

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

SS-00259 for General Use, Seventeenth Edition

SONY

Terms of Use:

Copyright and all intellectual property rights in the content of this document are vested in Sony Corporation and reserved, unless otherwise indicated.

This document is the Sony Technical Standard, SS-00259 for General Use, Seventeenth Edition.

Copyright 2019 Sony Corp.

ALL RIGHTS RESERVED

No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording or by any information storage and retrieval system, without the prior written permission of Sony Corporation.

CONTENTS

1.	PURPOSE.....	1
2.	SCOPE.....	1
	2.1 Scope applicable to parts and materials.....	1
	2.2 Scope applicable to products.....	1
3.	TERMS AND DEFINITIONS	2
4.	MANAGEMENT STANDARDS FOR "ENVIRONMENT-RELATED SUBSTANCES TO BE CONTROLLED"	3
	4.1 "Environment-related Substances to be Controlled ('Controlled Substances')"	3
	4.2 Additional rules for packaging components and materials	20
	4.3 Rules for batteries.....	23
	4.4 Rules for chemical analysis	24
5.	REPLACEMENT OF CHEMICAL SUBSTANCES ACCORDING TO "SONY GROUP ENVIRONMENTAL MID-TERM TARGET"	27
	5.1 Polyvinyl chloride (PVC)	27
	5.2 Brominated flame retardants (BFR).....	28
	APPENDIX	29

1. PURPOSE

With regard to the "Environment-related Substances to be Controlled ('Controlled Substances')" contained in the parts and devices employed in Sony 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 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 electronics products that are designed and manufactured by the Sony group for sale, loan, or distribution
- 2) Sony 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'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
Considering possibility of phase-out in the future (i.e. reclassification into Level 2), 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, or adhesion, whether intended or not. When a substance is unintentionally contained in, or added to a product in a processing 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: * 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 won't accept the parts and/or materials specified in the corresponding columns of Table 4.2.

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

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

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

Mgmt level				Substances	Page
1	2	3	Ex		
x	x	x		<u>Bis (2-ethylhexyl)phthalate (DEHP)</u>	5
x	x	x		<u>Dibutyl phthalate (DBP)</u>	5
x	x	x		<u>Benzyl butyl phthalate (BBP)</u>	6
x	x	x		<u>Diisobutyl phthalate (DIBP)</u>	6
x			x	<u>Cadmium and cadmium compounds</u>	7
x			x	<u>Lead and lead compounds</u>	8
x			x	<u>Mercury and mercury compounds</u>	10
x				<u>Chromium (VI) compounds</u>	10
x				<u>Polybrominated biphenyls (PBBs)</u>	10
x				<u>Polybrominated diphenylethers (PBDEs)</u>	10
x				<u>Hexabromocyclododecane (HBCDD)</u>	10
x				<u>Polychlorinated biphenyls (PCBs) and specific substitutes</u>	10
x				<u>Polychlorinated naphthalenes (PCNs)</u>	10
x				<u>Polychlorinated terphenyls (PCTs)</u>	10
x				<u>Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (SCCP)</u>	11
x				<u>Tris(2-chloroethyl)phosphate (TCEP)</u>	11
x				<u>Tris(1-chloro-2-propyl)phosphate (TCPP)</u>	11
x				<u>Tris(1,3-dichloro-2-propyl)phosphate (TDCPP)</u>	11
x			x	<u>Fluorinated greenhouse gases (PFC, SF₆, HFC)</u>	11
x				<u>Ozone depleting substances (ODS)</u>	11
x			x	<u>Perfluorooctane sulfonates (PFOS)</u>	11
x				<u>Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA</u>	12
	x		x	<u>Perfluorooctanoic acid (PFOA) and its salts and related substances</u>	12
x				<u>Tri-substituted organostannic compounds</u>	12
x			x	<u>Dibutyltin (DBT) compounds</u>	13
x				<u>Diocetyl tin (DOT) compounds</u>	13
x				<u>Beryllium oxide</u>	13
x		x		<u>Cobalt dichloride</u>	13
x		x		<u>Diarsenic trioxide</u>	13
x		x		<u>Diarsenic pentoxide</u>	13
x		x		<u>Nickel and Nickel compounds</u>	14
x		x		<u>Diisononyl phthalate (DINP)</u>	14
x		x		<u>Diisodecyl phthalate (DIDP)</u>	14
x				<u>Di-n-octyl phthalate (DNOP)</u>	15
x				<u>Asbestos</u>	15
x				<u>Formaldehyde</u>	15
x				<u>Azocolourants and azodyes which form certain aromatic amines</u>	15
x				<u>2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)</u>	16
x				<u>Dimethyl fumarate (DMF)</u>	16
x				<u>Polycyclic aromatic hydrocarbons (PAH)</u>	16

1	2	3	Ex	Substances	Page
		x		<u>Brominated flame retardants (BFR)</u>	16
		x		<u>Chlorinated flame retardants (CFR)</u>	16
		x		<u>Di-n-hexyl phthalate (DnHP)</u>	16
		x		<u>Perchlorates</u>	16
		x		<u>Radioactive substances</u>	17
		x		<u>Substances in candidate list for authorization of EU REACH regulation</u>	17

Table 4.2 Detail of 'Controlled Substances'

Bis (2-ethylhexyl)phthalate (DEHP)		
CAS No. [117-81-7], Synonym: Di(2-ethylhexyl)phthalate (DEHP)		
Mgmt level	Targets	Threshold level
Level 1	- Parts and materials for EEE (note that parts and materials for batteries are level 2) - Parts and materials for carrying bags, carrying cases, carrying pouches	0.1 wt% (1000 ppm) in homogenous material
	- Parts and materials for children's toy or child care article	0.1 wt% (1000 ppm) as the sum of the phthalate (DEHP, DBP, BBP) concentrations in plasticized material
Level 2	Effective date of the ban on the delivery: January 1, 2020 - All applications other than Level 1 and Level 3, including parts and materials for carrying bags, carrying cases, carrying pouches, children's toy, child care article. (e.g. packaging parts and materials, parts and materials for batteries, printing such as instruction manuals)	0.1 wt% (1000 ppm) as the sum of the phthalate (DEHP, DBP, BBP, DIBP) concentrations in plasticized material
Level 3	- Parts and materials not subject to EU Directive 2011/65/EU (EU RoHS Directive) 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	0.1 wt% (1000 ppm) in homogenous material

Dibutyl phthalate (DBP)		
CAS No. [84-74-2]		
Mgmt level	Targets	Threshold level
Level 1	- Parts and materials for EEE (note that parts and materials for batteries are level 2) - Parts and materials for carrying bags, carrying cases, carrying pouches	0.1 wt% (1000 ppm) in homogenous material
	- Parts and materials for children's toy or child care article	0.1 wt% (1000 ppm) as the sum of the phthalate (DEHP, DBP, BBP) concentrations in plasticized material
Level 2	Effective date of the ban on the delivery: January 1, 2020 - All applications other than Level 1 and Level 3, including parts and materials for carrying bags, carrying cases, carrying pouches, children's toy, child care article. (e.g. packaging parts and materials, parts and materials for batteries, printing such as instruction manuals)	0.1 wt% (1000 ppm) as the sum of the phthalate (DEHP, DBP, BBP, DIBP) concentrations in plasticized material
Level 3	- Parts and materials not subject to EU Directive 2011/65/EU (EU RoHS Directive) 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	0.1 wt% (1000 ppm) in homogenous material

