

TAMURA Group Green Procurement Standards Appendix

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TAMURA CORPORATION

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Attached document (Format)

"Green procurement" supplier questionnaire

* The revision contents display it with blue.

* As for this document, Japanese is original. When there is a doubt, Please confirm a Japanese version. The content is given to priority to a Japanese version, when there is contradiction between the contents of English version and Japanese version.

1. Objective

This "green procurement standard appendix" aims to provide the standard of environmental control substances of the procurement goods by order of RoHS Directive and REACH Regulation and to promote production which considers the environment.

2. Application

This green procurement standard appendix is intended for all parts, materials, packaging, and other articles (hereafter called the "procurement goods") used for Tamura product.

3. Definition of Terms

(1) Controlled Environmental Substance

Chemical substances contained in delivered products specified by Tamura Group which are judged to have marked impacts on global environment and human bodies.

(a) Containing banned substances

(Chemical substances that must not be used in procurement goods)

Any of the substances shown below falls into this range.

- Chemical substance contaminated in products that is banned by existing laws and regulations or a substance where an upper limit of concentration is specified.
- Chemical substances that are banned in product contamination by the Tamura Group prior to the effective period specified by a treaty, law, or regulation.
- Chemical substances for which the Tamura Group promotes the ban on usage in products.

Containing banned substances are managed using the controls levels 1) to 3) and the Exclusion.

1) Level 1

The range of limitation that must not be used in procurement goods.

2) Level 2

The usage of these substances in products procured by a specified date is banned; if used, the content must be made clear.

3) Level 3

The substances being reviewed for transition to Level 2 in the future and having the usage status assessed for the substances and their application.

4) Exclusion

Contents which are excluded from Levels 1 to 3 in consideration for items exempt from laws.

(b) Substances requiring communication of information

Chemical substances for which it is necessary to assess the containment of substance and the containment amount. However, does not restrict intentional use. In the case of an overlap with Containing banned substances, priority is given to the Containing banned substances. Further information is given in "4.2 Information Transmission Substances."

(2) Homogeneous material

A material that cannot be mechanically disjointed into different materials.

(3) Contained

Addition, filling, mixture, or adhesion of a chemical substance regardless of whether it is intentionally or not.

(If the product may be subjected to contamination from molds, tools, machines, equipment, etc. with which it comes into direct contact, the part which touches the product must be considered to fall under the scope of banned environmentally hazardous substances.)

(4) Impurities

It means chemical substances contained in natural materials, but could not be completely removed by industrial technology in the refining process for industrial material, or substances occurring in synthetic reaction, but could not be eliminated by industrial technology.

(5) Intentional addition

Deliberate use in the formulation of a product where its continued presence is desired to provide a specific characteristic, appearance or quality.

(6) Chemical substance

Substances which are single elements or composites and that exist naturally or are obtained from a production process.

(7) Mixture

A mixture intentionally comprising two or more chemical substances.

(8) Article

An item of specific shape, appearance or design created during manufacture which substantially determines functions in final user rather than functions provided by its chemical composition.

Note: Examples of articles are metal plates, gears, integrated circuits, electric appliances, transport equipment, etc.

(9) Part

An article to be manufactured until it turns into an end product.

4. Environmental control substances

4.1. Containing banned substances

The scope includes chemical substances contained in procured items that are determined to have a significant environmental impact on the global environment or humans that meet any of the following conditions:

- Chemical substance contaminated in products that is banned by existing laws and regulations; or a substance where an upper limit of concentration is specified.
- Chemical substances that are banned in product contamination by the Tamura Group prior to the effective period specified by a treaty, law, or regulation.
- Chemical substances for which the Tamura Group promotes the ban on usage in products.

We may ask you to submit a "non-use guarantee." If the format is specified, please submit the documents in the specified format.

Note : The detailed contents of banned substance group mention it in (Table 2)

(Table 1) List of containing banned substance group

No	Substances/Substance group	p.
1	Asbestos	4
2	Specific azo compounds which form certain aromatic amines	4
3	Beryllium Oxide (BeO)	4
4	Cadmium and Cadmium compounds	4
5	Brominated flame retardants (BFR) ^{※1} (other than PBBs, PBDEs, or HBCDD)	5
6	Chlorinated flame retardants (CFR) ^{※1}	5
7	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene (DechloranePlus)	5
8	Chromium VI compounds	5
9	Cobalt dichloride	5
10	Diarsenic Trioxide • Diarsenic Pentoxide ^{※1}	5
11	Dibutyltin compounds (DBT)	5
12	Dioctyltin compounds (DOT)	6
13	Dimethyl fumarate (DMF)	6
14	Polycyclic aromatic hydrocarbons (PAH)	6
15	Fluorinated greenhouse gases (PFC, SF ₆ , HFC)	6
16	Formaldehyde	6
17	Hexabromocyclododecane (HBCDD) and all major diastereoisomers	7
18	Lead and Lead compounds	7
19	Mercury and Mercury compounds	8
20	Nickel and Nickel compounds	8
21	Ozone Depleting Substances	8
22	Perchlorates ^{※1}	8
23	Perfluorooctane sulfonates (PFOS) and its salts and related substances	8
24	Perfluorooctanoic acid (PFOA) and its branched isomers, its salts, and PFOA-related substances	8
25	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	9
26	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	9
27	Bis (2-ethylhexyl) phthalate (DEHP)	9
28	Benzyl butyl phthalate (BBP)	9
29	Dibutyl phthalate (DBP)	9
30	Diisobutyl phthalate (DIBP)	9
31	Diisodecyl phthalate (DIDP)	10
32	Diisononyl phthalate (DINP)	10
33	Di-n-octyl phthalate (DNOP)	10
34	Polybrominated Biphenyls (PBBs)	10
35	Polybrominated Diphenylethers (PBDEs)	10
36	Polychlorinated Biphenyls (PCBs) and specific substitutes	10

No	Substances/Substance group	p.
37	Polychlorinated Terphenyls (PCTs)	10
38	Polychlorinated Naphthalenes	11
39	Polyvinyl chloride (PVC), PVC Copolymers and its blends	11
40	Radioactive substances	11
41	Shortchain Chlorinated Paraffins (C10–C13)(SCCP)	11
42	Medium-chain Chlorinated Paraffins (C14–C17, and chlorination rate of 45wt% or more)(MCCP) ^{※2}	11
43	Specified organic tin compounds (trisubstituted stannanes (include TBT, TPT))	11
44	Chlorinated phosphate ester flame retardants (TCEP, TCPP, TDCPP)	11
45	Long-Chain Perfluoroalkyl Carboxylate and Perfluoroalkyl Sulfonate Chemical Substances (LCPFACs)	12
46	Phenol, isopropylated Phosphate (3:1) (PIP(3:1))	12
47	Pentachlorothiophenol(PCTP)	12
48	Perfluorohexane-1-sulphonic acid (PFHxS) and its salts and related substances	12
49	Long-chain Perfluorocarboxylic acids (PFCAs), its salts and related substances	12
50	Perfluorohexanoic acid (PFHxA) and its salts and related substances ^{※2}	12
51	Decabromodiphenylethane (DBDPE) ^{※1}	12
52	4,4'-isopropylidenediphenol (Bisphenol A) and a substance group containing Tetrabromo-bisphenol A(TBBPA) ^{※1}	13
53	Di-n-hexyl Phthalate (DnHP) ^{※1}	13
54	Octamethylcyclotetrasiloxane (D4), Decamethylcyclopentasiloxane (D5), Dodecamethylcyclohexasiloxane (D6) ^{※2}	13
55	Per- and polyfluoroalkyl substances (PFAS) ^{※1}	13
56	IEC 62474 listed substances (others) ^{※1}	13
57	Hexachlorobenzene(HCB)	14
58	Pentachlorophenol(PCP) and its salts and esters	14
59	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc : Class I Specified Chemical Substances	14
60	Industrial Safety and Health Act (Articl 55):Harmful Substances, etc., Prohibited for Manufacturing, etc.	14
61	Poisonous and Deleterious Substances Control Act : Specified Poisonous Substances	14
62	Arsenic and arsenic compounds ^{※3}	15
63	Halogen compound and Halogen resins ^{※3}	15
64	Mineral oil aromatic hydrocarbons (MOAH) ^{※1※3}	16
65	Saturated hydrocarbons(C16-35) (MOSH) ^{※1※3}	16

※1 : Only level 3 is applied. It is possible to deliver it until the prohibition date is specified.

※2 : Only level 2 is applied. It is possible to deliver it until the effective date.

※3 : It applies only to the packaging medium. Refer to P.15 -16(Table 3)

(Table 2) Names of banned Substances, Scope and When Delivery is banned

※ When "Intentional addition" and a numerical value are shown in "threshold levels", both of them shall be satisfied.

No.1	Asbestos		
	Targets	threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- Intentional addition	Banned already

No.2	Specific azo compounds which form certain aromatic amines		
Supplement	When decomposed based on testing methods quoted in the REACH regulation (EC) No.1907/2006 Annex XVII, amines not to be generated by decomposition and the azo compounds that generate those amines		
	Targets	threshold level	Effective date of the ban on the delivery
Level 1	- Cloth, fiber, leather goods, and those materials	- More than 30 ppm in a homogeneous material.	Banned already

No.3	Beryllium Oxide (BeO)		
	Targets	threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- More than 1000 ppm in the parts	Banned already

No.4	Cadmium and Cadmium compounds		
	Targets	threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- Intentional addition - More than 100 ppm in a homogeneous material	Banned already
Exclusion	- The items mentioned of "(2011/65/EU ANNEX III)" https://ec.europa.eu/environment/waste/rohs_eee/adaptation_en.htm RoHS 2 exemptions - Validity and rolling plan Tamura Group prohibits six months before the dates of applicability. (Reference)		
	No.	Exemption※1	Category※2 Scope and dates of applicability※3
	8(b)	Cadmium and its compounds in electrical contacts	8, 9(others) 8(in vitro) 9(industrial), 11 Requested for renewal Requested for renewal Requested for renewal
	8(b)-I	Cadmium and its compounds in electrical contacts used in: — circuit breakers, — thermal sensing controls, — thermal motor protectors (excluding hermetic thermal motor protectors), — AC switches rated at: 6A and more at 250VAC and more, or 12A and more at 125VAC and more, — DC switches rated at 20 A and more at 18 V DC and more, — switches for use at voltage supply frequency ≥ 200 Hz	1~7, 10 Requested for renewal
	13(b)	Cadmium and lead in filter glasses and glasses used for reflectance standards	8, 9(others) 8(in vitro) 9(industrial), 11 Requested for renewal Requested for renewal Requested for renewal
	13(b)-II 13(b)-III	Cadmium in striking optical filter glass types Cadmium and lead in glazes used for reflectance standards	1~7, 10 Requested for renewal

※1 : If there is a difference from the RoHS directive, the directive will take precedence.

