutyl phthalate	DBP				Yes							
Yes			Phthalates	84-69-5	Diisobutyl phthalate	DIBP											
		Yes	Phthalates	28553-12-0	Di-"isononyl" phthalate	DINP				Yes	Prohibited: content exceeding 0.1wt% and content in toys and childcare articles as plasticized material						
		Yes	Phthalates	131-18-0	Di-n-pentyl phthalate												
		Yes	Phthalates	605-50-5	Diisopentylphthalate	DIPP											
		Yes	Phthalates	117-84-0	Diocetyl phthalate					Yes	Prohibited: content exceeding 0.1wt% and content in toys and childcare articles as plasticized material						

Appendix 1 List of sample substances considered as "Prohibited Substances"

Rank			substance group	CAS No.	substance name	Synonyms	Japan's Laws			Overseas Laws					Tin conversion coefficient		
Prohibited Sub Level 1	Prohibited Sub Level 2	Prohibited Sub Level 3					Class 1 Specified Chemicals in Chem-sub Law	Proction-Prohibited Chemicals in Article 55, Ind Safety Law	Ozone Layer Law	EU REACH Annex XVII (EC) No 1907/2006		EU POPs Annex I (EC) No 850/2004		ChemVerbotsV		RoHS	
							Applicable, use limited and its threshold	Applicable, use limited and its threshold	Applicable	Applicable	Use limited and its threshold	Applicable	Use limited and its threshold	Applicable		Use limited and its threshold	Applicable
		Yes	Phthalates	117-82-8	Bis(2-methoxyethyl) phthalate												
		Yes	Phthalates	26761-40-0	Di-"isodecyl" phthalate				Yes	Prohibited: content exceeding 0.1wt% and content in toys and childcare articles as plasticized material							
		Yes	Others	115-96-8	Tris(2-chloroethyl)phosphate	TCEP											
		Yes	Arsenic and its compounds	1303-28-2	Diarsenic pentaoxide												
		Yes	Arsenic and its compounds	1327-53-3	Diarsenic trioxide												
		Yes	Cobalt and its compounds	7646-79-9	Cobalt dichloride												
		Yes	Others	JAMP-SN0007	Aluminosilicate, Refractory Ceramic Fibres (with conditions of SVHC)												
		Yes	Others	JAMP-SN0055	Zirconia Aluminosilicate, Refractory Ceramic Fibres (with conditions of SVHC)												
		Yes	Others	1304-56-9	Beryllium oxide												
		Yes	Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA	335-67-1	Pentadecafluorooctanoic acid	PFOA											
		Yes	Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA	3825-26-1	Ammonium pentadecafluorooctanoate												
		Yes	Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA	335-95-5	Sodium pentadecafluorooctanoate												
		Yes	Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA	2395-00-8	Potassium perfluorooctanoate												
		Yes	Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA	335-93-3	Silver(1+) perfluorooctanoate												
		Yes	Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA	335-66-0	Pentadecafluorooctyl fluoride												
		Yes	Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA	376-27-2	Methyl perfluorooctanoate												
		Yes	Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA	3108-24-5	Ethyl perfluorooctanoate												

Revision History

Revised Date	Location	Revised Content
Jul. 1, 2014	Substance group	<ul style="list-style-type: none"> - Added polycyclic aromatic hydrocarbons (PAH) - Changed "PVC and its mixtures, copolymer" to "PVC and its mixtures" - Added "Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA"
	CAS No.	<ul style="list-style-type: none"> - Corrected CAS No. of 2263-09-4 - Added CAS No. for HBCD such as 4736-49-6
	Substance	<ul style="list-style-type: none"> - Added 19783-14-3 "Lead(II) hydroxide" - Added examples of applicable substances for polycyclic aromatic hydrocarbons (PAH) - Added examples of applicable substances for perfluorooctanoic acid (PFOA) - Corrected substance names for 1311-11-1 and 33631-63-9 - Deleted 18253-54-8 "Tin, dichloro[29H,31H-phthalocyaninato(2-)-N29,N30,N31,N32]-, (OC-6-12)-" - Deleted 9003-22-9 "Vinyl chloride/vinyl acetate copolymer"
	Laws	<ul style="list-style-type: none"> - Revised applicable law for 85535-84-8 "Short-chane paraffin chloride (C10 – 13)" - Revised applicable law for 3194-55-6 etc. "Hexabromocyclododecane (HBCD)" - Revised applicable law for 1344-38-3 etc. "Hexavalent chromium compounds"
	Tin conversion coefficient	<p>Revised the conversion coefficient for the following substances (Substances other than the below have been revised to a valid 4-digit figure):</p> <p>"Specified organic tin compounds (1)" 56-35-9, 14275-57-1, 25711-26-6, 31732-71-5, 4782-29-0, 6454-35-9, 752-58-9, 1262-21-1, 13435-05-7, 1954-36-5, 4756-53-0</p>
Dec. 1, 2014	Substance group	<ul style="list-style-type: none"> - Changed "ozone depleting substnces (75-45-6, 1717-00-6, JAMP-SN0061) " to "Hydrochlorofluorocarbons (HCFC)" - Changed "Brominated flame retardant" to "Hexabromocyclododecane (HBCD)"
	Rank	<ul style="list-style-type: none"> - Changed Prohibited Substance level for "Polycyclic aromatic hydrocarbons (PAH)" - Changed Prohibited Substance level for "Hydrochlorofluorocarbons (HCFC)" - Changed Prohibited Substance level for "Hexabromocyclododecane (HBCD)" - Changed Prohibited Substance level for "Phthalates (Four kinds) (DEHP, BBP, DBP, DIBP)"