Benzyl butyl phthalate (BBP)		
CAS No. [85-68-7]		
Mgmt level	Targets	Threshold level
Level 1	- Parts and materials for EEE (note that parts and materials for batteries are level 2) - Parts and materials for carrying bags, carrying cases, carrying pouches	0.1 wt% (1000 ppm) in homogenous material
	- Parts and materials for children's toy or child care article	0.1 wt% (1000 ppm) as the sum of the phthalate (DEHP, DBP, BBP) concentrations in plasticized material
Level 2	Effective date of the ban on the delivery: January 1, 2020 - All applications other than Level 1 and Level 3, including parts and materials for carrying bags, carrying cases, carrying pouches, children's toy, child care article. (e.g. packaging parts and materials, parts and materials for batteries, printing such as instruction manuals)	0.1 wt% (1000 ppm) as the sum of the phthalate (DEHP, DBP, BBP, DIBP) concentrations in plasticized material
Level 3	- Parts and materials not subject to EU Directive 2011/65/EU (EU RoHS Directive) 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	0.1 wt% (1000 ppm) in homogenous material

Diisobutyl phthalate (DIBP)		
CAS No. [84-69-5]		
Mgmt level	Targets	Threshold level
Level 1	- Parts and materials for EEE (note that parts and materials for batteries are level 2) - Parts and materials for carrying bags, carrying cases, carrying pouches	0.1 wt% (1000 ppm) in homogenous material
	- Parts and materials for children's toy or child care article	0.1 wt% (1000 ppm) as the sum of the phthalate (DEHP, DBP, BBP, DIBP) concentrations in plasticized material
Level 2	Effective date of the ban on the delivery: January 1, 2020 - All applications other than Level 1 and Level 3, including parts and materials for carrying bags, carrying cases, carrying pouches, children's toy, child care article. (e.g. packaging parts and materials, parts and materials for batteries, printing such as instruction manuals)	0.1 wt% (1000 ppm) as the sum of the phthalate (DEHP, DBP, BBP, DIBP) concentrations in plasticized material
Level 3	- Parts and materials not subject to EU Directive 2011/65/EU (EU RoHS Directive) 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	0.1 wt% (1000 ppm) in homogenous material

Cadmium and cadmium compounds		
Mgmt level	Targets	Threshold level
Level 1	<ul style="list-style-type: none"> - All (See "4.2 Additional rules for packaging components and materials." See "4.3 Additional rules for batteries.") (Plastics, synthetic fiber, films, adhesive tapes, rubber, adhesive, paints, inks are required to be tested in accordance with "4.4 Rules for chemical analysis.") 	0.01 wt% (100 ppm) of total Cd in homogenous material
Exemption	<ul style="list-style-type: none"> - Cadmium and its compounds in electrical contacts used for equipment classified as category 8, 9 and 11 as defined in Annex I of EU Directive 2011/65/EU (EU RoHS Directive) - Cadmium and its compounds in electrical contacts used for equipment classified as category 1 to 7 and 10 as defined in Annex I of EU RoHS Directive (Valid until February 29, 2020) - Cadmium and its compounds in electrical contacts used in the followings for equipment classified as category 1 to 7 and 10 as defined in Annex I of EU RoHS Directive (Valid from March 1, 2020) <ul style="list-style-type: none"> - circuit breakers, - thermal sensing controls, - thermal motor protectors (excluding hermetic thermal motor protectors), - AC switches rated at 6A and more at 250V AC and more, or 12A and more at 125V AC and more, - DC switches rated at 20A and more at 18V DC and more, and - switches for use at voltage supply frequency \geq 200 Hz - Cadmium in filter glasses and glasses used for reflectance standards used for equipment classified as category 8, 9 and 11 as defined in Annex I of EU RoHS Directive - Cadmium in striking optical filter glass types used for equipment classified as category 1 to 7 and 10 as defined in Annex I of EU RoHS Directive; excluding applications falling under point 39 of the Annex III of EU RoHS Directive - Cadmium in glazes used for reflectance standards used for equipment classified as category 1 to 7 and 10 as defined in Annex I of EU RoHS Directive 	
<p>* Reference http://ec.europa.eu/environment/waste/rohs_eee/legis_en.htm (EU RoHS Directive)</p>		

Lead and lead compounds		
Mgmt level	Targets	Threshold level
Level 1	- All (See "4.2 Additional rules for packaging components and materials." See "4.3 Additional rules for batteries.") (Plastics, synthetic fiber, films, adhesive tapes, rubber, adhesive, paints, inks are required to be tested in accordance with "4.4 Rules for chemical analysis.")	0.1 wt% (1000 ppm) of total Pb in homogenous material
	- Parts and materials for consumer products designed or intended primarily for children 12 years of age or younger	0.01 wt% (100 ppm) of total Pb in product
	- Paint and similar surface coatings of toys and other articles intended for use by children	0.009 wt% (90 ppm) of total Pb in surface coating material
	- Cables/cords (including plug and connector) with thermoset or thermoplastic coatings	0.03 wt% (300 ppm) of total Pb in surface coating material

