

Management Standards for the Environment-Related Substances

Ver. 9.1

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Dexerials Corporation

The history of the change		
Version No	Enforcement date	The contents of the change
Ver.1.0	October 18, 2012	The establishment of the first edition
Ver.2.0	March 19, 2013	<p>The revision by the periodical review</p> <ol style="list-style-type: none"> The addition of new level 3 substances (Diisopentylphthalate, "1,2-Benzenedicarboxylic acid,dipentylester,branched and linear" N-pentyl-isopentylphthalate, Etylene glycol dimethyl ether, Perchlorate) Moving up of the delivery prohibition time of level 2 substances (HBCDD, dibutyl phthalate etc.) Change the expression of the target use (cadmium, lead, mercury, PVC, DBT, DOT, specific benzotriazoles, dibutyl phthalate etc. packing materials) Change of the standard / threshold level (cadmium, lead, mercury, hexavalant chrome, PCB, PCN, PCT, PBB, PBDE) The correction of the error in writing
Ver.3.0	March 14, 2014	<ol style="list-style-type: none"> The addition of new level 1 substances (TCPP, TDCPP, PFOA, SF6), TCEP is changed level 1 from level 2, The addition of new level 2 substances (PAH), Change prohibition time of level 2 of Cd and Cd compound to July 1, 2014.. The addition of new level 3 substances (Dipentyl phthalate, Trixylyl phosphate) fixed date comes and changes level 1 from level 2 (HBCDD) The correction of the error in writing
Ver.4.0	July 10, 2015	<p>The revision by the periodical review</p> <ol style="list-style-type: none"> Add new level 1 substance (six fluorinated sulfur SF6) to the revision history of Ver3.0 Revise the ninth page TCCP to TCPP, and TDCCP to TDCPP The addition of the table of contents and correction Revised 4.2 titles to " Additional rules for packing components and materials used for the product" Add the matter about the packing components and materials used for the delivery of parts / raw materials / sub-materials to be used for the product for 4.3 Revise 4.3 "Additional rules for batteries (Applicable to all batteries in commercial distribution)" to 4.4 Add Dexerials Co. Ltd. Group to 1(Purpose) Revise 2(Scope) Add (more than molecular weight 10,000) to a synthetic macromolecule in 3(TERMS AND DEFINITIONS) In 4.3, did it if not intended for the thing delivered to DXJ, DXSC, DXSA, DXSZ about the packing components and materials used for/ the delivery of parts/raw materials / sub-materials to be used for the product and intend for only the thing delivered to DXA, DXE

The history of the change

Version No	Enforcement date	The contents of the change
Ver.4.0	July 10,2015	<p>9. Add new level 1 substances (HCFC,BNST)</p> <p>10. The fixed date comes and changes level 1 from level 2 in Ver3.0 [Cadmium and cadmium compounds, Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA, Dibutyltin (DBT) compounds, Diarsenic trioxide, Diarsenic pentaoxide, Bis (2-ethylhexyl)phthalate, Dibutyl phthalate, Benzyl butyl phthalate, Diisobutyl phthalate,PAH</p> <p>11. Add level 2 substances (Bis (2-ethylhexyl)phthalate, Dibutyl phthalate, Benzyl butyl phthalate, Diisobutyl phthalate)</p> <p>12. Add new level 3 substances (DOTE, reaction mass of DOTE and MOTE)</p> <p>13. The substance which changed the name of the substance It was Specific benzotriazole in Ver3.0, but it is changed the name in Ver4.0 to 2-benzotriazol-2-yl-4,6- di-tert-butylphenol(UV-320)</p> <p>14. The substances which changed expression</p>
Ver.5.0	March 14,2017	<p>The revision by the periodical review</p> <p>1. Contents</p> <ul style="list-style-type: none"> • Change the PACKAGING components/materials to Sub-Materials in table of contents 4.2,4.3 <p>2. Addition of a definition</p> <p>Add Supply, Part, Material, Homogenous material, Article to the definition.</p> <p>3. Environment-relates substances</p> <ul style="list-style-type: none"> • Add new level 1 substance : Nickel • Add new level 3 substance : Redioactive substances • Change the substance name about the following substances and add substances in SVHC candidate list. PBB, PBDE, HBCD, PCB, TCEP, TCPP, TDCPP, Fluorinated greenhouse gases, PFOA, DMF, BFR, CFR, DnHP, Substances in SVHC candidate list • Change the expression of Targets / Threshold level about the following substances. : DEHP, DBP, BBP, DIBP, Cadmium and its compounds, Lead and its compounds, Mercury and its compounds, Chromium(VI) compounds, PBB, PBDE, HBCDD, PCB, SCCP, TCEP, TCPP, TDCPP, Fluorinated greenhouse gases, ODS(HCFC), PFOS, PFOA, ,TCEP, TCPP, TDCPP, DBT, DOT, Beryllium oxide Cobalt dioxide, Diarsenic trioxide, Diarsenic pentoxide, DINP, DIDP, DNOP, Formaldehyde, Azocolourants and azodyes, UV320, DMF, PAH, BFR, CFR, DnHP, Perchlorates, Substances in SVHC candidate list <p>4 Add (note 1), (note 2) to 4.2.1 the definition of sub-materials.</p> <p>5. Chang contents of list 4.3a to main sub-materials used in Dexerials Corporation Group</p> <p>6. Change expression of 4.4 table 4.4</p>

The history of the change		
Version No	Enforcement date	The contents of the change
Ver.6.0	March 14,2018	<p>The revision by the periodical review</p> <ol style="list-style-type: none"> 1 Changed the document management number from MS-3004 to QS-082. 2 In Table 4.1 of environmental management substances, remove BNST, and change the expression of the substance name of HBCDD , Ozone depleting substances , Nickel. In Table 4.2, Level 2 uses of DEHP, DBP, BBP, and DIBP are changed to Level 1. Review of cadmium and lead exemption items. Change the threshold level of HBCDD Expanded the subject substances of ozone depleting substances to the materials of the Montreal Protocol Annex A, B, C, and E. Add the test method and threshold level of Formaldehyde Add the Four substances to the substances in candidate list for authorization EU REACH regulation. In Table 4.4 Change the one part of threshold level of Lead and the object and threshold level of Mercury are aggregated 3 Dexerials Advanced Material (Suzhou) Co.Ltd. is deleted by the Dexerials group.
Ver.7.0	March 18,2019	<p>The revision by the periodical review</p> <ol style="list-style-type: none"> 1 Add management level to the Table 4.1 Environment-related Substances to be Controlled. 2 In Table 4.2, DEHP, DBP, BBP, and DIBP add new level 1 use (parts and materials used for toys or childcare products) and level 2 use change level 3 use. Cadmium and its compounds, Lead and its compounds revise the application exclusions. PFOS remove some of the application exclusions. Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA Change coverage to all. Add Perfluorooctanoic acid (PFOA) and its salts and related substances Nickel add new level 1 use (wrist-watch and wristband product) . Formaldehyde (Hardwood plywood, particleboard and medium-density fiberboard including thin medium-density fiberboard) remove additional criteria. In table 4.2 b, add 12 substances to List of Substances in candidate list for authorization of EU REACH regulation.
Ver.8.0	May 21,2020	<p>The revision by the periodical review</p> <ol style="list-style-type: none"> 1 3. Modify some of the definitions of terms (delivered goods, parts, raw materials, sub-materials) and add one part of threshold levels. 2 Addition of environmental-related Substances to be Controlled <ul style="list-style-type: none"> • New regulated substances (PFHxS, 4-aminobenzene, BPA, CMR substances of EU REACH regulation, one part of SVHC candidate substances of EU REACH regulation,) • Substances that have been added or changed target (DBHP, DBP, BBP, DIBP) • Substances with added or changed threshold levels (Cd, Pb, PBB, PBDE, PFOA and its salts, related substances of PFOA, Ni) 3 4.2.1 Supplementing some definitions of sub-materials 4 4.4 Items related to batteries are included in Table 4.2, so deleted
Ver.9.0	May 17, 2021	<p>The revision by the periodical review</p> <ol style="list-style-type: none"> 1 Deleted letter “sample” described in 1. PURPOSE and 2.SCOPE Added Dexerials Precision Components Corporation (DXPC) in 1.PURPOSE 4) 2 Deleted letter” Considering possibility of phase-out in the future (i.e. reclassification into Level 2)” in 3. TERMS AND DEFINITIONS