※2 : According to the definition of RoHS directive

※3 : Six months before the dates of applicability

Cat. 8, 9 others : for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments
 Cat. 8 in vitro : for category 8 in vitro diagnostic medical devices
 Cat. 9 industrial : for category 9 industrial monitoring and control instruments

No.5	Brominated flame retardants (BFR) (other than PBBs,PBDEs, or HBCDD)		
Targets		threshold level	Effective date of the ban on the delivery
Level 3	- All uses	- More than 1000 ppm as bromine in plastic materials	Possible until specified date

No.6	Chlorinated flame retardants (CFR)		
Targets		threshold level	Effective date of the ban on the delivery
Level 3	- All uses	- More than 1000 ppm as chlorine in plastic materials	Possible until specified date

No.7	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene (DechloranePlus)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- Intentional addition - More than 1 ppm in the article	Banned already

No.8	Chromium VI compounds		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- Natural leather parts and materials	- 3 ppm or more of the dry weight of the natural leather materials	Banned already
	- All uses other than the above	- Intentional addition - More than 1000 ppm in a homogeneous material	
Exclusion	- The items mentioned of "(2011/65/EU ANNEX III)" https://ec.europa.eu/environment/waste/rohs_eee/adaptation_en.htm RoHS 2 exemptions - Validity and rolling plan		

No.9	Cobalt dichloride		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- Moisture indicator used for a desiccant agent (e.g. silicagel)	- Intentional addition	Banned already
	- Humidity indicator card which is impregnated with cobalt dichloride	- More than 1000 ppm in the article	
Level 3	- All application other than the above	- More than 1000 ppm in the article	Possible until specified date

No.10	Diarsenic Trioxide•Diarsenic Pentoxide		
Targets		threshold level	Effective date of the ban on the delivery
Level 3	- All uses	- More than 1000 ppm in the article	Possible until specified date

No.11	Dibutyltin compounds (DBT)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- More than 1000 ppm* in a homogeneous material * By the weight of a tin	Banned already

No.12	Diocetyl tin compounds (DOT)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- Cloth, fiber, leather goods, and those materials - Child care article - Two-component roomtemperature vulcanisation moulding kits (RTV-2 moulding kits)	- More than 1000 ppm* in a homogeneous material * By the weight of a tin	Banned already

No.13	Dimethyl fumarate (DMF)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- 0.1 ppm or more in the parts	Banned already

No.14	Polycyclic aromatic hydrocarbons (PAH)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- Rubber or plastic parts of toys and childcare articles that come into direct, prolonged or repetitive skin or oral cavity contact	- 0.5 ppm or more in a homogeneous material	Banned already
	- Rubber or plastic parts that come into direct, prolonged or repetitive skin or oral cavity contact except those above	- 1 ppm or more in a homogeneous material	
Level 3	- The following rubber or plastic parts that come into direct, prolonged or repetitive skin or oral cavity contact (CAS Registry Number : 91-20-3, 120-12-7, 85-01-8, 206-44-0, 129-00-0, 191-24-2, 193-39-5)	- 0.5 ppm or more in the article	Possible until specified date

No.15	Fluorinated greenhouse gases (PFC, SF₆, HFC)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- Intentional addition	Banned already

No.16	Formaldehyde		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- The wooden products made from fiberboard, particleboard, or plywood, which are employed in products (e.g. speakers and racks)	- Obtain the value by any of the following test methods (1) to (3).	Banned already
	- Cloth, fiber, leather product, and the material	- 75 ppm or more in a homogeneous material	

Reference value (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 , 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 6 months) - Equal to or less than 7.0 mg in 100 g of a fiberboard without a surface treatment (the average value during 6 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 ISO 12460)
(3) 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)
Measurement methods :	
(1) Chamber method	EN 717-1:2004
(2) Perforator method	ISO 12460:2015
(3) Desiccator method	JIS A 5905 (Fiberboards), JIS A 5908 (Particleboards)

No.17	Hexabromocyclododecane (HBCDD) and all major diastereoisomers		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- Intentional addition - More than 75 ppm in the article	Banned already

No.18	Lead and Lead compounds			
Targets		threshold level	Effective date of the ban on the delivery	
Level 1	- Parts and materials for consumer products designed or intended primarily for children 12 years of age or younger	- 100 ppm or more in the part	Banned already	
	- Paint and similar surface coatings of toys and other articles intended for use by children	- More than 90 ppm in surface coating material		
	- Cables/cords (including plug and connector) with thermoset or thermoplastic coatings	- More than 300 ppm in surface coating material		
	- All uses except the above	- More than 1000 ppm in a homogeneous material		
Exclusion	- The items mentioned of "(2011/65/EU ANNEX III)" https://ec.europa.eu/environment/waste/rohs_eee/adaptation_en.htm RoHS 2 exemptions - Validity and rolling plan Tamura Group prohibits six months before the dates of applicability. (Reference)			
	No.	Exemption※1	Category※2	Scope and dates of applicability※3
	5(b)	Lead in glass of fluorescent tubes not exceeding 0.2% by weight	1~7, 10	Requested for renewal
	6(a)	Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0,35% lead by weight	8, 9(others) 8(in vitro) 9(industrial), 11	Requested for renewal Requested for renewal Requested for renewal
	6(a)-I	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	1~7, 10	Requested for renewal
	6(b)	Lead as an alloying element in aluminium containing up to 0.4% lead by weight	8, 9(others) 8(in vitro) 9(industrial), 11	Requested for renewal Requested for renewal
	6(b)-I	Lead as an alloying element in aluminium containing up to 0,4 % lead by weight, provided it stems from lead-bearing aluminium scrap recycling	1~7, 10	Requested for renewal
	6(b)-II	Lead as an alloying element in aluminium for machining purposes with a lead content up to 0,4 % by weight	1~7, 10	Requested for renewal
	6(c)	Copper alloy containing up to 4% lead by weight	1~7, 10 8, 9(others) 8(in vitro) 9(industrial), 11	Requested for renewal Requested for renewal Requested for renewal Requested for renewal
	7(a)	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead)	1~7, 10 8, 9(others) 8(in vitro) 9(industrial), 11	Requested for renewal Requested for renewal Requested for renewal Requested for renewal
	7(c)-I	Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic	9(industrial), 11	Requested for renewal
	7(c)-II	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher		
	13(a)	Lead in white glasses used for optical applications	1~7, 10 8, 9(others) 8(in vitro) 9(industrial), 11	Requested for renewal Requested for renewal Requested for renewal Requested for renewal
	13(b)	Cadmium and lead in filter glasses and glasses used for reflectance standards	8, 9(others) 8(in vitro) 9(industrial), 11	Requested for renewal Requested for renewal Requested for renewal
	13(b)-I	Lead in ion coloured optical filter glass types	1~7, 10	Requested for renewal
	13(b)-III	Cadmium and lead in glazes used for reflectance standards		
	34	Lead in cermet-based trimmer potentiometer elements	1~7, 10 8, 9(others) 8(in vitro) 9(industrial), 11	Requested for renewal Requested for renewal Requested for renewal Requested for renewal

※1 : If there is a difference from the RoHS directive, the directive will take precedence.
※2 : According to the definition of RoHS directive
※3 : Six months before the dates of applicability

Cat. 8, 9 others :
Cat. 8 in vitro :
Cat. 9 industrial :

for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments
for category 8 in vitro diagnostic medical devices
for category 9 industrial monitoring and control instruments

No.19	Mercury and Mercury compounds		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- Intentional addition - More than 1000 ppm in a homogeneous material	Banned already
Exclusion	- The items mentioned of "2011/65/EU ANNEX III" https://ec.europa.eu/environment/waste/rohs_eee/adaptation_en.htm RoHS 2 exemptions - Validity and rolling plan		

No.20	Nickel and Nickel compounds		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- Usage in which contact with skin is expected to be prolonged (belts, straps, ear phones, head phones and shoulder pads for bags, etc)	- 0.50 µg/cm ² /week	Banned already

No.21	Ozone Depleting Substances		
Supplement	Regulated substances also include isomers		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- Intentional addition - Use in the process of manufacture	Banned already

No.22	Perchlorates		
Targets		threshold level	Effective date of the ban on the delivery
Level 3	- All uses	- 0.006 ppm or more in the parts	Possible until specified date

No.23	Perfluorooctane sulfonates (PFOS) and its salts and related substances		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- Textiles or other coated materials	- Intentional addition - 1µg/m ² or more in the coated material	Banned already
	- All uses other than the above	- Intentional addition - 25 ppb or more in substance, mixture and article - More than 1 ppm as the sum of PFOS related substances in the article (as the sum of PFOS)	

No.24	Perfluorooctanoic acid (PFOA) and its branched isomers, its salts, and PFOA-related substances		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- Chemical substance, Mixture and Article using perfluorooctanoic acid (PFOA) and its branched isomers and its salts	- Intentional addition - 25 ppb or more in substance, mixture and article	Banned already
	- Chemical substance, Mixture and Article using perfluorooctanoic acid (PFOA) related substances	- Intentional addition - 1 ppm or more in substance, mixture and article (as the sum of PFOA)	

No.25	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- Intentional addition	Banned already

No.26	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- Intentional addition - More than 1 ppm in the article	Banned already

No.27	Bis (2-ethylhexyl) phthalate (DEHP)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- Parts and materials used in electrical and electronic equipment	- More than 1000 ppm in a homogeneous material	Banned already
	- All uses other than the above	- 1000 ppm or more in plasticized material (As the sum of DEHP, DBP, BBP, DIBP)	
Exclusion	- The items mentioned of "(2011/65/EU ANNEX III)" https://ec.europa.eu/environment/waste/rohs_eee/adaptation_en.htm RoHS 2 exemptions - Validity and rolling plan		

No.28	Benzyl butyl phthalate (BBP)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- Parts and materials used in electrical and electronic equipment	- More than 1000 ppm in a homogeneous material	Banned already
	- All uses other than the above	- 1000 ppm or more in plasticized material (As the sum of DEHP, DBP, BBP, DIBP)	

No.29	Dibutyl phthalate (DBP)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- Parts and materials used in electrical and electronic equipment	- More than 1000 ppm in a homogeneous material	Banned already
	- All uses other than the above	- 1000 ppm or more in plasticized material (As the sum of DEHP, DBP, BBP, DIBP)	

No.30	Diisobutyl phthalate (DIBP)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- Parts and materials used in electrical and electronic equipment	- More than 1000 ppm in a homogeneous material	Banned already
	- All uses other than the above	- 1000 ppm or more in plasticized material (As the sum of DEHP, DBP, BBP, DIBP)	

No.31	Di-isodecyl phthalate (DIDP)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- Parts and materials for children's toy or child care article that can be placed in a child's mouth	- More than 1000 ppm in plasticized material (As the sum of DIDP, DINP, DNOP)	Banned already
Level 3	- All uses	- Intentional addition	Possible until specified date

No.32	Diisononyl phthalate (DINP)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- Parts and materials for children's toy or child care article that can be placed in a child's mouth	- More than 1000 ppm in plasticized material (As the sum of DIDP, DINP, DNOP)	Banned already
Level 3	- All uses	- Intentional addition	Possible until specified date

No.33	Di-n-octyl phthalate (DNOP)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- Parts and materials for children's toy or child care article that can be placed in a child's mouth	- More than 1000 ppm in plasticized material (As the sum of DIDP, DINP, DNOP)	Banned already
Level 3	- All uses	- Intentional addition	Possible until specified date

No.34	Polybrominated Biphenyls (PBBs)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- Intentional addition - More than 1000 ppm in a homogeneous material	Banned already

No.35	Polybrominated Diphenylethers (PBDEs)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- Intentional addition - More than 500 ppm as the sum of PBDEs in the article	Banned already
	- Parts and Materials subject to EU RoHS Directive	- More than 1000 ppm in a homogeneous material	

No.36	Polychlorinated Biphenyls (PCBs) and specific substitutes		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- Intentional addition - More than 50 ppm in a homogeneous material	Banned already

No.37	Polychlorinated Terphenyls (PCTs)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- Intentional addition - More than 50 ppm in a homogeneous material	Banned already

No.38	Polychlorinated Naphthalenes		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- Intentional addition	Banned already

No.39	Polyvinyl chloride (PVC), PVC Copolymers and its blends		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- Substrates for contactless IC cards	- Intentional addition	Banned already
	- 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)		
	- Cable ties used for accessories and connecting cords		
	- Heat shrink tubes (note that such used for batteries are Level 3)		
	- Flexible flat cables(FFC)		
	- Suction cups for mounting in-vehicle products		
	- Insulating plate, veneer, label, sheet, laminat		
Level 3	- All uses except level1 items	- Intentional addition	Possible until specified date
Exclusion	Binder for resins used for paints, inks, coating agents, adhesives etc.		