Exemption	<ul style="list-style-type: none"> - Lead in glass of fluorescent tubes not exceeding 0.2% by weight - Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0.35% lead by weight used for equipment classified as category 8, 9, 11 as defined in Annex I of EU Directive 2011/65/EU (EU RoHS Directive) - Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0.35% lead by weight used for equipment classified as category 1 to 7 and 10 as defined in Annex I of EU RoHS Directive (Valid until June 30, 2019) - Lead as an alloying element in steel for machining purposes containing up to 0.35% lead by weight and in batch hot dip galvanized steel components containing up to 0.2% lead by weight used for equipment classified as category 1 to 7 and 10 as defined in Annex I of EU RoHS Directive (Valid from July 1, 2019) - Lead as an alloying element in aluminium containing up to 0.4% lead by weight used for equipment classified as category 8, 9, 11 as defined in Annex I of EU RoHS Directive - Lead as an alloying element in aluminium containing up to 0.4% lead by weight used for equipment classified as category 1 to 7 and 10 as defined in Annex I of EU RoHS Directive (Valid until June 30, 2019) - Lead as an alloying element in aluminium containing up to 0.4% lead by weight, provided it stems from lead-bearing aluminium scrap recycling, used for equipment classified as category 1 to 7 and 10 as defined in Annex I of EU RoHS Directive (Valid from July 1, 2019) - Lead as an alloying element in aluminium for machining purposes with a lead content up to 0.4% by weight used for equipment classified as category 1 to 7 and 10 as defined in Annex I of EU RoHS Directive (Valid from July 1, 2019) - Copper alloy containing up to 4% lead by weight - Lead in high melting temperature type solders (i.e. lead- based alloys containing 85% by weight or more lead) - 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 - Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher - Lead in PZT based dielectric ceramic materials for capacitors being part of integrated circuits or discrete semiconductors - Lead in white glasses used for optical applications - Lead in filter glasses and glasses used for reflectance standards used for equipment classified as category 8, 9 and 11 as defined in Annex I of EU RoHS Directive - Lead in ion coloured optical filter glass types used for equipment classified as category 1 to 7 and 10 as defined in Annex I of EU RoHS Directive - Lead in glazes used for reflectance standards used for equipment classified as category 1 to 7 and 10 as defined in Annex I of EU RoHS Directive - Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages used for equipment classified as category 8, 9, 11 as defined in Annex I of EU RoHS Directive - Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages used for equipment classified as category 1 to 7 and 10 as defined in Annex I of EU RoHS Directive (Valid until February 29, 2020) - Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages where at least one of the following criteria applies used for equipment classified as category 1 to 7 and 10 as defined in Annex I of EU RoHS Directive (Valid from March 1, 2020) <ul style="list-style-type: none"> - a semiconductor technology node of 90 nm or larger, - a single die of 300 mm² or larger in any semiconductor technology node, - stacked die packages with die of 300 mm² or larger, or silicon interposers of 300 mm² or larger - Lead in cermet-based trimmer potentiometer elements
<p>* Reference http://ec.europa.eu/environment/waste/rohs_eee/legis_en.htm (EU RoHS Directive)</p>	

Mercury and mercury compounds		
Mgmt level	Targets	Threshold level
Level 1	- All (See "4.2 Additional rules for packaging components and materials." See "4.3 Additional rules for batteries.")	Intentionally added or 0.1 wt% (1000 ppm) of total Hg in homogenous material
Exemption	- Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes Short length (≤ 500 mm) not exceeding (per lamp): 3.5 mg - Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes Medium length (> 500 mm and $\leq 1\ 500$ mm) not exceeding (per lamp): 5 mg - Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes Long length ($> 1\ 500$ mm) not exceeding (per lamp): 10 mg - Mercury in projector lamps	

Chromium (VI) compounds		
Synonym: Hexavalent chromium compounds		
Mgmt level	Targets	Threshold level
Level 1	- Natural leather parts and materials (See "4.4 Rules for chemical analysis" for reference.)	0.0003 wt% (3 ppm) of total Cr ⁺⁶ in dry weight of the leather.
	- All application other than the above (See "4.2 Additional rules for packaging components and materials.")	0.1 wt% (1000 ppm) of total Cr ⁺⁶ in homogenous material

Polybrominated biphenyls (PBBs)		
Mgmt level	Targets	Threshold level
Level 1	- All	0.1 wt% (1000 ppm) in homogenous material

Polybrominated diphenylethers (PBDEs)		
Mgmt level	Targets	Threshold level
Level 1	- All	0.1 wt% (1000 ppm) in homogenous material

Hexabromocyclododecane (HBCDD)		
CAS No. [25637-99-4], [3194-55-6], [134237-51-7], [134237-50-6] and [134237-52-8]		
Mgmt level	Targets	Threshold level
Level 1	- All	Intentionally added or 0.01 mass% (100ppm) of article

Polychlorinated biphenyls (PCBs) and specific substitutes		
CAS No. of Specific substitutes are [76253-60-6], [81161-70-8] and [99688-47-8]		
Mgmt level	Targets	Threshold level
Level 1	- All	Intentionally added

Polychlorinated naphthalenes (PCNs)		
Mgmt level	Targets	Threshold level
Level 1	- All	Intentionally added

Polychlorinated terphenyls (PCTs)		
Mgmt level	Targets	Threshold level
Level 1	- All	0.005 wt% (50 ppm) in material

Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (SCCP)		
Mgmt level	Targets	Threshold level
Level 1	- All	Intentionally added or 0.1 wt% (1000 ppm) of article

Tris(2-chloroethyl)phosphate (TCEP)		
CAS No. [115-96-8]		
Mgmt level	Targets	Threshold level
Level 1	- All	0.1 wt% (1000 ppm) of article

Tris(1-chloro-2-propyl)phosphate (TCPP)		
CAS No. [13674-84-5], Synonym: Tris(2-chloro-1-methylethyl) phosphate		
Mgmt level	Targets	Threshold level
Level 1	- All	0.1 wt% (1000 ppm) of article

Tris(1,3-dichloro-2-propyl)phosphate (TDCPP)		
CAS No. [13674-87-8]		
Mgmt level	Targets	Threshold level
Level 1	- All	0.1 wt% (1000 ppm) of article

Fluorinated greenhouse gases (PFC, SF ₆ , HFC)		
Mgmt level	Targets	Threshold level
Level 1	- All	Intentionally added
Exemption	- SF ₆ incorporated into surge absorber in power unit for projector	

Ozone depleting substances (ODS)		
Substances of Annexes A, B, C and E of Montreal Protocol (*)		
Mgmt level	Targets	Threshold level
Level 1	- All	Intentionally added
	- Components and materials processed with ODS	Processes with ODS cleaning, foaming or other processes
*Reference: http://www.env.go.jp/earth/ozone/montreal_protocol.html (Websites of Ministry of the Environment Government of Japan) http://ozone.unep.org/ (Websites of UNEP Ozone Secretariat)		

Perfluorooctane sulfonates (PFOS)		
Mgmt level	Targets	Threshold level
Level 1	- Textiles or other coated materials	Intentionally added or 1 µg/m ² of coated material
	- All except textiles or other coated materials	Intentionally added or 0.1 wt% (1000 ppm) of material in the part (as the sum of PFOS)
Exemption	- Any photographic coatings applied to films, papers, or printing plates	

Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA		
CAS No.[335-67-1], [3825-26-1], [335-95-5], [2395-00-8], [335-93-3], [335-66-0], [376-27-2] and [3108-24-5]		
Mgmt level	Targets	Threshold level
Level 1	- Textiles, photographic coatings applied to films, paper or printing plates and other coated consumer products	1 µg/m ² (as the sum of PFOA) of material
	- All application other than the above	0.1 wt% of material in the part (as the sum of PFOA)