The history of the change

Version No	Enforcement date	The contents of the change
Ver.9.0	May 17, 2021	<p>3 Added Environment-related Substances to be Controlled</p> <ul style="list-style-type: none"> • New controlled substances <ul style="list-style-type: none"> [(Canada) Prohibition of Certain Toxic Substance Regulations] <ul style="list-style-type: none"> • 1,6,7,8,9,14,15,16,17,17,18,18- Dodecachloropentacyclo [12.2.1.16,9.02,13.05,10] octadica-7,15-diene (“ Dechlorane Plus” TM) • PFCAs and its salts and related Substances • Decabromodiphenylethane (DBDPE) [(EU) Commission Regulation(EU)2019/2021 laying down ecodesign requirements for electronic displays] <ul style="list-style-type: none"> • Halogenated flame retardants [(EU) REACH regulation] <ul style="list-style-type: none"> • PFHxA and its salts and related substances • Dioctyltin dilaurate, stannane, dioctyl-, bis(coco acyloxy) derivs.,and any other stannate,Dioctyl-, bis (fatty acyloxy) derivs. wherein C12 is the predominant carbon number of the fatty acyloxy moiety • Bis(2-(2-methoxyethoxy)ethyl)ether • Dibutylbis (pentane-2,4-dionato-O,O’) tin [(USA) TSCA] <ul style="list-style-type: none"> • Long-chain perfluoroalkyl carboxylate(LCPFACs) and perfluoroalkyl sulfonate chemicals • Decabromodiphenyl eter (DecaBDE) • Phenol, Isopropylated Phosphate (PIP) (3:1) • 2,4,6-Tris(tert-butyl)phenol (TTBP) • Pentachlorothiophenol (PCTP) • Hexachlorobutadiene (HCBd) • List of the First 10 Chemical Substances Undergoing TSCA’s Risk Evaluation • List of the 20 High-Priority Substances Selected to Undergo TSCA’s Risk Evaluation Process • Added / Changed of Targets <ul style="list-style-type: none"> [(USA) California RoHS] <ul style="list-style-type: none"> Cd ,Pb, Hg and its compounds / Chromium(VI) compounds / PVC and its blends • Changed of Threshold levels <ul style="list-style-type: none"> [(EU) Stokholm Convention on Persistent Organic Pollutants] <ul style="list-style-type: none"> Perfluorohexane-1- sulfonic acid (PFHxS) and its salts • Changed of Expiration date of Exemption <ul style="list-style-type: none"> Cd ,Pb, Hg and its compounds / PFOA and individual salts and esters of PFOA • Changed of the use <ul style="list-style-type: none"> PFOA and individual salts and esters of PFOA • Changed of Testing methods <ul style="list-style-type: none"> Azocolourants and azodyes which form certain aromatic amines / 4-Aminoazobenzene <p>4 Deleted letter ” the thing delivered to DXE about the sub-materials used for the delivery of parts/raw materials / sub-materials to be used for the product are the object of 4.1 and 4.2”</p>
Ver.9.1	June 8, 2021	<ul style="list-style-type: none"> • Changed the representation from Dexerilas Corporation Group to Dexerials Group in 1.PURPOSE, 2.SCOPE, 2.2 Scope applicable to products, 3.TERMS AND DEFINITION, 4.2 ,4.3, as in the QS-082 • Added 15)Dexerials Group in 3. TERMS AND DEFINITIONS Deleted letter related Dexerials Group in 1. PURPOSE

CONTENTS

1. PURPOSE.....1

2. SCOPE.....1

2.1 Scope applicable to parts and materials and sub-materials.....1

2.2 Scope applicable to products1

3. TERMS AND DEFINITIONS.....2

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

4.1 "Environment-related Substances to be Controlled ('Controlled Substances')"4

4.2 Additional rules for sub-materials for the products.....29

4.3 The Additional matter about the sub-materials used for the delivery of the part s/ raw materials / sub-materials to be used for products.....32

1. PURPOSE

With regard to the "Environment-related Substances to be Controlled (Controlled Substances)" contained in the parts, materials and sub-materials employed in products and trial products of Dexerials Group, 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 Dexerials Group 's products and trial 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

Targets are the parts, materials, and sub-materials that are procured by the Dexerials Group, or by third parties to which the Dexerials Group outsources the design and manufacture of its products and trial products.

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

2.1 Scope applicable to 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)
- Sub-materials (The definition refers to 4.2.1)
- 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.)
- The sub-materials used for the delivery of the part s/ raw materials / sub-materials
(See Section 4.2.1 "Definition of sub-materials " .)
- Batteries

2.2 Scope applicable to products

- 1) Dexerials Group's products and trial products that are designed and manufactured by the Dexerials Group for sale, loan, or distribution
- 2) Dexerials Group's products and trial products being sold and loaned or distributed with the Dexerials Group's logos on them, whose design and/or manufacture are outsourced to third parties
- 3) Third parties' products and trial products(sample) whose design and/or manufacture are outsourced to the Dexerials Group (except when the parts, materials and sub-materials are specified by the third parties)

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, materials and sub-materials, "Environment-related Substances to be Controlled ('Controlled Substances')" are those which, according to Dexerials Corporation's judgment, have significant environmental-impact on both humans and the global environment.

2) Management levels

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, materials and sub-materials, 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.

Notes: * A substance that satisfies either or both of the following conditions is treated as impurity and not "Intentionally added":

One contained in a natural material, which cannot be completely removed in a refining process by adequate technical means (i.e. natural impurities); and

One generated in a synthesis process, which cannot be completely removed by adequate technical means.

* There are substances called "impurities," the name of which is used to distinguish them from main materials. If they are used for the purpose of changing the characteristics of a material such as alloy and plastic, they are treated as "Intentionally added."

Dopants (Doping Agents) for production of semiconductor devices, etc. are not treated as "Intentionally added" if present in the devices in a very small amount.

5) Supply, Part, Raw-Material, Sub-Material

"Supply" means things which an organization delivers to customer(parts, materials, sub-materials, OEM products).

"Part" means the combination of article and article processed with raw-materials.

"Raw-Material" means the plastics, fillers, inorganic materials, additives, etc. that are processed and part of the Article.

"Sub-Material" means the product made of any kind of material or part used to contain, protect, handle, deliver, or award products to producer to the user or consumer who processed them from parts, raw materials, or packaging materials.

6) 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 process.

7) 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.

8) 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."

9) Threshold level

"threshold level" is a condition or a numerical value.

* Equal to or above this concentration limit is applicable.

* When threshold levels such as 'Intentionally added' and a numerical value are shown in 'threshold levels', both of them shall be satisfied.

10) Effective date of the ban on the delivery

This indicates the date on or after which Dexerials Group won't accept the parts, materials and sub-materials specified in the corresponding columns of Table 4.2.

11) Plastics defined in this Technical Standard

Plastics refer to materials and raw materials composed of synthetic high-molecular polymers in this Standard. More specifically, "plastics" mainly mean the following articles composed of synthetic high-molecular polymers (more than molecular weight 10,000): resins, films, adhesives, adhesive tapes, molded products, products made of synthetic rubber, and plastics made from raw materials of plant origin. Note: * When a natural resin is synthesized with any one of the above articles, the synthetic substance is a plastic.

12) 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).

13) 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

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) Dexerials Group

Dexerials Corporation (DXJ) , Dexerials Precision Components Corporation (DXPC) ,
Dexerials America Corporation (DXA) , Dexerials Europe B.V. (DXE) , Dexerials (Suzhou) Co.Ltd. (DXSC)

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

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

The table below lists the "Environment-related Substances to be Controlled ('Controlled Substances)," defined in this Standard.

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

No	Management Level				Substances	page
	1	2	3	Exemption		
1	×			×	Bis (2-ethylhexyl)phthalate (DEHP)	6
2	×			×	Dibutyl phthalate (DBP)	6
3	×			×	Benzyl butyl phthalate (BBP)	7
4	×			×	Diisobutyl phthalate (DIBP)	7
5	×			×	Cadmium and cadmium compounds	8, 9
6	×			×	Lead and lead compounds	9~11
7	×			×	Mercury and mercury compounds	11
8	×				Chromium (VI) compounds	12
9	×				Polybrominated biphenyls (PBBs)	12
10	×				Polybrominated diphenylethers (PBDEs)	12
11	×				Hexabromocyclododecane (HBCDD)	12
12	×				Polychlorinated biphenyls (PCBs) and specific substitutes	12
13	×				Polychlorinated naphthalenes (PCNs)	12
14	×				Polychlorinated terphenyls (PCTs)	13
15	×				Alkans, C10-13 chloro (short-chain chlorinated paraffins) (SCCP)	13
16	×				Tris(2-chloroethyl) phosphate (TCEP)	13
17	×				Tris(1-chloro-2-propyl)phosphate(TCPP)	13
18	×				Tris(1,3-dichloro-2-propyl)phosphate(TDCPP)	13
19	×			×	Fluorinated greenhouse gases (PFC , SF ₆ , HFC)	13
20	×				Ozone depleting substances (ODS)	13
21	×				Perfluorooctane sulfonates (PFOS)	14
22	×			×	Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA	14
23	×				Perfluorooctanoic acid (PFOA) related substances	14
24	×				Trisubstituted organotin compounds (TBT, TPT)	14
25	×			×	Dibutyltin (DBT) compounds	15
26	×			×	Diocetyl tin (DOT) compounds	15
27	×				Beryllium oxide	15
28	×				Cobalt dichloride	15
29	×				Diarsenic trioxide	15
30	×				Diarsenic pentoxide	16
31	×		×		Nickel and Nickel compounds	16
32	×				Asbestos	16
33	×		×		Di-isononyl phthalate (DINP)	16
34	×		×		Di-isodecyl phthalate (DIDP)	16
35	×				Di-n-octyl phthalate (DNOP)	17
36	×				Formaldehyde	17
37	×				Azocolourants and azodyes which form certain aromatic amines	17