<< Panasonic Group Chemical Substances Management Rank Guidelines List of Exempted Items >>

(Categories 8, 9)

- ♦ Reference legislation: 2011/65/EU (RoHS Directive) ANNEX IV, 2014/1/EU–2014/13/EU, 2014/15/EU–2014/16/EU, 2014/69/EU–2014/71/EU, 2014/73/EU–2014/75/EU(Amending 2011/65/EU)

Applications exempted from the restriction in Article 4(1) specific to medical devices (Category 8) and monitoring and control instruments (Category 9).

No	Exemption	Scope and dates of applicability	Expiry date by the Rank Guidelines (Date of shipment from factory)
Equipment utilising or detecting ionising radiation			
1	Lead, cadmium and mercury in detectors for ionising radiation.		
2	Lead bearings in X-ray tubes.		
3	Lead in electromagnetic radiation amplification devices: micro-channel plate and capillary plate.		
4	Lead in glass frit of X-ray tubes and image intensifiers and lead in glass frit binder for assembly of gas lasers and for vacuum tubes that convert electromagnetic radiation into electrons.		
5	Lead in shielding for ionising radiation.		
6	Lead in X-ray test objects.		
7	Lead stearate X-ray diffraction crystals.		
8	Radioactive cadmium isotope source for portable X-ray fluorescence spectrometers.		
Sensors, detectors and electrodes			
1a	Lead and cadmium in ion selective electrodes including glass of pH electrodes.		
1b	Lead anodes in electrochemical oxygen sensors.		
1c	Lead, cadmium and mercury in infra-red light detectors.		
1d	Mercury in reference electrodes: low chloride mercury chloride, mercury sulphate and mercury oxide.		
Others			
9	Cadmium in helium-cadmium lasers.		
10	Lead and cadmium in atomic absorption spectroscopy lamps.		
11	Lead in alloys as a superconductor and thermal conductor in MRI.		
12	Lead and cadmium in metallic bonds creating superconducting magnetic circuits in MRI, SQUID, NMR (Nuclear Magnetic Resonance) or FTMS (Fourier Transform Mass Spectrometer) detectors.	30 June 2021	31 December 2020
13	Lead in counterweights.		
14	Lead in single crystal piezoelectric materials for ultrasonic transducers.		
15	Lead in solders for bonding to ultrasonic transducers.		
16	Mercury in very high accuracy capacitance and loss measurement bridges and in high frequency RF switches and relays in monitoring and control instruments not exceeding 20 mg of mercury per switch or relay.		
17	Lead in solders in portable emergency defibrillators.		
18	Lead in solders of high performance infrared imaging modules to detect in the range 8-14 μm .		
19	Lead in Liquid crystal on silicon (LCoS) displays.		
20	Cadmium in X-ray measurement filters.		

Appendix 2. Exempted Items List

Applications exempted from the restriction in Article 4(1) specific to medical devices (Category 8) and monitoring and control instruments (Category 9).