Perfluorooctanoic acid (PFOA) and its salts and related substances		
CAS No 335-67-1 and its salts and related substances.		
Any related substance (including its salts and polymers) having a linear or branched perfluoroheptyl group with the formula C ₇ F ₁₅ - directly attached to another carbon atom, as one of the structural elements. Any related substance (including its salts and polymers) having a linear or branched perfluorooctyl group with the formula C ₈ F ₁₇ - as one of the structural elements.		
The following substances are excluded:		
C ₈ F ₁₇ -X, where X = F, Cl, Br.		
C ₈ F ₁₇ -C(=O)OH, C ₈ F ₁₇ -C(=O)O-X' or C ₈ F ₁₇ -CF ₂ -X' (where X' = any group, including salts).		
Mgmt level	Targets	Threshold level
Level 2	Effective date of the ban on the delivery: January 1, 2020 - All (except below)	25 ppb of PFOA including its salts or 1000 ppb (1 ppm) of one or a combination of PFOA-related substances.
	Effective date of the ban on the delivery: July 4, 2021 - Equipment used to manufacture semi-conductors - Latex printing inks.	
	Effective date of the ban on the delivery: July 4, 2022 - Plasma nano-coatings	
Exemption	- Photographic coatings applied to films, papers or printing plates and articles coated with such photographic coatings - Semiconductors or compound semiconductors manufactured in photo-lithography processes for semiconductors or in etching processes for compound semiconductors Even under the exemption, substances of CAS No.[335-67-1], [3825-26-1], [335-95-5], [2395-00-8], [335-93-3], [335-66-0], [376-27-2] and [3108-24-5] need to satisfy the threshold levels specified in the above "Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA"	

Tri-substituted organostannic compounds		
including tributyltin (TBT) compounds and triphenyltin (TPT) compounds		
Mgmt level	Targets	Threshold level
Level 1	- All	Intentionally added or 0.1 wt% (1000 ppm) of tin in the part

Dibutyltin (DBT) compounds		
Mgmt level	Targets	Threshold level
Level 1	- All	0.1 wt% (1000 ppm) of tin in the part
Exemption	- Packaging components and materials for parts and devices, which are reused and not provided to the consumer - Packaging components or materials for devices, semiconductors, and any other components (e.g. trays, magazine sticks, stoppers, reels, embossed carrier tapes)	

Diocetyl tin (DOT) compounds		
Mgmt level	Targets	Threshold level
Level 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

Beryllium oxide		
Mgmt level	Targets	Threshold level
Level 1	- All	0.1 wt% (1000 ppm) of product

Cobalt dichloride		
CAS No. [7646-79-9]		
Mgmt level	Targets	Threshold level
Level 1	- Moisture indicator used for a desiccant agent (e.g. silica gel)	Intentionally added
	- Humidity indicator card which is impregnated with cobalt dichloride	0.1 wt% (1000 ppm) of article
Level 3	- All application other than the above	0.1 wt% (1000 ppm) of article

Diarsenic trioxide		
CAS No. [1327-53-3]		
Mgmt level	Targets	Threshold level
Level 1	- Glass for LCD panels (including cover glasses, touchscreens, and backlights)	0.1 wt% (1000 ppm) of article
Level 3	- All application other than the above	0.1 wt% (1000 ppm) of article

Diarsenic pentoxide		
CAS No. [1303-28-2]		
Mgmt level	Targets	Threshold level
Level 1	- Glass for LCD panels (including cover glasses, touchscreens, and backlights)	0.1 wt% (1000 ppm) of article
Level 3	- All application other than the above	0.1 wt% (1000 ppm) of article

Nickel and Nickel compounds		
Note: If there are other instructions issued by Sony for nickel, it shall be followed.		
Mgmt level	Targets	Threshold level
Level 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).	0.28 $\mu\text{g}/\text{cm}^2/\text{week}$ (release concentration)
Level 3	- All, where prolonged skin contact is expected	Intentionally added

Diisononyl phthalate (DINP)		
CAS No. [28553-12-0] and [68515-48-0]		
Mgmt level	Targets	Threshold level
Level 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 (DINP, DIDP, DNOP) concentrations in plasticized material
Level 3	- All application other than the above	Intentionally added

Di-isodecyl phthalate (DIDP)		
CAS No. [26761-40-0] and [68515-49-1]		
Mgmt level	Targets	Threshold level
Level 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 (DINP, DIDP, DNOP) concentrations in plasticized material
Level 3	- All application other than the above	Intentionally added

Di-n-octyl phthalate (DNOP)		
CAS No. [117-84-0]		
Mgmt level	Targets	Threshold level
Level 1	- Parts and materials for children's toy or child care article that can be placed in a child's mouth	0.1 wt% as the sum of the phthalate (DINP, DIDP, DNOP) concentrations in plasticized material

Asbestos		
Mgmt level	Targets	Threshold level
Level 1	- All	Intentionally added

Formaldehyde		
Mgmt level	Targets	Threshold level
Level 1	- The wooden products made from fiberboard, particleboard, or plywood, which are employed in products (e.g. speakers and racks)	See "4.4 Rules for chemical analysis."
	- Textiles	0.0075 wt% (75 ppm) of textile material

Azocolourants and azodyes which form certain aromatic amines		
Regarding certain aromatic amines, see Table 4.2b.		
Mgmt level	Targets	Threshold level
Level 1	- Textiles and Leather (See "4.4 Rules for chemical analysis" for reference.)	0.003 wt% (30 ppm) of the finished textile/leather product

Table 4.2b List of certain aromatic amines

CAS No.	Substance name
92-67-1	4-aminodiphenyl
92-87-5	benzidine
95-69-2	4-chloro-o-toluidine; 4-chloro-2-methylaniline
91-59-8	2-naphthylamine
97-56-3	o-aminoazotoluene
99-55-8	2-amino-4-nitrotoluene; 5-nitro-o-toluidine
106-47-8	p-chloroaniline
615-05-4	2,4-diaminoanisole
101-77-9	4,4'-diaminodiphenylmethane; 4,4'-methylenedianiline
91-94-1	3,3'-dichlorobenzidine
119-90-4	3,3'-dimethoxybenzidine
119-93-7	3,3'-dimethylbenzidine
838-88-0	3,3'-dimethyl-4,4'-diaminodiphenylmethane; 4,4'-diamino-3,3'-diphenylmethane
120-71-8	p-cresidine; 6-methoxy-m-toluidine
101-14-4	4,4'-methylene-bis-(2-chloroanilene)
101-80-4	4,4'-oxideaniline
139-65-1	4,4'-thiodianiline; 4,4'-diaminodiphenylsulfide
95-53-4	o-toluidine
95-80-7	2,4-toluylenediamine; 4-methyl-m-phenylenediamine
137-17-7	2,4,5-trimethylaniline
90-04-0	o-anisidine
60-09-3	4-aminoazobenzene

2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)		
CAS No. [3846-71-7], Synonym: "Phenol, 2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl)-", "2-(3',5'-Di-tert-butyl-2'-hydroxyphenyl)benzotriazole"		
Mgmt level	Targets	Threshold level
Level 1	- All	Intentionally added or 0.1 wt% (1000 ppm) of article

Dimethyl fumarate (DMF)		
CAS No. [624-49-7]		
Mgmt level	Targets	Threshold level
Level 1	- All	0.00001 wt% (0.1 ppm) of the part

Polycyclic aromatic hydrocarbons (PAH)		
CAS No.[50-32-8], [192-97-2], [56-55-3], [218-01-9], [205-99-2], [205-82-3], [207-08-9] and [53-70-3]		
Mgmt level	Targets	Threshold level
Level 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
	- 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

