

**MANAGEMENT REGULATIONS FOR THE  
ENVIRONMENT-RELATED SUBSTANCES TO BE  
CONTROLLED WHICH ARE INCLUDED IN  
PARTS AND MATERIALS**

SS-00259 for General Use, Twentieth Edition

**SONY**

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## 1. PURPOSE

With regard to the "Environment-related Substances to be Controlled ('Controlled Substances')" contained in the parts and devices employed in Sony Group electronics products, this Standard clarifies (1) banned substances, (2) substances to be phased out, and (3) exempted substances and their uses, in order to realize the following aims and objectives:

- 1) To prevent the above-mentioned substances from being used for Sony Group electronics products;
- 2) To comply with related laws and regulations;
- 3) To reduce the influence of the above substances upon the ecosystem; and
- 4) To contribute to the preservation of the global environment.

## 2. SCOPE

### 2.1 Scope applicable to parts and materials

Targets are the parts, materials, and other goods that are procured by the Sony Group, or by third parties to which the Sony Group outsources the design and manufacture of its electronics products.

The targets need to satisfy the threshold levels specified in this Standard.

Target parts and materials:

- Semi-finished products (e.g. modules, functional units, board assemblies, and other assembly parts)
- Parts (electrical parts, mechanical parts, semiconductor devices, PWBs, recording media, and packaging components and materials)
- Screws
- Accessories (mice, remote commanders, AC adaptors, and other accessories with which you can use products)
- Materials constituting subsidiary parts and materials (e.g. adhesives, adhesive tapes, soldering materials, etc.) used for products
- Printed materials (e.g. instruction manuals, warranty cards, additional product/parts information)
- Repair parts (The application of some repair parts for products on the market shall be followed the instructions on the separately issued notice.)
- Packaging components and materials that parts suppliers use for delivery and protection (See Section 4.2.1 "Definition of packaging components and materials" for details.)
- Batteries

### 2.2 Scope applicable to products

- 1) Sony Group electronics products that are designed and manufactured by the Sony Group for sale, loan, or distribution
- 2) Sony Group electronics products being sold and loaned or distributed with the Sony Group's logos on them, whose design and/or manufacture are outsourced to companies other than Sony Group
- 3) Electronics products of companies other than Sony Group whose design and/or manufacture are outsourced to the Sony Group (except when the parts and materials are specified by the companies other than Sony Group)

Regarding the use of substances prohibited or restricted by regional or country laws and ordinances, the laws and ordinances must be observed and followed even though the substances and their uses are not clearly regulated in this Standard.

### 3. TERMS AND DEFINITIONS

In this Standard, terms are defined in the following manners:

- 1) "Environment-related Substances to be Controlled ('Controlled Substances')"  
Among the substances contained in parts and devices, "Environment-related Substances to be Controlled ('Controlled Substances')" are those which, according to Sony Group's judgment, have significant environmental impact on both humans and the global environment.
- 2) Management Levels (abbr: Mgmt level)  
To manage the above-mentioned substances, the following Levels and Exemption are used:
  - a) Level 1  
The substances and their applications classified into this Level are those that are banned for the use in parts and materials.
  - b) Level 2  
On the date set in each table, the substances and their applications in the respective tables shall be reclassified into Level 1.
  - c) Level 3  
Technical investigations on substances and their applications are conducted.
  - d) Exemption  
Not subject to Level 1, Level 2 and Level 3 because of reasons also being reflected by exemptions from laws. Technical investigations and monitoring of substances and their applications are conducted as necessary.
- 3) Contained  
"Contained" means that a substance remains in parts, devices, or their materials because of addition, filling, blending, migration, adhesion, etc., whether intended or not. When a substance is unintentionally blended, migrated, adhered, or otherwise remains in a product in a processing or logistics process, this situation is also regarded as "Contained."
- 4) Intentionally added  
"Intentionally added" means a situation where a substance is contained in the part, device, or its materials because of deliberate addition, filling, blending, or adhesion, in order to provide a specific characteristic, appearance, property, attribute or quality.
- 5) Homogenous material  
"Homogenous material" means one material of uniform composition throughout or a material, consisting of a combination of materials, that cannot be disjointed or separated into different materials by mechanical actions, such as unscrewing, cutting, crushing, grinding and abrasive processes.
- 6) Material  
"Material" means substance or mixture within a product or product part.
- 7) Part  
"Part" means an article to be manufactured until it turns into an end product (the final article which is the outcome of assembling, processing or manufacturing chemical products and/or parts).
- 8) Article  
"Article" means an item of specific shape, appearance or design created during manufacture which substantially determines functions in final use rather than functions provided by its chemical composition.
- 9) Product  
"Product" means a part or an end product which is delivered to a customer as the outcome of business activities of the organization.
- 10) Target  
"Target" is an object or element (e.g. parts, materials, applications or processing) that might trigger further obligations depending on the defined "management level."
- 11) Threshold level  
"Threshold level" is a condition or concentration limit that might trigger further obligations depending on the defined "management level."  
Notes: \* Equal to or above this concentration limit is applicable.  
\* When criteria such as 'Intentionally added' and a numerical value are shown in 'threshold level,' both of them shall be satisfied.
- 12) Effective date of the ban on the delivery  
This indicates the date on or after which Sony Group won't accept the parts and/or materials.

13) Battery

"Battery" means any source of electrical energy generated by direct conversion of chemical energy and consisting of one or more primary battery cells (non-rechargeable) or consisting of one or more secondary battery cells (rechargeable). Button Cell is included.

14) Button Cell

"Button Cell" means any small round portable battery whose diameter is greater than its height and which is used for special purposes such as hearing aids, watches, small portable equipment and back-up power

15) Battery Pack

"Battery Pack" means any set of batteries that are connected together and/or encapsulated within an outer casing so as to form a complete unit that the end-user is not intended to split up or open

## 4. MANAGEMENT STANDARDS FOR "ENVIRONMENT-RELATED SUBSTANCES TO BE CONTROLLED"

### 4.1 "Environment-related Substances to be Controlled ('Controlled Substances')"

The "List of Environment-related Substances to be Controlled ('Controlled Substances')" in this technical standard is showed in Table 4.1. "Detail of 'Controlled Substances'", "Substances in candidate list for authorization of EU REACH regulation (Substances of very high concern/ SVHC; hereinafter called Substances in candidate list for authorization)", "Details of Controlled Substances for leather/textile products", "Long-chain perfluoroalkyl carboxylate (LCPFACs) and perfluoroalkyl sulfonate chemicals", "TSCA Priority chemicals" and "Exemption List" are showed in Annex A, B, C, D, E and F respectively. "No." in Table 4.1 refers to "No." in Annex A unless otherwise specified. Other than Annex A refer to the respective annexes. (e.g.: B-XX refers to No. XX of Annex B)

**Table 4.1 List of "Environment-related Substances to be Controlled ('Controlled Substances')"**

Mgmt level				Substances	No.
Level			Ex		
1	2	3			
x		x	x	Bis (2-ethylhexyl)phthalate (DEHP)	<a href="#">15</a> , <a href="#">41</a> , <a href="#">B-26</a> , <a href="#">E-b-11</a>
x		x	x	Dibutyl phthalate (DBP)	<a href="#">15</a> , <a href="#">66</a> , <a href="#">B-102</a> , <a href="#">E-b-3</a>
x		x	x	Benzyl butyl phthalate (BBP)	<a href="#">15</a> , <a href="#">69</a> , <a href="#">B-106</a> , <a href="#">E-b-2</a>
x		x	x	Diisobutyl phthalate (DIBP)	<a href="#">15</a> , <a href="#">65</a> , <a href="#">B-101</a>
x			x	Cadmium and cadmium compounds	<a href="#">4</a> , <a href="#">C-a-1</a> , <a href="#">Section 4.2</a>
x			x	Lead and lead compounds	<a href="#">10</a> , <a href="#">C-a-4</a> , <a href="#">Section 4.2</a>
x			x	Mercury and mercury compounds	<a href="#">11</a> , <a href="#">Section 4.2</a>
x				Chromium (VI) compounds	<a href="#">5</a> , <a href="#">C-a-2</a> , <a href="#">Section 4.2</a>
x				Polybrominated biphenyls (PBBs)	<a href="#">17</a>
x				Polybrominated diphenylethers (PBDEs)	<a href="#">18</a> , <a href="#">B-28-</a>
x				Hexabromocyclododecane (HBCDD)	<a href="#">9</a> , <a href="#">B-3</a> , <a href="#">E-a-3</a>
x				Polychlorinated biphenyls (PCBs) and specific substitutes	<a href="#">19</a>
x				Polychlorinated terphenyls (PCTs)	<a href="#">20</a>
x				Polychlorinated naphthalenes (PCNs)	<a href="#">21</a>
x				Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (SCCP)	<a href="#">23</a> , <a href="#">B-6</a>
x				Tris(2-chloroethyl)phosphate (TCEP)	<a href="#">40</a> , <a href="#">B-27</a> , <a href="#">E-b-20</a>
x				Tris(1-chloro-2-propyl)phosphate (TCPP)	<a href="#">47</a>
x				Tris(1,3-dichloro-2-propyl)phosphate (TDCPP)	<a href="#">48</a>
x			x	Fluorinated greenhouse gases (PFC, SF <sub>6</sub> , HFC)	<a href="#">8</a>
x				Ozone depleting substances (ODS)	<a href="#">12</a>
x				Perfluorooctane sulfonates (PFOS)	<a href="#">14</a>
x				Perfluorohexane-1-sulphonic acid (PFHxS) and its salts	<a href="#">29</a> , <a href="#">B-12</a>
x			x	Perfluorooctanoic acid (PFOA) and its salts and related substances	<a href="#">31</a> , <a href="#">32</a> , <a href="#">B-64</a> , <a href="#">B-66</a> , <a href="#">D</a>
x				Tri-substituted organostannic compounds	<a href="#">24</a> , <a href="#">B-74</a> , <a href="#">C-b-2</a>
x			x	Dibutyltin (DBT) compounds	<a href="#">6</a> , <a href="#">B-61</a> , <a href="#">B-84</a>
x				Dioctyltin (DOT) compounds	<a href="#">7</a> , <a href="#">B-16</a>
x				Beryllium oxide	<a href="#">44</a>
x		x		Cobalt dichloride	<a href="#">63</a> , <a href="#">B-93</a>
x		x		Diarsenic trioxide	<a href="#">45</a> , <a href="#">B-49</a>
x		x		Diarsenic pentoxide	<a href="#">43</a> , <a href="#">B-43</a>

Mgmt level				Substances	No.
Level			Ex		
1	2	3			
x		x		Nickel and Nickel compounds	<a href="#">28</a>
x		x		Diisononyl phthalate (DINP)	<a href="#">16</a> , <a href="#">27</a>
x		x		Diisodecyl phthalate (DIDP)	<a href="#">16</a> , <a href="#">26</a>
x				Di-n-octyl phthalate (DNOP)	<a href="#">16</a>
x		x		Di-n-hexyl phthalate (DnHP)	<a href="#">67</a> , <a href="#">B-103</a> , <a href="#">C-a-22</a>
x				Asbestos	<a href="#">1</a> , <a href="#">E-a-4</a>
x				Formaldehyde	<a href="#">55</a> , <a href="#">C-a-17</a>
x				Azocolourants and azodyes which form certain aromatic amines	<a href="#">2</a> , <a href="#">59</a>
x		x		2-Benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	<a href="#">54</a> , <a href="#">B-67</a>
x				Dimethyl fumarate (DMF)	<a href="#">60</a>
x		x		Polycyclic aromatic hydrocarbons (PAH)	<a href="#">49</a> , <a href="#">50</a> , <a href="#">51</a> , <a href="#">52</a> , <a href="#">53</a> , <a href="#">56</a> , <a href="#">57</a> , <a href="#">58</a> , <a href="#">B-57</a> , <a href="#">B-60</a> , <a href="#">B-70</a> , <a href="#">B-75</a> , <a href="#">C-a-6</a> , <a href="#">C-a-7</a> , <a href="#">C-a-8</a> , <a href="#">C-a-9</a> , <a href="#">C-a-10</a> , <a href="#">C-a-11</a> , <a href="#">C-a-12</a> , <a href="#">C-a-13</a>
x		x		Brominated flame retardants (BFR) (other than PBBs, PBDEs, or HBCDD)	<a href="#">3</a> , <a href="#">Section 5.2</a>
		x		Chlorinated flame retardants (CFR) (other than TCEP, TCPP, or TDCPP)	<a href="#">25</a>
		x		Perchlorates	<a href="#">13</a>
		x		Radioactive substances	<a href="#">22</a>
		x		4,4'-Isopropylidenediphenol (bisphenol A)	<a href="#">64</a> , <a href="#">B-98</a>
		x		Halogenated flame retardants (other than brominated and chlorinated flame retardants)	<a href="#">34</a>
x				Halogenated flame retardants	<a href="#">33</a>
	x			Long-chain (C9-C20) perfluorocarboxylic acids (PFCAs) and its salts and related substances	<a href="#">35</a>
		x		Perfluorohexanoic acid (PFHxA) and its salts and related substances	<a href="#">38</a>
	x			Decabromodiphenylethane (DBDPE)	<a href="#">68</a>
	x	x		1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.0 2,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™)	<a href="#">30</a> , <a href="#">B-13</a>
x		x		Perfluorocarboxylic acids (PFCAs) C9-C14 and its salts and related substances	<a href="#">36</a> , <a href="#">37</a> , <a href="#">B-10</a> , <a href="#">B-11</a>
x				Hexachlorobenzene (HCB)	<a href="#">42</a>
x				Pentachlorothiophenol (PCTP)	<a href="#">46</a>
x	x		x	Phenol, Isopropylated, Phosphate (3:1) (PIP (3:1))	<a href="#">61</a>
x				2,4,6-Tris(tert-butyl)phenol (TTBP)	<a href="#">62</a>
x				Hexachlorobutadiene (HCBd)	<a href="#">70</a>
		x		Per/polyfluoroalkyl substances (PFAS)	<a href="#">39</a>
x				Chlorinated phenols (PCP)	<a href="#">C-b-1</a>
		x		Substances in candidate list for authorization of EU REACH regulation	<a href="#">Annex B</a>
x				Details of Controlled Substances for leather/textile products	<a href="#">Annex C</a>



Mgmt level				Substances	No.
Level			Ex		
1	2	3			
x				Long-chain perfluoroalkyl carboxylate (LCPFACs) and perfluoroalkyl sulfonate chemicals	<a href="#">Annex D</a>
x		x		TSCA Priority chemicals	<a href="#">Annex E</a>
x		x		Polyvinyl chloride (PVC)	<a href="#">Section 5.1</a>

## 4.2 Additional rules for packaging components and materials

### 4.2.1 Definition of "packaging components and materials"

Packaging components and materials are defined as products made from any materials and components of any nature to be used for the containment, protection, handling, delivery and presentation of goods, from raw materials to processed goods from the producer to the user or consumer.