No	Exemption	Scope and dates of applicability	Expiry date by the Rank Guidelines (Date of shipment from factory)
21	Cadmium in phosphor coatings in image intensifiers for X-ray images.	31 December 2019	30 June 2019
	Cadmium in phosphor coatings in spare parts for X-ray systems placed on the EU market before 1 January 2020.		
22	Lead acetate marker for use in stereotactic head frames for use with CT and MRI and in positioning systems for gamma beam and particle therapy equipment.	30 June 2021	31 December 2020
23	Lead as an alloying element for bearings and wear surfaces in medical equipment exposed to ionising radiation.	30 June 2021	31 December 2020
24	Lead enabling vacuum tight connections between aluminium and steel in X-ray image intensifiers.	31 December 2019	30 June 2019
25	Lead in the surface coatings of pin connector systems requiring nonmagnetic connectors which are used durably at a temperature below – 20 °C under normal operating and storage conditions.	30 June 2021	31 December 2020
26	Lead in — solders on printed circuit boards, — termination coatings of electrical and electronic components and coatings of printed circuit boards, — solders for connecting wires and cables, — solders connecting transducers and sensors, that are used durably at a temperature below – 20 °C under normal operating and storage conditions.	30 June 2021	31 December 2020
27	Lead in — solders, — termination coatings of electrical and electronic components and printed circuit boards, — connections of electrical wires, shields and enclosed connectors, which are used in (a) magnetic fields within the sphere of 1 m radius around the isocentre of the magnet in medical magnetic resonance imaging equipment, including patient monitors designed to be used within this sphere, or (b) magnetic fields within 1 m distance from the external surfaces of cyclotron magnets, magnets for beam transport and beam direction control applied for particle therapy.	30 June 2020	31 December 2019
28	Lead in solders for mounting cadmium telluride and cadmium zinc telluride digital array detectors to printed circuit boards.	31 December 2017	30 June 2017
29	Lead in alloys, as a superconductor or thermal conductor, used in cryo-cooler cold heads and/or in cryo-cooled cold probes and/or in cryo-cooled equipotential bonding systems, in medical devices (category 8) and/or in industrial monitoring and control instruments.	30 June 2021	31 December 2020
30	Hexavalent chromium in alkali dispensers used to create photocathodes in X-ray image intensifiers.	31 December 2019	30 June 2019
	Hexavalent chromium in alkali dispensers used to create photocathodes in spare parts for X-ray systems placed on the EU market before 1 January 2020.		
31	Lead, cadmium and hexavalent chromium in reused spare parts, recovered from medical devices placed on the market before 22 July 2014 and used in category 8 equipment placed on the market before 22 July 2021, provided that reuse takes place in auditable closed-loop business-to-business return systems, and that the reuse of parts is notified to the consumer.	21 July 2021	21 January 2021
32	Lead in solders on printed circuit boards of detectors and data acquisition units for Positron Emission Tomographs which are integrated into Magnetic Resonance Imaging equipment.	31 December 2019	30 June 2019
33	Lead in solders on populated printed circuit boards used in Directive 93/42/EEC class IIa and IIb mobile medical devices other than portable emergency defibrillators.		
	— class IIa — class IIb	30 June 2016 31 December 2020	31 December 2015 30 June 2020
34	Lead as an activator in the fluorescent powder of discharge lamps when used for extracorporeal photopheresis lamps containing BSP (BaSi2O5 :Pb) phosphors.	22 July 2021	22 January 2021
35	Mercury in cold cathode fluorescent lamps for back-lighting liquid crystal displays, not exceeding 5 mg per lamp, used in industrial monitoring and control instruments placed on the market before 22 July 2017	21 July 2024	21 January 2024

Appendix 2. Exempted Items List

Applications exempted from the restriction in Article 4(1) specific to medical devices (Category 8) and monitoring and control instruments (Category 9).

No	Exemption	Scope and dates of applicability	Expiry date by the Rank Guidelines (Date of shipment from factory)
36	Lead used in other than C-press compliant pin connector systems for industrial monitoring and control instruments.	31 December 2020	30 June 2020
	Lead used in other than C-press compliant pin connector systems in spare parts for industrial monitoring and control instruments placed on the market before 1 January 2021.		
37	Lead in platinized platinum electrodes used for conductivity measurements where at least one of the following conditions applies: (a) wide-range measurements with a conductivity range covering more than 1 order of magnitude (e.g. range between 0.1 mS/m and 5 mS/m) in laboratory applications for unknown concentrations; (b) measurements of solutions where an accuracy of +/- 1% of the sample range and where high corrosion resistance of the electrode are required for any of the following: (i) solutions with an acidity < pH 1; (ii) solutions with an alkalinity > pH 13; (iii) corrosive solutions containing halogen gas; (c) measurements of conductivities above 100 mS/m that must be performed with portable instruments.	31 December 2018	30 June 2018
38	Lead in solder in one interface of large area stacked die elements with more than 500 interconnects per interface which are used in X-ray detectors of CT (computed tomography) and X-ray systems.	31 December 2019	30 June 2019
	Lead in solder in one interface of large area stacked die elements with more than 500 interconnects per interface which are used in spare parts for CT and X-ray systems placed on the market before 1 January 2020.		
39	Lead in micro-channel plates (MCPs) used in equipment where at least one of the following properties is present: (a) a compact size of the detector for electrons or ions, where the space for the detector is limited to a maximum of 3 mm/MCP (detector thickness + space for installation of the MCP), a maximum of 6 mm in total, and an alternative design yielding more space for the detector is scientifically and technically impracticable; (b) a two-dimensional spatial resolution for detecting electrons or ions, where at least one of the following applies: (i) a response time shorter than 25 ns; (ii) a sample detection area larger than 149 mm ² ; (iii) a multiplication factor larger than 1,3 × 10 ³ . (c) a response time shorter than 5 ns for detecting electrons or ions; (d) a sample detection area larger than 314 mm ² for detecting electrons or ions; (e) a multiplication factor larger than 4,0 × 10 ⁷ .		
	— medical devices and monitoring and control instruments	21 July 2021	21 January 2021
	— in-vitro diagnostic medical devices	21 July 2023	21 January 2023
	— industrial monitoring and control instruments	21 July 2024	21 January 2024
40	Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC for industrial monitoring and control instruments.	31 December 2020	30 June 2020
	Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC in spare parts for industrial monitoring and control instruments placed on the market before 1 January 2021.		