Brominated flame retardants (BFR)		
(other than PBBs, PBDEs, or HBCDD)		
Mgmt level	Targets	Threshold level
Level 3	- Printed Wiring Board (PWB) Laminates	0.09 wt% (900 ppm) total bromine content in laminate
	- Plastic materials except printed wiring board laminates	0.1 wt% (1000 ppm) of bromine in plastic materials

Chlorinated flame retardants (CFR)		
(other than TCEP, TCPP, or TDCPP)		
Mgmt level	Targets	Threshold level
Level 3	- Printed Wiring Board (PWB) Laminates	0.09 wt% (900 ppm) total chlorine content in laminate
	- Plastic materials except printed wiring board laminates	0.1 wt% (1000 ppm) chlorine in plastic materials

Di-n-hexyl phthalate (DnHP)		
CAS No. [84-75-3], Synonym: Dihexyl phthalate		
Mgmt level	Targets	Threshold level
Level 3	- All	Intentionally added or 0.1wt% (1000 ppm) of article

Perchlorates		
Mgmt level	Targets	Threshold level
Level 3	- All	6×10^{-7} wt% (6 ppb) of battery or product part

Radioactive substances		
Mgmt level	Targets	Threshold level
Level 3	- All	Intentionally added

Substances in candidate list for authorization of EU REACH regulation (except for the substances already mentioned in Table 4.2)		
See Table 4.2c		
Mgmt level	Targets	Threshold level
Level 3	- All	0.1 wt% (1000 ppm) of article

Table 4.2c List of Substances in candidate list for authorization of EU REACH regulation

CAS No.	Substance name
10043-35-3, 11113-50-1	Boric acid
12179-04-3, 1330-43-4, 1303-96-4, 12267-73-1	Disodium tetraborates
71888-89-6	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)
68515-42-4	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)
	Aluminosilicate Refractory Ceramic Fibres
	Zirconia Aluminosilicate Refractory Ceramic Fibres
140-66-9	4-(1,1,3,3-tetramethylbutyl)phenol Synonym: 4-tert-Octylphenol
111-96-6	Bis(2-methoxyethyl) ether
117-82-8	Bis(2-methoxyethyl) phthalate (DMEP)
112-49-2	1,2-bis(2-methoxyethoxy)ethane (TEGDME) Synonym: Triglyme, Triethylene glycol dimethyl ether, Ansul Ether 161, DMTG, Ethane 1,2-bis(2-methoxyethoxy)-, Glyme 4, Hisolve MTM, Methyltriglyme, NSC 66400
110-71-4	1,2-dimethoxyethane (EGDME) Synonym: 1,2-Ethandiol, dimethyl ether; 2,5-Dioxahexane; DME; DME (glycol ether); Dimethyl Cellosolve; Ethylene dimethyl ether; Glycol dimethyl ether; Glyme; Hisolve MMM; Monoethylene glycol dimethyl ether; Monoglyme; NSC 60542; α,β -Dimethoxyethane
60-09-3	4-Aminoazobenzene Synonym: 4-Phenylazoaniline, Aniline Yellow
629-14-1	1,2-Diethoxyethane Synonym: Diethyl glycol; Ethylene Glycol Diethyl Ether
1303-86-2	Diboron trioxide Synonym: Boron oxide; Boron sequioxide
68-12-2	N,N-dimethylformamide Synonym: Formyldimethylamine
84777-06-0	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear Synonym: bis-C5-alkyl-(linear and branched)phthalate
605-50-5	Diisopentylphthalate (DIPP) Synonym: 1,2-Benzenedicarboxylic acid; bis(3-methylbutyl)ester; Diisoamyl phthalate; Isoamyl phthalate
776297-69-9	N-pentyl-isopentylphthalate n-Pentyl-isopentyl phthalate; 1,2-Benzenedicarboxylic acid; 3-methylbutylpentyl ester

CAS No.	Substance name
57110-29-9, 19438-60-9, 25550-51-0, 48122-14-1	Hexahydromethylphthalic anhydride
131-18-0	Dipentyl phthalate (DPP) Synonym: amoil; amylphthalate; amyl phthalate; di-n-phthalate; ai3-00363(usda); diamyl phthalate; dipentyl phthalate; dil-n-amyl phthalate; di-1-pentylphthalate
	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)
25155-23-1	Trixylyl phosphate (TXP)
573-58-0	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)
96-45-7	Imidazolidine-2-thione; (2-imidazoline-2-thiol) Synonym: ethylene thiourea
68515-50-4	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear Synonym: Diisohexyl phthalate (DiHP)
1937-37-7	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)
15571-58-1	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE) 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)
25973-55-1	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)
68515-51-5, 68648-93-1	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters or mixed decyl and hexyl and octyl diesters
1120-71-4	1,3-propanesultone
3864-99-1	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)
36437-37-3	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)
4149-60-4, 375-95-1, 21049-39-8	Perfluorononan-1-oic-acid and its sodium and ammonium salts
50-32-8	Benzo[def]chrysene Synonym: Benzo[a]pyrene
80-05-7	4,4'-isopropylidenediphenol Synonym: Bisphenol A; BPA
335-76-2, 3830-45-3, 3108-42-7	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts

CAS No.	Substance name
355-46-4, 68259-08-5, 3871-99-6	Perfluorohexane-1-sulphonic acid and its salts
13560-89-9, 135821-74-8, 135821-03-3	Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene
218-01-9, 1719-03-5	Chrysene
56-55-3, 1718-53-2	Benz[a]anthracene
191-24-2	Benzo[ghi]perylene
556-67-2	Octamethylcyclotetrasiloxane (D4)
541-02-6	Decamethylcyclopentasiloxane (D5)
540-97-6	Dodecamethylcyclohexasiloxane (D6)
12008-41-2	Disodium octaborate
61788-32-7	Terphenyl, hydrogenated
84-61-7	Dicyclohexyl phthalate (DCHP)
6807-17-6	2,2-bis(4'-hydroxyphenyl)-4-methylpentane Synonym: 4,4'-isobutylethylidenediphenol
206-44-0, 93951-69-0	Fluoranthene
85-01-8	Phenanthrene
129-00-0, 1718-52-1	Pyrene
207-08-9	Benzo[k]fluoranthene

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.

Table 4.3 Additional rules for packaging components and materials

Heavy metals (cadmium, lead, mercury, and hexavalent chromium)		
Articles that satisfy not only the rules specified in Table 4.2, 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 4.3a.	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 "4.4 Rules for chemical analysis."		

Table 4.3a 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 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, 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 batteries

4.3.1 Definitions of "Battery," "Battery pack," and "Button cell" in this Standard

"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).

"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.

"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.

4.3.2 "Targets" and "Effective date of the ban on the delivery" regarding cadmium, lead and mercury for batteries

For cadmium (Cd), lead (Pb), and mercury (Hg), the threshold level specified in Table 4.4 shall be applied to batteries.

Apart from the following, if there are other instructions for cadmium, lead and mercury in batteries, it shall be followed.