No.40	Radioactive substances		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- Intentional addition	Banned already

No.41	Shortchain Chlorinated Paraffins (C10–C13)(SCCP)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- Intentional addition - More than 1000 ppm in the article	Banned already

No.42	Medium-chain Chlorinated Paraffins (C14–C17, and chlorination rate of 45wt% or more)(MCCP)		
Targets		threshold level	Effective date of the ban on the delivery
Level 2	- All uses	- Intentional addition - More than 1000 ppm in the article	April 1, 2026~

No.43	Specified organic tin compounds (trisubstituted stannanes (include TBT, TPT))		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- Intentional addition - More than 1000ppm* in a homogeneous material * By the weight of a tin	Banned already

No.44	Chlorinated phosphate ester flame retardants (TCEP, TCPP, TDCPP)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- Flame retardants used in plastics, resins, fabrics, and textiles	- More than 1000 ppm in the articles	Banned already

No.45	Long-Chain Perfluoroalkyl Carboxylate and Perfluoroalkyl Sulfonate Chemical Substances (LCPFACs)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- the surface coatings (and materials used for surface coatings) of parts/products	- Intentional addition	Banned already

No.46	Phenol, isopropylated Phosphate (3:1) (PIP(3:1))		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses except level3 items	- More than 0.1 wt% in the articles	Banned already
Level 3	- Lubricants, grease, manufacturing equipment, components for the semiconductor industry, and automotive components, except for exclusions	- More than 0.1 wt% in the articles	Possible until specified date
Exclusion	- Lubricants and grease for aerospace aircraft and turbine use - Circuit boards and wiring harnesses (including terminals and fuse covers, cable sleeves, casings, connectors, and tape)		

No.47	Pentachlorothiophenol(PCTP)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- More than 1wt% in the articles	Banned already

No.48	Perfluorohexane-1-sulphonic acid (PFHxS), its salts and related substances		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- Intentional addition - More than 25 ppb as the sum of PFHxS and its salts in the substance, mixture and article - More than 1 ppm as the sum of PFHxS related substances in the substance, mixture and article	Banned already

No.49	Long-chain Perfluorocarboxylic acids (PFCAs), its salts and related substances		
Targets		threshold level	Effective date of the ban on the delivery
Level 1 ※	- Carbon chain lengths within the range from C9 to C14	- More than 25 ppb as the sum of PFCAs and its salts in the article - More than 260 ppb as the sum of PFCAs related substances in the article	Banned already
Level 2	- Carbon chain lengths within the range from C9 to C21	- Intentional addition	April 1, 2026~

※ Substances restricted under REACH (Annex XVII)

No.50	Perfluorohexanoic acid (PFHxA) and its salts and related substances		
Targets		threshold level	Effective date of the ban on the delivery
Level 2	- Textile products, leather products, fur products, and footwear for the general public	- More than 25 ppb as the sum of PFHxA and its salts in a homogeneous material - More than 1 ppm as the sum of PFHxA related substances in a homogeneous material	April 10, 2026~

No.51	Decabromodiphenylethane (DBDPE)		
Targets		threshold level	Effective date of the ban on the delivery
Level 3	- All uses	- Intentional addition	Possible until specified date

No.52	4,4'-isopropylidenediphenol (Bisphenol A) and a substance group containing Tetrabromo-bisphenol A (TBBPA)		
Targets		threshold level	Effective date of the ban on the delivery
Level 3	- All uses	- Intentional addition - More than 10 ppm in the article	Possible until specified date

No.53	Di-n-hexyl Phthalate (DnHP)		
Targets		threshold level	Effective date of the ban on the delivery
Level 3	- All uses	- Intentional addition - More than 1000 ppm in the article	Possible until specified date

No.54	Octamethylcyclotetrasiloxane (D4), Decamethylcyclopentasiloxane (D5), Dodecamethylcyclohexasiloxane (D6)		
Targets		threshold level	Effective date of the ban on the delivery
Level 2	- Glues, sealants, adhesives, and moldings	- More than 1wt% as residue from silicone polymers	December 6, 2025 ~
	- Protective coatings	- More than 0.3wt% as residue from silicone polymers	
Exclusion	- As a component of silicone polymers		

No.55	Per- and polyfluoroalkyl substances (PFAS)		
Targets		threshold level	Effective date of the ban on the delivery
Level 3	- Fluorinated substances containing at least one fully fluorinated (no H/Cl/Br/I atoms bonded) methyl (CF ₃ -) or methylene (-CF ₂ -) carbon atom	- Intentional addition	Possible until specified date

No.56	IEC 62474 listed substances (others)		
Supplement	From among IEC 62474 listed substances, all chemical substances excluding chemical substances which are restricted in other items.		
Targets		threshold level	Effective date of the ban on the delivery
Level 3	- All uses	- More than 1000 ppm in the articles	Possible until specified date

No.57	Hexachlorobenzene(HCB)		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- More than 10 ppm in the article *	Banned already

* E U. (EU) No.2019/1021(POPs Regulation)

No.58	Pentachlorophenol(PCP) and its salts and esters		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- More than 5 ppm in the article *	Banned already

* E U. (EU) No.2019/1021(POPs Regulation)

No.59	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc : Class I Specified Chemical Substances		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- Intentional addition *	Banned already

*According to principles of "Best Available Technology/ Techniques (BAT)" based on the Act on the Examination of Chemical Substances and Regulation of Manufacturing, etc. If approved by the Ministry of Health, Labor and Welfare, the Ministry of Economy, Trade and Industry, and the Ministry of the Environment in Japan, it will not be treated as a Class 1 Specified Chemical Substances.

No.60	Industrial Safety and Health Act (Articl 55) : Harmful Substances, etc., Prohibited for Manufacturing, etc.		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- Intentional addition	Banned already

No.61	Poisonous and Deleterious Substances Control Act : Specified Poisonous Substances		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All uses	- Intentional addition	Banned already

4.1.1. Additional requirements concerning "Packaging" materials

[Definition of "Packaging"]

Packaging is used for "supplying", "protecting", "treating", "delivering" and "giving" from the producer to the user or the consumer, and packaging material means that it is made from various type and material.

Packaging indicates the one is made from various kinds and various materials.

These added items also apply to parts and materials purchased as product packaging materials.

Note: A substance is exempted from the application of each environmental control substance standard only when it is clear that it will be discarded or processed in another way in a delivery location of Tamura Corporation*, there is no danger that the substance is transmitted to a part or a material or mixed with it, and there is an agreement between the management division of the delivery location and the client.

* Including returnable boxes under control of a carrier or a supplier which will be collected and reused

(Table 3) Additional requirements concerning packaging materials

※ When "Intentional addition" and a numerical value are shown in "threshold levels", both of them shall be satisfied.

Heavy metals (The total of mercury, cadmium, hexavalent chrome and lead)			
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- The packaging which was listed in (Table 4)	- Intentional addition - 100 ppm or more in a homogeneous material (About the total of the heavy metal)	Banned already
Exclusion	- Returnable box belongs to a parts supplier.		

No.62	Arsenic and arsenic compounds		
Supplement	Reference laws and regulations・・・REACH Regulation ANNEX X VII Clause 19		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- The packaging that it was made of wood, and was listed in (Table 4) (A mainly wooden palette, wooden box)	- Intentional addition (insect killing, sterilization, etc)	Banned already

No.63	Halogen compounds and halogen resins		
Supplement	Reference laws and regulations ・・・Blue angel, Eco Mark, Basel Convention, WEEE Directive Annex		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- The packing that was listed in (Table 4) including Brominated flame retardant, chlorinated flame retardant, Poly vinyl chloride(PVC), fluorine contained resin.	- Intentional addition	Banned already
Exclusion	- Parts and materials not primarily for performing packaging functions are used as packaging materials. ... The phrase "not primarily for performing packaging functions" refers to applications other than those for product protection or wrapping (case, cushioning materials, etc). Example : hologram label, halogen compounds and fluorine additives used in printing inks as coloring agents, etc. However, these exclusion conditions do not apply when the contained halogen compound is classified as a prohibited substance as defined in Level 1.		

No.64	Mineral oil aromatic hydrocarbons (MOAH)		
Supplement	Reference regulation: French circular economy law "Anti-Waste and Circular Economy Law (AGEC law)" (L2020-105), Decree: MOAH/MOSH regulation (D.543-213), Ministerial Order: Official gazette (JORF n° 0102 du 3 mai 2022)		
Targets		threshold level	Effective date of the ban on the delivery
Level 3	- Packaging materials, printed matter (Substances containing 1 to 7 aromatic rings)	- 1000 ppm in ink	Possible until specified date
	- Packaging materials, printed matter (Substances containing 3 to 7 aromatic rings)	- 1 ppm in ink	

No.65	Saturated hydrocarbons(C16-35) (MOSH)		
Supplement	Reference regulation: French circular economy law "Anti-Waste and Circular Economy Law (AGEC law)" (L2020-105), Decree: MOAH/MOSH regulation (D.543-213), Ministerial Order: Official gazette (JORF n° 0102 du 3 mai 2022)		
Targets		threshold level	Effective date of the ban on the delivery
Level 3	- Packaging materials, printed matter	- 1000 ppm in ink	Possible until specified date

(Table 4) The identification example of "Packaging"

For the one used in the product of consumer and business (The one used in the transportation of customer's product)		
PACKAGING		
1	Carton(Box)	Including master carton and sub-master carton made from any materials.
2	Buffer material	
3	protection bag (sheet)	Such as made from foamed plastic or nonwoven fabric.
4	Plastic bag	
5	Envelope	Envelope for written guarantee etc
6	Blister pack	
7	Film	Including the protection film that pasted to the surface of the liquid crystal display.
8	Clamshell	
9	Partition	
10	Print ink	Used for packaging
11	Adhesive tape	Such as used for closing carton or poly bag, or fixing or protection for removable component.
12	Staple	
13	Label	The one stuck to packing parts like bar code label in customer's Control Division.
14	Joint	Carton joint, etc
15	Wire band	PP band, etc
16	Hanging tab	
17	Handle	Handle and constituent material
18	Frame	Wood frame, etc
19	Shrink film	
20	Bottle	
21	Sleeve	
22	Dressing case	The one that corresponds to dressing case of fountain pen and cosmetics
23	Skid	
24	Spindle case	
NOT PACKAGING (List including the Packaging to treat as products)		
1	CD case/wrapping	Cases or bags which is used for a CD and other recording mediums of the product consider it partly.
2	Index card/Label	The index card labels which are attached to a CD and the other recording mediums of the product consider it partly.
3	Carrying case/ Porch	The things which are attached to the headphones of the product consider it partly.
4	Label	Sticked on except packaging item
5	Label	Sticked by third parties such as cargo label and /or invoice.
Added to above, and used for devices, semiconductors and other components		
PACKAGING		
1	Magazine stick	Such as used for IC
2	Stopper	
3	Tray	
4	Reel	
Added to above, and used for physical distribution		
PACKAGING		
1	Pallet	Made from wood, plastic, paper, etc. which is used in one-way transportation, including slip sheet.
2	Wood box	
3	Stretch film	For protecting of collapse of cargo piles
4	Wood container	
5	Re-packing	Such as carton, cushion, tape, etc. for re-packing of sending out parts
6	Band/String	PP band
NOT PACKAGING		
1	Ship and air container	Container for ship transportation and air cargo container