Revision History

Revised Date	Location	Revised Content
Feb. 8, 2010	Title	Panasonic Group List of Exempted Items --> Panasonic Group Chemical Substances Management Rank Guidelines List of Exempted Items
Dec. 6, 2010	Each item	Updated in light of the review of exemptions in the EU RoHS Directive
Jul. 13, 2011	Each item	Strike-through is displayed for items whose exemption period has been expired.
Dec. 14, 2012	Each item	<p>1) "Panasonic Group Chemical Substances Management Rank Guidelines (for Products) List of Exempted Items"</p> <ul style="list-style-type: none"> — Shaded the items (cells) in which the exemptions have expired — Changed the indication form of items where the exemption contents (expiry date, concentration, spare parts, etc.) vary with the same code — Exemption code: Added 7(c)-IV, 16–40 <p>2) "Panasonic Group Chemical Substances Management Rank Guidelines List of Exempted Items (Categories 8, 9)"</p> <ul style="list-style-type: none"> — Added a list of exemptions regarding those relating to applications exempted from the restriction in Article 4(1) specific to medical devices (Category 8) and monitoring and control instruments (Category 9).
Jul. 1, 2014	Each item	<p>1) "Panasonic Group Chemical Substances Management Rank Guidelines (for Products) List of Exempted Items"</p> <ul style="list-style-type: none"> — Exemption code: Added "1(g)" — Exemption code: Modified "7(c)-IV" and "40" <p>2) "Panasonic Group Chemical Substances Management Rank Guidelines List of Exempted Items (Categories 8, 9)"</p> <ul style="list-style-type: none"> — Exemption code: Modified "12" — Exemption code: Added "21–34"
Dec. 1, 2014	Each item	<p>1) "Panasonic Group Chemical Substances Management Rank Guidelines (for Products) List of Exempted Items"</p> <ul style="list-style-type: none"> — Added Note (expiry dates vary when applying to items for Categories 8 and 9) — Exemption code: Added "4(g)" and "41" — Revised description of the legal expiry date for Exemption code: 23 — Abbreviated "electrical and electronic equipment" as "EEE" <p>2) "Panasonic Group Chemical Substances Management Rank Guidelines List of Exempted Items (Categories 8, 9)"</p> <ul style="list-style-type: none"> — Exemption code: Added "35–40"

Appendix 3. Controlled Values for Prohibited Substances

1 List of controlled values for prohibited substances

(These are content concentrations for control at Panasonic, and guarantee of controlled values are not to be called for on suppliers).

Table A2- 1 List of controlled values for prohibited substances

Prohibited substance	Applicable part/material		Controlled value [Content concentration that is deemed to not exceed when the non-use control of Level 1 Prohibited Substances is properly managed]
Cadmium	Resin (including rubber/film) Coatings, inks, pigments, dyes		Less than 20ppm ^{*1} (High-precision analysis method ^{*2}) (in state with no volatile elements)
	Lead-free solder	Bar solder, Wire solder, Resin flux cored solder, Solder paste, Solder ball	Less than 20ppm (High-precision analysis method ^{*2})
		Soldered sections of purchased PC boards, Component solder	
	Metal materials other than lead-free solder		Less than 75ppm (High-precision analysis method ^{*2})
Lead	Resin (including rubber/film) Coatings, inks, pigments, dyes		Less than 100ppm ^{*1} (High-precision analysis method ^{*2}) (with no volatile elements)
	Lead-free solder	Bar solder, Wire solder, Resin flux cored solder, Solder paste, Solder ball	Less than 500ppm (High-precision analysis method ^{*2})
		Soldered sections of purchased PC boards, Component solder	Less than 800ppm (High-precision analysis method ^{*2})
	Electroless nickel plating		Less than 800ppm (High-precision analysis method ^{*2})
	Metal materials other than lead-free solder or electroless nickel plating		Less than 500ppm ^{*1*3} (High-precision analysis method ^{*2})
	Glass (limited to uses in lamps)		Less than 500ppm (High-precision analysis method ^{*2})

Hexavalent Chromium	Chromate treatment parts/materials (base-layer zinc plating)	Less than 100ppm ^{*1*5*7} (Simple analysis method ^{*6})
	Surface treatment materials ^{*8} other than base-layer zinc plating	Less than 0.2 μg/cm ² ^{*1*7} (Simple analysis method ^{*6})
	Surface treatment materials other than the above ^{*9} (excluding resins and surface treatment materials exempted from the simple analysis method ^{*6} for chrome tanning of leather etc.)	Less than 100ppm ^{*1*7} (Simple analysis method ^{*6})
PBB PBDE	Resin (including rubber/film)	Less than 100ppm (High-precision analysis method ^{*2})
Lead, mercury, cadmium, hexavalent chromium	Packaging material For each homogenous material comprising packaging (for example, resin, ink, paint)	Less than 100ppm (High-precision analysis method ^{*2}) of total quadruple heavy metals
With respect to the "Applicable part/material" or "Prohibited substance" not specifically listed in the table above, the lower limit concentration ^{*4} quantitatively measured by the corresponding high-precision analysis method is to be used as the interim controlled value.		

*1: Does not apply to packaging material.