Table 4.4 Detail for cadmium, lead and mercury for batteries

Cadmium and cadmium compound		
Mgmt level	Targets	Threshold level
Level 1	- Carbon zinc batteries (except button cells) - Alkaline manganese batteries (except button cells) - Nickel hydrogen rechargeable batteries (except button cells)	0.001% (10 ppm) by weight of battery
	- All other batteries	0.002% (20 ppm) by weight of battery
Lead and lead compounds		
Mgmt level	Targets	Threshold level
Level 1	- Alkaline manganese batteries (except button cells)	0.004 wt% (40 ppm) of battery
	- Carbon zinc batteries - Alkaline manganese button cells	0.1 wt% (1000 ppm) of battery
	- All other batteries	0.2wt% (2000 ppm) of battery
Mercury and mercury compounds		
Mgmt level	Targets	Threshold level
	- All batteries	Intentionally added or 0.0001 wt% (1 ppm) of battery, 0.0005 wt% (5 ppm) of total Hg in homogenous material

4.3.3 "Targets" and "Effective date of the ban on the delivery" regarding substances other than cadmium, lead and mercury for batteries and regarding substances for parts of "Battery packs" other than their batteries

For "controlled substances" other than cadmium (Cd), lead (Pb) and mercury (Hg), the criteria/threshold levels specified in Table 4.2 shall be applied to batteries.

Parts of "Battery packs" other than their batteries shall follow the criteria/threshold levels specified in Table 4.2.

4.4 Rules for chemical analysis

4.4.1 Substances and targets which are chemical analysis is required

Cadmium/cadmium compounds and Lead/lead compounds
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 - Closed system for acid decomposition method (e.g. microwave decomposition method) - Acid digestion method - Dry ashing method 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 - Inductively Coupled Plasma-Optical (Atomic) Emission Spectrometry (ICP-OES [ICP-AES]) - Atomic Absorption Spectrometry (AAS) - Atomic Fluorescence Spectrometry (AFS) - Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Formaldehyde
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 ³) in an air-tight test chamber whose volume is 12 m ³ , 1 m ³ , or 0.0225 m ³ 2) [With a perforator method] - Equal to or less than 6.5 mg in 100 g of a particleboard without a surface treatment (the average value during six months) - Equal to or less than 7.0 mg in 100 g of a fiberboard without a surface treatment (the average value during six months) - 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) 3) [With a desiccator method] - Average content: 0.5 mg/l or less - Maximum content: 0.7 mg/l or less (Use N=2 to check the average and maximum values.)
Testing methods: - A chamber method specified in EN 717-1:2004 - A perforator method specified in ISO12460:2015 - A desiccator method specified in JIS A 5905 (Fiberboards) and JIS A 5908 (Particleboards)

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 20).

For mercury, typical methods are as follows.

- (1) Closed system for acid decomposition method (e.g. a microwave decomposition method) (e.g. IEC 62321-5:2013, 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 20).

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)

4.4.2 Chemical analysis for reference

Hexavalent chromium compounds
For reference, the methods for natural leather materials are as follows.
Testing methods (for reference)
1) EN ISO 17075:2007
2) IULTCS/IUC18 (conform with ISO 17075:2007)

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)
1) For textiles: EN 14362-1:2012; EN 14362-3:2012 for 4-aminoazobenzene
2) For leather: EN ISO 17234-1:2015; EN ISO 17234-2:2011 for 4-aminoazobenzene

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

Sony declares in "Sony Group Environmental Mid-Term Target" that:
 Sony analyzes the use of chemical substances and the contents in parts and products.
 Based on the risk evaluation, Sony 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 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 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"> - Substrates for FeliCa contactless IC cards - Carrying bags, carrying cases, and carrying pouches for digital cameras, video camcorders, and portable audio products (excluding those for professional use) - Cable ties used for accessories and connecting cords - Packaging components and materials to protect, contain, or transport products or supplied accessories (e.g. bags, adhesive tapes, cartons, and blister packs) (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.) - Heat shrink tubes (excluding those for batteries) - Flexible flat cables (FFC) - Insulating plates, decorative panels, labels (excluding those for batteries) - Sheets, and laminates (including sheets and laminates used for exterior of wooden speakers) - Suction cups for mounting in-vehicle products 	Intentionally use
	<ul style="list-style-type: none"> - 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. (excluding accessories and products designed for professional use) (This except in cases where doing so would negatively affect product quality or cause technical problems.) 	Intentionally use
Level 3	- All application other than the above	Intentionally use
Exemption	- Binder for resins used for paints, inks, coating agents, adhesives etc.	
* http://www.sony.net/SonyInfo/csr_report/environment/products/replace.html#block2		

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 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
** http://www.sony.net/SonyInfo/csr_report/environment/products/replace.html#block3		

APPENDIX

1. MAJOR CONTROLLED SUBSTANCES, AND EXAMPLES OF APPLICABLE LAWS AND REGULATIONS

Disclaimer: Applicable laws and regulations, and controlled substances in Appendix 1 are illustrative only, not all the substances and its alias name are listed.

2. HISTORY OF UPDATES ON EFFECTIVE DATE OF THE BAN ON THE DELIVERY FOR EVERY SUBSTANCE

1. MAJOR CONTROLLED SUBSTANCES, AND EXAMPLES OF APPLICABLE LAWS AND REGULATIONS

Note: This information is confirmed as of January 2019. The revised edition and appendix should be also referred if there are.

The laws and regulations cited herein are subject to change, and it is essential to consult the latest editions of the relevant laws and regulations.

Substances	Laws and regulations (examples)
Cadmium and cadmium compounds	European Union. REACH Regulation (EC) No. 1907/2006 Annex XVII.
	European Union. RoHS Directive 2011/65/EU.
	European Union. Batteries Directive 2006/66/EC.
	South Korea. Quality Management and Safety Control of Industrial Products Act
	South Korea. Electrical Appliances Safety Control Act.
	South Korea. Act on Resource Recycling of Electrical and Electronic Equipment and Vehicles.
	Denmark: Statutory Order No. 1199.
Lead and lead compounds	European Union. RoHS Directive 2011/65/EU.
	European Union. Batteries Directive 2006/66/EC.
	Argentina. The Law No..26.184 Portable Power and Resolution 14/2007.
	Brazil. Battery Regulation (Resolution No. 401)
	Paraguay. Integral Management of Batteries (LEY No. 5882)
	South Korea. Quality Management and Safety Control of Industrial Products Act
	South Korea. Act on Resource Recycling of Electrical and electronic Equipment and Vehicles.
	Denmark: Statutory Order No. 1012.
Mercury and mercury compounds	European Union. RoHS Directive 2011/65/EU.
	European Union. Batteries Directive 2006/66/EC.
	China. 1997 Regulation on Mercury Content Limitation for Batteries.
	China. Inspection and Management Methods for the Import and Export of Battery Products Containing Mercury. (English translation by EIA)
	United States. Louisiana State. Mercury Risk Reduction Act.
	South Korea. Act on Resource Recycling of Electrical and electronic Equipment and Vehicles.
Hexavalent chromium compounds	European Union. RoHS Directive 2011/65/EU.
	South Korea. Act on Resource Recycling of Electrical and electronic Equipment and Vehicles.
Polybrominated biphenyls (PBB)	European Union. REACH Regulation (EC) No. 1907/2006 Annex XVII.
	European Union. RoHS Directive 2011/65/EU.
	South Korea. Act on Resource Recycling of Electrical and electronic Equipment and Vehicles.
Polybrominated diphenylethers (PBDE)	European Union. REACH Regulation (EC) No. 1907/2006 Annex XVII.
	European Union. RoHS Directive 2011/65/EU.
	South Korea. Act on Resource Recycling of Electrical and electronic Equipment and Vehicles.
Hexabromocyclododecane (HBCDD)	European Union. REACH Regulation (EC) No. 1907/2006.