4.1.2. Additional requirements concerning battery (Applicable to all batteries in commercial distribution)

(Table 5) Additional requirements concerning battery

Name	Cadmium and Cadmium compounds		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- Zinc carbon batteries *	- 10 ppm or more of the cadmium in the battery	Banned already
	- Alkaline manganese batteries *		
	- Nickel-metal hydride secondary battery * * except button cells		
	- Batteries other than the above	- 20 ppm or more of the cadmium in the battery	

Name	Lead and Lead compounds		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- Alkaline manganese batteries	- 40 ppm or more of the lead in the battery	Banned already
	- Batteries other than the above	- 100 ppm or more of the lead in the battery	
	- Zinc-Silver oxide batteries, Zinc-air batteries (button cells)		

Name	Mercury and Mercury compounds		
Targets		threshold level	Effective date of the ban on the delivery
Level 1	- All batteries	- Intentional addition - 1 ppm or more of the Mercury in the battery - 5 ppm or more in a homogeneous material	Banned already

Definitions in this clause

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

A list of Containing banned substances (Exemplification)

(Table 6) List of Containing banned substances (exemplification)

These are some typical banned substances. For other substances, please refer to the chemSHERPA substance list.

Refer to P.5

No.7	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10] octadeca-7,15-diene (DechloranePlus)	CAS RN
	1,4:7,10-Dimethanodibenzo[a,e]cyclooctene, 1,2,3,4,7,8,9,10,13,13,14,14-dodecachloro-1,4,4a,5,6,6a,7,10,10a,11,12,12a-dodecahydro-	13560-89-9
	1,4:7,10-Dimethanodibenzo[a,e]cyclooctene, 1,2,3,4,7,8,9,10,13,13,14,14-dodecachloro-1,4,4a,5,6,6a,7,10,10a,11,12,12a-dodecahydro-, (1R,4S,4aS,6aS,7S,10R,10aR,12aR)-rel-	135821-74-8
	1,4:7,10-Dimethanodibenzo[a,e]cyclooctene, 1,2,3,4,7,8,9,10,13,13,14,14-dodecachloro-1,4,4a,5,6,6a,7,10,10a,11,12,12a-dodecahydro-, (1R,4S,4aS,6aR,7R,10S,10aS,12aR)-rel-	135821-03-3

Refer to P.6

No.15	Fluorinated greenhouse gases (PFC, SF ₆ , HFC)	CAS RN
	Tetrafluoromethane (Carbon tetrafluoride, PFC-14)	75-73-0
	Hexafluoroethane (PFC-116)	76-16-4
	Octafluoropropane (PFC-218)	76-19-7
	Decafluorobutane (PFC-31-10)	355-25-9
	Dodecafluoropentane (PFC-41-12)	678-26-2
	Tetradecafluorohexane (PFC-51-14)	355-42-0
	Perfluorocyclobutane (PFC C318)	115-25-3
	Sulfur Hexafluoride (SF ₆)	2551-62-4
	Trifluoromethane (HFC-23)	75-46-7
	Difluoromethane (HFC-32)	75-10-5
	Methyl fluoride (HFC-41)	593-53-3
	2H,3H-Decafluoropentane (HFC-43-10mee)	138495-42-8
	Pentafluoroethane (HFC-125)	354-33-6
	1,1,2,2-Tetrafluoroethane (HFC-134)	359-35-3
	1,1,1,2-Tetrafluoroethane (HFC-134a)	811-97-2
	1,2-Difluoroethane (HFC-152)	624-72-6
	1,1-Difluoroethane (HFC-152a)	75-37-6
	1,1,2-Trifluoroethane (HFC-143)	430-66-0
	1,1,1-Trifluoroethane (HFC-143a)	420-46-2
	2H-Heptafluoropropane (HFC-227ea)	431-89-0
	1,1,1,2,2,3-Hexafluoro-propane (HFC-236cb)	677-56-5
	1,1,1,2,3,3-Hexafluoropropane (HFC-236ea)	431-63-0
	1,1,1,3,3,3-Hexafluoropropane (HFC-236fa)	690-39-1
	1,1,2,2,3-Pentafluoropropane (HFC-245ca)	679-86-7
	1,1,1,3,3-Pentafluoropropane (HFC-245fa)	460-73-1
	1,1,1,3,3-Pentafluorobutane (HFC-365mfc)	406-58-6

Refer to P.9

No.26	-	CAS RN
	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1

Refer to P.10

No.31	-	CAS RN
	Di-isodecyl phthalate (DIDP)	26761-40-0 68515-49-1

Refer to P.10

No.32	-	CAS RN
	Diisononyl phthalate (DINP)	28553-12-0 68515-48-0

Refer to P.10

No.33	-	CAS RN
	Di-n-octyl phthalate (DNOP)	117-84-0

Refer to P.11

No.40	Radioactive Substances	CAS RN
	Uranium-238	7440-61-1
	Radon	10043-92-2
	Americium-241	14596-10-2
	Thorium-232	7440-29-1
	Cesium-137	10045-97-3
	Strontium-90	10098-97-2
	Other radioactive substances	-

Refer to P.11

No.41	Shortchain Chlorinated Paraffins (C10-13)(SCCP)	CAS RN
	Alkanes, C10-13, chloro	85535-84-8
	Alkanes, C10-12, chloro	108171-26-2
	Alkanes, C12-13, chloro	71011-12-6
	Alkanes, chloro	61788-76-9
	Other Short Chain Chlorinated Paraffins	-

Note: Only short-chain chlorinated paraffins with carbon length of 10-13 atoms are covered

Refer to P.11 : [It is possible to deliver it until the effective date.](#)

No.42	Medium-chain Chlorinated Paraffins (C14–C17, and chlorination rate of 45wt% or more)(MCCP)	CAS RN
	Alkanes, C14-17, chloro (aka 'MCCP' in Europe)	85535-85-9
	Alkanes, C14-16, chloro	1372804-76-6
	Tetradecane, chloro derivs.	198840-65-2
	Alkanes, C10-21, chloro (aka CP52 in Asia)	84082-38-2
	Alkanes, C6-18, chloro	68920-70-7
	Alkanes, C10-32, chloro	84776-06-7
	Alkanes, C16-27, chloro	84776-07-8
	Alkanes, C16-35, chloro	85049-26-9
	Alkanes, C12-14, chloro	85536-22-7
	Alkanes, C10-26, chloro	97659-46-6
	Paraffins (petroleum), normal C>10, chloro	97553-43-0
	Alkanes, C10-14, chloro	85681-73-8
	Paraffin oils, chloro	85422-92-0

Refer to P.11

No.44	Chlorinated phosphate ester flame retardants (TCEP,TCPP,TDCPP)	CAS RN
	Tris (2-chloroethyl)phosphate (TCEP)	115-96-8
	Tris(2-chloro-1-methylethyl)phosphate (TCPP)	13674-84-5
	Tris(1,3-dichloro-2-propyl) Phosphate (TDCPP)	13674-87-8

Refer to P.12

No.45	Long-Chain Perfluoroalkyl Carboxylate and Perfluoroalkyl Sulfonate Chemical Substances (LCPFACs)	CAS RN
	Perfluorooctyl iodide(Octane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-8-iodo-)	507-63-1
	Tetrahydroperfluoro-1-decanol(1-Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-heptadecafluoro-.)	678-39-7
	Perfluoro-1-dodecanol(1-Dodecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafuoro-)	865-86-1
	Perfluorodecyl iodide(Decane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-10-iodo-.)	2043-53-0
	1,1,2,2-Tetrahydroperfluorododecyl iodide(Dodecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-heneicosafuoro-12-iodo-.)	2043-54-1
	Perfluorodecylethyl acrylate(2-Propenoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11, 12,12,12-heneicosafuorododecyl ester.)	17741-60-5
	1,1,2,2-Tetrahydroperfluorodecyl acrylate(2-Propenoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl ester)	27905-45-9
	1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12-Pentacosafuoro-14-iodotetradecane (Tetradecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12-pentacosafuoro-14-iodo-.)	30046-31-2
	3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-Pentacosafuorotetradecan-1-ol (1-Tetradecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafuoro-.)	39239-77-5
	3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-Nonacosafuorohexadecan-1-ol (1-Hexadecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-nonacosafuoro-.)	60699-51-6
	1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14-Nonacosafuoro-16-iodohexadecane (Hexadecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14-nonacosafuoro-16-iodo-.)	65510-55-6
	Sodium;2-methylpropane-1-sulfonate	68187-47-3
	1,1,2,2-Tetrahydroperfluoroalkyl(C8-C14) alcohol	68391-08-2
	Thiols, C8-20, gamma-omega-perfluoro, telomers with acrylamide	70969-47-0
	Silicic acid (H ₄ SiO ₄), sodium salt (1:2), reaction products with chlorotrimethylsilane and 3,3,4,4,5,5,6,6,7,7,8,8,9,9, 10,10,10-heptadecafluoro-1-decanol(Silicic acid (H ₄ SiO ₄), sodium salt (1:2), reaction products with chlorotrimethylsilane and 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-1-decanol.)	125476-71-3
	Thiols, C4-20, gamma-omega-perfluoro, telomers with acrylamide and acrylic acid, sodium salts	1078712-88-5
	1-Propanaminium, 3-amino-N-(carboxymethyl)-N,Ndimethyl-,N-(2-((gammaomega-perfluoro-C4-20-alkyl)thio)acetyl) derivs.,inner salts	1078715-61-3
	Polyfluoroalkyl betaine (generic)	-
	Modified fluoroalkyl urethane (generic)	-
	Perfluorinated polyamine (generic)	-

Refer to P.12

No.46	-	CAS RN
	Phenol, isopropylated Phosphate (3:1) (PIP(3:1))	68937-41-7

Refer to P.12

No.47	-	CAS RN
	Pentachlorothiophenol(PCTP)	133-49-3

Refer to P.12

No.48	Perfluorohexane-1-sulphonic acid (PFHxS), its salts and related substances	CAS RN
	Perfluorohexane-1-sulphonic acid	355-46-4
	potassium perfluorohexane-1-sulphonate	3871-99-6
	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, neodymium(3+) salt (3:1)	41184-65-0
	Yttrium tris(tridecafluorohexane-1-sulfonate)	41242-12-0
	Lithium 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluorohexane-1-sulfonate	55120-77-9
	Ammonium tridecafluorohexane-1-sulfonate	68259-08-5
	Potassium salt of perfluoroalkane(C=6-12)sulfonic acid	68391-09-3
	Zinc bis(tridecafluorohexane-1-sulfonate)	70136-72-0
	Compound of tridecafluorohexane-1-sulfonic acid and 2,2'-iminodiethanol (1:1)	70225-16-0
	Compound of tridecafluorohexane-1-sulfonic acid and triethylamine (1:1)	72033-41-1
	Sodium 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluorohexane-1-sulfonate	82382-12-5
	Cesium tridecafluorohexane-1-sulfonate	92011-17-1