No	Management Level				Substances	page
	1	2	3	Exemption		
38	×				2-benzotriazol-2-yl-4,6-di-tert-butylphenol(UV-320)	18
39	×				Dimethyl fumarate (DMF)	18
40	×				Polycyclic aromatic hydrocarbons (PAH)	19
41			×		Brominated flame retardants (BFR)	19
42			×		Chlorinated flame retardants (CFR)	19
43			×		Di-n-hexyl phthalate (DnHP)	19
44			×		Perchlorates	19
45			×		Radioactive substances	20
46		×			Perfluorohexane-1- sulfonic acid (PFHxS) and its salts	20
47	×				4-Aminoazobenzene	20
48			×		4,4'-Isopropylidenediphenol (BPA)	20
49			×		Halogenated flame retardants(other than brominated and chlorinated flame retardants)	20
50	×				Halogenated flame retardants	20
51			×		Long-chain(C9-C20) perfluorocarboxylic acids (PFCAs) and its salts and related substances	21
52			×		Perfluorohexanoic acid (PFHxA) and its salts and related substances	21
53		×			1,6,7,8,9,14,15,16,17,17,18,18- Dodecachloropentacyclo [12.2.1.16,9.02,13.05,10] octadica-7,15-diene (" Dechlorane Plus" TM)	21
54		×			Decabromodiphenylethane (DBDPE)	21
55	×				CMR Substances of EU REACH regulation (Entry 72)	21,22
56			×		Substances in candidate list for authorization of EU REACH regulation	23~25
57	×				Long-chain perfluoroalkyl carboxylate (LCPFACs) and perfluoroalkyl sulfonate chemicals	26
58	×	×			TSCA Priority chemicals (PBT substances)	26
59		×			List of the First 10 Chemical Substances Undergoing TSCA's Risk Evaluation	27
60			×		List of the 20 High-Priority Substances Selected to Undergo TSCA's Risk Evaluation Process	27
61	×		×	×	Polyvinyl chloride (PVC) and PVC blends Polyvinyl chloride (PVC) and PVC blends	28

Table 4.2 Main "Targets" and "Effective date of the ban on the delivery" regarding 'Controlled Substances'

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

Substances: Bis (2-ethylhexyl)phthalate (DEHP)			
CAS No. 117-81-7, Synonym: Di(2-ethylhexyl)phthalate			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • In homogeneous materials of supply 1000 ppm (or 0.1 wt%) 	Banned
	<ul style="list-style-type: none"> • Parts and materials for children ' s toy or child care article • All excluding applications falling within the scope of EU RoHS 2011/65/EU • Part in direct contact with the ear of earphones (including headphones, headsets, etc.) 	<ul style="list-style-type: none"> • In plasticized raw-materials of supply 1000ppm (or 0.1wt%) as the sum of the (DEHP,DBP,BBP,DIBP) . 	
Exemption	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		

Substances: Dibutyl phthalate (DBP)			
CAS No. 84-74-2, Synonym: Dibutylphthalate			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • In homogeneous materials of supply 1000 ppm (or 0.1 wt%) 	Banned
	<ul style="list-style-type: none"> • Parts and materials for children ' s toy or child care article • All excluding applications falling within the scope of EU RoHS 2011/65/EU • Part in direct contact with the ear of earphones (including headphones, headsets, etc.) 	<ul style="list-style-type: none"> • In plasticized raw-materials of supply 1000ppm (or 0.1wt%) as the sum of the (DEHP,DBP,BBP,DIBP) . 	
Exemption	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		

Substances: Benzyl butyl phthalate (BBP)			
CAS No. 85-68-7, Synonym: Benzylbutylphthalate			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • In homogeneous materials of supply 1000 ppm (or 0.1 wt%) 	Banned
	<ul style="list-style-type: none"> • Parts and materials for children 's toy or child care article • All excluding applications falling within the scope of EU RoHS 2011/65/EU • Part in direct contact with the ear of earphones (including headphones, headsets, etc.) 	<ul style="list-style-type: none"> • In plasticized raw-materials of supply 1000ppm (or 0.1wt%) as the sum of the (DEHP,DBP,BBP,DIBP) 	
Exemption	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		

Substances: Diisobutyl phthalate (DIBP)			
CAS No. 84-69-5			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • In homogeneous materials of supply 1000 ppm (or 0.1 wt%) 	Banned
	<ul style="list-style-type: none"> • Parts and materials for children 's toy or child care article • All excluding applications falling within the scope of EU RoHS 2011/65/EU • Part in direct contact with the ear of earphones (including headphones, headsets, etc.) 	<ul style="list-style-type: none"> • In plasticized raw-materials of supply 1000ppm (or 0.1wt%) as the sum of the (DEHP,DBP,BBP,DIBP) 	
Exemption	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		

Substances: Cadmium and cadmium compounds			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> • All (see 4.2,4.3 for the sub-material), 	<ul style="list-style-type: none"> • In homogeneous materials of supply 100 ppm (or 0.01 wt%) 	Banned
	<ul style="list-style-type: none"> • 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.) 	<ul style="list-style-type: none"> • In homogeneous materials of supply 75ppm (or 0.0075 wt%) 	
	<ul style="list-style-type: none"> • Manganese batteries (except button cells) • Alkaline manganese batteries (except button cells) • Nickel hydrogen rechargeable batteries (except button cells) 	<ul style="list-style-type: none"> • In batteries of supply 10 ppm (or 0.001 wt%) 	
	<ul style="list-style-type: none"> • All other batteries 	<ul style="list-style-type: none"> • In batteries of supply 20 ppm (or 0.002 wt%) 	
	<ul style="list-style-type: none"> • Video display devices, with a screen size of greater than four inches 	<ul style="list-style-type: none"> • In homogeneous materials of supply 100ppm (or 0.01 wt%) 	
Exemption	<ul style="list-style-type: none"> • Cadmium and its compounds in electrical contacts⁽³⁾ • Cadmium and its compounds in electrical contacts used in: ⁽⁴⁾ <ul style="list-style-type: none"> - circuit breakers, - thermal sensing controls, - thermal motor protectors (excluding hermetic thermal motor protectors), - 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, -DC switches rated at 20A and more at 18 V DC and more - switches for use at voltagesupply frequency ≥ 200 Hz. • Cadmium in filter glasses and glasses used for reflectance standards ⁽³⁾ • Cadmium in striking optical filter glass types; excluding applications falling under point 39 of EU RoHS Annex ⁽⁷⁾ • Cadmium and lead in glazes used for reflectance standards ⁽⁷⁾ 		
<p>Reference (EU RoHS Directive) http://ec.europa.eu/environment/waste/rohs_eee/legis_en.htm</p> <p>For the Exemption categories., see EU RoHS AnnexIII.</p> <p>(3) Cat.8,9 and 11 : pending</p> <p>(4) Cat. 1-7, 10 and 11 : pending</p> <p>(7) Cat. 1-7 and 10: pending</p>			

(*) Plastics, synthetic fiber, films, adhesive tape, 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

(1) Closed system for acid decomposition method (e.g. microwave decomposition method)

(2) Acid digestion method

(3) 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 F 963-16, , ASTM D 5517-14,and ISO 8124-3:2010) shall not be applied.