*2: A controlled method other than the high-precision analysis method may be used for daily control purposes when such method is confirmed to correlate with the high-precision method. (Ex. Symple analysis method, which has been confirmed as correlating with the high-precision analysis)

*3: Because the lead (Ex. lead 0.35wt% or less as iron alloy), which is exempted from application by the RoHS Directive, is applicable as an alloy content, the Directive is not applied to the lead as an impurity.

*4: The value is determined by the sample quantity, analysis sensitivity of the analyzer (detection lower limit), etc. used by generally practiced high-precision analysis, or the detectable lower limit concentration of the target substance per unit sample quantity.

*5: Hexavalent chromium concentration based on zinc plating mass in the denominator

*6: Hot water-extracted diphenylcarbazine absorption method (Panasonic's independently defined method)

*7: In the judgment method (excluding the spot-test method) for hexavalent chromium listed in IEC 62321, when the concentration of hexavalent chromium in the specified extraction solution is less than 0.02mg/L, the concentration is assumed to be less than the controlled value of hexavalent chromium used by the Panasonic Group.

*8: When the surface treatment mass cannot be calculated (for example, chromate processing and metal chrome plating on aluminum materials)

*9: When the base layer is something other than zinc plating and the surface treatment mass can be calculated

2 Controlled Value of Lead Concentration of impurities in the Lead-free Solder used in a Flow-solder Bath in Panasonic and at a Partner Company.

In a Panasonic or partner company production process, the lead concentration of lead-free solder used in a flow-solder bath should be kept below the controlled value in Table A2- 2.

Table A2- 2 Controlled value^{*1} of lead concentration in lead-free solder in a flow-solder bath

Prohibited substance	Applicable part/material	Controlled value
Lead	Lead-free solder in a flow-solder bath	Less than 800ppm (Simple analysis method ^{*2})

*1: This controlled value applies to internal production processes and does not specify the controlled value in the production process at a supplier.

*2: The simple analysis method should comply with the "Simple Analysis Method of Lead-Free Solder in a Flow-solder Bath" (internal document).

Revision History

	Location	Revised Content
Jul. 1, 2014	Table A2- 1	<ul style="list-style-type: none">- Added controlled value for lead in "Electroless nickel plating"- Revised "Metal materials other than lead-free solder" to "Metal materials other than lead-free solder or electroless nickel plating"
Dec. 1, 2014	Table A2- 1	<ul style="list-style-type: none">- Added "excluding ... surface treatment materials exempted from the simple analysis method^{*6} for chrome tanning of leather etc."

Appendix 4. Analysis Method

1 Brief Description of the Analysis Method of Level 1 Prohibited Substances

An example of brief description of the analysis method (high-precision analysis method) for Level 1 Prohibited Substances is as the table below.

The analysis method shown here is to lead to results equivalent to IEC 62321 as the Panasonic Group. However, confirm conformance with IEC 62321^{*1} when adopting as data to be used for conformance evaluation information in CE marking.

Target Substance	Analysis Method	Remarks
PCB (Polybiphenyl chloride)	Dissolution → extraction → HRGCMS, GCMS, GC	
PCT (Polyterphenyl chloride)	Dissolution → extraction → GCMS	
Asbestos	Crushing → XRD	
Specified organic tin compound	Dissolution → extraction → derivative → GCMS	
Paraffin chloride	Dissolution → extraction → column cleanup → GCMS	
Specified brominated flame-retardants (PBB, PBDE)	Dissolution → extraction → HRGCMS	See 2.7
Azo dye and pigment forming specified amines	Specified test. Dissolution → extraction → derivative → GCMS	See 2.4
Short-chain paraffin chloride (C10-13)	Dissolution → extraction → HRGCMS	
Cadmium and its compounds	Decomposition → ICP-OES (AES) or ICP-MS	See 2.1
Lead and its compounds	Decomposition → ICP-OES (AES) or ICP-MS	See 2.1
Hexavalent chromium compounds	Dissolution test. Decomposition → diphenylcarbazide method, IC	See 2.3
Mercury and its compounds	Incineration → absorption → reduction/ vaporization AAS	See 2.2
Ozone-depleting substances	Volatilization, Desorption → capture GC, GCMS	
Formaldehyde	Volatilization, Desorption → capture → extraction HPLC	See 2.5

HRGCMS: High-resolution gas chromatograph-mass spectrometry

GCMS: Gas chromatograph mass-spectrometry

ICP-OES: High-frequency induction-coupling plasma-emission spectroscopy

ICP-MS: High-frequency induction-coupling plasma-mass spectroscopy

GC: Gas chromatography

HPLC: High-performance liquid chromatography

IC: Ion chromatography

XRD: X-ray diffraction

AAS: Atomic absorption spectrometry

*1: IEC 62321 (Electrotechnical products - Determination of levels of six regulated substances (lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, polybrominated diphenyl ethers))

2 Detailed Analysis Method for Level 1 Prohibited Substances

An analysis method for substances ranked as Level 1 Prohibited Substances is introduced below.