Note: The definition excludes the components and materials for the returnable boxes, which are reused or recycled under the control of carriers or parts suppliers, and are not disposed of by end-users or Sony Group.

**Table 4.2 Additional rules for packaging components and materials**

Heavy metals (cadmium, lead, mercury, and hexavalent chromium)		
Articles that satisfy not only the rules specified in section 4.1, but also the following conditions determined by the regulations of relevant laws		
Mgmt level	Targets	Threshold level
Level 1	- All packaging components and materials Some examples are given in PACKAGING of Table 4.2a.	100 ppm (or 0.01 wt%) or more of the total-concentration of four heavy metals (cadmium, lead, mercury, and hexavalent chromium) in each part, ink, or paint that constitutes a package
Exemption	- Cartons for returnable boxes owned by carriers or parts suppliers	
Packaging components and materials are required to be tested in accordance with the "4.3 Rules for chemical analysis."		

**Table 4.2a Illustrative examples of PACKAGING components/materials and NOT PACKAGING components/materials**

Note: The following lists provide some examples of the products, which we categorize as "packaging" as well as "not packaging," to serve as a reference. They are not intended to include all products in both categories.

For consumer- and professional-electronics products (used for transporting Sony Group electronics products)		
PACKAGING		
1.	Carton	Including master carton and sub-master carton made from any materials.
2.	Cushion	
3.	Protection bag, protection sheet	Such as made from foamed plastic or nonwoven fabric
4.	Plastic bag	
5.	Envelope	Such as used for warranty card
6.	Blister pack	
7.	Film	Including protection films such as used for the LCD displays
8.	Clamshell	
9.	Separator, spacer, partition	
10.	Printing ink	Used for packaging components
11.	Adhesive tape	Such as used for closing carton or poly bag, or, fixing or protection for removable component
12.	Staple	
13.	Label	Attached to the packaging components under control of Sony Group, such as bar-code label
14.	Joint	Carton joint
15.	Band	Such as PP band
16.	Hanging tab	
17.	Carrying handle	Including its related components
18.	Crate	Such as wooden frame
19.	Shrink film	
20.	Bottle	
21.	Sleeve	
22.	Jewel box	Such as packaging for fountain pen
23.	Skid	
24.	Spindle case	
NOT PACKAGING		
1.	Case/Bag	Cases or bags intended to be used as storage for CD, DVD, Blu-ray Discs, MD, tapes or MO devices
2.	Inlay card, inlay label	Such as index-card or label for CD and other recording media which are defined as part of product
3.	Carrying case, carrying pouch	Such as used for headphones, camera, and walkman®, which are defined as part of product
4.	Label	Labels attached to products and others except those attached to packaging components and materials
5.	Label	Labels attached by third parties such as cargo label and/or invoice

For devices, semiconductors, and any other components		
PACKAGING		
1.	Magazine stick	Such as used for IC
2.	Stopper	
3.	Tray	
4.	Reel	

For physical distribution		
PACKAGING		
1.	Pallet	Made from wood, plastic, paper, etc. which is used in one-way transportation, including slip sheet.
2.	Crate	Such as wooden container
3.	Stretch film	Wrap around palletized unit
4.	Wooden container	
5.	Items used for over packaging	Such as carton, cushion, adhesive tape, etc. which is used for component delivery
6.	Band, string	Such as PP band
NOT PACKAGING		
1.	Shipping container, air container	Such as 40 ft container for boat, and air cargo container

### 4.3 Rules for chemical analysis

#### 4.3.1 Substances and targets which are chemical analysis is required

<b>Cadmium/cadmium compounds and Lead/lead compounds</b>
Plastics, synthetic fiber, films, adhesive tapes, rubber, adhesive, paints, inks are required to be tested in accordance with the following standards.
Standards for measurement
1) Sample preparation Typical sample preparation methods: e.g. IEC 62321-5:2013, EPA 3052:1996
<ul style="list-style-type: none"> <li>- Closed system for acid decomposition method (e.g. microwave decomposition method)</li> <li>- Acid digestion method</li> <li>- Dry ashing method</li> </ul>
Note: Precipitates must be completely dissolved by some technical means (e.g. alkali fusion). Any extraction methods (including EN71-3:2014, ASTM F963-16, ASTM D5517-14, and ISO 8124-3:2010) shall not be applied.
2) Measurement methods Typical measurement methods: e.g. IEC 62321-5:2013
<ul style="list-style-type: none"> <li>- Inductively Coupled Plasma-Optical (Atomic) Emission Spectrometry (ICP-OES [ICP-AES])</li> <li>- Atomic Absorption Spectrometry (AAS)</li> <li>- Atomic Fluorescence Spectrometry (AFS)</li> <li>- Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)</li> </ul>

<b>Formaldehyde</b>
The wooden products (e.g. speakers and racks) made from fiberboard, particleboard, or plywood, which are employed in products, are required to satisfy in accordance with the following standards.
Threshold level (emission content): Obtain the value by any one of the following methods.
1) [With a chamber method] Concentration in the air: Equal to or less than 0.1 ppm (or 0.124 mg/m <sup>3</sup> ) in an air-tight test chamber whose volume is 12 m <sup>3</sup> , 1 m <sup>3</sup> , or 0.0225 m <sup>3</sup>
2) [With a perforator method]
<ul style="list-style-type: none"> <li>- Equal to or less than 6.5 mg in 100 g of a particleboard without a surface treatment (the average value during six months)</li> <li>- Equal to or less than 7.0 mg in 100 g of a fiberboard without a surface treatment (the average value during six months)</li> <li>- Equal to or less than 8.0 mg in 100 g of a particleboard/fiberboard without a surface treatment (the value derived from the one-time measurement based on ISO12460)</li> </ul>
3) [With a desiccator method]
<ul style="list-style-type: none"> <li>- Average content: 0.5 mg/l or less</li> <li>- Maximum content: 0.7 mg/l or less</li> </ul> (Use N=2 to check the average and maximum values.)
Testing methods:
<ul style="list-style-type: none"> <li>- A chamber method specified in EN 717-1:2004</li> <li>- A perforator method specified in ISO12460:2015</li> <li>- A desiccator method specified in JIS A 5905 (Fiberboards) and JIS A 5908 (Particleboards)</li> </ul>

# Heavy metals (cadmium, lead, mercury, and hexavalent chromium)

Packaging components and materials are required to be tested in accordance with the following standards.

For hexavalent chromium:

- 1) First analyze total chromium content and verify that the total concentration of cadmium, lead, mercury and total chromium is less than 100 ppm. When analyzing, the same sample preparation methods as those used for cadmium and lead are applicable. If this total concentration is more than 100 ppm, follow instruction of 2)

Standards for four heavy metals measurement

## 1-1) Sample preparation

For cadmium, lead and total chromium, follow the methods respectively specified in "Cadmium/cadmium compounds and Lead/lead compounds" (page 9).

For mercury, typical methods are as follows.

- (1) Closed system for acid decomposition method (e.g. a microwave decomposition method) (e.g. IEC 62321-4:2013, EPA 3052:1996)
- (2) A heating evaporation-cold-vapor mercury-atomic-absorption method
- (3) A wet decomposition method (e.g. Kjeldahl method) in which a decomposition flask with a reflux condenser is used to decompose mercury by sulfuric acid or nitric acid

Note: In the process of sample preparation, particular attention is required to avoid mercury sublimation, and precipitates must be completely dissolved by some technical means.

## 1-2) Measurement methods

Regarding the measurement of cadmium, lead, and total-chromium concentrations, follow the methods respectively specified in "Cadmium/cadmium compounds and Lead/lead compounds" (page 9).

Regarding the measurement of mercury, follow the methods respectively specified in "Cadmium/cadmium compounds and Lead/lead compounds". However, when the mercury concentration is predicted to be low, you are advised to use one of the following methods:

- (1) A reduction-evaporation atom-absorption method
- (2) ICP-OES (ICP-AES) method with a hydride-generation apparatus
- (3) ICP-MS method with a hydride-generation apparatus

- 2) If total concentration is more than 100 ppm as the result of the analysis specified by 1), verify that the sum of the cadmium, lead and mercury concentration is less than the 100 ppm limit. When the sum of the cadmium, lead and mercury concentration is less than the 100 ppm limit, analyze and confirm that no hexavalent chromium is present, using the standard methods for detecting hexavalent chromium.

Standard methods for detecting hexavalent chromium:

Note: Standard methods specified hereafter are applicable when total concentration of the four elements of cadmium, lead, mercury, and total chromium in packaging components and materials is 100 ppm or more.

Detection methods:

## 2-1) Sample preparation

- Extraction methods such as boiling water extraction and alkaline extraction (e.g. IEC 62321 7-2:2017, EPA 3060A)

## 2-2) Measurement method

- Ultraviolet-Visible (UV/VIS) Spectroscopy (e.g. IEC 62321 7-2:2017, EPA 7196A)

**4.3.2 Chemical analysis for reference**

Hexavalent chromium compounds
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For reference, the methods for natural leather materials are as follows.
--

Testing methods (for reference)
---------------------------------

- |   |
|---|
| <ol style="list-style-type: none"> <li>1) EN ISO 17075:2007</li> <li>2) IULTCS/IUC18 (conform with ISO 17075:2007)</li> </ol> |
|---|

Azocolourants and azodyes which form certain aromatic amines
--

For reference, the methods for decomposing azo compounds and then extracting amines are as follows.
---

Testing methods (for reference)
---------------------------------

- |   |
|---|
| <ol style="list-style-type: none"> <li>1) For textiles: EN 14362-1:2017;<br/>EN 14362-3:2017 for 4-aminoazobenzene</li> <li>2) For leather: EN ISO 17234-1:2015;<br/>EN ISO 17234-2:2011 for 4-aminoazobenzene</li> </ol> |
|---|

## 5. REPLACEMENT OF CHEMICAL SUBSTANCES ACCORDING TO "SONY GROUP ENVIRONMENTAL MID-TERM TARGET"

Sony Group declares in "Sony Group Environmental Mid-Term Target" that:

Sony Group analyzes the use of chemical substances and the contents in parts and products.

Based on the risk evaluation, Sony Group identifies and discontinues high-risk uses of these substances.

### 5.1 Polyvinyl chloride (PVC)

PVC may pose a risk to the environment if disposed of improperly. Another concern is that PVC might contain various other chemical substances, including plasticizers and stabilizers, which could pose risks to the environment and human health.

Sony Group is concerned with the possibility that in particular its small electronics products in developing countries could be collected for obtaining valuable materials, and then the unwanted parts could be improperly incinerated and disposed of in landfills. Considering the impact of these activities on the environment, Sony Group will replace PVC with alternative substances for the parts and materials as listed below.

Polyvinyl chloride (PVC)and PVC blends		
Detailed instructions should be given to business partners separately with the specifications of the parts used for target products		
Mgmt level	Target	Threshold level
Level 1	<ul style="list-style-type: none"><li>- Substrates for FeliCa contactless IC cards</li><li>- Carrying bags, carrying cases, and carrying pouches for digital cameras, video camcorders, and portable audio products (excluding those for professional use)</li><li>- Cable ties used for accessories and connecting cords</li><li>- Packaging components and materials to protect, contain, or transport products or supplied accessories (e.g. bags, adhesive tapes, cartons, and blister packs)</li></ul> <p>(Note that packaging components or materials for devices, semiconductors, and any other components (e.g. trays, magazine sticks, stoppers, reels, embossed carrier tapes) are excluded.)</p> <ul style="list-style-type: none"><li>- Heat shrink tubes (excluding those for batteries)</li><li>- Flexible flat cables (FFC)</li><li>- Insulating plates, decorative panels, labels (excluding those for batteries)</li><li>- Sheets, and laminates (including sheets and laminates used for exterior of wooden speakers)</li><li>- Suction cups for mounting in-vehicle products</li></ul>	Intentionally use
	<ul style="list-style-type: none"><li>- Resin for main housing and insulation of cable for internal wiring of a product specified at below web site link (*) and newly released at least after April 1st, 2011.</li></ul> <p>(excluding accessories and products designed for professional use)</p> <p>(This except in cases where doing so would negatively affect product quality or cause technical problems.)</p>	Intentionally use
Level 3	<ul style="list-style-type: none"><li>- All application other than the above</li></ul>	Intentionally use
Exemption	<ul style="list-style-type: none"><li>- Binder for resins used for paints, inks, coating agents, adhesives etc.</li></ul>	
* <a href="https://www.sony.net/SonyInfo/csr_report/environment/data/p_replace.html#block2">https://www.sony.net/SonyInfo/csr_report/environment/data/p_replace.html#block2</a>		



## 5.2 Brominated flame retardants (BFR)

Some BFRs are harmful to human health and tend to remain in the environment and accumulate in living organisms. As in the case of PVC, improper incineration of BFRs carries a risk of releasing harmful substances into the environment. Considering the impact of these activities on the environment, Sony Group will replace BFR with alternative substances for the product categories or models as listed at below web site link.