2) Measurement methods Typical measurement methods: e.g. IEC 62321-5:2013

(1) Inductively Coupled Plasma-Optical (Atomic) Emission Spectroscopy (ICP-OES [ICP-AES])

(2) Atomic Absorption Spectroscopy (AAS)

(3) Atomic Fluorescence Spectrometry(AFS)

(4) Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)

Substances: Lead and lead compounds

Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> All except the following uses (see 4.2,4.3 for the sub-material) (Including categories that will expire on July 21,2021 in the EU RoHS Directive Exemptions Annex III 5(b) ,7(c)-IV) 	<ul style="list-style-type: none"> In homogeneous materials of supply 1000 ppm (or 0.1 wt%) 	Banned
	<ul style="list-style-type: none"> Parts and material for consumer products designed or intended primarily for children 12 years of age or younger 	<ul style="list-style-type: none"> In parts and raw-materials of supply 100ppm (or 0.01wt%) 	
	<ul style="list-style-type: none"> Paint and similar surface coatings of toys and other than articles intended for use children 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.) 	<ul style="list-style-type: none"> In surface coating materials of supply 90ppm (or 0.009wt%) 	
	<ul style="list-style-type: none"> Cable/cords (including plug and connector) with thermoset or thermoplastic coatings. 	<ul style="list-style-type: none"> In surface coating materials of supply 300ppm (or 0.03wt%) 	
	<ul style="list-style-type: none"> 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.) 	<ul style="list-style-type: none"> In homogeneous materials of supply 300 ppm (or 0.03 wt%) 	
	<ul style="list-style-type: none"> All other batteries except below 	<ul style="list-style-type: none"> In batteries of supply 2000ppm (or 0.2 wt%) 	
	<ul style="list-style-type: none"> Manganese batteries Alkaline manganese button cells 	<ul style="list-style-type: none"> In batteries of supply 1000ppm (or 0.1 wt%) 	
	<ul style="list-style-type: none"> Alkaline manganese batteries (except button cells) 	<ul style="list-style-type: none"> In batteries of supply 40ppm (or 0.004 wt%) 	
	<ul style="list-style-type: none"> Video display devices, with a screen size of greater than four inches 	<ul style="list-style-type: none"> In homogeneous materials of supply 1000ppm (or 0.1 wt%) 	

Exemption	<ul style="list-style-type: none"> • Lead in glass of fluorescent tubes not exceeding 0.2% by weight (2) • Lead as an alloying element in steel for machining purposes and in galvanised steel containing up to 0.35 % lead by weight (3) • 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 (4) • Lead as an alloying element in aluminium containing up to 0.4 % lead by weight (3) • Lead as an alloying element in aluminium containing up to 0.4 % lead by weight, provided it stems from lead-bearing aluminium scrap recycling (4) • Lead as an alloying element in aluminium for machining purposes with a lead content up to 0.4 % by weight (4) • Copper alloy containing up to 4 % lead by weight (5) • Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead (5) • 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 (5) • Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher (5) • Lead in PZT based dielectric ceramic materials for capacitors which are part of integrated circuits or discrete semiconductors (6) • Lead in white glasses used for optical applications (5) • Lead in filter glasses and glasses used for reflectance standards (3) • Lead in ion coloured optical filter glass types (7) • Lead in glazes used for reflectance standards (7) • Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages (3) • 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: (4) <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 300mm² or larger. • Lead in cermet-based trimmer potentiometer elements (5)
Reference	<p>(EU RoHS Directive) http://ec.europa.eu/environment/waste/rohs_eee/legis_en.htm</p> <p>For the Exemption categories., see EU RoHS AnnexIII.</p> <p>(2)Categories (Cat.) 1-7 and 10: pending,</p> <p>Cat. 8 other than <i>in vitro</i> diagnostic medical devices (<i>in vitro</i>) and 9 other than industrial monitoring and control instruments (industrial): July 21, 2021</p> <p>Cat. 8 <i>in vitro</i>: July 21, 2023</p> <p>Cat. 9 industrial and 11: July 21, 2024</p> <p>(3) Cat.8,9 and 11 : pending</p> <p>(4) Cat.1-7,10 and 11 : pending</p> <p>(5) All cat : pending</p> <p>(6) Cat. 1-7, 8 other than <i>in vitro</i>, 9 other than industrial and 10: July 21, 2021</p> <p style="padding-left: 20px;">Cat. 8 <i>in vitro</i>: July 21, 2023</p> <p style="padding-left: 20px;">Cat. 9 industrial and 11: July 21, 2024</p> <p>(7) Cat. 1-7 and 10: pending</p>

(*) Plastics, synthetic fiber, films, adhesive tape, 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

(1) Closed system for acid decomposition method (e.g. microwave decomposition method) (2) Acid digestion method

(3) 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 F 963-16, ASTM D 5517-14,and ISO 8124-3:2010) shall not be applied..

2) Measurement methods

Typical measurement methods: e.g. IEC 62321-5:2013

(1) Inductively Coupled Plasma-Optical (Atomic) Emission Spectroscopy (ICP-OES [ICP-AES])

(2) Atomic Absorption Spectroscopy (AAS) (3) Atomic Fluorescence Spectrometry(AFS)

(4) Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)

Substances: Mercury and mercury compounds

Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> All except batteries (see 4.2,4.3 for the sub-material), 	<ul style="list-style-type: none"> Intentionally added of supply or in homogeneous materials of supply 1000 ppm (or 0.1 wt%) 	Banned
	<ul style="list-style-type: none"> All batteries 	<ul style="list-style-type: none"> Intentionally added of batteries of supply or 0.0001 wt% (1 ppm) of battery 0.0005 wt% (5 ppm) of total Hg in homogenous material of batteries of supply 	
	<ul style="list-style-type: none"> Video display devices, with a screen size of greater than four inches 	<ul style="list-style-type: none"> In homogeneous materials of supply 1000ppm (or 0.1 wt%) 	
Exemption	<ul style="list-style-type: none"> Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp): Short length (≤ 500 mm) : not exceeding 3.5 mg per lamp (1) 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 (1) 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 (1) Mercury in other discharge lamps for special purposes not specially mentioned in EU RoHS Annex (1) 		

(1) Categories (Cat.) 1-7,8 other than in vitro, 9 other than industrial and 10 : pending,

Cat.8 in vitro: July 21,2023,

Cat.9 industrial and 11 : July 21,2024.

Substances: Hexavalent chromium compounds			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> All applications other than the below (see 4.2,4.3 for the sub-material) 	<ul style="list-style-type: none"> In homogeneous materials of supply 1000 ppm (or 0.1 wt%) 	Banned
	<ul style="list-style-type: none"> Natural leather parts and materials 	<ul style="list-style-type: none"> 3ppm(or 0.0003wt%) of dry weight of the natural leather materials of supply 	
	<ul style="list-style-type: none"> Video display devices, with a screen size of greater than four inches 	<ul style="list-style-type: none"> In homogeneous materials of supply 1000ppm (or 0.1 wt%) 	
For reference, the methods for natural leather materials are as follows.			
Testing methods(for reference)			
The method for natural leather materials are as follows.			
1) EN ISO 17075			
2) IULTCS / IUC18(conform with ISO 17075:2007)			

Substances: Polybrominated biphenyls (PBBs)			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> Intentionally added or in homogeneous materials of supply 1000 ppm (or 0.1 wt%) 	Banned

Substances: Polybrominated diphenylethers (PBDEs)			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> Intentionally added or in homogeneous materials of supply 1000 ppm (or 0.1 wt%) 	Banned

Substances: Hexabromocyclododecane (HBCDD)			
CAS No. 25637-99-4, 3194-55-6, 134237-50-6, 134237-51-7, 134237-52-8			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> Intentionally added or in raw-materials or article of supply 100 ppm (or 0.01 wt%) 	Banned

Substances: Polychlorinated biphenyls (PCBs) and specific substitutes			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> Intentionally added of supply 	Banned

Substances: Polychlorinated naphthalenes (PCNs)			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> Intentionally added of supply 	Banned

Substances: Polychlorinated terphenyls (PCTs)			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	· All	· In supply 50 ppm (or 0.005 wt%)	Banned

Substances: Alkans, C10-13, chloro (Short-Chain Chlorinated paraffins) (SCCP)			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	· All	· Intentionally added of supply or in raw-materials or article of supply 1000 ppm (or 0.1 wt%)	Banned

Substances: Tris(2-chloroethyl) phosphate (TCEP)			
CAS No. 115-96-8			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	· All	· In raw-materials or article of supply 1000 ppm (or 0.1 wt%)	Banned

Substances: Tris(2-chloro-2-propyl)phosphate(TCPP)			
CAS No. 13674-84-5, Synonym: Tris(2-chloro-1-methylethyl)phosphate			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	· All	· In raw-materials or article of supply 1000 ppm (or 0.1 wt%)	Banned

Substances: Tris(1,3-dichloro-2-propyl)phosphate(TDCPP)			
CAS No. 13674-87-8			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	· All	· In raw-materials or article of supply 1000 ppm (or 0.1 wt%)	Banned

Substances: Fluorinated greenhouse gases (PFC,SF6,HFC)			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	· All	· Intentionally added of supply	Banned
Exemption	· SF6 incorporated into surge absorber in power unit for projector		

Substances: Ozone depleting substances (ODS)			
Substances of Annexes A, B, C, and E of Montreal Protocol *			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	· All	· Intentionally added of supply	Banned
	· Parts 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)