The fluorescence X-ray analysis method is shown for lead, cadmium, mercury, and chromium as a screening analysis; for hexavalent chromium, warm-water extracted diphenylcarbazide absorption photometric method is shown as a simple analysis method (Panasonic method). In addition, a high-precision analysis method is introduced for lead, cadmium, mercury, hexavalent chromium, azo compounds, and formaldehyde, etc.

2.1 Lead, Cadmium, and their Compounds

2.1.1 Screening Analysis

(1) Fluorescence X-ray analysis

A sample with a predetermined volume and weight can be created with relatively simple preparations, including sample cutting, crushing, etc. The presence and concentration of lead and cadmium can be determined promptly by using an analyzer. This method is suited for analyzing plastics, rubber, metal, glass, ceramics, etc.

Concentrations can be determined by using the built-in semi-quantitative analysis software (fundamental parameter method) and quantitative analysis software (analytical curve method).

(2) Analyzer

Energy-dispersion type fluorescence X-ray analyzer (EDX), Wavelength-dispersion type fluorescence X-ray analyzer (WDX)

2.1.2 High-precision Analysis (Determining the correct quantity of contents)

(1) Preprocessing of a sample involves wet decomposition (including pressure decomposition) under the influence of nitric acid, hydrochloric acid, hydrofluoric acid, hydrogen peroxide acid, etc., incineration under the influence of sulfuric acid or low-temperature incineration with oxygen plasma for preparing a specimen solution. Any precipitation, if generated, is re-dissolved by fluoric acid decomposition or alkaline dissolution decomposition before using it for analysis.

The prepared solution specimen is then supplied to an ICP emission spectroscopy and the concentration of lead and cadmium in the specimen solution is measured by using the analytical curve produced with the standard solution. The measured concentration values are then converted to lead and cadmium content in a solid sample. The method listed in IEC 62321 may also be used as a preprocessing method.

(2) Analyzer

As a rule, ICP optical emission spectroscopy (ICP-OES (AES)) should be used, but if a similar or better performance is warranted, ICP mass spectroscopy (ICP-MS) or atomic absorption spectrometry (AAS) may also be used.

2.1.3 Methods to Analyze Lead in Electroless Nickel Plating

- (1) Preparation of a lead analysis sample (plated film)
 - 1) Prepare a thin piece of SUS304 plate as a base material.
 - 2) Measure the weight of the SUS304 plate.
 - 3) Apply nickel plating to the SUS304 plate in a nickel-plating bath under standard conditions.
 - 4) Measure the weight of the plated SUS304 plate.
 - 5) Calculate the weight of the nickel-plated film from the weight difference before and after plating.
- (2) Quantitative analysis method of the lead contained in a nickel-plated film
 - 1) Apply selective thermal dissolution to the nickel-plated film of the plated sample of the above (1)-4) by using an appropriate quantity of (1 + 1) nitric acid.
 - 2) Analyze the lead contained in the dissolved solution (test liquid) by using the atomic absorption spectrometry, ICP optical emission spectroscopy, and ICP mass spectroscopy.
 - 3) If the weight of the nickel-plated film cannot be obtained in the above procedure (1)-5), analyze the nickel in the test solution by using either atomic absorption spectrometry or ICP emission spectroscopy analysis. Note that optimized analysis conditions need to be determined if the ICP emission spectroscopy analysis is used.

2.1.4 High-precision Analysis of Lead Contained in a Tin-plated Film

(The details of the method are generally not specified, but a temporary method is shown below.)

- (1) The tin-plated structure to which this method is applicable
Tin-plating + Copper plating (Due to the fact that phosphor bronze used as a base film for copper plating sometimes contains tin and lead, caution is required to prevent dissolved lead from the base layer affecting the measured quantity of lead, depending on the etching method.)
- (2) Method
When analyzing the lead in a tin-plated film, preprocessing is necessary to prevent dissolution of the lead contained in the base layer of the tin plating.
 - 1) Preparation of etching solution ($\text{HCl} : \text{HNO}_3 : \text{H}_2\text{O} = 9 : 1 : 10$, refer to JIS Z3910: Solder Analysis Method)
 - 2) Etching the tin-plated film (Heated, and until the copper base layer is visible)
 - 3) Measure the volume of the etching solution, determine the quantity of tin and lead using ICP emission spectroscopy, and calculate the proportion of lead contained in the tin-plated film. (Lead inclusion rate = measured value of lead / (measured value of tin plating + measured value of lead))

2.2 Mercury and its Compounds

2.2.1 Screening Analysis

(1) Fluorescence X-ray analysis

A sample with a predetermined volume and weight can be created with relatively simple preparations, including sample cutting, crushing, etc. The presence and concentration of mercury can be determined promptly by using an analyzer.

This method is suited for analyzing plastics, rubber, metal, glass, ceramics, etc. Concentrations can be determined by using the built-in semi-quantitative analysis software (fundamental parameter method) and quantitative analysis software (analytical curve method).