Brominated flame retardants (BFR)		
Detailed instructions should be given to business partners separately with the specifications of the parts used for target products.		
Mgmt level	Target	Threshold level
Level 1	- Main printed wiring boards (PWB) of a product specified at below web site link (**) and newly released at least after April 1st, 2011. (excluding accessories and products designed for professional use) (This except in cases where doing so would negatively affect product quality or cause technical problems.)	0.09 wt% (900 ppm) total bromine content in laminate
	- Main housing of a product specified at below web site link (**) and newly released at least after April 1st, 2011. (excluding accessories and products designed for professional use) (This except in cases where doing so would negatively affect product quality or cause technical problems.)	0.1 wt% (1000 ppm) of bromine in plastic materials
** <a href="https://www.sony.net/SonyInfo/csr_report/environment/data/p_replace.html#block3">https://www.sony.net/SonyInfo/csr_report/environment/data/p_replace.html#block3</a>		

## **ANNEX**

- A: Detail of 'Controlled Substances'
- B: Substances in candidate list for authorization of EU REACH regulation
- C: "Details of Controlled Substances for leather/textile products
- D: Long-chain perfluoroalkyl carboxylate (LCPFACs) and perfluoroalkyl sulfonate chemicals
- E: TSCA Priority chemicals
- F: Exemption List
- G: HISTORY OF UPDATES ON EFFECTIVE DATE OF THE BAN ON THE DELIVERY FOR EVERY SUBSTANCE

## Annex A: Detail of 'Controlled Substances'

All the parts, materials and products mentioned in "Section 2. Scope" are subject to this standard.

When "Batteries" or a specific type name of battery (e.g. Carbon Zinc battery) is described in "Target", that requirement shall be applied.

"Referenced laws and regulations" are based on the information as of March, 2022. Refer to any other official documents or their annexes if available and note the latest versions of them for details as they may be modified afterwards.

No.	Substance/Substance group	CAS RN	Mgmt level	Targets	Threshold level	Referenced laws and regulations
1	Asbestos	-	1	All	Intentionally added	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII; [USA] Toxic Substances Control Act (TSCA); [Switzerland] Act of Reduction of Risks in Treatment of Specified Hazardous Substances, Preparations, and Articles in Switzerland (ChemRRV) Swiss Ordinance 814.81
2	Azocolourants and azodyes which form certain aromatic amines	-	1	Textiles and Leather (See "4.3 Rules for chemical analysis" for reference.)	0.003 wt% (30 ppm) of the finished textile/leather product	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
3	Brominated flame retardants (BFR) (other than PBBs, PBDEs, or HBCDD)	-	3	Printed wiring board (PWD) laminates	0.09 wt% (900 ppm) total bromine content in laminate	(Standard) IEC 61249-2-21; (Standard) IPC-4101
			3	Plastic materials except printed wiring board laminates	0.1 wt% (1000 ppm) of bromine in plastic materials	(Standard) JEDEC JS709

No.	Substance/Substance group	CAS RN	Mgmt level	Targets	Threshold level	Referenced laws and regulations
4	Cadmium/Cadmium compounds	-	1	All except below (See "4.2 Additional rules for packaging components and materials.") (Plastics, synthetic fiber, films, adhesive tapes, rubber, adhesive, paints, inks are required to be tested in accordance with "4.3 Rules for chemical analysis.")	0.01 wt% (100 ppm) of total Cd in homogenous material	[EU] RoHS Directive 2011/65/EU and its amendments; [China] Law Measures for Restriction of the Use of Hazardous Substances in Electrical Appliances and Electronic Products; [Japan] Law for the Promotion of Effective Utilization of Resources; [EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
			1	- Mobile phone case (product that is used to cover the surface of a mobile phone to protect the main body and decorate its appearance) - Part in direct contact with the ear of earphones (including headphones, headsets, etc.)	0.0075 wt% (75 ppm) of total Cd in homogenous material	[Korea] Electrical Appliances and Consumer Products Safety Control Act
			1	- Carbon zinc batteries (except button cells) - Alkaline manganese batteries (except button cells) - Nickel hydrogen rechargeable batteries (except button cells)	0.001 wt% (10 ppm) of battery	[EU] Battery Directive 2006/66/EC; [Korea (the Republic of)] Quality Management and Manufactured Product Safety Management Law (Battery Regulation)
			1	All other batteries	0.002 wt% (20 ppm) of battery	[EU] Battery Directive 2006/66/EC; [South Korea] Consumer Protection Law
			1	Video display devices, with a screen size of greater than four inches	0.01 wt% (100 ppm) of total Cd in homogenous material	[USA California] Electronic Waste Recycling Act (California RoHS) SB 20, amended by SB 50 and AB 575

No.	Substance/Substance group	CAS RN	Mgmt level	Targets	Threshold level	Referenced laws and regulations
5	Chromium (VI) Compounds	-	1	All application other than the below (See "4.2 Additional rules for packaging components and materials.")	0.1 wt% (1000 ppm) of total Cr <sup>6+</sup> in homogenous material	[EU] RoHS Directive 2011/65/EU and its amendments; [China] Law Measures for Restriction of the Use of Hazardous Substances in Electrical Appliances and Electronic Products; [Japan] Law for the Promotion of Effective Utilization of Resources;
			1	Natural leather parts and materials (See "4.3.2 Rules for chemical analysis" for reference.)	0.0003 wt% (3 ppm) of total Cr <sup>6+</sup> in dry weight of the leather	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
			1	Video display devices, with a screen size of greater than four inches	0.1 wt% (1000 ppm) of total Cr <sup>6+</sup> in homogenous material	[USA California] Electronic Waste Recycling Act (California RoHS) SB 20, amended by SB 50 and AB 575
6	Dibutyltin (DBT) compounds	-	1	All	0.1 wt% (1000 ppm) of tin in the part	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
7	Diocetyl tin (DOT) compounds	-	1	- Textile and leather articles intended to come into contact with the skin - Childcare articles - Two-component room temperature vulcanisation moulding kits (RTV-2 moulding kits)	0.1 wt% (1000 ppm) of tin in the part	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
8	Fluorinated Greenhouse Gases (PFC, SF <sub>6</sub> , HFC)	-	1	All	Intentionally added	[EU] REGULATION (EU) No 517/2014 on fluorinated greenhouse gases
9	Hexabromocyclododecane (HBCDD)	-	1	All	Intentionally added or 0.01 wt% (100 ppm) of article	[EU] REACH Regulation (EC) No.1907/2006 Candidate List for Authorisation; [Japan] Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.; [EU] Persistent Organic Pollutants (POPs) Regulation (EC) No.2019/1021

No.	Substance/Substance group	CAS RN	Mgmt level	Targets	Threshold level	Referenced laws and regulations
10	Lead/Lead Compounds	-	1	All except batteries (See "4.2 Additional rules for packaging components and materials.") (Plastics, synthetic fiber, films, adhesive tapes, rubber, adhesive, paints, inks are required to be tested in accordance with "4.3 Rules for chemical analysis.")	0.1 wt% (1000 ppm) of total Pb in homogenous material	[EU] RoHS Directive 2011/65/EU and its amendments; [China] Law Measures for Restriction of the Use of Hazardous Substances in Electrical Appliances and Electronic Products; [Japan] Law for the Promotion of Effective Utilization of Resources; [EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
			1	Parts and materials for consumer products designed or intended primarily for children 12 years of age or younger	0.01 wt% (100 ppm) of product	[USA] Consumer Product Safety Improvement Act of 2008 PUBLIC LAW 110-314
			1	Paint and similar surface coatings of toys and other articles intended for use by children	0.009 wt% (90 ppm) of surface coating material	[USA] Consumer Product Safety Improvement Act of 2008 PUBLIC LAW 110-314;
			1	- Paint or surface coating of mobile phone cases (products that are used to protect the main body by covering the surface of the mobile phone and decorate its appearance) - Paint or surface coating of part in direct contact with the ear of earphones (including headphones, headsets, etc.)	0.009 wt% (90 ppm) of surface coating material	[Korea] Electrical Appliances and Consumer Products Safety Control Act
			1	Cables/cords (including plug and connector) with thermoset or thermoplastic coatings	0.03 wt% (300 ppm) of surface coating material	[USA California] Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)
			1	- Mobile phone case (product that is used to cover the surface of a mobile phone to protect the main body and decorate its appearance) - Part in direct contact with the ear of earphones (including headphones, headsets, etc.)	0.03 wt% (300 ppm) of total Pb in homogenous material	[Korea] Electrical Appliances and Consumer Products Safety Control Act

No.	Substance/Substance group	CAS RN	Mgmt level	Targets	Threshold level	Referenced laws and regulations
			1	All other batteries except below	0.2 wt% (2000 ppm) of battery	[Argentina] The Law No. 26.184 Portable Power
			1	- Carbon zinc batteries	0.1 wt% (1000 ppm) of battery	[Brazil] CONAMA Resolution No.401/2008
			1	- Alkaline manganese batteries (including button cells)	0.004 wt% (40 ppm) of battery	[EU] Battery Directive 2006/66/EC; [China] Limitation of mercury, cadmium and lead contents for alkaline and non-alkaline zinc manganese dioxide batteries GB 24427-2009; [China] GB24427-2021
			1	- Zinc air button cells	0.05 wt% (500 ppm) of battery	[China] GB24427-2021
			1	- Silver oxide button cells	0.02 wt% (200 ppm) of battery	[China] GB24427-2021
			1	Video display devices, with a screen size of greater than four inches	0.1 wt% (1000 ppm) of total Pb in homogenous material	[USA California] Electronic Waste Recycling Act (California RoHS) SB 20, amended by SB 50 and AB 575
11	Mercury/Mercury Compounds	-	1	All except batteries (See "4.2 Additional rules for packaging components and materials.")	Intentionally added or 0.1 wt% (1000 ppm) of total Hg in homogenous material	[EU] RoHS Directive 2011/65/EU and its amendments; [China] Law Measures for Restriction of the Use of Hazardous Substances in Electrical Appliances and Electronic Products; [Japan] Law for the Promotion of Effective Utilization of Resources; [EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII; [Canada] Products containing Mercury Regulations SOR/2014-254
			1	All batteries	Intentionally added or 0.0001 wt% (1 ppm) of battery	[EU] Battery Directive 2006/66/EC; [China] Limitation of mercury, cadmium and lead contents for alkaline and non-alkaline zinc manganese dioxide batteries GB 24427-2009; [Taiwan (Province of China)] Restrictions on the Manufacture, Import, and Sale of Dry Cell Batteries; [Korea (the Republic of)] Quality Management and Manufactured Product Safety Management Law (Battery Regulation); [USA New York] Environmental Conservation Law, Battery management and disposal § 27-0719
			1	All batteries	0.0005 wt% (5 ppm) of total Hg in homogenous material	[Canada] Products containing Mercury Regulations SOR/2014-254
			1	Video display devices, with a screen size of greater than four inches	0.1 wt% (1000 ppm) of total Hg in homogenous material	[USA California] Electronic Waste Recycling Act (California RoHS) SB 20, amended by SB 50 and AB 575

No.	Substance/Substance group	CAS RN	Mgmt level	Targets	Threshold level	Referenced laws and regulations
12	Ozone Depleting Substances (ODS) (CFC, Halon, HBFC, HCFC & others) Substances of Annexes A, B, C and E of Montreal Protocol	-	1	All	Intentionally added	[EU] Regulation on substances that deplete the ozone layer (EC) No. 1005/2009; [Japan] Law concerning the Protection of the Ozone Layer through the Control of Specified Substances and Other Measures; [USA] Clean Air Act; (Treaty) Montreal Protocol on Substances that Deplete the Ozone Layer
			1	Components and materials processed with ODS	Processes with ODS cleaning, foaming or other processes	[USA] Clean Air Act Title VI; [USA] Internal Revenue Code Title 26
13	Perchlorates	-	3	All	6 x 10 <sup>-7</sup> wt% (6 ppb) of battery or product part	[USA California] Perchlorate Contamination Prevention Act of 2003 AB 826
14	Perfluorooctane sulfonates (PFOS)	-	1	Textiles or other coated materials.	Intentionally added or 1 µg/m <sup>2</sup> of coated material	[EU] Persistent Organic Pollutants (POPs) Regulation (EC) No.2019/1021; [Canada] Prohibition of Certain Toxic Substances Regulations SOR/2012-285 and its amendment; [Japan] Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.
			1	All except textiles or other coated materials.	Intentionally added or 0.1 wt% (1000 ppm) of the part (as the sum of PFOS)	[EU] Persistent Organic Pollutants (POPs) Regulation (EC) No.2019/1021; [Canada] Prohibition of Certain Toxic Substances Regulations SOR/2012-285 and its amendment; [Japan] Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.
15	Phthalates, Selected Group 1 (BBP, DBP, DEHP, DIBP)	-	1	Parts and materials for children's toy or child care article	0.1 wt% (1000 ppm) as the sum of the phthalate concentrations in plasticized material	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII; [USA] Consumer Product Safety Improvement Act of 2008 PUBLIC LAW 110-314
			1	All excluding applications falling within the scope of EU RoHS 2011/65/EU	0.1 wt% (1000 ppm) as the sum of the phthalate concentrations in plasticized material	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII; [USA] Consumer Product Safety Improvement Act of 2008 PUBLIC LAW 110-314
			1	Part in direct contact with the ear of earphones (including headphones, headsets, etc.)	0.1 wt% (1000 ppm) as the sum of the phthalate concentrations in plasticized material	[Korea] Electrical Appliances and Consumer Products Safety Control Act
16	Phthalates, Selected Group 2 (DIDP, DINP, DNOP)	-	1	Parts and materials for children's toy or child care article that can be placed in a child's mouth	0.1 wt% (1000 ppm) as the sum of the phthalate concentrations in plasticized material	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII; [USA] Consumer Product Safety Improvement Act of 2008 PUBLIC LAW 110-314