Substances: Perfluorooctane sulfonates (PFOS)			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> Textiles or other coated parts and materials 	<ul style="list-style-type: none"> Intentionally added of textiles or other coated parts and raw-materials of supply or in textiles or other coated parts and raw-materials of supply $1 \mu\text{g}/\text{m}^2$	Banned
	<ul style="list-style-type: none"> All except textiles or other coated parts and raw-materials 	<ul style="list-style-type: none"> Intentionally added of supply or in supply 1000ppm (or 0.1wt%) (as the sum of PFOS)	

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			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> Intentionally added of supply or in supply 25ppb (as the sum of PFOA)	Banned
Exemption	<ul style="list-style-type: none"> photolithography or etch processes in semiconductor manufacturing(until July 4, 2025) 		

Substances: Perfluorooctanoic acid (PFOA) related substances			
PFOA-related substances are below Any related substance (including its salts and polymers) having a linear or branched perfluoroheptyl group with the formula C_7F_{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_8F_{17} as one of the structural elements. The following substances are excluded: $\text{C}_8\text{F}_{17}\text{-X}$, where $\text{X}=\text{F}, \text{Cl}, \text{Br}$ $\text{C}_8\text{F}_{17}\text{-C}(\text{=O})\text{OH}$, $\text{C}_8\text{F}_{17}\text{-C}(\text{=O})\text{O-X}'$ (where X' =any group, including salts) .			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> Intentionally added of supply or in supply 1ppm (as the sum Related substances of PFOA)	Banned

Substances: Tri-substituted organostanic compounds			
including tributyltin (TBT) compounds and triphenyltin (TPT) compounds			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> Intentionally added of supply or in supply 1000 ppm (or 0.1 wt%) (as the tin)	Banned

Substances: Dibutyltin (DBT) compounds			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	• All	• In supply 1000 ppm (or 0.1 wt%) (as the tin)	Banned
Exemption	<ul style="list-style-type: none"> • Additives of sub-materials for parts and devices which are reused and not provided to the consumer • Additives of sub-materials for devices, semiconductors, and any other components (e.g. trays, magazine sticks, stoppers, reels, embossed carrier tapes) • When Dexerials Corporation Group purchases dibutyl tin (DBT) compound more than 1,000ppm by tin conversion for materials ,products or the trial products (sample) which made by Dexerials Corporation Group or third party's whose design and/or manufacture are outsourced to the Dexerials Corporation Group does not exceed 1,000ppm by tin conversion. 		

Substances: Dioctyltin (DOT) compounds			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> • Textile and leather parts and materials intended to come into contact with the skin • Childcare parts and materials • Two-component room temperature vulcanization moulding kits (RTV-2 moulding kits) 	• In supply 1000 ppm (or 0.1 wt%) (as the tin)	Banned
Exemption	<ul style="list-style-type: none"> • When Dexerials Corporation Group purchases dibutyl tin (DBT) compound more than 1,000ppm by tin conversion for materials ,products or the trial products (sample) which made by Dexerials Corporation Group or third party's whose design and/or manufacture are outsourced to the Dexerials Corporation Group does not exceed 1,000ppm by tin conversion. 		

Substances: Beryllium oxide			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	• All	• In supply 1000 ppm (or 0.1 wt%)	Banned

Substances: Cobalt dichloride			
CAS No 7646-79-9			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	• Moisture indicator used for a Desiccant agent (e.g. silica gel)	• Intentionally added of supply	Banned
	• Humidity indicator card which is impregnated with cobalt dichloride	• In article of supply 1000 ppm (or 0.1 wt%)	

Substances: Diarsenic trioxide			
CAS No. 1327-53-3			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	• Glass for LCD panels (including cover glasses, touchscreens, and backlights)	• In article of supply 1000 ppm (or 0.1 wt%)	Banned

Substances: Diarsenic pentoxide			
CAS No. 1303-28-2			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> Glass for LCD panels (including cover glasses, touchscreens, and backlights) 	<ul style="list-style-type: none"> In article of supply 1000 ppm (or 0.1 wt%) 	Banned

Substances: Nickel and nickel compounds			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> 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) 	<ul style="list-style-type: none"> In Parts and raw-materials for mobile phone, wrist-watch, wristband product where prolonged skin contact is expected 0.5 $\mu\text{g}/\text{cm}^2/\text{week}$ (release concentration) 	Banned
Level 3	<ul style="list-style-type: none"> All, where prolonged skin contact is expected. 	<ul style="list-style-type: none"> Intentionally added of supply 	N/A

Substances: Asbestos			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> Intentionally added of supply 	Banned

Substances: Di-isononyl phthalate (DINP)			
CAS No. 28553-12-0, 68515-48-0			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> Parts and materials for children's toy or care parts and materials that can be placed in a child's mouth 	<ul style="list-style-type: none"> In Parts and raw-materials which plasticized of supply 1000ppm (or 0.1wt%) (as the sum of DINP, DIDP, DNOP) 	Banned
Level 3	<ul style="list-style-type: none"> All application other than the above 	<ul style="list-style-type: none"> Intentionally added of supply 	N/A

Substances: Di-isodecyl phthalate (DIDP)			
CAS No. 26761-40-0, 68515-49-1,			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> Parts and materials for children's toy or care parts and materials that can be placed in a child's mouth 	<ul style="list-style-type: none"> In Parts and raw-materials which plasticized of supply 1000ppm (or 0.1wt%) (as the sum of DINP, DIDP, DNOP) 	Banned
Level 3	<ul style="list-style-type: none"> All application other than the above 	<ul style="list-style-type: none"> Intentionally added of supply 	N/A

Substances: Di-n-octyl phthalate (DNOP)			
CAS No. 117-84-0			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> Parts and materials for children's toy or care parts and materials that can be placed in a child's mouth 	<ul style="list-style-type: none"> In Parts and raw-materials which plasticized of supply 1000ppm(or 0.1wt%) (as the sum of DINP, DIDP, DNOP) 	Banned

Substances: Formaldehyde			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> Textiles 	<ul style="list-style-type: none"> In textile parts and raw-materials of Supply 75ppm(or 0.0075wt%) 	Banned
	<ul style="list-style-type: none"> The wooden products made from fiberboard, particleboard, or plywood, which are employed in products (e.g. speakers and racks) 	<ul style="list-style-type: none"> The details are as follows. 	

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/m³) in an air-tight test chamber whose volume is 12 m³, 1 m³, or 0.0225 m³

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 ISO 12460:2015
- A desiccator method specified in JIS A 5905 (Fiberboards) and JIS A 5908 (Particleboards)

Substances: Azocolourants and azodyes which form certain aromatic amines			
Regarding certain aromatic amines, see Table 4.2a			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> Parts and materials of textiles and leathers 	<ul style="list-style-type: none"> Certain aromatic amines in textiles and leathers of supply 30ppm (or 0.003wt%) 	Banned

Testing methods (for reference)

The methods for decomposing azo compounds and then extracting amines are as follows.

- For textiles : EN 14362-1:2017; EN 14362-3:2017 for 4-aminoazobenzene
- For leather : EN ISO 17234-1:2015; EN ISO 17234-2:2011 for 4-aminoazobenzene

Table 4.2a List of certain aromatic amine

CAS No.	Amine compounds
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-chloroaniline)
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

Substances: 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-dimethyl)" , "2-(3',5'-Di-tert-butyl-2'-hydroxyphenyl) benzotriazole "			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	· All	· Intentionally added of supply or in raw materials and article of supply 1000 ppm (or 0.1 wt%)	Banned

Substances: Dimethyl fumarate (DMF)

CAS No. 624-49-7			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	· All	· In supply 0.1 ppm (or 0.00001 wt%)	Banned

Substances: Polycyclic aromatic hydrocarbons (PAH)			
CAS No. 50-32-8,192-97-2,56-55-3,218-01-9,205-99-2,205-82-3,207-08-9,53-70-3			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> Rubber or plastic parts of toys and childcare products that come into direct, prolonged or repetitive skin or oral cavity contact except those for toys or childcare products (eg. grip, handle) 	<ul style="list-style-type: none"> In rubber or plastic of supply 1ppm (or 0.0001 wt%) 	Banned
	<ul style="list-style-type: none"> Rubber or plastic parts of toys and childcare products that come into direct, prolonged or repetitive skin or oral cavity contact 	<ul style="list-style-type: none"> In rubber or plastic of supply 0.5 ppm (or 0.00005 wt%) 	