(2) Analyzer

Energy-dispersion type fluorescence X-ray analyzer (EDX), Wavelength-dispersion type fluorescence X-ray analyzer (WDX)

2.2.2 High-precision Analysis (Determining the correct quantity of contents)

(1) By using pressure decomposition or a decomposition flask with a reflux-cooling device, a sample can be decomposed with sulfuric acid or nitric acid while preventing the volatilization of mercury. The dissolved sample is then analyzed with a reducing-vapor atomic absorption spectrometry or reducing-vapor ICP optical emission spectroscopy. The measured concentration of mercury in the solution is determined with the analytical curve produced with the standard solution and then converted to a solid quantity in the sample. The method listed in IEC 62321 may also be used as a preprocessing method.

(2) Analyzer

The use of a reducing-vapor atomic absorption spectrometry (AAS) or reducing-vapor ICP optical emission spectroscopy (ICP-OES (AES)) is considered standard but an ICP mass-spectroscopy (ICP-MS), cold-vapor atomic absorption spectrometry (CVAAS) may also be used if a similar or better performance is expected.

2.3 Hexavalent Chromium Compounds

Analysis methods for detecting hexavalent chromium compounds in a sample include the X-ray diffraction method or X-ray optical emission spectroscopy. However, these methods cannot determine the concentration. Therefore, the following fluorescence X-ray spectroscopy is used for determining the chromium content first and then the possible inclusion of hexavalent chromium.

2.3.1 Screening analysis

(1) Fluorescence X-ray analysis

A sample with a predetermined volume and weight can be created with relatively simple preparations, including sample cutting, crushing, etc. The presence and concentration of chromium can be determined promptly by using an analyzer.

This method is suited for analyzing plastics, rubber, metal, glass, ceramics, etc. However, this method is not suitable for analyzing hexavalent chromium in the surface treatment of metallic objects.

Concentrations can be determined by using the built-in semi-quantitative analysis software (fundamental parameter method) and quantitative analysis software (analytical curve method). This method is not used for measuring hexavalent chromium but for measuring chromium.

(2) Analyzer

Energy-dispersion type fluorescence X-ray analyzer (EDX), Wavelength-dispersion type fluorescence X-ray analyzer (WDX)

2.3.2 Simple Analysis Method

Use this method for controlling hexavalent chromium in a chromate treatment material. Use of the spot-test method listed in IEC 62321 is not permitted.

(1) Warm-water-extracted diphenylcarbazide absorption spectroscopy

As part of preprocessing, prepare test liquid by extracting the sample in warm water at 80°C for 10 min.

Add the pack test chemical for hexavalent chromium (Kyoritsu Chemical-Check Lab) to the test liquid. Measure absorption near the wavelength 540 nm by using a spectrophotometer (water analysis pack included) and obtain the concentration of hexavalent chromium in the test liquid. By using the hexavalent chromium concentration, the extracted liquid quantity, the surface areas of sample, and the quantity of zinc-plating, convert to the hexavalent chromium quantity per zinc-plating quantity.

(2) Analyzer

Shimadzu Ultraviolet Visual Ray Photospectrometer UV-mini 1240 (water analysis pack included), Kyoritsu Chemical-Check Lab hexavalent chromium digital pack test

2.3.3 High-precision analysis

- (1) Application to surface treatment items such as plating, conversion treatments, etc.:
Boiling-water-extracted diphenylcarbazide absorption spectroscopy
A sample solution is prepared by extracting the content from a solid sample in boiling water. The prepared sample solution is used in diphenylcarbazide absorption spectroscopy or ion-chromatography for selectively determining the concentration of hexavalent chromium. The method listed in IEC 62321 may also be used.

The concentration of hexavalent chromium in the sample solution is determined using the analytical curve produced from the standard solution and then converted to the quantity of hexavalent chromium (Cr^{6+}) as μg per uniform material mass (g).

Chromate-processed sample with a base-layer zinc plating shall be converted to hexavalent chromium (Cr^{6+}) $\mu\text{g/g}$ of zinc plating mass (Zn). When the surface treatment material (other than base-layer zinc plating) and the surface treatment mass cannot be measured (for example, chromate processing and metal chromium plating on aluminum), then the quantity shall be converted to the contained quantity of hexavalent chromium (Cr^{6+}) $\mu\text{g/cm}^2$.

- (2) Application to resin, paint, ink, pigment, etc.: Alkaline-extracted diphenylcarbazide absorption spectroscopy
Heat and extract a crushed sample in alkaline solution, then selectively measure hexavalent chromium by using the diphenylcarbazide absorption spectroscopy. (The method listed in IEC 62321 may also be used.)
- (3) Application to chrome tanned leather products and components: Method pursuant to EN ISO 17075
Extract crushed test material with potassium phosphate based on the method described in EN ISO 17075, and then selectively quantify hexavalent chromium using the diphenylcarbazide absorption method.
- (4) Analyzer
Absorption spectroscopy, ion-chromatograph analyzer

2.4 Azo Dye and Pigment Forming Specific Amines

The method of decomposing azo compounds and extracting is described in the following references.