No.	Substance/Substance group	CAS RN	Mgmt level	Targets	Threshold level	Referenced laws and regulations
17	Polybrominated biphenyls (PBBs)	-	1	All	0.1 wt% (1000 ppm) in homogenous material	[EU] RoHS Directive 2011/65/EU and its amendments; [China] Law Measures for Restriction of the Use of Hazardous Substances in Electrical Appliances and Electronic Products; [Japan] Law for the Promotion of Effective Utilization of Resources
			1	All	Intentionally added	[EU] Persistent Organic Pollutants (POPs) Regulation (EC) No.2019/1021
18	Polybrominated diphenyl ethers (PBDEs)	-	1	All	Intentionally added or 0.1 wt% (1000 ppm) in homogenous material	[EU] RoHS Directive 2011/65/EU and its amendments; [China] Law Measures for Restriction of the Use of Hazardous Substances in Electrical Appliances and Electronic Products; [Japan] Law for the Promotion of Effective Utilization of Resources; [Japan] Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.; [USA] Toxic Substances Control Act (TSCA)
			1	All excluding applications falling within the scope of EU RoHS 2011/65/EU	Intentionally added or 0.05 wt% (500 ppm) in article or mixture	[EU] Persistent Organic Pollutants (POPs) Regulation (EC) No.2019/1021
19	Polychlorinated Biphenyls (PCBs) and specific substitutes	-	1	All	Intentionally added or 0.00005% (0.5 ppm) in material	[EU] Persistent Organic Pollutants (POPs) Regulation (EC) No.2019/1021; [USA] Toxic Substances Control Act (TSCA); [Japan] Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.; Sony requirement
20	Polychlorinated Terphenyls (PCTs)	-	1	All	0.005 wt% (50 ppm) in material	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
21	Polychlorinated naphthalenes (PCNs)	-	1	All	Intentionally added	[EU] Persistent Organic Pollutants (POPs) Regulation (EC) No.2019/1021; [Japan] Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.
22	Radioactive substances	-	3	All	Intentionally added	[USA] Nuclear Regulatory Commission Regulations Title 10 CFR Part 20; [Japan] Law for the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors; [Japan] Law Concerning Prevention from Radiation Hazards due to Radio-Isotopes, etc.; [EU] Directive 2013/59/Euratom

No.	Substance/Substance group	CAS RN	Mgmt level	Targets	Threshold level	Referenced laws and regulations
23	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (SCCP)	-	1	All	Intentionally added or 0.1 wt% (1000 ppm) of article	[EU] REACH Regulation (EC) No.1907/2006 Candidate List for Authorisation; [EU] Persistent Organic Pollutants (POPs) Regulation (EC) No.2019/1021; [Norway] Regulations relating to restrictions on the manufacture, import, export, sale and use of chemicals and other products hazardous to health and the environment (Consumer Product Regulations) FOR-2004-06-01-922; [Switzerland] Act of Reduction of Risks in Treatment of Specified Hazardous Substances, Preparations, and Articles in Switzerland (ChemRRV) Swiss Ordinance 814.81
24	Tri-substituted organostannic compounds (including tributyltin (TBT) compounds and triphenyltin (TPT) compounds)	-	1	All	Intentionally added or 0.1 wt% (1000 ppm) of tin in the part	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII; [Japan] Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.; [Norway] Regulations relating to restrictions on the manufacture, import, export, sale and use of chemicals and other products hazardous to health and the environment (Consumer Product Regulations) FOR-2004-06-01-922
25	Chlorinated Flame Retardants (CFR) (other than TCEP, TCPP, or TDCPP)	-	3	Plastic materials except below	0.1 wt% (1000 ppm) chlorine in plastic materials	(Standard) JEDEC JS709
			3	Printed Wiring Board (PWB) Laminates	0.09 wt% (900 ppm) total chlorine content in laminate	(Standard) IEC 61249-2-21; (Standard) IPC-4101
26	Di-isodecyl phthalate (DIDP)	-	3	All	Intentionally added	[USA California] Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)
27	Diisononyl phthalate (DINP)	-	3	All	Intentionally added	[USA California] Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)
28	Nickel and Nickel compounds Note: If there are other instructions issued by Sony Group for nickel, it shall be followed.	-	1	- Parts and materials for mobile phone, where prolonged skin contact is expected - Parts and materials for wrist-watch and wristband product, where prolonged skin contact is expected (ex. cases, watch straps and tighteners).	0.5 µg/cm <sup>2</sup> /week (release concentration)	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
			3	All where prolonged skin contact is expected	Intentionally added	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII

No.	Substance/Substance group	CAS RN	Mgmt level	Targets	Threshold level	Referenced laws and regulations
29	Perfluorohexane-1-sulphonic acid (PFHxS), its salts and PFHxS-related substances	-	1	All	Intentionally added	Stockholm Convention on Persistent Organic Pollutants
30	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.1.6,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™)	-	2	<b>Effective date of the ban on the delivery: October 1, 2022</b> All	Intentionally added	[Canada] Prohibition of Certain Toxic Substances Regulations
31	Perfluorooctanoic acid (PFOA) and its salts	-	1	All	0.0000025 wt% (25 ppb) of PFOA including its salts in article or mixture	[EU] Persistent Organic Pollutants (POPs) Regulation (EC) No.2019/1021
			1	All	Intentionally added	[EU] Persistent Organic Pollutants (POPs) Regulation (EC) No.2019/1021
32	PFOA-related substances	-	1	All	0.0001 wt% (1 ppm, 1000 ppb) of one or a combination of PFOA-related substances, in article or mixture	[EU] Persistent Organic Pollutants (POPs) Regulation (EC) No.2019/1021
			1	All	Intentionally added	[EU] Persistent Organic Pollutants (POPs) Regulation (EC) No.2019/1021
33	Halogenated flame retardants	-	1	Plastic enclosure and stand of electronic displays, including televisions, monitors and digital signage displays with a screen area greater than 100 square centimetres, as well as labels, tapes, etc. attached to the plastic enclosures and stands.	0.1wt% of total halogen elements in homogeneous material (including PBBs and PBDEs) or intentionally added	[EU] Commission Regulation (EU) 2019/2021 laying down ecodesign requirements for electronic displays; [USA] State of New York: Regulation of Chemicals in Upholstered Furniture, Mattresses and Electronic Enclosures
			1	Plastic enclosure of game device	0.1wt% of total halogen elements in homogeneous material (including PBBs and PBDEs) or intentionally added	[EU] Energy Efficiency of Games Consoles Self-Regulatory Initiative to further improve the energy efficiency of Games Consoles

No.	Substance/Substance group	CAS RN	Mgmt level	Targets	Threshold level	Referenced laws and regulations
34	Halogenated flame retardants (other than brominated and chlorinated flame retardants)	-	3	Plastic materials	Intentionally added	[USA] Safer Products for Washington
35	Long-chain (C9-C20) perfluorocarboxylic acids (PFCAs) and its salts and related substances	-	2	<b>Effective date of the ban on the delivery: October 1, 2022</b> All	Intentionally added	[Canada] Prohibition of Certain Toxic Substances Regulations
36	Perfluorocarboxylic acids (PFCAs) C9-C14 and its salts	-	1	All	0.0000025 wt% (25 ppb) of PFCAs including its salts in article or mixture	[EU] Registry of restriction intensions under REACH Regulation (EC) No.1907/2006
37	PFCAs C9-C14-related substances	-	1	All	0.000026 wt% (260 ppb) of one or a combination of PFCAs-related substances, in article or mixture	[EU] Registry of restriction intensions under REACH Regulation (EC) No.1907/2006
38	Perfluorohexanoic acid (PFHxA) and its salts and related substances	-	3	All	Intentionally added	[EU] Registry of restriction intensions under REACH Regulation (EC) No.1907/2006
39	Per/polyfluoroalkyl substances (PFAS)		3	All	Intentionally added	[USA] State of Maine: An Act to Stop Perfluoroalkyl and Polyfluoroalkyl Substances Pollution
40	Tris(2-chloroethyl) phosphate (TCEP)	115-96-8	1	All	0.1 wt% (1000 ppm) of article	[EU] REACH Regulation (EC) No.1907/2006 Candidate List for Authorisation [USA] Washington D.C., D.C. Law 21-108 Carcinogenic Flame Retardant Prohibition Amendment Act of 2016.
41	Bis (2-ethylhexyl) phthalate (DEHP)	117-81-7	1	All	0.1 wt% (1000 ppm) in homogenous material	[EU] RoHS Directive 2011/65/EU and its amendments; [EU] REACH Regulation (EC) No.1907/2006 Candidate List for Authorisation
42	Hexachlorobenzene (HCB)	118-74-1	1	All	Intentionally added or 0.001 wt% (10 ppm) in article or mixture	[EU] Persistent Organic Pollutants (POPs) Regulation (EC) No.2019/1021
43	Diarsenic pentoxide	1303-28-2	1	Glass for LCD panels (including cover glasses, touchscreens, and backlights)	0.1 wt% (1000 ppm) of article	[EU] REACH Regulation (EC) No.1907/2006 Candidate List for Authorisation; [EU] REACH Regulation (EC) No.1907/2006 ANNEX XIV

No.	Substance/Substance group	CAS RN	Mgmt level	Targets	Threshold level	Referenced laws and regulations
44	Beryllium Oxide	1304-56-9	1	All	0.1 wt% (1000 ppm) of product	(Guidance) EICTA, CECED and EERA Joint Position: Guidance on implementing article 11 of Directive 2002/96(EC) concerning information for treatment facilities
45	Diarsenic trioxide	1327-53-3	1	Glass for LCD panels (including cover glasses, touchscreens, and backlights)	0.1 wt% (1000 ppm) of article	[EU] REACH Regulation (EC) No.1907/2006 Candidate List for Authorisation; [EU] REACH Regulation (EC) No.1907/2006 ANNEX XIV
46	Pentachlorothiophenol (PCTP)	133-49-3	1	All	Intentionally added	[USA] Toxic Substances Control Act (TSCA)
47	Tris(2-chloro-1-methylethyl) Phosphate (TCPP)	13674-84-5	1	All	0.1 wt% (1000 ppm) of article	[USA] State of Vermont Act. 85
48	Tris(1,3-dichloro-2-propyl) Phosphate (TDCPP)	13674-87-8	1	All	0.1 wt% (1000 ppm) of article	[USA] State of Vermont Act. 85 [USA] Washington D.C., D.C. Law 21-108 Carcinogenic Flame Retardant Prohibition Amendment Act of 2016.
49	Benzo[e]pyrene (BeP)	192-97-2	1	Rubber or plastic parts that come into direct, prolonged or repetitive skin or oral cavity contact (e.g. grip, handle), except those for toys or childcare articles	0.0001 wt% (1 ppm) of the plastic or rubber part	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
			1	Rubber or plastic parts of toys and childcare articles that come into direct, prolonged or repetitive skin or oral cavity contact	0.00005 wt% (0.5 ppm) of the plastic or rubber part	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
50	Benzo[j]fluoranthene (BjFA)	205-82-3	1	Rubber or plastic parts that come into direct, prolonged or repetitive skin or oral cavity contact (e.g. grip, handle), except those for toys or childcare articles	0.0001 wt% (1 ppm) of the plastic or rubber part	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
			1	Rubber or plastic parts of toys and childcare articles that come into direct, prolonged or repetitive skin or oral cavity contact	0.00005 wt% (0.5 ppm) of the plastic or rubber part	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII

No.	Substance/Substance group	CAS RN	Mgmt level	Targets	Threshold level	Referenced laws and regulations
51	Benzo[b]fluoranthene (BbFA)	205-99-2	1	Rubber or plastic parts that come into direct, prolonged or repetitive skin or oral cavity contact (e.g. grip, handle), except those for toys or childcare articles	0.0001 wt% (1 ppm) of the plastic or rubber part	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
			1	Rubber or plastic parts of toys and childcare articles that come into direct, prolonged or repetitive skin or oral cavity contact	0.00005 wt% (0.5 ppm) of the plastic or rubber part	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
52	Benzo[k]fluoranthene (BkFA)	207-08-9	1	Rubber or plastic parts that come into direct, prolonged or repetitive skin or oral cavity contact (e.g. grip, handle), except those for toys or childcare articles	0.0001 wt% (1 ppm) of the plastic or rubber part	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
			1	Rubber or plastic parts of toys and childcare articles that come into direct, prolonged or repetitive skin or oral cavity contact	0.00005 wt% (0.5 ppm) of the plastic or rubber part	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
53	Chrysene (CHR)	218-01-9	1	Rubber or plastic parts that come into direct, prolonged or repetitive skin or oral cavity contact (e.g. grip, handle), except those for toys or childcare articles	0.0001 wt% (1 ppm) of the plastic or rubber part	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
			1	Rubber or plastic parts of toys and childcare articles that come into direct, prolonged or repetitive skin or oral cavity contact	0.00005 wt% (0.5 ppm) of the plastic or rubber part	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
54	2-Benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	1	All	Intentionally added or 0.1 wt% (1000 ppm) of article	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII

No.	Substance/Substance group	CAS RN	Mgmt level	Targets	Threshold level	Referenced laws and regulations
55	Formaldehyde	50-00-0	1	Textiles	0.0075 wt% (75 ppm) of textile material	[Austria] BGB I 1990/194: Formaldehyde Restriction §2, 12/2/1990; [Lithuania] Hygiene Norm HN 96:2000 (Hygiene Norms and Regulations)
			1	The wooden products made from fiberboard, particleboard, or plywood, which are employed in products (e.g. speakers and racks)	See "4.3 Rules for chemical analysis."	[USA] TSCA Title VI; [Germany] ChemVerbotsV; [Denmark] Directive No. 289
56	Benzo[a]pyrene (BaP)	50-32-8	1	Rubber or plastic parts that come into direct, prolonged or repetitive skin or oral cavity contact (e.g. grip, handle), except those for toys or childcare articles	0.0001 wt% (1 ppm) of the plastic or rubber part	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
			1	Rubber or plastic parts of toys and childcare articles that come into direct, prolonged or repetitive skin or oral cavity contact	0.00005 wt% (0.5 ppm) of the plastic or rubber part	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
57	Dibenzo[a,h]anthracene (DBaA)	53-70-3	1	Rubber or plastic parts that come into direct, prolonged or repetitive skin or oral cavity contact (e.g. grip, handle), except those for toys or childcare articles	0.0001 wt% (1 ppm) of the plastic or rubber part	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
			1	Rubber or plastic parts of toys and childcare articles that come into direct, prolonged or repetitive skin or oral cavity contact	0.00005 wt% (0.5 ppm) of the plastic or rubber part	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
58	Benzo[a]anthracene (BaA)	56-55-3	1	Rubber or plastic parts that come into direct, prolonged or repetitive skin or oral cavity contact (e.g. grip, handle), except those for toys or childcare articles	0.0001 wt% (1 ppm) of the plastic or rubber part	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
			1	Rubber or plastic parts of toys and childcare articles that come into direct, prolonged or repetitive skin or oral cavity contact	0.00005 wt% (0.5 ppm) of the plastic or rubber part	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
59	4-Aminoazobenzene	60-09-3	1	Textiles and Leather (See "4.3.2 Rules for chemical analysis" for reference.)	0.003 wt% (30 ppm) of the finished textile/leather product	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII

No.	Substance/Substance group	CAS RN	Mgmt level	Targets	Threshold level	Referenced laws and regulations
60	Dimethylfumarate (DMF)	624-49-7	1	All	0.00001 wt% (0.1 ppm) of the part	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
61	Phenol, Isopropylated, Phosphate (3:1) (PIP (3:1))	68937-41-7	1	All except below	Intentionally added	[USA] Toxic Substances Control Act (TSCA)
			2	<b>Effective date of the ban on the delivery: June 1, 2023</b> Adhesives and Sealants (including articles using these materials)	Intentionally added	[USA] Toxic Substances Control Act (TSCA)
62	2,4,6-Tris(tert-butyl)phenol (TTBP)	732-26-3	1	All except articles	Intentionally added	[USA] Toxic Substances Control Act (TSCA)
63	Cobalt Dichloride	7646-79-9	1	Moisture indicator used for a desiccant agent (e.g. silica gel)	Intentionally added	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
			1	Humidity indicator card which is impregnated with cobalt dichloride	0.1 wt% (1000 ppm) of article	[EU] REACH Regulation (EC) No.1907/2006 ANNEX XVII
64	4,4'-Isopropylidenediphenol (BPA)	80-05-7	3	All	Intentionally added or 0.1 wt% (1000 ppm) of article	[EU] REACH Regulation (EC) No.1907/2006 Candidate List for Authorisation; [USA California] Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)
65	Diisobutyl phthalate (DIBP)	84-69-5	1	All	0.1 wt% (1000 ppm) in homogenous material	[EU] RoHS Directive 2011/65/EU and its amendments; [EU] REACH Regulation (EC) No.1907/2006 Candidate List for Authorisation
66	Dibutyl phthalate (DBP)	84-74-2	1	All	0.1 wt% (1000 ppm) in homogenous material	[EU] RoHS Directive 2011/65/EU and its amendments; [EU] REACH Regulation (EC) No.1907/2006 Candidate List for Authorisation
67	Di-n-hexyl phthalate (DnHP)	84-75-3	3	All	Intentionally added or 0.1 wt% (1000 ppm) of article	[EU] REACH Regulation (EC) No.1907/2006 Candidate List for Authorisation; [USA California] Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)
68	Decabromodiphenylethane (DBDPE)	84852-53-9	2	<b>Effective date of the ban on the delivery: October 1, 2022</b> All	Intentionally added	[Canada] Prohibition of Certain Toxic Substances Regulations
69	Benzyl butyl phthalate (BBP)	85-68-7	1	All	0.1 wt% (1000 ppm) in homogenous material	[EU] RoHS Directive 2011/65/EU and its amendments; [EU] REACH Regulation (EC) No.1907/2006 Candidate List for Authorisation
70	Hexachlorobutadiene (HCBd)	87-68-3	1	All	Intentionally added	[USA] Toxic Substances Control Act (TSCA)



## Annex B: Substances in candidate list for authorization of EU REACH regulation

All the parts, materials and products mentioned in “Section 2. Scope” are subject to this standard. “Threshold level” is defined as 0.1 wt% (1000 ppm) of article. The applicable “Management Level” is Level 3 in principle. Refer to the applicable Annex based on the letter indicated in the column of “Remarks” of the table. The Annex provides information on which laws and regulations regulate the use of a particular substance.

No.	Substance / Substance group	CAS RN	Remarks
1	Boric acid	-	
2	Disodium tetraborate, anhydrous	-	
3	Hexabromocyclododecane (HBCDD)	-	A
4	Aluminosilicate Refractory Ceramic Fibres	-	
5	Zirconia Aluminosilicate Refractory Ceramic Fibres	-	
6	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (SCCP)	-	A
7	Hexahydromethylphthalic anhydride	-	
8	4-Nonylphenol, branched and linear, ethoxylated (substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxylated covering UVCB- and well-defined substances, polymers and homologues, which include any of the individual isomers and/or combinations thereof)	-	
9	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters or mixed decyl and hexyl and octyl diesters [with $\geq 0.3\%$ of dihexyl phthalate (EC No. 201-559-5)]	-	
10	Perfluorononan-1-oic-acid and its sodium and ammonium salts	-	A
11	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	-	A
12	Perfluorohexane-1-sulphonic acid (PFHxS) and its salts	-	A
13	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene (“Dechlorane Plus”™)	-	A
14	Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with $\geq 0.1\%$ w/w of 4-nonylphenol, branched and linear (4-NP)	-	
15	Perfluorobutane sulfonic acid (PFBS) and its salts	-	
16	Diocetyl tin dilaurate, stannane, dioctyl-, bis(coco acyloxy) derivs., and any other stannane, dioctyl-, bis(fatty acyloxy) derivs. wherein C12 is the predominant carbon number of the fatty acyloxy moiety	-	A
17	Medium-chain chlorinated paraffins (MCCP)		
18	Orthoboric acid, sodium salt		
19	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)	-	
20	4-Nonylphenol, branched and linear	-	
21	Lead dinitrate	10099-74-8	A
22	1,2-Dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	
23	Bis(2-methoxyethyl) ether	111-96-6	
24	Potassium hydroxyoctaoxodizincatedichromate	11103-86-9	A
25	1,2-Bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	
26	1,3-Propanesultone	1120-71-4	
27	Tris(2-chloroethyl) phosphate (TCEP)	115-96-8	A
28	Bis(pentabromophenyl) ether (decabromodiphenyl ether) (DecaBDE)	1163-19-5	A
29	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	A

No.	Substance / Substance group	CAS RN	Remarks
30	Bis(2-methoxyethyl) phthalate	117-82-8	
31	6,6'-di-tert-butyl-2,2'- methylenedi-p-cresol (DBMC)	119-47-1	
32	Disodium octaborate	12008-41-2	
33	Lead oxide sulfate	12036-76-9	A
34	Lead titanium trioxide	12060-00-3	A
35	Pentalead tetraoxide sulphate	12065-90-6	A
36	Trilead dioxide phosphonate	12141-20-7	A
37	Tetralead trioxide sulphate	12202-17-4	A
38	Tetraboron disodium heptaoxide, hydrate	12267-73-1	
39	Dioxobis(stearato)trilead	12578-12-0	A
40	Lead titanium zirconium oxide	12626-81-2	A
41	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	12656-85-8	A
42	Pyrene	129-00-0	
43	Diarsenic pentoxide	1303-28-2	A
44	Diboron trioxide	1303-86-2	
45	Cadmium oxide	1306-19-0	A
46	Cadmium sulphide	1306-23-6	A
47	Dipentyl phthalate (DPP)	131-18-0	
48	Orange lead (lead tetroxide)	1314-41-6	A
49	Diarsenic trioxide	1327-53-3	A
50	Lead sulfochromate yellow (C.I. Pigment Yellow 34)	1344-37-2	A
51	4-(1,1,3,3-Tetramethylbutyl)phenol	140-66-9	
52	bis(2-(2-methoxyethoxy)ethyl) ether	143-24-8	
53	2-Ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	15571-58-1	
54	Benzo[g,h,i]perylene	191-24-2	
55	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	
56	Fluoranthene	206-44-0	
57	Benzo[k]fluoranthene (BkFA)	207-08-9	A
58	Lead cyanamidate	20837-86-9	A
59	Cadmium hydroxide	21041-95-2	A
60	Chrysene (CHR)	218-01-9	A
61	Dibutylbis(pentane-2,4-dionato-O,O')tin	22673-19-4	A
62	Trixylyl phosphate	25155-23-1	
63	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	
64	Pentadecafluorooctanoic Acid (PFOA)	335-67-1	A
65	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	
66	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	A
67	2-Benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	A
68	2,4-Di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	
69	Pentazinc chromate octahydroxide	49663-84-5	A

No.	Substance / Substance group	CAS RN	Remarks
70	Benzo[d,e,f]chrysene (Benzo[a]pyrene (BaP))	50-32-8	A
71	Dodecamethylcyclotetrasiloxane	540-97-6	
72	Decamethylcyclotetrasiloxane	541-02-6	
73	Octamethylcyclotetrasiloxane	556-67-2	
74	Bis(tributyltin) oxide (TBTO)	56-35-9	A
75	Benz[a]anthracene (BaA)	56-55-3	A
76	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	
77	4-Aminoazobenzene	60-09-3	
78	Diisopentyl phthalate	605-50-5	
79	Terphenyl, hydrogenated	61788-32-7	
80	Sulfurous acid, lead salt, dibasic	62229-08-7	A
81	1,2-Diethoxyethane	629-14-1	
82	N,N-dimethylformamide	68-12-2	
83	2,2-Bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	
84	Dibutyltin dichloride (DBTC)	683-18-1	A
85	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	
86	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	
87	Silicic acid (H <sub>2</sub> Si <sub>2</sub> O <sub>5</sub> ), barium salt (1:1), lead-doped	68784-75-8	A
88	[Phthalato(2-)]dioxotrilead	69011-06-9	A
89	Diisohexyl phthalate	71850-09-4	
90	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	
91	Lead	7439-92-1	A
92	Cadmium	7440-43-9	A
93	Cobalt Dichloride	7646-79-9	A
94	4,4'-(1-Methylpropylidene)bisphenol	77-40-7	
95	Lead chromate (II)	7758-97-6	A
96	N-pentyl-isopentylphthalate	776297-69-9	
97	Strontium chromate	7789-06-2	A
98	4,4'-Isopropylidenediphenol (BPA)	80-05-7	A
99	Pyrochlore, antimony lead yellow (C.I. Pigment Yellow 41)	8012-00-8	A
100	Dicyclohexyl phthalate	84-61-7	E
101	Diisobutyl phthalate (DIBP)	84-69-5	A
102	Dibutyl phthalate (DBP)	84-74-2	A
103	Di-n-hexyl Phthalate (DnHP)	84-75-3	A
104	1,2-Benzenedicarboxylic acid, dipentyl ester, branched and linear	84777-06-0	
105	Phenanthrene	85-01-8	
106	Benzyl butyl phthalate (BBP)	85-68-7	A
107	Fatty acids, C16-18, lead salts	91031-62-8	A
108	Imidazolidine-2-thione (2-imidazoline-2-thiol)	96-45-7	

## Annex C: Details of Controlled Substances for leather/textile products

### a. CMR Substances of EU REACH regulation (Entry 72)

“Targets” are as follows:

- Textile parts/products which come into contact with human skin under normal conditions of use (e.g. straps, carrying bags, carrying cases, pouches etc.).

“Management Level” is defined as Level1 for all substances listed in the table below.

No.	Substance / Substance group	CAS RN	Threshold level (in homogenous material)
1	Cadmium and its compounds (listed in EU REACH Regulation Annex XVII, Entry 28, 29, 30, Appendices 1-6)	-	0.0001 wt% (1 ppm) (expressed as Cd metal that can be extracted from the material)
2	Chromium (VI) compounds (listed in EU REACH Regulation Annex XVII, Entry 28, 29, 30, Appendices 1-6)	-	0.0001 wt% (1 ppm) (expressed as Cr (VI) metal that can be extracted from the material)
3	Arsenic compounds (listed in EU REACH Regulation Annex XVII, Entry 28, 29, 30, Appendices 1-6)	-	0.0001 wt% (1 ppm) (expressed as As metal that can be extracted from the material)
4	Lead and its compounds (listed in EU REACH Regulation Annex XVII, Entry 28, 29, 30, Appendices 1-6)	-	0.0001 wt% (1 ppm) (expressed as Pb metal that can be extracted from the material)
5	Benzene	71-43-2	0.0005 wt% (5 ppm)
6	Benz[a]anthracene (BaA)	56-55-3	0.0001 wt% (1 ppm)
7	Benzo[b]fluoranthene (BbFA) Benz[e]acephenanthrylene	205-99-2	0.0001 wt% (1 ppm)
8	Benzo[a]pyrene (BaP); Benzo[def]chrysene	50-32-8	0.0001 wt% (1 ppm)
9	Benzo[e]pyrene (BeP)	192-97-2	0.0001 wt% (1 ppm)
10	Benzo[j]fluoranthene (BjFA)	205-82-3	0.0001 wt% (1 ppm)
11	Benzo[k]fluoranthene (BkFA)	207-08-9	0.0001 wt% (1 ppm)
12	Chrysene (CHR)	218-01-9	0.0001 wt% (1 ppm)
13	Dibenz[a,h]anthracene (DBaA)	53-70-3	0.0001 wt% (1 ppm)
14	$\alpha,\alpha,\alpha,4$ -Tetrachlorotoluene; p-Chlorobenzotrachloride	5216-25-1	0.0001 wt% (1 ppm)
15	$\alpha,\alpha,\alpha$ -Trichlorotoluene; benzotrachloride	98-07-7	0.0001 wt% (1 ppm)
16	$\alpha$ -Chlorotoluene; Benzyl chloride	100-44-7	0.0001 wt% (1 ppm)
17	Formaldehyde	50-00-0	0.0075 wt% (75 ppm)
18	1,2-Benzenedicarboxylic acid; Di-C 6-8-branched alkylesters, C 7-rich	71888-89-6	0.1 wt% (1000 ppm) (individually or in combination with other phthalates in this entry or in other entries of EU REACH Regulation Annex XVII that are classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 in any of the hazard classes carcinogenicity, germ cell mutagenicity or reproductive toxicity, category 1A or 1B)
19	Bis(2-methoxyethyl) phthalate	117-82-8	0.1 wt% (1000 ppm) (individually or in combination with other phthalates in this entry or in other entries of EU REACH Regulation Annex XVII that are classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 in any of the hazard classes carcinogenicity, germ cell mutagenicity or reproductive toxicity, category 1A or 1B)