Substances	Laws and regulations (examples)
Polychlorinated biphenyls (PCB)	Japan. Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances, Class I.
	United States. Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions (40CFR 761).
Polychlorinated naphthalenes (PCN)	Japan. Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances, Class I.
Polychlorinated terphenyls (PCT)	European Union. REACH Regulation (EC) No. 1907/2006 Annex XVII.
Short-chain chlorinated paraffins (SCCP)	Norway. Regulations relating to restrictions on the use, etc. of certain dangerous chemicals.
	European Union. EU POPs Regulation (EC) No 850/2004.
Tris(2-chloroethyl) phosphate (TCEP), Tris(2-chloro-1-methylethyl) phosphate (TCPP), Tris(1,3-dichloro-2-propyl) phosphate (TDCPP)	European Union. REACH Regulation (EC) No. 1907/2006.
	United States. Vermont State. Act 85
Hydrofluorocarbon (HFC), Perfluorocarbon (PFC), Sulfur hexafluoride (SF ₆)	European Union. EU regulation (EC) No. 842/2006.
	Denmark: Statutory Order No. 552.
	Switzerland. Ordinance on Risk Reduction related to Chemical Products (ORRChem).
Ozone depleting substances (ODS)	European Union. EU regulation (EC) No. 2037/2000.
	Japan. Law Concerning the Protection of the Ozone Layer through the Control of Specified Substances and Other Measures.
	United States. Clean Air Act Amendments of 1990.
	Republic of Indonesia. Regulation of the Minister of Industry of the Republic of Indonesia No. 33/M-IND/PER/4/2007 dated April 17, 2007.
Hydrochlorofluorocarbons (HCFC)	European Union. EU regulation (EC) No. 1005/2009.
Perfluorooctane sulfonates (PFOS)	European Union. REACH Regulation (EC) No. 1907/2006 Annex XVII.
Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA	Norway. Product Regulations
Perfluorooctanoic acid (PFOA) and its salts and related substances	European Union. REACH Regulation (EC) No. 1907/2006 Annex XVII.
Trisubstituted organic tin compounds (incl. tributyltin (TBT) compounds and triphenyltin (TPT) compounds)	European Union. REACH Regulation (EC) No. 1907/2006 Annex XVII.
	Japan. Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances, Class I and Class II.
Dibutyltin (DBT) compounds	European Union. REACH Regulation (EC) No. 1907/2006 Annex XVII.
Dioctyltin (DOT) compounds	European Union. REACH Regulation (EC) No. 1907/2006 Annex XVII.
Beryllium oxide	European Union. WEEE Directive 2002/96/EC and EU Directive 1999/45/EC.
Cobalt dichloride	European Union. REACH Regulation (EC) No. 1907/2006 Annex XVII.
Diarsenic trioxide, Diarsenic pentaoxide	European Union. REACH Regulation (EC) No. 1907/2006.
Bis (2-ethylhexyl)phthalate, Dibutyl phthalate, Benzyl butyl phthalate, Diisobutyl phthalate	European Union. REACH Regulation (EC) No. 1907/2006 Annex XVII.
	European Union. RoHS Directive 2011/65/EU, 2015/863/EU.

Substances	Laws and regulations (examples)
Asbestos	Japan. Industrial Safety and Health Law.
	Germany. Chemicals Prohibition Ordinance. (German abbreviation: ChemVerbotsV)
Specific azo compounds	European Union. REACH Regulation (EC) No. 1907/2006 Annex XVII.
Formaldehyde	Germany. Chemicals Prohibition Ordinance. (German abbreviation: ChemVerbotsV)
	Denmark: Statutory Order No. 289.
2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	Japan. Law Concerning the Examination and Regulation of Manufacture of Chemical Substances, Class I.
Dimethyl fumarate (DMF)	European Union. REACH Regulation (EC) No. 1907/2006.
Polycyclic aromatic hydrocarbons (PAHs)	European Union. REACH Regulation (EC) No. 1907/2006 Annex XVII.
Heavy metals (lead, cadmium, mercury, and hexavalent chromium)	European Union. EU Directive 94/62/EC on packaging and packaging waste and its amendments.
	New York State and other 15 states in the United States. Regulations on Heavy Metals in Packaging Materials.
Nickel and Nickel compounds	European Union. REACH Regulation (EC) No. 1907/2006 Annex XVII.

2. HISTORY OF UPDATES ON EFFECTIVE DATE OF THE BAN ON THE DELIVERY FOR EVERY SUBSTANCE

Substances: Bis (2-ethylhexyl)phthalate (DEHP), Dibutyl phthalate (DBP), Benzyl butyl phthalate (BBP)	
Targets	Effective date of the ban on the delivery
<ul style="list-style-type: none"> - 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
<ul style="list-style-type: none"> • Parts and materials for EEE 	Banned since April 1, 2018
<ul style="list-style-type: none"> • Parts and materials for toys and childcare articles 	Banned since April 1, 2019

Substances: Diisobutyl phthalate (DIBP)	
Targets	Effective date of the ban on the delivery
<ul style="list-style-type: none"> - 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
<ul style="list-style-type: none"> • Parts and materials for EEE 	Banned since April 1, 2018

Substances: Cadmium and cadmium compounds	
Targets	Effective date of the ban on the delivery
<ul style="list-style-type: none"> - 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
<p>All uses except those specified in Level 2 and Exemption Typical examples are given below:</p> <ul style="list-style-type: none"> - 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
<ul style="list-style-type: none"> - 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
<ul style="list-style-type: none"> - Optical glass 	Banned since June 1, 2010
<ul style="list-style-type: none"> - Cadmium in colour converting II-VI LEDs ($< 10 \mu\text{g Cd per mm}^2$ of light-emitting area) for use in display systems, except the cases where cadmium is contained in a concentration ≥ 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) <p>Note: Level 1 applies to the cases where cadmium is contained in a concentration ≥ 100 ppm in the above designated plastics</p>	Banned since July 1, 2014