No.48	Perfluorohexane-1-sulphonic acid (PFHxS), its salts and related substances (Continued)	CAS RN
	Perfluoroalkane(C=6-12)sulfonic acid	93572-72-6
	Tetrabutylammonium tridecafluorohexane-1-sulfonate	108427-54-9
	Tetraethylammonium tridecafluorohexane-1-sulfonate	108427-55-0
	Triphenylsulfonium tridecafluorohexane-1-sulfonate	144116-10-9
	Diphenyliodonium tridecafluorohexane-1-sulfonate	153443-35-7
	Tetraethylammonium fluorinated alkyl(C=1-18) sulfonate	160869-62-5
	Tetramethylammonium tridecafluorohexane-1-sulfonate	189274-31-5
	Compound of 2-methylpropan-2-amine and tridecafluorohexane-1-sulfonic acid (1:1)	202189-84-2
	Bis(4-tert-butylphenyl)iodonium tridecafluorohexane-1-sulfonate	213740-81-9
	Compounds of perfluoroalkane(C=6-8)sulfonic acid and polyethylene-polypropylene glycol bis(2-aminopropyl) ether	306974-45-8
	Gallium tris(tridecafluorohexane-1-sulfonate)	341035-71-0
	Phenyl(di-p-tolyl)sulfonium tridecafluorohexane-1-sulfonate	341548-85-4
	Scandium tris(tridecafluorohexane-1-sulfonate)	350836-93-0
	S,S,S',S'-Tetraphenyl[sulfanediylbis(4,1-phenylene)]bis(sulfonium) bis(tridecafluorohexane-1-sulfonate)	421555-73-9
	Bis(4-tert-pentylphenyl)iodonium tridecafluoro-1-hexanesulfonate	421555-74-0
	Tris(4-tert-butylphenyl)sulfonium tridecafluorohexane-1-sulfonate	425670-70-8
	Bis(tert-butylphenyl)iodonium tridecafluorohexane-1-sulfonate	866621-50-3
	Diphenyl(p-tolyl)sulfonium tridecafluorohexane-1-sulfonate	910606-39-2
	[4-(Methacryloyloxy)phenyl](diphenyl)sulfonium tridecafluorohexane-1-sulfonate	911027-68-4
	Polymer of 2-ethyl-2-adamantyl methacrylate / 3-hydroxy-1-adamantyl methacrylate / [4-(methacryloyloxy)phenyl](diphenyl)sulfonium tridecafluorohexane-1-sulfonate / 2-oxoxolan-3-yl methacrylate	911027-69-5
	Other Perfluorohexane-1-sulphonic acid (PFHxS), its salts and related substances	e.g.

Refer to P.12 : It is possible to deliver it until the effective date for carbon length of 9-21 atoms.

No.49	Long-chain Perfluorocarboxylic acids (PFCAs), its salts and related substances	CAS RN
	Perfluorononan-1-oic-acid (PFNA) Nonanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,9-heptadecafluoro-	375-95-1
	Nonadecafluorodecanoic acid (PFDA) Decanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-nonadecafluoro-	335-76-2
	Undecanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,11-heneicosafluoro-	2058-94-8
	Dodecanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-tricosafluoro-	307-55-1
	Tridecanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,13-pentacosafluoro-	72629-94-8
	Tetradecanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-heptacosafluoro-	376-06-7
	Pentadecanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,15-nonacosafuoro-	141074-63-7
	Hexadecanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-hentriacontafuoro-	67905-19-5
	Heptadecanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,17-tritriacontafuoro-	57475-95-3
	Octadecanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,18-pentatriacontafuoro-	16517-11-6
	Nonadecanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,19-heptatriacontafuoro-	133921-38-7
	Eicosanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,20-nonatriacontafuoro-	68310-12-3
	Perfluoroheneicosanoic acid C21	-
	Perfluorononan-1-oic-acid (PFNA) ammonium salts Nonanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,9-heptadecafluoro-, ammonium salt (1:1)	4149-60-4
	Perfluorononan-1-oic-acid (PFNA) sodium salts Nonanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,9-heptadecafluoro-, sodium salt (1:1)	21049-39-8
	Nonadecafluorodecanoic acid (PFDA) sodium salts Decanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-nonadecafluoro-, sodium salt (1:1)	3830-45-3
	Nonadecafluorodecanoic acid (PFDA) ammonium salts Decanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-nonadecafluoro-, ammonium salt (1:1)	3108-42-7
	Ethanol, 2,2'-iminobis-, compd. with α -fluoro- ω -[2-(phosphonooxy)ethyl]poly(difluoromethylene) (2:1)	65530-63-4
	Ethanol, 2,2'-iminobis-, compd. with α,α' -[phosphinicobis(oxy-2,1-ethanediyl)]bis[ω -fluoropoly(difluoromethylene)] (1:1)	65530-64-5

No.49	Long-chain Perfluorocarboxylic acids (PFCAs), its salts and related substances (Continued)	CAS RN
	Poly(difluoromethylene), α,α' -[phosphinobis(oxy-2,1-ethanediyl)]bis(ω -fluoro-, ammonium salt (1:1))	65530-70-3
	Poly(difluoromethylene), α -fluoro- ω -[2-(phosphonooxy)ethyl]-, ammonium salt (1:1)	65530-71-4
	Poly(difluoromethylene), α -fluoro- ω -[2-(phosphonooxy)ethyl]-, ammonium salt (1:2)	65530-72-5
	Ethanol, 2,2'-iminobis-, compd. with α -fluoro- ω -[2-(phosphonooxy)ethyl]poly(difluoromethylene) (1:1)	65530-74-7
	Phosphonic acid, perfluoro-C6-12-alkyl derivs.	68412-68-0
	Phosphinic acid, bis(perfluoro-C6-12-alkyl) derivs.	68412-69-1
	Phosphoric acid, γ - ω -perfluoro-C8-16-alkyl esters, compds. with diethanolamine	74499-44-8
	1-Dodecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafuoro-, 1,1'-(hydrogen phosphate)	1895-26-7
	1,2-Tridecanediol, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,13,13,13-eicosafuoro-12-(trifluoromethyl)-, 1-(dihydrogen phosphate)	63295-27-2
	1,2-Pentadecanediol, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,15,15,15-tetracosafuoro-14-(trifluoromethyl)-, 1-(dihydrogen phosphate)	63295-28-3
	1,2-Tridecanediol, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,13-heneicosafuoro-, 1-(dihydrogen phosphate)	94158-70-0
	1,2-Pentadecanediol, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,15-pentacosafuoro-, 1-(dihydrogen phosphate)	94200-42-7
	1,2-Heptadecanediol, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,17-nonacosafuoro-, 1-(dihydrogen phosphate)	94200-43-8
	1,2-Tridecanediol, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,13-heneicosafuoro-, 1-(dihydrogen phosphate), diammonium salt	94200-46-1
	1,2-Pentadecanediol, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,15-pentacosafuoro-, 1-(dihydrogen phosphate), diammonium salt	94200-47-2
	1,2-Heptadecanediol, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,17-nonacosafuoro-, 1-(dihydrogen phosphate), diammonium salt	94200-48-3
	1,2-Tridecanediol, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,13,13,13-eicosafuoro-12-(trifluoromethyl)-, 1-(dihydrogen phosphate), diammonium salt	94200-50-7
	1,2-Pentadecanediol, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,15,15,15-tetracosafuoro-14-(trifluoromethyl)-, 1-(dihydrogen phosphate), diammonium salt	94200-51-8
	Undecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11-tricosafuoro-11-iodo-	307-50-6
	Dodecane, 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-12-iodo-	307-60-8
	1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14-Nonacosafuoro-14-iodotetradecane	307-63-1
	Pentadecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15-hentriacontafuoro-15-iodo-	335-79-5
	Tridecane, 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-heptacosafuoro-13-iodo-	376-04-5
	Decane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-heneicosafuoro-10-iodo-	423-62-1
	Nonane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9-nonadecafuoro-9-iodo-	558-97-4
	Decane, 1,1,1,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-eicosafuoro-10-iodo-2-(trifluoromethyl)-	677-93-0
	Dodecane, 1,1,1,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12-tetracosafuoro-12-iodo-2-(trifluoromethyl)-	3248-61-1
	Tetradecane, 1,1,1,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14-octacosafuoro-14-iodo-2-(trifluoromethyl)-	3248-63-3
	Alkyl iodides, C6-18, perfluoro	90622-71-2
	Dodecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-heneicosafuoro-12-iodo-	2043-54-1
	Tetradecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12-pentacosafuoro-14-iodo-	30046-31-2
	Hexadecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14-nonacosafuoro-16-iodo-	65510-55-6
	Undecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9-nonadecafuoro-11-iodo-	65510-56-7
	Alkyl iodides, C4-20, γ - ω -perfluoro	68188-12-5
	Alkyl iodides, C10-12, γ - ω -perfluoro	68390-33-0
	Poly(difluoromethylene), α -[2-[(2-carboxyethyl)thio]ethyl]- ω -fluoro-, lithium salt (1:1)	65530-69-0
	Poly(difluoromethylene), α -[2-[(2-carboxyethyl)thio]ethyl]- ω -fluoro-	65530-83-8
	Butanoic acid, 4-[[3-(dimethylamino)propyl]amino]-4-oxo-, 2(or 3)-[(γ - ω -perfluoro-C6-20-alkyl)thio] derivs.	68187-25-7
	1-Propanesulfonic acid, 2-methyl-, 2-[[1-oxo-3-[(γ - ω -perfluoro-C4-16-alkyl)thio]propyl]amino] derivs., sodium salts	68187-47-3
	1-Dodecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafuoro-	865-86-1
	1-Tetradecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafuoro-	39239-77-5
	Alcohols, C8-14, γ - ω -perfluoro	68391-08-2
	1-Hexadecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-nonacosafuoro-	60699-51-6
	1-Eicosanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,20-heptatriacontafuoro-	65104-65-6