No.	Substance / Substance group	CAS RN	Threshold level (in homogenous material)
20	Diisopentylphthalate	605-50-5	0.1 wt% (1000 ppm) (individually or in combination with other phthalates in this entry or in other entries of EU REACH Regulation Annex XVII that are classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 in any of the hazard classes carcinogenicity, germ cell mutagenicity or reproductive toxicity, category 1A or 1B)
21	Di-n-pentyl phthalate (DPP)	131-18-0	0.1 wt% (1000 ppm) (individually or in combination with other phthalates in this entry or in other entries of EU REACH Regulation Annex XVII that are classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 in any of the hazard classes carcinogenicity, germ cell mutagenicity or reproductive toxicity, category 1A or 1B)
22	Di-n-hexyl phthalate (DnHP)	84-75-3	0.1 wt% (1000 ppm) (individually or in combination with other phthalates in this entry or in other entries of EU REACH Regulation Annex XVII that are classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 in any of the hazard classes carcinogenicity, germ cell mutagenicity or reproductive toxicity, category 1A or 1B)
23	N-Methyl-2-pyrrolidone; 1-Methyl-2-pyrrolidone (NMP)	872-50-4	0.3 wt% (3000 ppm)
24	N,N-Dimethylacetamide (DMAC)	127-19-5	0.3 wt% (3000 ppm)
25	N,N-Dimethylformamide; Dimethyl formamide	68-12-2	0.3 wt% (3000 ppm)
26	1,4,5,8-Tetraaminoanthraquinone C.I.Disperse Blue 1	2475-45-8	0.005 wt% (50 ppm)
27	Benzenamine, 4,4'-(4-iminocyclohexa-2,5-dienylidenemethylene)dianiline hydrochloride C.I. Basic Red 9	569-61-9	0.005 wt% (50 ppm)
28	[4-[4,4'-Bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride; C.I. Basic Violet 3 with ≥ 0,1 % of Michler's ketone (EC no. 202-027-5)	548-62-9	0.005 wt% (50 ppm)
29	4-Chloro-o-toluidinium chloride	3165-93-3	0.003 wt% (30 ppm)
30	2-Naphthylammoniumacetate	553-00-4	0.003 wt% (30 ppm)
31	4-Methoxy-m-phenylene diammonium sulphate; 2,4-Diaminoanisole sulphate	39156-41-7	0.003 wt% (30 ppm)
32	2,4,5-Trimethylaniline hydrochloride	21436-97-5	0.003 wt% (30 ppm)
33	Quinoline	91-22-5	0.005 wt% (50 ppm)

## b. Korea\_Electrical Appliances and Consumer Products Safety Control Act

“Targets” are as follows:

- Leather products (natural leather, artificial leather, and natural fur occupying more than 60% of the surface of the product).

“Management Level” is defined as Level1 for all substances listed in the table below.

No.	Substance / Substance group	CAS RN	Threshold level
1	Chlorinated phenols (PCP)	-	0.0005 wt% (5 ppm) in homogeneous material (except artificial leather)
2	Tri-substituted organostannic compounds (TBT)	-	0.0001 wt% (1 ppm) in coating and printing

## Annex D: Long-chain perfluoroalkyl carboxylate (LCPFACs) and perfluoroalkyl sulfonate chemicals

“Targets” are as follows:

- Parts/products that contain one or more of the applicable LCPFACs in the surface coating;
- Materials (that contain one or more of the applicable LCPFACs) that are intended to be used as surface coatings

“Management Level” is defined as Level1 and “threshold level” is defined as intentionally added <sup>1)</sup>.

### a. Chemical substances specified in US TSCA LCPFAC SNUR"40 C.F.R § 721.10536 (b)(2)"

No.	Substance / Substance group (TSCA chemical inventory name)	CAS RN	EPA accession No
1	Perfluorooctyl iodide (Octane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-8-iodo-)	507-63-1	N/A
2	Tetrahydroperfluoro-1-decanol (1-Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-.)	678-39-7	N/A
3	Perfluoro-1-dodecanol (1-Dodecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafuoro-.)	865-86-1	N/A
4	Perfluorodecyl iodide (Decane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-10-iodo-.)	2043-53-0	N/A
5	1,1,2,2-Tetrahydroperfluorododecyl iodide (Dodecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-heneicosafuoro-12-iodo-.)	2043-54-1	N/A
6	Perfluorodecylethyl acrylate (2-Propenoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafuorododecyl ester.)	17741-60-5	N/A
7	1,1,2,2-Tetrahydroperfluorodecyl acrylate (2-Propenoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl ester)	27905-45-9	N/A
8	1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12-Pentacosafuoro-14-iodotetradecane (Tetradecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12-pentacosafuoro-14-iodo-.)	30046-31-2	N/A
9	3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-Pentacosafuorotetradecan-1-ol (1-Tetradecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafuoro-.)	39239-77-5	N/A
10	3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-Nonacosafuorohexadecan-1-ol (1-Hexadecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-nonacosafuoro-.)	60699-51-6	N/A
11	1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14-Nonacosafuoro-16-iodohexadecane (Hexadecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14-nonacosafuoro-16-iodo-.)	65510-55-6	N/A
12	Sodium;2-methylpropane-1-sulfonate (1-Propanesulfonic acid, 2-methyl-, 2-[[1-oxo-3-[(.gamma.-.omega.-perfluoro-C4-16-alkyl)thio]propyl]amino] derivs., sodium salts)	68187-47-3	N/A
13	1,1,2,2-Tetrahydroperfluoroalkyl (C8-C14) alcohol (Alcohols, C8-14, .gamma.-.omega.-perfluoro-.)	68391-08-2	N/A
14	Thiols, C8-20, gamma-omega-perfluoro, telomers with acrylamide (Thiols, C8-20, .gamma.-.omega.-perfluoro, telomers with acrylamide.)	70969-47-0	N/A

No.	Substance / Substance group (TSCA chemical inventory name)	CAS RN	EPA accession No
15	Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), sodium salt (1:2), reaction products with chlorotrimethylsilane and 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-1-decanol (Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), sodium salt (1:2), reaction products with chlorotrimethylsilane and 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-1-decanol.)	125476-71-3	N/A
16	Thiols, C4-20, gamma-omega-perfluoro, telomers with acrylamide and acrylic acid, sodium salts (Thiols, C4-20, gamma-omega-perfluoro, telomers with acrylamide and acrylic acid, sodium salts.)	1078712-88-5	N/A
17	1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-2-((gamma-omega-perfluoro-C4-20-alkyl)thio)acetyl) derivs., inner salts (1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-2-[(gamma-omega-perfluoro-C4-20-alkyl)thio]acetyl) derivs., inner salts.)	1078715-61-3	N/A
18	Polyfluoroalkyl betaine (generic) (Polyfluoroalkyl betaine (PROVISIONAL).)	CBI	71217 <sup>3)</sup>
19	Modified fluoroalkyl urethane (generic) (Modified fluoroalkyl urethane (PROVISIONAL).)	CBI	89419 <sup>3)</sup>
20	Perfluorinated polyamine (generic) (Perfluorinated polyamine (PROVISIONAL).)	CBI	274147 <sup>3)</sup>

- b. Perfluorooctanoic acid (PFOA) and its salts specified in US TSCA LCPFAC SNUR<sup>40</sup> C.F.R § 721.10536 (b)(3)"

The following substances are examples of PFOA and its salts, and the subjects are all PFOA and its salts.

No.	Substance / Substance group (TSCA chemical inventory name)	CAS RN
1	Octanoyl fluoride, pentadecafluoro-	335-66-0
2	Octanoic acid, pentadecafluoro- (PFOA)	335-67-1
3	Octanoic acid, pentadecafluoro-, silver salt	335-93-3
4	Octanoic acid, pentadecafluoro-, sodium salt	335-95-5
5	Octanoic acid, pentadecafluoro-, potassium salt	2395-00-8
6	Octanoic acid, pentadecafluoro-, ammonium salt (APFO)	3825-26-1

- 1) The exemptions for TSCA LCPFAC SNUR apply the exemptions for EU POPs regulation. See No.31 of PFOA in Annex F.
- 2) Surface coatings refer to materials that are applied as thin layers of protective / decorative / functional films to the surface of articles. "This term often refers to paints such as lacquers or enamels, but also refers to films applied to other materials including, but are not limited to, paints, varnishes, sealants, adhesives, inks, maskants, and temporary protective coatings."
- 3) EPA accession number about CBI (Confidential Business information).



## Annex E: TSCA Priority chemicals

“Targets” are parts, materials, and products in “2. Scope”.

Refer to the applicable Annex based on the letter indicated in the column of “Remarks” of the table. The Annex provides information on which laws and regulations regulate the use of a particular substance.

### a. List of the First 10 Chemical Substances Undergoing TSCA's Risk Evaluation

All the parts, materials and products mentioned in “Section 2. Scope” are subject to this standard. “Management Level” is defined as Level 1 and “threshold level” is defined as intentionally added. (\*Targets and thresholds may be revised depending on the status of legislation.)

No.	Substance / Substance group	CAS RN	Remarks
1	Methylene Chloride	75-09-2	
2	1-Bromopropane	106-94-5	
3	Cyclic Aliphatic Bromide Cluster (HBCD)	25637-99-4 3194-55-6 3194-57-8	A
4	Asbestos	1332-21-4	A
5	Carbon Tetrachloride	56-23-5	A
6	1,4-dioxane	123-91-1	
7	N-Methylpyrrolidone (NMP)	872-50-4	C
8	Perchloroethylene	127-18-4	
9	Pigment Violet 29	81-33-4	
10	Trichloroethylene (TCE)	79-01-6	

- b. List of the 20 High-Priority Substances Selected to Undergo TSCA's Risk Evaluation Process  
 All the parts, materials and products mentioned in "Section 2. Scope" are subject to this standard.  
 "Management Level" is defined as Level 3 and "threshold level" is defined as intentionally added.

No.	Substance / Substance group	CAS RN	Remarks
1	1,3-Butadiene	106-99-0	
2	Butyl benzyl phthalate (BBP)	85-68-7	A
3	Dibutyl phthalate (DBP)	84-74-2	A
4	o-Dichlorobenzene	95-50-1	
5	p-Dichlorobenzene	106-46-7	
6	1,1-Dichloroethane	75-34-3	
7	1,2-Dichloroethane	107-06-2	
8	trans-1,2-Dichloroethylene	156-60-5	
9	1,2-Dichloropropane	78-87-5	
10	Dicyclohexyl phthalate	84-61-7	B
11	Di-ethylhexyl phthalate (DEHP)	117-81-7	A
12	Di-isobutyl phthalate (DIBP)	84-69-5	A
13	Ethylene dibromide	106-93-4	
14	Formaldehyde	50-00-0	A
15	1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta [g]-2-benzopyran (HHCB)	1222-05-5	
16	Tetrabromobisphenol A (TBBPA)	79-94-7	
17	Phosphoric acid, triphenyl ester (TPP)	115-86-6	
18	Phthalic anhydride	85-44-9	
19	1,1,2-Trichloroethane	79-00-5	
20	Tris(2-chloroethyl) phosphate (TCEP)	115-96-8	A

## Annex F: Exemption List

Exemptions that Sony Group uses are shown in the following table. “Effective date defined in laws” means the date when the latest exemption became or will become applicable and “Expiration date defined in laws” represents the earliest one if there are different ones for several categories. Please check the number in “Remarks” and refer to the relevant note below the table for details. The expiration date of exemptions relevant to EU Directive 2011/65/EU (EU RoHS) described in the table is subject to change. Refer to the [latest status](#) of each. Reference Information: [Implementation of the RoHS Directive](#) (European Commission website)

No.	Regulation name	DISPLAY STRING	Use name		Effective date defined in laws	Expiration date defined in laws	Remarks
1	EU RoHS	3(a)	Hg	Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp): Short length ( $\leq 500$ mm) : not exceeding 3.5 mg per lamp	Jan 1, 2012	Feb 24, 2025	
2	EU RoHS	3(b)	Hg	Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp): Medium length ( $> 500$ mm and $\leq 1,500$ mm) : not exceeding 5 mg per lamp	Jan 1, 2012	Feb 24, 2025	
3	EU RoHS	3(c)	Hg	Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp): Long length ( $> 1,500$ mm) : not exceeding 13 mg per lamp	Jan 1, 2012	Feb 24, 2025	
4	EU RoHS	4(f)	Hg	Mercury in other discharge lamps for special purposes not specially mentioned in EU RoHS Annex	Sep 25, 2010	Sep 30, 2022	
5	EU RoHS	4(f)-I	Hg	Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex	Oct 01, 2022	Feb 24, 2025	
6	EU RoHS	4(f)-II	Hg	Mercury in high pressure mercury vapour lamps used in projectors where an output $\geq 2000$ lumen ANSI is required	Oct 01, 2022	Feb 24, 2027	
7	EU RoHS	6(a)	Pb	Lead as an alloying element in steel for machining purposes and in galvanised steel containing up to 0.35 % lead by weight	Jul 1, 2019	Pending	1)
8	EU RoHS	6(a)-I	Pb	Lead as an alloying element in steel for machining purposes containing up to 0.35% lead by weight and in batch hot dip galvanised steel components containing up to 0.2% lead by weight	Jul 1, 2019	Pending	2)