Substances: Lead and lead compounds	
Targets	Effective date of the ban on the delivery
<ul style="list-style-type: none"> - Packaging components and materials (See 4.2.1.) - The paints, and inks containing lead, which are used for PWBs 	Banned since the establishment of this Standard
<ul style="list-style-type: none"> - Surface coatings (plating) for the external electrodes, lead wires, and other areas of parts (e.g. electrical parts, semiconductor devices, and heat sinks) - 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 - The paints and inks used for outer and exposed areas of devices 	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"> - The surface coatings for the external electrodes, lead wires, etc. of the parts contained in AC adaptors, remote commanders, semiconductor devices, etc. - Lead 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 - 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) - 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 - The paints and inks used for areas other than the outer and exposed ones of devices 	Banned since January 1, 2005
<ul style="list-style-type: none"> - Electroless plating films such as electroless nickel plating and electroless gold plating whose lead content is more than 1000 ppm 	Banned since February 1, 2006
<ul style="list-style-type: none"> - Glass for all uses except those specified in Exemption - 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% 	Banned since June 1, 2010
<ul style="list-style-type: none"> - Dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC 	Banned since January 1, 2012
<ul style="list-style-type: none"> - Crystal glass as defined in Annex 1 (Categories 1, 2, 3 and 4) of EU Directive 69/493/EEC 	Banned since April 1, 2012

(*1) Allowable lead concentrations

Type of alloy	Allowable lead concentration
Steel	up to 0.35 wt%
Aluminum alloy	up to 0.4 wt%
Copper alloys (including brass and phosphor bronze)	up to 4 wt%
Solder (*2)	up to 1000 ppm

Substances: Mercury and mercury compounds	
Targets	Effective date of the ban on the delivery
<ul style="list-style-type: none"> - 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
<ul style="list-style-type: none"> - All uses except those specified in Level 2 and Exemption 	Banned since January 1, 2005
<ul style="list-style-type: none"> - 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

Substances: Hexavalent chromium compounds	
Targets	Effective date of the ban on the delivery
- Packaging components and materials (See 4.2.1.)	Banned since the establishment of this Standard
- Constituents of parts or materials (e.g. inks, paints, additives, etc.) - Residues in the surfaces of screws, steel sheets, etc. that are processed with plating or conversion coating	Banned since January 1, 2005

Substances: Polybrominated biphenyls (PBB)	
Targets	Effective date of the ban on the delivery
- All uses (e.g. flame retardants contained in plastics)	Banned since the establishment of this Standard

Substances: Polybrominated diphenylethers (PBDE) (including decabromodiphenyl ether [DecaBDE])	
Targets	Effective date of the ban on the delivery
- 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

Substances: Polychlorinated biphenyls (PCB), polychlorinated naphthalenes (PCN), polychlorinated terphenyls (PCT)	
Targets	Effective date of the ban on the delivery
- All uses (e.g. capacitors, lubricants, insulating oils, transformers containing oil, paints, and flame retardants in plastics)	Banned since the establishment of this Standard

Substances: Short-chain chlorinated paraffins (SCCP)	
Short-chain chlorinated paraffins with carbon chain length;10-13	
Targets	Effective date of the ban on the delivery
- 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

Substances: Polyvinyl chloride (PVC) and PVC blends	
Targets	Effective date of the ban on the delivery
- 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

Substances: Hydrofluorocarbon (HFC), Perfluorocarbon (PFC)	
Targets	Effective date of the ban on the delivery
- All uses installed into product (e.g. refrigerant and insulation)	Banned since April 1, 2008

Substance: Ozone depleting substances (ODS)	
ODS in Table 4.2d	
Targets	Effective date of the ban on the delivery
- 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

Note: The incorrect CAS No. 165-97-7 in Table 4.2d is replaced with the correct CAS No. 2354-06-5.

Substances: Perfluorooctane sulfonates (PFOS)	
Targets	Effective date of the ban on the delivery
- Materials whose PFOS concentration is 0.1 wt% or more - Textiles or other coated materials whose amount of PFOS is 1 µg/m ² 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

Substances: Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA		
CAS No. 335-67-1, 3825-26-1, 335-95-5, 2395-00-8, 335-93-3, 335-66-0, 376-27-2, 3108-24-5		
Targets	Criteria/threshold levels	Effective date of the ban on the delivery
- Coatings applied to textiles, leathers and fabrics	- More than 1 µg/m ² 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

Substances: Trisubstituted organotin compounds (including tributyltin (TBT) compounds and triphenyltin (TPT) compounds)	
Metal tin, tin alloys, tin plating and tin inorganic compounds do not fall under this category.	
Targets	Effective date of the ban on the delivery
- All uses (e.g. paints, inks, preservatives, and fungicides)	Banned since the establishment of this Standard

Substances: Dibutyltin (DBT) compounds		
Metal tin, tin alloys, tin plating and tin inorganic compounds do not fall under this category.		
Targets	Criteria/threshold levels	Effective date of the ban on the delivery
- All applications including additives of plastics (except Level 2)	- More than 1000 ppm (or 0.1 wt%) of the tin contained in materials	Banned since July 1, 2011
- One-component and two-component room temperature vulcanisation sealants (RTV-1 and RTV-2 sealants) - One-component and two-component room temperature vulcanisation adhesives (RTV-1 and RTV-2 adhesives) - Catalysts for paints or coating agents - Stabilizers in PVC used for coating of fabrics intended for outdoor applications - 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	Banned since July 1, 2014

Substances: Dioctyltin (DOT) compounds		
Metal tin, tin alloys, tin plating and tin inorganic compounds do not fall under this category.		
Targets	Criteria/threshold levels	Effective date of the ban on the delivery
- Additives of textiles	- More than 1000 ppm (or 0.1 wt%) of the tin contained in materials	Banned since July 1, 2011

Substances: Beryllium oxide	
Targets	Effective date of the ban on the delivery
- All uses	Banned since April 1, 2008

Substance: Cobalt dichloride	
Targets	Effective date of the ban on the delivery
- 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

Substances: Diarsenic trioxide, Diarsenic pentaoxide		
The target substances are as follows: CAS No. 1327-53-3, 1303-28-2. The following threshold level for each substance shall be applied.		
Targets	Criteria/threshold levels	Effective date of the ban on the delivery
- 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

Substances: Asbestos	
Targets	Effective date of the ban on the delivery
- All uses (e.g. insulators and fillers)	Banned since the establishment of this Standard

Substances: Specific azo compounds	
Azodyes that form any of the amine compounds listed in Table 4.2b through the decomposition methods cited in REACH Regulation (EC) No. 1907/2006 / Annex XVII and amine compounds in Table 4.2b	
Targets	Effective date of the ban on the delivery
- 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

Substance: Formaldehyde	
Targets	Effective date of the ban on the delivery
- 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

Substance: Specific benzotriazole	
2-(3',5'-Di-tert-butyl-2'-hydroxyphenyl)benzotriazole (CAS No. 3846-71-7)	
Targets	Effective date of the ban on the delivery
- 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

Substances: Dimethyl fumarate (DMF)	
CAS No. 624-49-7	
Targets	Effective date of the ban on the delivery
- All uses (e.g. fungicides and desiccant agents)	Banned since April 1, 2010

(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, Seventeenth Edition

Enforced 2019.04.01

Issued by Secretariat of the Sony Technical Standards, Sony Corporation