Substances: Brominated flame retardants (BFR)			
Other than PBBs, PBDEs, HBCDD			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 3	<ul style="list-style-type: none"> Printed wiring board (PWB) laminate 	<ul style="list-style-type: none"> In PWB of supply 900ppm (or 0.09 wt%) (as the sum of bromine) 	N/A
	<ul style="list-style-type: none"> Plastic materials except printed wiring board (PWB) laminate 	<ul style="list-style-type: none"> In plastic materials of supply 1000ppm (or 0.1 wt%) (as the sum of bromine) 	N/A

Substances: Chlorinated flame retardants (CFR)			
Other than TCEP, TCPP, TDCPP			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 3	<ul style="list-style-type: none"> Printed wiring board (PWB) laminate 	<ul style="list-style-type: none"> In PWB of supply 900ppm (or 0.09 wt%) (as the sum of chlorine) 	N/A
	<ul style="list-style-type: none"> Plastic materials except printed wiring board (PWB) laminate 	<ul style="list-style-type: none"> In plastic materials of supply 1000ppm (or 0.1 wt%) (as the sum of bromine) 	N/A

Substances: Di-n-hexyl phthalate (DnHP)			
CAS No. 84-75-3, Synonym : Dihexyl phtalate			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 3	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> Intentionally added of supply or in raw-materials and article of supply 1000 ppm (or 0.1 wt%) 	N/A

Substances: Perchlorates			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 3	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> 6 ppb (or 0.000006 wt%) of battery or parts of battery in supply 	N/A

Substances: Radioactive substances			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 3	· All	· Intentionally added of supply	N/A

Substances: Perfluorohexane-1-sulphonic acid (PFHxS), its salts and PFHxS-related substances			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 2	· All	· Intentionally added of supply	December 1,2021

Substances: 4-Aminoazobenzene			
CAS No. 60-09-3			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	· Parts and materials of textiles and leathers	· In textiles and leathers of supply 30ppm (or 0.003wt%)	Banned
Testing methods (for reference) The methods for decomposing azo compounds and then extracting amines are as follows. 3) For textiles : EN 14362-1:2017; EN 14362-3:2017 for 4-aminoazobenzene 4) For leather : EN ISO 17234-1:2015; EN ISO 17234-2:2011 for 4-aminoazobenzene			

Substances: 4,4'-Isopropylidenediphenol (BPA)			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 3	· All	· Intentionally added of supply or in raw-materials and article of supply 1000 ppm (or 0.1 wt%)	N/A

Substances: Halogenated flame retardants (other than brominated and chlorinated flame retardants)			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 3	· Plastic materials	· Intentionally added of supply	N/A

Substances: Halogenated flame retardants			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	· Plastic enclosure and stand of electronic displays, including televisions, monitors and digital signage displays with a screen area greater than 100 square centimeters, as well as labels, tapes, etc. attached to the plastic enclosures and stands.	· Intentionally added or 0.1 wt% of total halogen elements in homogeneous material (including PBBs and PBDEs)	Banned
	· Plastic enclosure of game device		

Substances: Long-chain(C9-C20) perfluorocarboxylic acids (PFCAs) and its salts and related substances			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 3	· All	· Intentionally added of supply	N/A

Substances: Perfluorohexanoic acid (PFHxA) and its salts and related substances			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 3	· All	· Intentionally added of supply	N/A

Substances: 1,6,7,8,9,14,15,16,17,17,18,18· Dodecachloropentacyclo [12.2.1.16,9.02,13.05,10] octadica-7,15-diene (" Dechlorane Plus"™)			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 2	· All	· Intentionally added of supply	January 1,2022

Substances: Decabromodiphenylethane (DBDPE)			
CAS No.84852-53-9			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 2	· All	· Intentionally added of supply	January 1,2022

Substances: CMR Substances of EU REACH regulation (Entry 72)			
See Table 4.2 b			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	· Textile parts/products which come into contact with human skin under normal conditions of use (e.g. straps, carrying bags, carrying cases, pouches etc.).	· See Table 4.2 b	Banned

Table 4.2 b List of CMR Substances of EU REACH regulation (Entry 72)

CAS No.	Substance name	Threshold level (in homogenous material)
-	Cadmium and its compounds (listed in Annex XVII, Entry 28, 29, 30, Appendices1-6)	1ppm (0.0001wt%) (expressed as Cd metal that can be extracted from the material)
-	Chromium (VI) compounds (listed in Annex XVII, Entry 28, 29, 30, Appendices1-6)	1ppm(0.0001wt%) (expressed as Cr (VI) metal that can be extracted from the material)
-	Arsenic compounds (listed in Annex XVII, Entry 28, 29, 30, Appendices1-6)	1ppm(0.0001wt%) (expressed as As metal that can be extracted from the material)
-	Lead and its compounds (listed in Annex XVII, Entry 28, 29, 30, Appendices1-6)	1ppm(0.0001wt%) (expressed as Pb metal that can be extracted from the material)
71-43-2	Benzene	5ppm(0.0005 wt%)
56-55-3	Benz[a]anthracene (BaA)	1ppm(0.0001 wt%)
205-99-2	Benzo[b]fluoranthene (BbFA) : Benzo[e]acephenanthrylene	1ppm(0.0001 wt%)
50-32-8	Benzo[a]pyrene (BaP) : Benzo[def]chrysene	1ppm(0.0001 wt%)
192-97-2	Benzo[e]pyrene (BeP)	1ppm(0.0001 wt%)
205-82-3	Benzo[j]fluoranthene (BjFA)	1ppm(0.0001 wt%)
207-08-9	Benzo[k]fluoranthene (BkFA)	1ppm(0.0001 wt%)

CAS No.	Substance name	Threshold level (in homogenous material)
218-01-9	Chrysene (CHR)	1ppm(0.0001 wt%)
53-70-3	Dibenz[a,h]anthracene (DBahA)	1ppm(0.0001 wt%)
5216-25-1	$\alpha,\alpha,\alpha,4'$ -Tetrachlorotoluene : p-Chlorobenzotrìchloride	1ppm(0.0001 wt%)
98-07-7	α,α,α' -Trichlorotoluene : benzotrìchloride	1ppm(0.0001 wt%)
100-44-7	α -Chlorotoluene : Benzyl chloride	1ppm(0.0001 wt%)
50-00-0	Formaldehyde	75ppm(0.0075 wt%)
71888-89-6	1,2-Benzenedicarboxylic acid : Di-C 6-8-branched alkylesters, C 7-rich	1000ppm(0.1wt%) (individually or in combination with other phthalates in this entry or in other entries of 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
117-82-8	Bis(2-methoxyethyl) phthalate	
605-50-5	Diisopentylphthalate	
131-18-0	Di-n-pentyl phthalate (DPP)	
84-75-3	Di-n-hexyl phthalate (DnHP)	
872-50-4	N-Methyl-2-pyrrolidone : 1-Methyl-2-pyrrolidone (NMP)	3000ppm(0.3 wt%)
127-19-5	N,N-Dimethylacetamide : (DMAC)	3000ppm(0.3 wt%)
68-12-2	N,N-Dimethylformamide : Dimethyl formamide	3000ppm(0.3 wt%)
2475-45-8	1,4,5,8-Tetraaminoanthraquinone : C.I.Disperse Blue 1	50ppm(0.005 wt%)
569-61-9	Benzenamine, 4,4'-(4-iminocyclohexa-2,5-dienylidenemethylene)dianilinehydrochloride : C.I. Basic Red 9	50ppm(0.005 wt%)
548-62-9	[4-[4,4'-Bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride : C.I. Basic Violet 3 with $\geq 0,1$ % of Michler's ketone (EC no. 202-027-5)	50ppm(0.005 wt%)
3165-93-3	4-Chloro-o-toluidinium chloride	30ppm(0.003 wt%)
553-00-4	2-Naphthylammoniumacetate	30ppm(0.003 wt%)
39156-41-7	4-Methoxy-m-phenylene diammonium sulphate : 2,4-Diaminoanisole sulphate	30ppm(0.003 wt%)
21436-97-5	2,4,5-Trimethylaniline hydrochloride	30ppm(0.003 wt%)
91-22-5	Quinoline	50ppm(0.005 wt%)

Substances in candidate list for authorization of EU REACH regulation			
See Table 4.2 c			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 3	• All	<ul style="list-style-type: none"> • In raw materials and article of supply 1000 ppm (or 0.1 wt%) • The substances and applications specified in level 1 in Table 4.2 should be given priority to level 1. 	N/A