No.	Regulation name	DISPLAY STRING	Use name		Effective date defined in laws	Expiration date defined in laws	Remarks
9	EU RoHS	6(b)	Pb	Lead as an alloying element in aluminium containing up to 0.4 % lead by weight	Jul 1, 2019	Pending	1)
10	EU RoHS	6(b)-I	Pb	Lead as an alloying element in aluminium containing up to 0.4 % lead by weight, provided it stems from lead-bearing aluminium scrap recycling	Jul 1, 2019	Pending	2)
11	EU RoHS	6(b)-II	Pb	Lead as an alloying element in aluminium for machining purposes with a lead content up to 0.4 % by weight	Jul 1, 2019	Pending	2)
12	EU RoHS	6(c)	Pb	Copper alloy containing up to 4 % lead by weight	Jul 1, 2019	Pending	3)
13	EU RoHS	7(a)	Pb	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead)	Jul 1, 2019	Pending	3)
14	EU RoHS	7(c)-I	Pb	Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound	Jul 1, 2019	Pending	3)
15	EU RoHS	7(c)-II	Pb	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	Mar 1, 2020	Pending	3)
16	EU RoHS	8(b)	Cd	Cadmium and its compounds in electrical contacts	Mar 1, 2020	Pending	1)
17	EU RoHS	8(b)-I	Cd	Cadmium and its compounds in electrical contacts used in: <ul style="list-style-type: none"> <li>- circuit breakers,</li> <li>- thermal sensing controls,</li> <li>- thermal motor protectors (excluding hermetic thermal motor protectors),</li> <li>- AC switches rated at: 6 A and more at 250 V AC and more, or 12 A and more at 125 V AC and more,</li> <li>- DC switches rated at 20 A and more at 18 V DC and more, and</li> <li>- switches for use at voltage supply frequency <math>\geq 200</math> Hz.</li> </ul>	Mar 1, 2020	Pending	2)
18	EU RoHS	13(a)	Pb	Lead in white glasses used for optical applications	Jul 6, 2018	Pending	3)
19	EU RoHS	13(b)	Cd, Pb	Cadmium and lead in filter glasses and glasses used for reflectance standards	Jul 6, 2018	Pending	1)
20	EU RoHS	13(b)-(I)	Pb	Lead in ion coloured optical filter glass types	Jul 6, 2018	Pending	4)
21	EU RoHS	13(b)-(II)	Cd	Cadmium in striking optical filter glass types; excluding applications falling under point 39 of EU RoHS Annex	Jul 6, 2018	Pending	4)

No.	Regulation name	DISPLAY STRING	Use name		Effective date defined in laws	Expiration date defined in laws	Remarks
22	EU RoHS	13(b)-(III)	Cd, Pb	Cadmium and lead in glazes used for reflectance standards	Jul 6, 2018	Pending	4)
23	EU RoHS	15	Pb	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages	Mar 1, 2020	Pending	1)
24	EU RoHS	15(a)	Pb	Lead in solders to complete a viable electrical connection between the semiconductor die and carrier within integrated circuit flip chip packages where at least one of the following criteria applies: - a semiconductor technology node of 90 nm or larger; - a single die of 300 mm <sup>2</sup> or larger in any semiconductor technology node; - stacked die packages with die of 300 mm <sup>2</sup> or larger, or silicon interposers of 300 mm <sup>2</sup> or larger.	Mar 1, 2020	Pending	2)
25	EU RoHS	34	Pb	Lead in cermet-based trimmer potentiometer elements	Jul 1, 2019	Pending	3)
26	EU F-gas	-	SF <sub>6</sub>	SF <sub>6</sub> incorporated into surge absorber in power unit for projector	May 17, 2006	-	
27	EU REACH	(DBT)	DBT	Packaging components and materials for parts and devices, which are reused and not provided to the consumer	Jan 1, 2012	-	
28	EU REACH	(DBT)	DBT	Packaging components or materials for devices, semiconductors, and any other components (e.g. trays, magazine sticks, stoppers, reels, embossed carrier tapes)	Jan 1, 2012	-	
29	EU REACH	(BBP, DBP, DEHP, DIBP)	BBP, DBP, DEHP, DIBP	Parts and materials not subject to EU RoHS exclusively for industrial or agricultural use, or for use exclusively in the open air, provided that no plasticized material comes into contact with human mucous membranes or into prolonged contact with human skin	Jul 7, 2020	-	
30	EU POPs	(PFOA)	PFOA	photolithography or etch processes in semiconductor manufacturing	Jul 4, 2020	Jul 4, 2025	
31	TSCA	(PIP)	PIP	Lubricants and greases (including articles using these materials)	Mar 8, 2021	-	

- 1) Cat. 8, 9 and 11: pending  
2) Cat. 1-7 and 10: pending  
3) All Cat.: pending  
4) Cat. 1-7 and 10: pending

## Annex G: HISTORY OF UPDATES ON EFFECTIVE DATE OF THE BAN ON THE DELIVERY FOR EVERY SUBSTANCE

Substance / Substance group	Targets	Effective date of the ban on the delivery
Asbestos	- All uses (e.g. insulators and fillers)	Banned since the establishment of this Standard
Azocolourants and azodyes which form certain aromatic amines	- The substances which are used in parts or articles that may come into direct and prolonged contact with the human skin (e.g. belts, straps, ear phones, head phones, and shoulder pads for bags)	Banned since the establishment of this Standard
Cadmium/Cadmium compounds	- Packaging components and materials (See 4.2.1.) - The stabilizers, pigments, or dyes used for plastics (including rubber) materials (e.g. labels, cabinets, phonograph records, cable tie, the keys of remote commanders, the outer plastic resins of electrical parts, and the insulators of electrical wiring) - Paints, inks - Surface treatment (e.g. electroplating, electroless plating, etc.) and coating - Photographic films - Fluorescent lamps (small-sized ones, straight-tube ones)	Banned since the establishment of this Standard
	All uses except those specified in Level 2 and Exemption Typical examples are given below: - Switches, relays, breakers, DC motors, and other electrical contact points - Fuse elements of temperature fuses - Glass, and the pigments as well as dyes of glass paints (paints for glass and the pigments as well as dyes used for glass) - Solder (whose cadmium concentration is more than 20 ppm) - CdS-photocells and the phosphors contained in fluorescent display devices - Resistor elements (glass frit)	Banned since January 1, 2005
	- Parts composed of metals containing zinc (e.g. brass, hot dip galvanizing, etc.) whose cadmium concentration is more than 100 ppm	Banned since October 1, 2005
	- Optical glass	Banned since June 1, 2010
	- Cadmium in colour converting II-VI LEDs (< 10 µg Cd per mm <sup>2</sup> of light-emitting area) for use in display systems, except the cases where cadmium is contained in a concentration <sup>3</sup> 100 ppm in the following designated plastics: Designated plastics: polymers or copolymers of vinyl chloride (PVC), polyurethane (PUR), "low-density polyethylene (LDPE), with the exception of low-density polyethylene used for the production of coloured masterbatch", cellulose acetate (CA), cellulose acetate butyrate (CAB), epoxy resins, melamine-formaldehyde (MF) resins, urea-formaldehyde (UF) resins, unsaturated polyesters (UP), polyethylene terephthalate (PET), polybutylene terephthalate (PBT), transparent/general-purpose polystyrene, acrylonitrile methacrylate (AMMA), crosslinked polyethylene (VPE), high-impact polystyrene, polypropylene (PP) Note: Level 1 applies to the cases where cadmium is contained in a concentration <sup>3</sup> 100 ppm in the above designated plastics	Banned since July 1, 2014

Substance / Substance group	Targets	Effective date of the ban on the delivery
	<ul style="list-style-type: none"> <li>- Mobile phone case (product that is used to cover the surface of a mobile phone to protect the main body and decorate its appearance)</li> <li>- Part in direct contact with the ear of earphones (including headphones, headsets, etc.) (0.0075 wt% (75 ppm) of total Cd in homogenous material)</li> </ul>	Banned since June 1, 2020
	<ul style="list-style-type: none"> <li>- Video display devices, with a screen size of greater than four inches (0.01 wt% (100 ppm) of total Cd in homogenous material)</li> </ul>	Banned since June 1, 2021
Chromium (VI) Compounds	<ul style="list-style-type: none"> <li>- Packaging components and materials (See 4.2.1.)</li> </ul>	Banned since the establishment of this Standard
	<ul style="list-style-type: none"> <li>- Constituents of parts or materials (e.g. inks, paints, additives, etc.)</li> <li>- Residues in the surfaces of screws, steel sheets, etc. that are processed with plating or conversion coating</li> </ul>	Banned since January 1, 2005
	<ul style="list-style-type: none"> <li>- Video display devices, with a screen size of greater than four inches (0.1 wt% (1000 ppm) of total Cr6+ in homogenous material)</li> </ul>	Banned since June 1, 2021
Dibutyltin (DBT) compounds Metal tin, tin alloys, tin plating and tin inorganic compounds do not fall under this category.	<ul style="list-style-type: none"> <li>- All applications including additives of plastics (except Level 2) (More than 1000 ppm (or 0.1 wt%) of the tin contained in materials)</li> </ul>	Banned since July 1, 2011
	<ul style="list-style-type: none"> <li>- One-component and two-component room temperature vulcanisation sealants (RTV-1 and RTV-2 sealants)</li> <li>- One-component and two-component room temperature vulcanisation adhesives (RTV-1 and RTV-2 adhesives)</li> <li>- Catalysts for paints or coating agents</li> <li>- Stabilizers in PVC used for coating of fabrics intended for outdoor applications</li> <li>- Additives of soft polyvinyl chloride (PVC) profiles whether by themselves or coextruded with hard PVC (More than 1000 ppm (or 0.1 wt%) of the tin contained in materials)</li> </ul>	Banned since July 1, 2014
Diocetyl tin (DOT) compounds Metal tin, tin alloys, tin plating and tin inorganic compounds do not fall under this category.	<ul style="list-style-type: none"> <li>- Additives of textiles (More than 1000 ppm (or 0.1 wt%) of the tin contained in materials)</li> </ul>	Banned since July 1, 2011
Hydrofluorocarbon (HFC), Perfluorocarbon (PFC)	<ul style="list-style-type: none"> <li>- All uses installed into product (e.g. refrigerant and insulation)</li> </ul>	Banned since April 1, 2008

Substance / Substance group	Targets	Effective date of the ban on the delivery
Lead/Lead Compounds	<ul style="list-style-type: none"> <li>- Packaging components and materials (See 4.2.1.)</li> <li>- The paints, and inks containing lead, which are used for PWBs</li> </ul>	Banned since the establishment of this Standard
	<ul style="list-style-type: none"> <li>- Surface coatings (plating) for the external electrodes, lead wires, and other areas of parts (e.g. electrical parts, semiconductor devices, and heat sinks)</li> <li>- The stabilizers, pigments, and dyes contained in the plastic (including rubber) materials that are used for outer and exposed areas of the following articles: mice, devices, AC adaptors, connection cords, remote commanders, and power supply cords</li> <li>- The paints and inks used for outer and exposed areas of devices</li> </ul>	Banned since April 1, 2004
	<p>All uses except those specified in Level 2, Level 3 and Exemption</p> <p>Typical examples are given below:</p> <ul style="list-style-type: none"> <li>- The surface coatings for the external electrodes, lead wires, etc. of the parts contained in AC adaptors, remote commanders, semiconductor devices, etc.</li> <li>- Leaded solder that meets both of the following conditions: 1) lead content is less than 85 wt%; and 2) lead content is more than 1000 ppm</li> <li>- All kinds of alloys (including solder materials) whose individual lead concentrations exceed their allowable ones provided in the table at the bottom of Exemption below. (*1)</li> <li>- The stabilizers, pigments, and dyes contained in the plastic (including rubber) materials that are used for areas (excluding outer and exposed ones) of the following articles: mice, devices, AC adaptors, connection cords, remote commanders, and power supply cords</li> <li>- The paints and inks used for areas other than the outer and exposed ones of devices</li> </ul>	Banned since January 1, 2005
	<ul style="list-style-type: none"> <li>- Electroless plating films such as electroless nickel plating and electroless gold plating whose lead content is more than 1000 ppm</li> </ul>	Banned since February 1, 2006
	<ul style="list-style-type: none"> <li>- Glass for all uses except those specified in Exemption</li> <li>- Solder consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80 wt% and less than 85 wt%</li> </ul>	Banned since June 1, 2010
	<ul style="list-style-type: none"> <li>- Dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC</li> </ul>	Banned since January 1, 2012
	<ul style="list-style-type: none"> <li>- Crystal glass as defined in Annex 1 (Categories 1, 2, 3 and 4) of EU Directive 69/493/EEC</li> </ul>	Banned since April 1, 2012
	<ul style="list-style-type: none"> <li>- Lead in glass of CRT / CCFL</li> </ul>	Banned since April 1, 2018
	<ul style="list-style-type: none"> <li>- Paint or surface coating of mobile phone cases (products that are used to protect the main body by covering the surface of the mobile phone and decorate its appearance)</li> <li>- Paint or surface coating of part in direct contact with the ear of earphones (including headphones, headsets, etc.)" (0.009 wt% (90 ppm) of surface coating material)</li> </ul>	Banned since June 1, 2020
	<ul style="list-style-type: none"> <li>- Mobile phone case (product that is used to cover the surface of a mobile phone to protect the main body and decorate its appearance)</li> <li>- Part in direct contact with the ear of earphones (including headphones, headsets, etc.) (0.03 wt% (300 ppm) of total Pb in homogenous material)</li> </ul>	Banned since June 1, 2020
	<ul style="list-style-type: none"> <li>- Video display devices, with a screen size of greater than four inches (0.1 wt% (1000 ppm) of total Pb in homogenous material)</li> </ul>	Banned since June 1, 2021
	<ul style="list-style-type: none"> <li>- Including categories that will expire on Jul 21, 2021 in the EU RoHS Directive Exemptions Annex III 5 (b), 7 (c) -IV (0.1 wt% (1000 ppm) of total Pb in homogenous material)</li> </ul>	Banned since June 1, 2021