LMBG 82.02.2: Analysis of commodities-Detection of particular azo dyes used in textile commodities, LMBG 82.02.3: Analysis of commodities-Detection of particular azo dyes used in leather, and LMBG 82.02.4: Analysis of commodities-Detection of particular azo dyes used in polyester fibers. Specifically, the content is extracted in solvent, sodium thiosulfate is added as a reducing agent, and the decomposed content is re-extracted in solvent. The extracted solution is then measured with a gas chromatograph mass analyzer, liquid chromatograph mass analyzer, or a high-speed liquid chromatograph to determine the content of the specified amines.

Since the above-mentioned test/analysis requires significant cost and time due to the procedure for decomposing and measuring the azo compound, it is recommended that information be obtained from the manufacturer or association that handles the pigment or dye after confirming the relevant color base (C. I. Pigment).

According to the test results by ETAD (Ecological and Toxicological Association of Dyes and Organic Pigments Manufacturers), the azo-based pigments and dyes shown below are said to clear the daily goods regulation as stipulated in Germany's amine regulations (Fifth revision of the ordinance). Therefore, the following azo-based pigments and dyes do not correspond to Level 1 Prohibited Substances.

C. I. Name	C. I. No.	CAS No.	Regulatory Status
Pigment Yellow 12	21090	6358-85-6	A
Pigment Yellow 13	21100	5102-83-0	A
Pigment Yellow 14	21095	5468-75-7	A
Pigment Yellow 14	-	7621-06-9	A
Pigment Yellow 17	21105	4531-49-1	A
Pigment Yellow 55	21096	6358-37-8	A
Pigment Yellow 83	21108	5567-15-7	A
Pigment Yellow 126	21101	90268-23-8	A
Pigment Yellow 127	21102	68610-86-6	A
Pigment Yellow 174	21098	78952-72-4	A
Pigment Yellow 176	21103	90268-24-9	A
Pigment Orange 13	21110	3520-72-7	A
Pigment Orange 16	21160	6505-28-8	A
Pigment Orange 34	21115	15793-73-4	A
Pigment Orange 35			
Pigment Orange 37			

C. I.: Color index of pigments and dyes published in the U.K.

Regulatory Status = A: Exempted under the 5th Amendment

2.5 Formaldehyde

The method of measuring the quantity of formaldehyde released from materials includes the Chamber Method EN717-1 (Wood based panels; determination of formaldehyde release; formaldehyde emission by the chamber method) (Corresponding to 0.1ppm regulation in DE ChemVerbotsV).

In Japan, a formaldehyde test/analysis method has been determined by JIS A1460, 2001. (Test method for formaldehyde emission from construction boards: Desiccator method) (JIS F****class: 0.3 mg/L or less)

The Formaldehyde Regulation in Denmark specifies a chamber method (0.15 mg/m³) and a perforator method (25 mg/100 g) as defined by EN 120 (Wood based panels; determination of formaldehyde content; extraction method called perforator method; German version EN 120: 1992). In the U.S., ASTM E 1333-96 (Standard Test Method for Determining Formaldehyde Concentration in Air and Emission Rates from Wood Products Using a Large Chamber) applies. Sample loading rates and reference values vary in accordance with material type (plywood, particle board and MDF, etc.).

2.6 Packaging Materials

The quantity of cadmium, lead, mercury, and hexavalent chromium in packaging materials such as paper, plastics, ink, etc. should not exceed 100ppm in total. In addition, the cadmium content in plastic materials must be 75ppm or less.

In principle, the analysis of these four elements shall be made using the preparation and analysis methods mentioned in 2.1, 2.2 and 2.3 above. However, as far as hexavalent chromium is concerned, when the solution decomposed with nitric acid, sulfuric acid or hydrogen peroxide and analyzed by atomic absorption spectrometry, ICP optical emission spectroscope, or ICP mass spectroscope guarantee that the total chromium content be 2 ppm or less, then the analysis of hexavalent chromium inclusion by means of a solution test may be omitted.

2.7 PBB, PBDE in Resin

(1) Preprocessing

After crushing a sample, use an organic solvent suited for resolving samples such as toluene or tetrahydrofuran, combined with an appropriate extraction method such as the Soxhlet method to swell and extract PBB, PBDE. In order to remove the resin content in the solution, apply a cleanup process such as re-sedimentation in poor solvent, centrifugal separation, silica gel absorption, etc. The method listed in IEC 62321 may also be used as a preprocessing method.

(2) Measurement method

Introduce the conditioned sample solution into the Quadruple GC-MS (gas chromatograph mass spectrometer) and compare with the retention time, mass pattern and spectrum intensity of a known standard sample to perform qualitative and quantitative analysis.

(3) Analyzer

Use a quadruple gas chromatograph mass spectrometer (GC-MS) and a magnetic high-resolution mass spectrometer (GC-HRMS). For the standard sample, use PBB composite (mixture of multiple types of brominated biphenyls), PBDE composite (mixture of multiple types of brominated diphenyl-ethers) and a single substance (at least 5 types of standard samples, 4 to 10-brominated substances, 10-brominated diphenyl ethers is essential).

Revision History

	Location	Revised Content
Dec. 1, 2014	2.3.3	- (3) Added “Application to chrome tanned leather products and components”

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