No.49	Long-chain Perfluorocarboxylic acids (PFCAs), its salts and related substances (Continued)	CAS RN
	1-Octadecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,18-tritriacontafluoro-	65104-67-8
	Poly(oxy-1,2-ethanediyl), α -hydro- ω -hydroxy-, ether with α -fluoro- ω -(2-hydroxyethyl)poly(difluoromethylene) (1:1)	65545-80-4
	Poly(difluoromethylene), α -[2-(acetyloxy)-2-[(carboxymethyl)dimethylammonio]ethyl]- ω -fluoro-, inner salt	71002-41-0
	Poly(difluoromethylene), α -[2-(acetyloxy)-3-[(carboxymethyl)dimethylammonio]propyl]- ω -fluoro-, inner salt	123171-68-6
	2-Propenoic acid, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,15,15,15-tetracosafuoro-2-hydroxy-14-(trifluoromethyl)pentadecyl ester	16083-87-7
	2-Propenoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,14,14,14-tetracosafuoro-13-(trifluoromethyl)tetradecyl ester	52956-82-8
	2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafuorododecyl ester, polymer with 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl 2-methyl-2-propenoate, methyl 2-methyl-2-propenoate, 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-pentacosafuorotetradecyl 2-methyl-2-propenoate and 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl 2-methyl-2-propenoate	65104-45-2
	2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,12,12,12-eicosafuoro-11-(trifluoromethyl)dodecyl ester	74256-14-7
	2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,14,14,14-tetracosafuoro-13-(trifluoromethyl)tetradecyl ester	74256-15-8
	2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafuorododecyl ester	2144-54-9
	2-Propenoic acid, 2-methyl-, 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-pentacosafuorotetradecyl ester	6014-75-1
	2-Propenoic acid, 2-methyl-, 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-nonacosafuorohexadecyl ester	4980-53-4
	2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,18-tritriacontafuorooctadecyl ester	59778-97-1
	2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,20-heptatriacontafuoroicosyl ester	65104-66-7
	2-Propenoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafuorododecyl ester	17741-60-5
	2-Propenoic acid, γ - ω -perfluoro-C8-14-alkyl esters	85631-54-5
	Poly(difluoromethylene), α -fluoro- ω -[2-[(2-methyl-1-oxo-2-propen-1-yl)oxy]ethyl]-	65530-66-7
	Poly(difluoromethylene), α -fluoro- ω -[2-[(1-oxo-2-propen-1-yl)oxy]ethyl]-	65605-70-1
	Poly(difluoromethylene), α -fluoro- ω -(2-hydroxyethyl)-, 2-hydroxy-1,2,3-propanetricarboxylate (3:1)	65530-59-8
	Poly(difluoromethylene), α -fluoro- ω -(2-hydroxyethyl)-, dihydrogen 2-hydroxy-1,2,3-propanetricarboxylate	65605-56-3
	Poly(difluoromethylene), α -fluoro- ω -(2-hydroxyethyl)-, hydrogen 2-hydroxy-1,2,3-propanetricarboxylate	65605-57-4
	Imidodicarbonic diamide, N,N',2-tris(6-isocyanatohexyl)-, reaction products with 3-chloro-1,2-propanediol and α -fluoro- ω -(2-hydroxyethyl)poly(difluoromethylene)	110053-43-5
	2-Propenoic acid, 2-methyl-, C2-18-alkyl esters, polymers with α -fluoro- ω -[2-[(1-oxo-2-propenyl)oxy]ethyl]poly(difluoromethylene) and vinylidene chloride	148878-17-5
	Poly(difluoromethylene), α -fluoro- ω -[2-[(1-oxooctadecyl)oxy]ethyl]-	65530-65-6
	9-Octadecenoic acid (9Z)-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafuorododecyl ester	125768-41-4
	9-Octadecenoic acid (9Z)-, 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-pentacosafuorotetradecyl ester	220237-52-5
	Pentanoic acid, 4,4-bis[(γ - ω -perfluoro-C6-12-alkyl)thio] derivs., compds. with diethanolamine	94095-37-1
	Pentanoic acid, 4,4-bis[(γ - ω -perfluoro-C8-20-alkyl)thio] derivs., compds. with diethanolamine	71608-61-2
	Butanedioic acid, monopolyisobutylene derivs., 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafuorododecyl ester	253682-98-3
	Butanedioic acid, monopolyisobutylene derivs., 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafuoro tetradecyl ester	253682-97-2
	1-Propanaminium, 2-hydroxy-N,N,N-trimethyl-, 3-[(γ - ω -perfluoro-C6-20-alkyl)thio] derivs., chlorides	70983-60-7
	Betaines, N-(hydroxyethyl)-N-methyl-N-(2-sulfoethyl)-N-(1,1,2-trihydroperfluoro-C8-14-2-alkenyl)	98219-29-5
	Betaines, (hydroxyethyl)methyl(γ , ω -perfluoro-C8-14- β -alkenyl)(2-sulfopropyl)	115340-82-4
	Quaternary ammonium compounds, (hydroxyethyl)dimethyl(γ - ω -perfluoro-C8-14- β -alkenyl), Me sulfates (salts)	92129-34-5
	Quaternary ammonium compounds, trimethyl(δ - ω -perfluoro-C8-14- β -alkenyl), chlorides	115535-36-9
	Quaternary ammonium compounds, diethylmethyl(γ - ω -perfluoro-C8-14- β -alkenyl), Me sulfates	127133-57-7
	Quaternary ammonium compounds, diethylmethyl(γ - ω -perfluoro-C8-14- β -alkenyl), tetraphenylborates	145477-02-7
	Quaternary ammonium compounds, diethylmethyl(γ - ω -perfluoro-C8-14- β -alkenyl), tetraphenylborates	153325-45-2

No.49	Long-chain Perfluorocarboxylic acids (PFCAs), its salts and related substances (Continued)	CAS RN
	Poly(difluoromethylene), α -fluoro- ω -[2-[[2-(trimethylammonio)ethyl]thio]ethyl]-, methyl sulfate (1:1)	65530-57-6
	Piperazinium, 1-(carboxymethyl)-1-(2-hydroxyethyl)-4-(2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-nonadecafluoro-1-oxodecyl)-, inner salt	71356-38-2
	Thiols, C10-20, γ - ω -perfluoro	68140-21-6
	Sulfuric acid, mono(γ - ω -perfluoro-C6-12-alkyl) esters, ammonium salts	68516-17-6
	1-Propanaminium, 3-[[4-[(heptadecafluorononen-1-yl)oxy]benzoyl]amino]-N,N,N-trimethyl-, iodide (1:1)	59493-72-0
	Sulfuric acid, mono(γ - ω -perfluoro-C8-12-alkyl) esters, ammonium salts	84238-62-0
	Ethene, tetrafluoro-, homopolymer, α -fluoro- ω -(2-hydroxyethyl)-, citrate, reaction products with 1,6-diisocyanatohexane	68891-05-4
	Perfluoro compounds, C5-18	86508-42-1
	1,3-Propanediol, 2,2-bis[[(γ - ω -perfluoro-C4-10-alkyl)thio]methyl] derivs., phosphates	148240-84-0
	Hexanedioic acid, dimethyl ester, polymers with 2,2-bis(bromomethyl)-1,3-propanediol-ethanethiol-tetrafluoroethylene telomer reaction products	277752-44-0
	2-Propenoic acid, 2-methyl-, 2-ethylhexyl ester, polymers with maleic anhydride, 2-[[2-(mercaptoethoxy)carbonyl]amino]ethyl methacrylate, γ - ω -perfluoro-C8-16-alkyl acrylate and stearyl methacrylate	333784-46-6
	2-Propenoic acid, 2-methyl-, 3-chloro-2-hydroxypropyl ester, polymers with 2,3-dihydroxypropyl methacrylate, γ - ω -perfluoro-C8-16-alkyl acrylate, polyethylene glycol methacrylate Me ether and polypropylene glycol monomethacrylate	333784-44-4
	2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymers with δ - ω -perfluoro-C10-16-alkyl acrylate and vinyl acetate	174125-96-3
	Poly(oxy-1,2-ethanediyl), α -methyl- ω -hydroxy-, 2-hydroxy-3-[(γ - ω -perfluoro-C6-20-alkyl)thio]propyl ethers	70983-59-4
	Siloxanes and Silicones, di-Me, hydroxy-terminated, polymers with tetradecanedioic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,13-tricosafluoro-1-tridecanol-terminated	182700-77-2
	1-Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-	678-39-7
	Poly(difluoromethylene), α -fluoro- ω -[2-(phosphonoxy)ethyl]-	65530-61-2
	Thiols, C8-20, γ - ω -perfluoro, telomers with acrylamide	70969-47-0
	Fatty acids, C7-13, perfluoro	68333-92-6
	Fatty acids, C7-19, perfluoro	91032-01-8
	Dodecanoyl fluoride, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,12,12,12-docosafluoro-11-(trifluoromethyl)-	15811-52-6
	Dodecanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,12,12,12-docosafluoro-11-(trifluoromethyl)-	16486-96-7
	Tetradecanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,14,14,14-hexacosafuoro-13-(trifluoromethyl)-	18024-09-4
	Dodecanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,12,12,12-docosafluoro-11-(trifluoromethyl)-, compd. with ethanamine (1:1)	68015-87-2
	Tetradecanoyl fluoride, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,14,14,14-hexacosafuoro-13-(trifluoromethyl)-	68025-62-7
	Decanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-octadecafluoro-9-(trifluoromethyl)-, ammonium salt (1:1)	3658-63-7
	Dodecanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-tricosafluoro-, ammonium salt (1:1)	3793-74-6
	Fatty acids, C7-13, perfluoro, ammonium salts	72968-38-8
	Undecanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11-eicosafluoro-, potassium salt (1:1)	307-71-1
	Phosphinic acid, bis(perfluoro-C6-12-alkyl) derivs., aluminum salts	93062-53-4
	Undecanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11-eicosafluoro-	1765-48-6
	1-Pentadecanaminium, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,15-pentacosafuoro-2-hydroxy-N,N-bis(2-hydroxyethyl)-N-methyl-, iodide (1:1)	93776-16-0
	1-Tridecanaminium, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,13-heneicosafluoro-2-hydroxy-N,N-bis(2-hydroxyethyl)-N-methyl-, iodide (1:1)	93776-17-1
	1-Pentadecanaminium, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,15,15,15-tetracosafuoro-2-hydroxy-N,N-bis(2-hydroxyethyl)-N-methyl-14-(trifluoromethyl)-, iodide (1:1)	94159-76-9
	2-Pentadecanol, 1-[[3-(dimethylamino)propyl]amino]-4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,15-pentacosafuoro-	94159-79-2
	2-Tridecanol, 1-[[3-(dimethylamino)propyl]amino]-4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,13-heneicosafluoro-	94159-80-5
	2-Pentadecanol, 1-[[3-(dimethylamino)propyl]amino]-4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,15,15,15-tetracosafuoro-14-(trifluoromethyl)-	94159-82-7
	2-Tridecanol, 1-[[3-(dimethylamino)propyl]amino]-4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,13,13,13-eicosafluoro-12-(trifluoromethyl)-	94159-83-8
	1-Propanaminium, N-(2-carboxyethyl)-N,N-dimethyl-3-[(4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,15-pentacosafuoro-2-hydroxypentadecyl)amino]-, inner salt	93776-12-6