Substance / Substance group	Targets	Effective date of the ban on the delivery
	- Alkaline manganese button cells (0.004 wt% (40 ppm) of battery)	Banned since June 1, 2022
	- Zinc air button cells (0.05 wt% (500 ppm) of battery)	Banned since June 1, 2022
	- Silver oxide button cells (0.02 wt% (200 ppm) of battery)	Banned since June 1, 2022
Mercury/Mercury Compounds	- Packaging components and materials (See 4.2.1.) - Paints, and inks - Hour meters - Relays, switches, or sensors whose contacts contain mercury - Mercury or its compounds mixed in plastics	Banned since the establishment of this Standard
	- All uses except those specified in Level 2 and Exemption	Banned since January 1, 2005
	- Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL): Short length (not over 500 mm) : 3.5 mg or more, and less than 5 mg per lamp	Banned since January 1, 2011
	- Video display devices, with a screen size of greater than four inches (0.1 wt% (1000 ppm) of total Hg in homogenous material)	Banned since June 1, 2021
Ozone Depleting Substances (CFC, Halon, HBFC, HCFC & others) Substances of Annexes A, B, C and E of Montreal Protocol	- All uses for refrigerant, insulation and other products - Components and materials processed with ODS during cleaning, foaming and other processes	Banned since before the establishment of this Standard
Perfluorooctane sulfonates (PFOS)	- Materials whose PFOS concentration is 0.1 wt% or more - Textiles or other coated materials whose amount of PFOS is 1 µg/m <sup>2</sup> or more of the coated material	Banned since April 1, 2008
	- All uses except those specified in Exemption (photographic films for professional use and resists for semiconductors)	Banned since April 1, 2010
	- All uses	Banned since June 1, 2020
Bis (2-ethylhexyl) phthalate (DEHP), Dibutyl phthalate (DBP), Benzyl butyl phthalate (BBP)	- Parts and materials for carrying bags, carrying cases, carrying pouches - Parts and materials for EEE that are in prolonged contact with the human skin (e.g. grip, handle)	Banned since July 1, 2014
	- Parts and materials for EEE	Banned since April 1, 2018
	- Parts and materials for toys and childcare articles	Banned since April 1, 2019
	- All excluding applications falling within the scope of EU RoHS 2011/65/EU (0.1 wt% (1000 ppm) as the sum of the phthalate concentrations in plasticized material )	Banned since January 1, 2020
	- Part in direct contact with the ear of earphones (including headphones, headsets, etc.) (0.1 wt% (1000 ppm) as the sum of the phthalate concentrations in plasticized material )	Banned since June 1, 2020

Substance / Substance group	Targets	Effective date of the ban on the delivery
Diisobutyl phthalate (DIBP)	- Parts and materials for carrying bags, carrying cases, carrying pouches - Parts and materials for EEE that are in prolonged contact with the human skin (e.g. grip, handle)	Banned since July 1, 2014
	- Parts and materials for EEE	Banned since April 1, 2018
	- Parts and materials for toys and childcare articles	Banned since January 1, 2020
	- All excluding applications falling within the scope of EU RoHS 2011/65/EU (0.1 wt% (1000 ppm) as the sum of the phthalate concentrations in plasticized material )	Banned since January 1, 2020
	- Part in direct contact with the ear of earphones (including headphones, headsets, etc.) (0.1 wt% (1000 ppm) as the sum of the phthalate concentrations in plasticized material )	Banned since June 1, 2020
Polybrominated biphenyls (PBBs)	- All uses (e.g. flame retardants contained in plastics)	Banned since the establishment of this Standard
	- All (Intentionally added)	Banned since June 1, 2020
Polybrominated diphenyl ethers (PBDEs) (including decabromodiphenyl ether [DecaBDE])	- All uses (e.g. flame retardants contained in plastics)	Banned since the establishment of this Standard
	- The parts manufactured using the molding dies, which were made in or before December 2002 (Applicable only to the bodies of the displays and TV sets shipped to countries and regions other than European ones) The parts whose molding dies have been made since January 2003 must not contain PBDE	Banned since January 1, 2005
	- All (Intentionally added)	Banned since June 1, 2020
	- All excluding applications falling within the scope of EU RoHS 2011/65/EU (0.05 wt% (500 ppm) in article or mixture)	Banned since June 1, 2022
Polychlorinated Biphenyls (PCBs) and specific substitutes	- All uses (e.g. capacitors, lubricants, insulating oils, transformers containing oil, paints, and flame retardants in plastics)	Banned since the establishment of this Standard
	- All (0.00005 wt% (0.5 ppm) in material)	Banned since June 1, 2022
Polychlorinated Terphenyls (PCTs)	- All uses (e.g. capacitors, lubricants, insulating oils, transformers containing oil, paints, and flame retardants in plastics)	Banned since the establishment of this Standard
Polychlorinated naphthalenes (PCNs)	- All uses (e.g. capacitors, lubricants, insulating oils, transformers containing oil, paints, and flame retardants in plastics)	Banned since the establishment of this Standard
Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (SCCP)	- The cabinets of products (including accessories) and PWBs	Banned since the establishment of this Standard
	- All uses other than the above	Banned since February 1, 2006
Trisubstituted organotin compounds (including tributyltin (TBT) compounds and triphenyltin (TPT) compounds) Not applicable to metallic tin, tin alloys, tin plating, and tin inorganic compounds	- All uses (e.g. paints, inks, preservatives, and fungicides)	Banned since the establishment of this Standard

Substance / Substance group	Targets	Effective date of the ban on the delivery
Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA	- Coatings applied to textiles, leathers and fabrics (More than 1 µg/m <sup>2</sup> of the coated material)	Banned since April 1, 2014
	- All applications other than above and Level 2 (More than 1000 ppm (or 0.1 wt%) of the parts)	Banned since April 1, 2014
Perfluorooctanoic acid (PFOA) and its salts	- All (except below) (0.0000025 wt% (25 ppb) of PFOA including its salts in article or mixture) - Equipment used to manufacture semi-conductors - Latex printing inks - Plasma nano-coatings	Banned since January 1, 2020
	- All (except below) (0.0000025 wt% (25 ppb) of PFOA including its salts in article or mixture) - photographic coatings applied to films - photolithography or etch processes in semiconductor manufacturing	Banned since June 1, 2020
	- All (except below) (0.0000025 wt% (25 ppb) of PFOA including its salts in article or mixture) - photolithography or etch processes in semiconductor manufacturing	Banned since June 1, 2021
	- All (except below) (Intentionally added) - Equipment used to manufacture semi-conductors - Latex printing inks - Plasma nano-coatings	Banned since April 1, 2020
	- All (except below) (Intentionally added) - photographic coatings applied to films - photolithography or etch processes in semiconductor manufacturing	Banned since June 1, 2020
	- All (except below) (Intentionally added) - photolithography or etch processes in semiconductor manufacturing	Banned since June 1, 2021
	- All (except below) (Intentionally added) - photolithography or etch processes in semiconductor manufacturing	Banned since June 1, 2021
PFOA-related substances	- All (except below) (0.0001 wt% (1 ppm, 1000 ppb) of one or a combination of PFOA-related substances, in article or mixture) - Equipment used to manufacture semi-conductors - Latex printing inks - Plasma nano-coatings	Banned since January 1, 2020
	- All (except below) (0.0001 wt% (1 ppm, 1000 ppb) of one or a combination of PFOA-related substances, in article or mixture) - photographic coatings applied to films - photolithography or etch processes in semiconductor manufacturing	Banned since June 1, 2020
	- All (except below) (0.0001 wt% (1 ppm, 1000 ppb) of one or a combination of PFOA-related substances, in article or mixture) - photolithography or etch processes in semiconductor manufacturing	Banned since June 1, 2021
	- All (except below) (Intentionally added) - Equipment used to manufacture semi-conductors - Latex printing inks - Plasma nano-coatings	Banned since April 1, 2020
	- All (except below) (Intentionally added) - photographic coatings applied to films - photolithography or etch processes in semiconductor manufacturing	Banned since June 1, 2020
	- All (except below) (Intentionally added) - photolithography or etch processes in semiconductor manufacturing	Banned since June 1, 2021

Substance / Substance group	Targets	Effective date of the ban on the delivery
Diarsenic pentoxide	- Antifoam agents or fining agents for LCD panels (including cover glasses, touchscreens, and backlights) (More than 1000 ppm (or 0.1 wt%) of the parts)	Banned since July 1, 2014
Beryllium Oxide	- All uses	Banned since April 1, 2008
Diarsenic trioxide	- Antifoam agents or fining agents for LCD panels (including cover glasses, touchscreens, and backlights) (More than 1000 ppm (or 0.1 wt%) of the parts)	Banned since July 1, 2014
2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	- Ultraviolet protectants and ultraviolet absorbers applied to decorative laminate, developing papers, molded plastic parts	Banned since April 1, 2008
	- Lenses and frames of glasses	Banned since April 1, 2011
Formaldehyde	- The wooden products made from fiberboard, particleboard, or plywood, which are employed in products for import into Europe (e.g. speakers and racks)	Banned since the establishment of this Standard
	- The wooden products made from fiberboard, particleboard, or plywood, which are employed in products for destinations other than Europe (e.g. speakers and racks)	Banned since January 1, 2005
Dimethyl fumarate (DMF)	- All uses (e.g. fungicides and desiccant agents)	Banned since April 1, 2010
Cobalt Dichloride (II)	- Moisture indicator used for a desiccant agent (e.g. silica gel)	Banned since April 1, 2009
	- Humidity indicator card which is impregnated with cobalt dichloride	Banned since April 1, 2011
Polyvinyl chloride (PVC) and PVC blends	- Substrates for FeliCa contactless IC cards * For reference, the targets have never contained PVC or PVC blends	Banned since before the establishment of this Standard
	- Coating agents and fabrics for the carrying bags, carrying cases, and carrying pouches, which are designed for use with personal computers, digital cameras, camcorders, and portable audio products (excluding those for professional use)	Banned since the establishment of this Standard
	- Cable ties used for accessories and connecting cords	Banned since July 1, 2002
	- Packaging components and materials to protect, contain, or transport products or supplied accessories (e.g. bags, adhesive tapes, cartons, and blister packs)	Banned since January 1, 2005
	- Heat shrink tubes	Banned since April 1, 2005
	- Flexible flat cables (FFC) - Sheets and laminates used for exterior of wooden speakers - Insulating plates, decorative panels, labels, sheets, and laminates	Banned since April 1, 2007
	- Suction cups for mounting in-vehicle products	Banned since April 1, 2010
	- Textile parts/products which come into contact with human skin under normal conditions of use (e.g. straps, carrying bags, carrying cases, pouches etc.).	Banned since April 1, 2020
CMR Substances of EU REACH regulation (Entry 72)	- Textile parts/products which come into contact with human skin under normal conditions of use (e.g. straps, carrying bags, carrying cases, pouches etc.).	Banned since April 1, 2020

Substance / Substance group	Targets	Effective date of the ban on the delivery
Halogenated flame retardants	<ul style="list-style-type: none"> <li>- Plastic enclosure and stand of electronic displays, including televisions, monitors and digital signage displays with a screen area greater than 100 square centimetres, as well as labels, tapes, etc. attached to the plastic enclosures and stands</li> <li>- Plastic enclosure of game device (0.1wt% of total halogen elements in homogeneous material (including PBBs and PBDEs) or intentionally added)</li> </ul>	Banned since June 1, 2021
Long-chain perfluoroalkyl carboxylate (LCPFACs) and perfluoroalkyl sulfonate chemicals (Annex D)	- Parts/products that contain one or more of the applicable LCPFACs in the surface coating and Materials (that contain one or more of the applicable LCPFACs) that are intended to be used as surface coatings (Intentionally added)	Banned since September 25, 2020
Decabromodiphenyl ether (DecaBDE)	- All (Intentionally added)	Banned since February 25, 2021
Phenol, Isopropylated Phosphate (PIP) (3:1)	- All except Adhesives and articles using adhesives (Intentionally added)	Banned since February 25, 2021
	- All except "Adhesives and Sealants", "Lubricants and greases", including articles using these materials (Intentionally added)	Banned since June 1, 2022
2,4,6-Tris(tert-butyl)phenol (TTBP)	- All except articles (Intentionally added)	Banned since February 25, 2021
Pentachlorothiophenol (PCTP)	- All (Intentionally added)	Banned since February 25, 2021
Hexachlorobutadiene (HCBd)	- All (Intentionally added)	Banned since February 25, 2021
Perfluorohexane-1-sulphonic acid (PFHxS), its salts and PFHxS-related substances	- All (Intentionally added)	Banned since December 1, 2021
Perfluorocarboxylic acids (PFCAs) C9-C14 and its salts	- All (0.000025 wt% (25 ppb) of PFCAs including its salts in article or mixture)	Banned since June 1, 2022
PFCAs C9-C14-related substances	- All (0.000026 wt% (260 ppb) of one or a combination of PFCAs-related substances, in article or mixture)	Banned since June 1, 2022
Hexachlorobenzene (HCB)	- All (Intentionally added or 0.001 wt% (10 ppm) in article or mixture)	Banned since June 1, 2022
Chlorinated phenols (PCP)	- Leather products except artificial leather (0.0005 wt% (5 ppm) in homogeneous material)	Banned since June 1, 2022
Tri-substituted organostannic compounds (TBT)	- Leather products (0.0001 wt% (1 ppm) in coating and printing)	Banned since June 1, 2022
List of the First 10 Chemical Substances Undergoing TSCA's Risk Evaluation	- All (Intentionally added)	Banned since January 1, 2022

(Note)

This document is subject to change without prior notice, as a result of a revision or modifications on the SS-00259, the Sony Technical Standard titled "Management Regulations for the Environment-related Substances to be Controlled which are included in Parts and Materials."

Management Regulations for the Environment-related Substances to be Controlled which are included in Parts and Materials

SS-00259 for General Use, Twentieth Edition

Enforced 2022.06.01

Issued by Secretariat of the Sony Technical Standards, Sony Group Corporation