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

CAS No.	Name
10043-35-3, 11113-50-1	Boric acid
12179-04-3, 1330-43-4, 1303-96-4, 12267-73-1	Disodium tetraborates
25637-99-4, 3194-55-6, 134237-50-6, 134237-52-8, 134237-51-7	Hexabromocyclododecane (HBCDD)
-	Aluminosilicate Refractory Ceramic Fibers
-	Zirconia Aluminosilicate Refractory Ceramic Fibers
-	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (SCCP)
57110-29-9, 19438-60-9, 25550-51-0, 48122-14-1	Hexahydromethylphthalic anhydride
-	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)
68515-51-5, 68648-93-1	1,2-benzenedicarboxylic acid, di-C6-10 alkyl esters ; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with $\geq 0.3\%$ of dihexyl phthalate (EC No.201-559-5)
4149-60-4, 375-95-1, 21049-39-8	Perfluorononan-1-oic acid and its sodium and ammonium salts
335-76-2, 3830-45-3, 3108-42-7	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts
335-46-4, 68259-08-5, 3871-99-6	Perfluorohexane-1-sulphonic acid (PFHxS) and its salts
-	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octa deca-7,15-diene ("Dechlorane Plus" TM)
-	Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with $\geq 0.1\%$ w/w of 4-nonylphenol, branched and linear (4-NP)
-	Perfluorobutane sulfonic acid (PFBS) and its salts
-	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE) and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyloxy)-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (MOTE) (reaction mass of DOTE and MOTTE)
-	Diocetyl tin dilaurate, stannane, dioctyl-, bis(coco acyloxy) derivs., and any other stannate, Dioctyl-, bis (fatty acyloxy) derivs. wherein C12 is the predominant carbon number of the fatty acyloxy moiety
10099-74-8	Lead dinitrate
110-71-4	Ethylene glycol dimethyl ether (EGDME)
111-96-6	Bis(2-methoxyethyl) ether
11103-86-9	Potassium hydroxyoctaoxidizedichromate
112-49-2	1,2-bis(2-methoxyethoxy) ethane (TEGDME)
1120-71-4	1,3-propanesultone

CAS No.	Name
115-96-8	Tris(2-chloroethyl) phosphate (TCEP)
1163-19-5	Bis(pentabromophenyl) ether (decabromodiphenyl ether) (DecaBDE)
117-81-7	Bis (2-ethylhexyl)phthalate (DEHP)
117-82-8	Bis(2-methoxyethyl) phthalate
12008-41-2	Disodium octaborate
12036-76-9	Lead oxide sulfate
12060-00-3	Lead titanium trioxide
12065-90-6	Pentalead tetraoxide sulphate
12141-20-7	Trilead dioxide phosphonate
12202-17-4	Tetralead trioxide sulphate
12267-73-1	Tetraboron disodium heptaoxide, hydrate
12578-12-0	Dioxobis(stearato)trilead
12626-81-2	Lead titanium zirconium oxide
12656-85-8	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)
129-00-0	Pyrene
1303-28-2	Diarsenic pentoxide
1303-86-2	Diboron trioxide
1306-19-0	Cadmium oxide
1306-23-6	Cadmium sulphide
131-18-0	Dipentyl phthalate (DPP) Synonym : amylphthalate
1314-41-6	Orange lead (lead tetroxide)
1327-53-3	Diarsenic trioxide
1344-37-2	Lead sulfochromate yellow (C.I. Pigment Yellow 34)
140-66-9	4-(1,1,3,3-tetramethylbutyl) phenol Synonym : 4-tert-Octylphenol
143-24-8	Bis(2-(2-methoxyethoxy)ethyl)ether
15571-58-1	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)
191-24-2	Benzo [ghi] perylene
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)
206-44-0	Fluoranthene
207-08-9	Benzo [k] fluoranthene
20837-86-9	Lead cyanamidate
21041-95-2	Cadmium hydroxide
218-01-9	Chrysene
22673-19-4	Dibutylbis (pentane-2,4-dionato-O,O') tin
25155-23-1	Trixylyl phosphate (TXP)
25973-55-1	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)
335-67-1	Pentadecafluorooctanoic Acid (PFOA)
36437-37-3	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl) phenol (UV-350)
3825-26-1	Ammonium pentadecafluorooctanoate (APFO)
3846-71-7	2-Benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)
3864-99-1	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl) phenol (UV-327)
49663-84-5	Pentazine chromate octahydroxide
50-32-8	Benzo[def] chrysene Synonym : Benzo[a] pyrene
540-97-6	Dodecamethylcyclohexasiloxane (D6)
541-02-6	Decamethylcyclopentasiloxane (D5)
556-67-2	Octamethylcyclotetrasiloxane (D4)

CAS No.	Name
56-35-9	Bis(tributyltin) oxide (TBTO)
56-55-3	Benz [a] anthracene
573-58-0	Disodium 3,3'[(1,1'-biphenyl)-4,4'-diylbis(azo)]bis(4-aminonaphtalene-1-sulphonate) (C.I. Direct Red 28)
60-09-3	4-aminoazobenzene
605-50-5	Diisopentylphthalate (DIPP) Synonym ; Diisoamyl phthalate
61788-32-7	Terphenyl,hydrogenated
62229-08-7	Sulfurous acid, lead salt, dibasic
629-14-1	1,2-diethoxyethane
68-12-2	N,N-dimethylformamide
6807-17-6	2,2-bis (4' -hydroxyphenyl) -4-methylpentane Synonym: 4,4' -isobutylethylidenediphenol
683-18-1	Dibutyltin dichloride (DBTC)
68515-42-4	1,2-benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)
68515-50-4	1,2-benzenedicarboxylic acid, dihexyl ester, branched and linear Synonym : Diisohexyl phthalate (DiHP)
68784-75-8	Silicic acid (H ₂ Si ₂ O ₅), barium salt (1:1), lead-doped
69011-06-9	[Phthalato(2-)]dioxotrilead
71850-09-4	Diisohexyl phthalate
71888-89-6	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich
7439-92-1	Lead
7440-43-9	Cadmium
7646-79-9	Cobalt Dichloride
7758-97-6	Lead chromate (II)
776297-69-9	N-pentyl-isopentylphthalate Synonym : N-pentyl-isopentyl phthalate
7789-06-2	Strontium chromate
80-05-7	4,4'-isopropylidenediphenol Synonym : Bisphenol A, BPA
8012-00-8	Pyrochlore, antimony lead yellow
84-61-7	Dicyclohexyl phthalate
84-69-5	Diisobutyl phthalate (DIBP)
84-74-2	Dibutyl phthalate (DBP)
84-75-3	Di-n-hexyl Phthalate (DnHP)
84777-06-0	1,2-benzenedicarboxylic acid, dipentylester, branched and linear Synonym : Bis-C5 alkyl-(linear and branched) phthalate
85-01-8	Phenanthrene
85-68-7	Benzyl butyl phthalate (BBP)
91031-62-8	Fatty acids, C16-18, lead salts
96-45-7	Imidazolidine-2-thione; (2-imidazoline-2-thiol)

Substances: Long-chain perfluoroalkyl carboxylate (LCPFACs) and perfluoroalkyl sulfonate chemicals			
See Table 4.2 d			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	· Parts/products that contain one or more of the applicable LCPFACs in the surface coating	· Intentionally added of supply	Banned

Table 4.2 d Chemical substances specified in US TSCA LCPFAC SNUR "40 C.F.R 721.10536(b)(2)"

CAS No.	Name
507-63-1	Perfluorooctyl iodide
678-39-7	Tetrahydroperfluoro-1-decanol
865-86-1	Perfluoro-1-dodecanol
2043-53-0	Perfluorodecyl iodide
2043-54-1	1,1,2,2-Tetrahydroperfluorododecyl iodide
17741-60-5	Perfluorodecylethyl acrylate
27905-45-9	1,1,2,2-Tetrahydroperfluorodecyl acrylate
30046-31-2	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
39239-77-5	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
60699-51-6	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
65510-55-6	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
68187-47-3	Sodium:2-methylpropane-1-sulfonate
68391-08-2	1,1,2,2- Tetrahydroperfluoroalkyl (C8-C14) alcohol
70969-47-0	Thiols, C8-20, gamma-omega-perfluoro, telomers with acrylamide
125476-71-3	Silicic acid (H4SiO4), 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
1078712-88-5	Thiols, C4-20, gamma-omega-perfluoro, telomers with acrylamide and acrylic acid, sodium salts)
1078715-61-3	1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl, N-(2-((gamma-omega-perfluoro-C4-20-alkyl)thio)acetyl) derivs., inner salts
CBI	Polyfluoroalkyl betaine (generic)
CBI	Modified fluoroalkyl urethane (generic)
CBI	Perfluorinated polyamine (generic)

Substances : TSCA Priority chemicals (PBT substances)					
Management level	CAS No	Name	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	1163-19-5	Decabromodiphenyl ether (DecaBDE)	· All	· Intentionally added of supply	Banned
			· All except below		
Level 2	68937-41-7	Phenol, Isopropylated Phosphate (PIP)(3:1)	· Adhesives and articles using adhesives		January 6, 2024
			· All except articles		
Level 1	732-26-3	2,4,6-Tris (tert-butyl) phenol (TTBP)	· All		
	133-49-3	Pentachlorothiophemol (PCTP)	· All		
	87-68-3	Hexachlorobutadiene (HCBD)	· All		