No.49	Long-chain Perfluorocarboxylic acids (PFCAs), its salts and related substances (Continued)	CAS RN
	1-Propanaminium, N-(2-carboxyethyl)-3-[(4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,13-heneicosafuoro-2-hydroxytridecyl)amino]-N,N-dimethyl-, inner salt	93776-13-7
	1-Propanaminium, N-(2-carboxyethyl)-N,N-dimethyl-3-[[4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,15,15,15-tetracosafuoro-2-hydroxy-14-(trifluoromethyl)pentadecyl]amino]-, inner salt	93776-15-9
	Amides, C7-19, α-ω-perfluoro-N,N-bis(hydroxyethyl)	90622-99-4
	Piperazinium, 1-(carboxymethyl)-1-(2-hydroxyethyl)-4-(2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-nonadecafluoro-1-oxodecyl)-, inner salt	71356-38-2
	2-Propenoic acid, perfluoro-C8-16-alkyl esters	85681-64-7
	2H-Pyran, 2,2,3,3,4,4,5,5,6-nonafluorotetrahydro-6-(1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,9-nonadecafluorononyl)-	68155-54-4
	2-Propenoic acid, 2-methyl-, 2-methylpropyl ester, polymer with butyl 2-propenoate and 2,5-furandione, γ-ω-perfluoro-C8-14-alkyl esters, tert-Bu benzenecarboxyperoxoate-initiated	459415-06-6
	2-Propen-1-ol, reaction products with 1,1,1,2,2-pentafluoro-2-iodoethane-tetrafluoroethylene telomer, dehydroiodinated, reaction products with epichlorohydrin and triethylenetetramine	464178-90-3
	Alcohols, C16-20-branched, reaction products with 1,6-diisocyanatohexane homopolymer, α-fluoro-ω-(2-hydroxyethyl)poly(difluoromethylene) and stearyl alc.	1246542-93-7
	2-Pentadecanol, 1,1'-[oxybis[(1-methyl-2,1-ethanedyl)oxy]]bis[4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15-pentacosafuoro-	93776-00-2
	2-Propenoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafuorododecyl ester, polymer with 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl 2-propenoate, hexadecyl 2-propenoate, N-(hydroxymethyl)-2-propenamide, octadecyl 2-propenoate, 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-pentacosafuorotetradecyl 2-propenoate and 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl 2-propenoate	115592-83-1
	2-Propenoic acid, dodecyl ester, polymers with Bu (1-oxo-2-propenyl)carbamate and γ-ω-perfluoro-C18-14-alkyl acrylate	144031-01-6
	2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with α-fluoro-ω-[2-[(2-methyl-1-oxo-2-propen-1-yl)oxy]ethyl]poly(difluoromethylene)	65605-58-5
	Ethanaminium, N,N-diethyl-N-methyl-2-[(2-methyl-1-oxo-2-propen-1-yl)oxy]-, methyl sulfate (1:1), polymer with 2-ethylhexyl 2-methyl-2-propenoate, α-fluoro-ω-[2-[(2-methyl-1-oxo-2-propen-1-yl)oxy]ethyl]poly(difluoromethylene), 2-hydroxyethyl 2-methyl-2-propenoate and N-(hydroxymethyl)-2-propenamide	65636-35-3
	2-Propenoic acid, 2-methyl-, C10-16-alkyl esters, polymers with 2-hydroxyethyl methacrylate, Me methacrylate and α-ω-perfluoro-C8-14-alkyl acrylate	125328-29-2
	2-Propenoic acid, 2-methyl-, C10-16-alkyl esters, polymers with 2-hydroxyethyl methacrylate, Me methacrylate and γ-ω-perfluoro-C8-14-alkyl acrylate	129783-45-5
	2-Propenoic acid, 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-pentacosafuorotetradecyl ester	34395-24-9
	2-Propenoic acid, 2-methyl-, 3-chloro-2-hydroxypropyl ester, polymer with 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafuorododecyl 2-propenoate, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl 2-propenoate, N-(hydroxymethyl)-2-propenamide, 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-nonacosafuorohexadecyl 2-propenoate, octadecyl 2-propenoate and 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-pentacosafuorotetradecyl 2-propenoate	119973-85-2
	2-Propenoic acid, C12-14-alkyl esters, polymers with Bu (1-oxo-2-propenyl)carbamate and δ-ω-perfluoro-C6-12-alkyl acrylate	178233-67-5
	2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with α-fluoro-ω-[2-[(2-methyl-1-oxo-2-propen-1-yl)oxy]ethyl]poly(difluoromethylene) and N-(hydroxymethyl)-2-propenamide	65605-59-6
	2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with α-fluoro-ω-[2-[(2-methyl-1-oxo-2-propen-1-yl)oxy]ethyl]poly(difluoromethylene), 2-hydroxyethyl 2-methyl-2-propenoate and N-(hydroxymethyl)-2-propenamide	65605-60-9
	2-Propenoic acid, 2-methyl-, 2-ethylhexyl ester, polymer with α-fluoro-ω-[2-[(2-methyl-1-oxo-2-propen-1-yl)oxy]ethyl]poly(difluoromethylene), 2-hydroxyethyl 2-methyl-2-propenoate and N-(hydroxymethyl)-2-propenamide	68239-43-0
	2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymers with Bu acrylate, γ-ω-perfluoro-C8-14-alkyl acrylate and polyethylene glycol monomethacrylate, 2,2'-(1,2-diazenediyl)bis[2,4-dimethylpentanenitrile]-initiated	150135-57-2
	2-Propenoic acid, 2-methyl-, hexadecyl ester, polymers with 2-hydroxyethyl methacrylate, γ-ω-perfluoro-C10-16-alkyl acrylate and stearyl methacrylate	203743-03-7
	2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymers with γ-ω-perfluoro-C10-16-alkyl acrylate and vinyl acetate, acetates	196316-34-4
	2-Propenoic acid, 2-methyl-, 3-chloro-2-hydroxypropyl ester, polymer with 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafuorododecyl 2-propenoate, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl 2-propenoate, N-(hydroxymethyl)-2-propenamide, 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-nonacosafuorohexadecyl 2-propenoate, octadecyl 2-propenoate, 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-pentacosafuorotetradecyl 2-propenoate and 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl 2-propenoate	1094598-90-9
	2-Propenoic acid, 2-methyl-, 3-chloro-2-hydroxypropyl ester, polymers with N-(1,1-dimethyl-3-oxobutyl)-2-propenamide, 2-ethylhexyl acrylate, γ-ω-perfluoro-C8-16-alkyl acrylate, stearyl acrylate and vinyl chloride, 2,2'-azobis[2-methylpropanimidamide] dihydrochloride-initiated	325966-78-7

No.49	Long-chain Perfluorocarboxylic acids (PFCAs), its salts and related substances (Continued)	CAS RN
	2-Propenoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafuorododecyl ester, polymer with 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl 2-propenoate, α-(2-methyl-1-oxo-2-propenyl)-ω-[(2-methyl-1-oxo-2-propenyl)oxy]poly(oxy-1,2-ethanediyl), 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-nonacosafuorohexadecyl 2-propenoate, octadecyl 2-propenoate and 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-pentacosafuorotetradecyl 2-propenoate	119973-84-1
	2-Propenoic acid, 2-methyl-, 2-aziridinyl ester, polymer with α-fluoro-ω-[2-[(1-oxo-2-propenyl)oxy]ethyl]poly(difluoromethylene) and phenylmethyl 2-methyl-2-propenoate	220713-37-1
	2-Propenenitrile, polymer with α-fluoro-ω-[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl]poly(difluoromethylene), α-(2-methyl-1-oxo-2-propenyl)-ω-methoxypoly(oxy-1,2-ethanediyl) and α-(2-methyl-1-oxo-2-propenyl)-ω-[(2-methyl-1-oxo-2-propenyl)oxy]poly(oxy-1,2-ethanediyl)	374928-93-5
	2-Propenoic acid, 2-methyl-, 2-ethylhexyl ester, polymer with α-fluoro-ω-[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl]poly(difluoromethylene)	97136-02-2
	2-Propenoic acid, 2-methyl-, 3-chloro-2-hydroxypropyl ester, polymer with α-fluoro-ω-[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl]poly(difluoromethylene)	101896-32-6
	2-Propenoic acid, 2-methyl-, 2-aziridinyl ester, polymer with α-fluoro-ω-[(2-methyl-1-oxo-2-propenyl)oxy]methyl]poly(difluoromethylene) and octadecyl 2-methyl-2-propenoate	220713-74-6
	2-Propenoic acid, 2-methyl-, 2-aziridinyl ester, polymer with 1,1-dimethylethyl 2-methyl-2-propenoate and α-fluoro-ω-[(2-methyl-1-oxo-2-propenyl)oxy]methyl]poly(difluoromethylene)	220713-85-9
	2-Butenedioic acid (2Z)-, dioctyl ester, polymer with chloroethene and α-fluoro-ω-[2-[(1-oxo-2-propenyl)oxy]ethyl]poly(difluoromethylene)	374928-92-4
	2-Propenoic acid, 2-methyl-, 2-methylpropyl ester, polymer with butyl 2-propenoate and 2,5-furandione, γ-ω-perfluoro-C8-14-alkyl esters, tert-Bu benzenecarboxyperoxy-initiated	459415-06-6
	2-Propenoic acid, polymer with butyl 2-propenoate and 2,5-furandione, γ-ω-perfluoro-C8-14-alkyl esters, potassium salts, tert-Bu benzenecarboxyperoxy-initiated	524729-93-9
	2-Propenoic acid, 2-methyl-, 2-(diethylamino)ethyl ester, polymer with α-fluoro-ω-[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl]poly(difluoromethylene), acetate (salt)	500701-62-2
	Ethene, tetrafluoro-, homopolymer, α-fluoro-ω-(2-hydroxyethyl)-, citrate, reaction products with 1,6-diisocyanatohexane	68891-05-4
	Alcohols, C8-14, γ-ω-perfluoro, polymers with α-fluoro-ω-[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl]poly(difluoromethylene), methanol, stearyl acrylate, stearyl methacrylate, 2,4-TDI and vinyl chloride	376364-33-9
	Hexane, 1,6-diisocyanato-, homopolymer, γ-ω-perfluoro-C6-20-alc.-blocked	135228-60-3
	1,3-Propanediol, 2,2-bis(bromomethyl)-, reaction products with ethanethiol-tetrafluoroethylene telomer, polymers with 1,6-diisocyanato-2,2,4(or 2,4,4)-trimethylhexane, 2-heptyl-3,4-bis(9-isocyanatononyl)-1-pentylcyclohexane and 2,2'-(methylimino)bis[ethanol]	144468-32-6
	Alcohols, C8-14, γ-ω-perfluoro, reaction products with epichlorohydrin, polyethylene glycol mono-Me ether and N,N',2-tris(6-isocyanatoheptyl)imidodicarbonic diamide	118102-37-7
	2-Oxepanone, homopolymer, decyl perfluoro-C8-14-alkyl esters, reaction products with 1H-imidazole-1-propanamine, polyethylene-polypropylene glycol and TDI homopolymer	332076-28-5
	2-Oxepanone, homopolymer, decyl perfluoro-C8-14-alkyl esters, reaction products with 1H-imidazole-1-propanamine and TDI homopolymer	332076-33-2
	2-Oxepanone, homopolymer, decyl perfluoro-C8-14-alkyl esters, reaction products with 1H-imidazole-1-propanamine, polyethylene glycol and TDI homopolymer	332076-34-3
	Fatty acids, C18-unsatd., dimers, diisocyanates, polymers with 2,3-bis(γ-ω-perfluoro-C4-18-alkyl)-1,4-butanediol, 1,6-diisocyanato-2,2,4(or 2,4,4)-trimethylhexane and 2,2'-(methylimino)bis[ethanol]	68990-40-9
	Alcohols, C8-14, γ-ω-perfluoro, reaction products with epichlorohydrin, tetrahydrofuran homopolymer and N,N',2-tris(6-isocyanatoheptyl)imidodicarbonic diamide	118102-38-8
	Alcohols, C8-14, γ-ω-perfluoro, polymers with 1,6-diisocyanatohexane, ethylene glycol, glycidol and 2,4-TDI	253873-70-0
	Imidodicarbonic diamide, N,N',2-tris(6-isocyanatoheptyl)-, reaction products with ethylene glycol, α-fluoro-ω-[2-[(1-oxo-2-propenyl)oxy]ethyl]poly(difluoromethylene), glycidol and 2,4-TDI	329201-80-1
	Imidodicarbonic diamide, N,N',2-tris(6-isocyanatoheptyl)-, reaction products with 3-chloro-1,2-propanediol, ethylene, iodoethane and tetrafluoroethylene	254889-72-0
	Methanol, reaction products with 1,6-diisocyanatohexane, ethylene, ethylene oxide, iodoethane and tetrafluoroethylene	254889-79-7
	Hexane, 1,6-diisocyanato-, homopolymer, α-fluoro-ω-(hydroxyethyl)poly(difluoromethylene)- and Me Et ketone oxime- and polyethylene glycol mono-Me ether-blocked	428842-38-0
	Fatty acids, linseed-oil, γ-ω-perfluoro-C8-14-alkyl esters	178535-23-4
	Hexane, 1,6-diisocyanato-, homopolymer, reaction products with α-fluoro-ω-(2-hydroxyethyl)poly(difluoromethylene)	126927-97-7
	Thiols, C8-20, γ-ω-perfluoro, telomers with acrylamide	70969-47-0
	Thiols, C4-20, γ-ω-perfluoro, reaction products with methylated formaldehyde-1,3,5-triazine-2,4,6-triamine polymer	113089-67-1
	Alcohols, C8-14, γ-ω-perfluoro, reaction products with epichlorohydrin and propylene oxide, trimethylamine-quaternized	185630-70-0
	Poly(difluoromethylene), α-fluoro-ω-(2-hydroxyethyl)-, ester with 2,15-bis(carboxymethyl)-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,2,15,16-tetracarboxylic acid (6:1)	65530-58-7
	Other Long-chain Perfluorocarboxylic acids (PFCAs), its salts and related substances	e.g.