Substances: List of the First 10 Chemical Substances Undergoing TSCA's Risk Evaluation			
See Table 4.2 e			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 2	· All	· Intentionally added of supply	January 1, 2022

Table 4.2 e List of the first 10 Chemical Substances Undergoing TSCA's Risk Evaluation

CAS No.	名称
75-09-2	Methylene Chloride
106-94-5	1-Bromopropane
25637-99-4, 3194-55-6, 3194-57-8	Cyclic Aliphatic Bromide Cluster (HBCD)
1332-21-4	Asbestos
56-23-5	Carbon Tetrachloride
123-91-1	1,4-Dioxane
872-50-4	N-methylpyrrolidone (NMP)
127-18-4	Tetrachloroethylene, also known as perchloroethylene
81-33-4	Pigment Violet 29
79-01-6	Trichloroethylene (TCE)

Substances: List of the First 10 Chemical Substances Undergoing TSCA's Risk Evaluation			
See Table 4.2 f			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 3	· All	· Intentionally added of supply	N/A

Table 4.2 f List of the 20 High-Priority Substances Selected to Undergo TSCA's Risk Evaluation Process

CAS No.	名称
106-99-0	1,3-Butadiene
85-68-7	Butyl benzyl phthalate (BBP)
84-74-2	Dibutyl phthalate (DBP)
95-50-1	o-Dichlorobenzene
106-46-7	p-Dichlorobenzene
75-34-3	1,1-Dichloroethane
107-06-2	1,2-Dichloroethane
156-60-5	trans-1,2-Dichloroethylene
78-87-5	1,2-Dichloropropane
84-61-7	Dicyclohexyl phthalate
117-81-7	Di-ethylhexyl phthalate (DEHP)
84-69-5	Di-isobutyl phthalate (DIBP)
106-93-4	Ethylene dibromide
50-00-0	Formaldehyde
1222-05-5	1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta [g]-2-benzopyran (HHCB)
79-94-7	4,4'-(1-Methylethylidene)bis[2, 6-dibromophenol] (TBBPA)
115-86-6	Phosphoric acid, triphenyl ester (TPP)
85-44-9	Phthalic anhydride
79-00-5	1,1,2-Trichloroethane
115-96-8	Tris(2-chloroethyl) phosphate (TCEP)

Substances: Polyvinyl chloride (PVC) and PVC blends			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> • Substrates for contactless IC cards • Fabrics and coating agents used for carrying bags, carrying cases, and carrying pouches for the following products (excluding those for professional use): Personal computers, digital cameras, video camcorders, and portable audio products • Cable ties used for accessories and connecting cords • Sub-materials to protect, contain, or transport products or supplied accessories (e.g. bags, adhesive tapes, cartons, and blister packs) Note that sub-materials for devices, semiconductors, and any other components (e.g. trays, magazine sticks, stoppers, reels, embossed carrier tapes) are excluded • Heat shrink tubes (Note: that such used for batteries are level3) • Flexible flat cables (FFC) • Insulating plates, decorative panels, Labels (Note: that such used for batteries are level3) • Sheets, and laminates used for exterior of wooden speakers • Suction cups for mounting in-vehicle products 	<ul style="list-style-type: none"> • Intentionally added of supply 	Banned
Level 3	<ul style="list-style-type: none"> • All applications other than Level 1 	<ul style="list-style-type: none"> • Intentionally added of supply 	N/A
Exemption	<ul style="list-style-type: none"> • Binder for resins used for paints, inks, coating agents, adhesives etc. 		

4.2 Additional rules for sub-materials used for the product

4.2.1 Definition of "Sub-materials "

"Sub-Material" means the product made of any kind of material or part used to contain, protect, handle, deliver, or award products to producer to the user or consumer who processed them from parts, raw materials, or packaging materials.

Note1: It means the packing part / materials shipped with the product of the Dexerials group mainly.(The thing delivered to DXJ, DXSC, DXA about the sub-materials used for the delivery of parts/raw materials / sub-materials to be used for the product are out of the object of "Management Standards for the Environment-Related Substances".

Note2: It is assumed that this standard is not intended for the sub-materials which carriers except Dexerials Group purchased.

Table 4.3 Additional rules for sub-materials

Substances: 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			
Management level	Targets	Threshold levels	Effective date of the ban on the delivery
Level 1	<ul style="list-style-type: none"> All sub-materials Some Illustrative examples are given in Table 4.3a.	<ul style="list-style-type: none"> 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 sub-materials	Banned
Exemption	<ul style="list-style-type: none"> Cartons for returnable boxes owned by carriers or parts suppliers 		
Sub-materials are required to be tested in accordance with the following standards.			
For hexavalent chromium: <ol style="list-style-type: none"> 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, 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 provided in Table4.3. Standards for four heavy metals measurement <ol style="list-style-type: none"> Sample preparation <p>For cadmium and total chromium,, follow the method listed in the column of cadmium .</p> <p>For lead, follow the methods listed the column of lead. For mercury, typical methods are as follows.</p> <ol style="list-style-type: none"> Closed system for acid decomposition method (e.g. a microwave decomposition method) (e.g. IEC 62321-5:2013, EPA 3052:1996) A heating evaporation-cold-vapor mercury-atomic-absorption method 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 <p>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.</p> Measurement methods <p>Regarding the measurement of cadmium and total-chromium concentrations, follow the method listed in the column of cadmium .</p> <p>Regarding the measurement of lead concentrations, follow the method listed in the column of lead .</p> <p>Regarding the measurement of mercury concentrations, follow the same methods as listed in the cadmium and listed in the lead .</p> <p>When the mercury concentration is predicted to be low, you are advised to use one of the following methods:</p> <ol style="list-style-type: none"> A reduction-evaporation atom-absorption method ICP-OES (ICP-AES) method with a hydride-generation apparatus ICP-MS method with a hydride-generation apparatus 			

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 sub-materials is 100 ppm or more.

Detection methods:

1) Sample preparation

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

2) Measurement method

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

Table 4.3a Examples of Sub-materials

Note: Do not cover all sub-materials.

Sub-materials		
For products		
1	Bottle/ Syringe / Drum	
2	Carton	Including master carton and sub-master carton made from any materials.
3	Separator, Spacer	
4	Cushion	Foamed plastics or air cap
5	Protection bag, protection sheet	Such as made from foamed plastic or nonwoven fabric
6	Antistatic seat/ bag	
7	Bag	Plastic bag or paper bag
8	Tray / Stick / Magazine	
9	Paper pipe / Plastic Core / Reel	Core or reel to wind film product
10	Adhesive tape	Such as used for closing carton or poly bag, or, fixing or protection for removable component
11	Band	Such as PP band
12	Cable Ties	
13	Shrink film	
14	Desiccating agent	
15	Printing ink/ Thermal transfer ribbon	For the print / printing to labels
16	Label	Attached to the Carton, Bottle, Syringe, Drum
The thing which the manufacturer of part / raw materials / the sub-material for products wraps the part / raw materials / sub-material .		
17	Carrying handle	Including its related components
18	Frame/ Board	Wooden frame / plywood
19	Foil / Sheet / Lap	
20	Tray / Stick / Magazine	
21	Bag	Plastic bag or paper bag
22	Cushion	Foamed plastics or air cap
23	Carton	
24	Adhesive tape	Such as used for closing carton or poly bag, or, fixing or protection for removable component
25	Band	Such as PP band
26	Staple	
27	Label	Attached to the Carton, Bottle, Syringe, Drum
28	Printing ink/ Thermal transfer ribbon	For the print / printing to labels
The thing which is used on distribution		
29	Pallet(wooden / plastic)	(notice) The thing which Dexerials Group purchases is an object
30	Container	The container made of every materials to use in exports (notice) The thing which Dexerials Group purchases is an object
31	Frame/ Board	Wooden frame / plywood (notice) The thing which Dexerials Group purchases is an object
32	Carrying handle	Including its related components (notice) The thing which Dexerials Group purchases is an object
33	Joint	Carton joint (notice) The thing which Dexerials Group purchases is an object
34	Tab for hanging	(notice) The thing which Dexerials Group purchases is an object
35	Staple/ Metal fittings	(notice) The thing which Dexerials Group purchases is an object

4.3 The additional matter about the Sub-materials used for

the delivery of parts/raw materials/sub-materials to be used for the product

The thing delivered to Dexerials group about the sub-materials used for the delivery of parts/raw materials / sub-materials to be used for the product are out of the object of “Management Standards for the Environment-Related Substances”