Refer to P.12 : [It is possible to deliver it until the effective date.](#)

No.50	Perfluorohexanoic acid (PFHxA) and its salts and related substances	CAS RN
	Ammonium undecafluorohexanoate	21615-47-4
	Sodium undecafluorohexanoate	2923-26-4
	Other Perfluorohexanoic acid (PFHxA) and its salts and related substances	e.g.

Refer to P.13 : It is possible to deliver it until the freeze date.

No.51	-	CAS RN
	Decabromodiphenylethane (DBDPE)	84852-53-9

Refer to P.13 : It is possible to deliver it until the freeze date.

No.52	4,4'-isopropylidenediphenol (Bisphenol A) and a substance group containing Tetrabromo-bisphenol A (TBBPA)	CAS RN
	4,4'-isopropylidenediphenol (Bisphenol A, BPA)	80-05-7
	4,4'-(1-methylpropylidene)bisphenol (Bisphenol B)	77-40-7
	4,4'-Sulfonyldiphenol (Bisphenol S)	80-09-1
	4,4'-Dihydroxydiphenylmethane (Bisphenol F)	620-92-8
	4,4'-(Hexafluoroisopropylidene)diphenol (Bisphenol AF)	1478-61-1
	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol (TBBPA)	79-94-7
	2,2'-[(1-methylethylidene)bis(2,6-dibromo-4,1-phenylene)oxymethylene]bisoxirane [TBBPA-bGE]	3072-84-2
	1,1'-(isopropylidene)bis[3,5-dibromo-4-(2,3-dibromopropoxy)benzene] [TBBPA-bDiBPrE]	21850-44-2
	1,1'-isopropylidenebis[4-(allyloxy)-3,5-dibromobenzene] [TBBPA-bAE]	25327-89-3
	4,4'-(isopropylidene)bis[2,6-dibromoanisole] m [TBBPA-bME]	37853-61-5
	1,1'-(isopropylidene)bis[3,5-dibromo-4-(2,3-dibromo-2-methylpropoxy)benzene]	97416-84-7
	INTERSTAB FR 184	-
	A mixture of: 2-ethyl-[2,6-dibromo-4-[1-[3,5-dibromo-4-(2-hydroxyethoxy)phenyl]-1-methylethyl]phenoxy]propenoate; 2,2'-diethyl-[4,4'-bis(2,6-dibromophenoxy)-1-methylethylidene] dipropenoate; 2,2'-[(1-methylethylidene)bis[[2,6-dibromo-4,1-phenylene)oxy]ethanol]]	-
	2,2-bis(3,5-dibromo-4-(3-acryloyloxy-2-hydroxypropoxy)phenyl)propane	-
	BB 331	-
	2,2',6,6'-Tetrabromo-4,4'-isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	40039-93-8
	2,2',6,6'-Tetrabromo-4,4'-isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane and 2,4,6-tribromophenol	158725-44-1
	Phenol, 4,4'-(1-methylethylidene)bis[2,6-dibromo-, polymer with 2-(chloromethyl)oxirane and 4,4'-(1-methylethylidene)bis[phenol], Ph ethers	1045809-53-7
	2,2',6,6'-Tetrabromo-4,4'-isopropylidenediphenol, oligomeric reaction products with Propylene oxide and n-butyl glycidyl ether	1179964-22-7
	Reaction mass of 1,1'-(isopropylidene)bis[3,5-dibromo-4-(2,3-dibromo-2-methylpropoxy)benzene] and 1,3-dibromo-2-(2,3-dibromo-2-methylpropoxy)-5-{2-[3,5-dibromo-4-(2,3,3-tribromo-2-methylpropoxy)phenyl]propan-2-yl}benzene	-

Refer to P.13 : It is possible to deliver it until the freeze date.

No.53	-	CAS RN
	Di-n-hexyl Phthalate (DnHP)	84-75-3

Refer to P.13 : [It is possible to deliver it until the effective date.](#)

No.54	Octamethylcyclotetrasiloxane (D4), Decamethylcyclopentasiloxane (D5), Dodecamethylcyclohexasiloxane (D6)	CAS RN
	Octamethylcyclotetrasiloxane (D4)	556-67-2
	Decamethylcyclopentasiloxane (D5)	541-02-6
	Dodecamethylcyclohexasiloxane (D6)	540-97-6

Refer to P.14

No.57	-	CAS RN
	Hexachlorobenzene(HCB)	118-74-1

Refer to P.14

No.58	Pentachlorophenol(PCP) and its salts and esters	CAS RN
	Hexadecyl(trimethyl)ammonium pentachlorophenolate	87-76-3
	2,3,4,5,6-Pentachlorophenol	87-86-5
	Sodium Pentachlorophenate	131-52-2
	Copper(II) bis(2,3,4,5,6-pentachlorophenolate)	2917-31-9
	Zinc bis(pentachlorophenolate)	2917-32-0
	Tributyl(pentachlorophenoxy)stannane	3644-38-0
	Pentachlorophenyl laurate	3772-94-9
	Methyl(pentachlorophenolato)mercury	5902-76-1
	Bis(pentachlorophenyl) carbonate	7497-08-7
	Potassium pentachlorophenolate	7778-73-6
	Pentachlorophenyl oleate	10443-46-6
	Pentachlorophenyl N(2)-[(benzyloxy)carbonyl]-L-glutamate	13673-51-3
	Pentachlorophenyl N-[(benzyloxy)carbonyl]-L-isooleucinate	13673-53-5
	Pentachlorophenyl (R)-2-[(benzyloxy)carbonyl]amino-3-(benzylsulfanyl)propanoate	13673-54-6
	Pentachlorophenyl N-[(4-methoxybenzyl)oxy]carbonyl]-L-serinate	23234-97-1
	Sodium pentachlorophenolate decahydrate	27735-63-3
	Sodium pentachlorophenolate monohydrate	27735-64-4
	Pentachlorophenyl (S)-5-oxopyrrolidine-2-carboxylate	28990-85-4
	Compound of 2,2',2''-nitrilotriethanol and pentachlorophenol (1:1)	32978-79-3
	Compound of abieta-8(14),9(11),12-trien-18-amine and pentachlorophenol	35109-57-0
	Pentachlorophenyl 2-hydroxybenzoate	36994-69-1
	Pentachlorophenyl (R)-5-oxopyrrolidine-2-carboxylate	50654-95-0
	Pentachlorophenyl N-[(benzyloxy)carbonyl]-L-tyrosinate	55593-07-2
	Calcium bis(pentachlorophenolate)	55868-72-9
	Pentachlorophenyl 5-oxopyrrolidine-2-carboxylate	67246-71-3
	Compounds of coco alkyl amines and pentachlorophenol (1:1)	90640-52-1
	Coco-alkyl(trimethyl)ammonium pentachlorophenolates	91080-93-2
	Pentachlorophenyl ester of fatty acids(C=8-12)	98219-40-0
	Pentachlorophenyl ester of fatty acids(C=16-18)	98219-41-1

Refer to P.14

No.59	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc : Class I Specified Chemical Substances	CAS RN
	Bis(tri-n-butyltin)oxide (TBTO)	56-35-9
	Hexachlorobenzene	118-74-1
	Aldrin	309-00-2
	Dieldrin	60-57-1 128-10-9
	Endrin	72-20-8 128-10-9
	Chlorophenothane (DDT)	50-29-3
	Chlorophenothane	57-74-9 76-44-8 5103-71-9 5103-74-2 5566-34-7 6058-23-7 12789-03-6 27304-13-8 56534-03-3 56641-38-4
	N,N -ditolyl-p-phenylenediamine, N-tolyl-N -xylyl-p-phenylenediamine and N,N -dixylyl-p-phenylenediamine	27417-40-9 28726-30-9 70290-05-0 620-91-7 15017-02-4 68953-84-4

No.59	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc : Class I Specified Chemical Substances (Continued)	CAS RN
	2,4,6-tri-tert-butylphenol	732-26-3
	Toxaphene	8001-35-2
	Mirex	2385-85-5
	Dicofol	115-32-2 10606-46-9
	Hexachloro-1,3-butadiene (HCBd)	87-68-3
	Pentachlorobenzene	608-93-5
	Hexachlorocyclohexane	-
	α -Hexachlorobutadiene	319-84-6
	β -Hexachlorobutadiene	319-85-7
	γ -Hexachlorobutadiene (Rinden)	58-89-9
	Chlordecone	143-50-0
	Endosulfan	115-29-7 959-98-8 33213-65-9
	Pentachlorophenol(PCP) and its salts and esters	Refer to No.58
	Methoxychlor	72-43-5 30667-99-3 76733-77-2 255065-25-9 255065-26-0 59424-81-6 1348358-72-4

Refer to P.14

No.60	Industrial Safety and Health Act (Articl 55) : Harmful Substances, etc., Prohibited for Manufacturing, etc.	CAS RN
	Benzidine	92-87-5
	4-Aminodiphenyl	92-67-1
	4-Nitrodiphenyl	92-93-3
	Bis(chloromethyl)eter	542-88-1
	β -Naphthylamine: 2-Naphthylamine	91-59-8
	Benzen and rubber gule which contains benzene	71-43-2
	Yellow Phosphor match	12185-10-3

Refer to P.14

No.61	Poisonous and Deleterious Substances Control Act : Specified Poisonous Substances	CAS RN
	Octamethyl pyrophosphoramidate (Schradan)	152-16-9
	Tetraalkyl lead	-
	Tetramethyl lead	75-74-1
	Tetraethyl lead	78-00-2
	Ethyltrimethylplumbane	1762-26-1
	Diethyldimethylplumbane	1762-27-2
	Triethylmethylplumbane	1762-28-3
	Parathion	56-38-2
	Dimethylethyl mercaptoethyl triphosphate	8022-00-2
	Phosphamidon	13171-21-6
	Dimethylparanitrophenyl thiophosphate	298-00-0
	Tetraethylpyrophosphate	107-49-3
	Salts of fluoroacetic acid	144-49-0
	Sodium fluoroacetate	62-74-8
	Fluoroacetamide	640-19-7
	Aluminium phosphide	20859-73-8

Major controlled substances, and examples of applicable laws and regulations

The laws and regulations cited herein are subject to change, and it is essential to consult

(Table 7) Containing banned substances and examples of applicable laws and regulations

No.	Substances/Substance group	Laws and regulations (examples)
1	Asbestos	E U. REACH Regulation (EC) No. 1907/2006 Annex XVII U.S. Toxic Substances Control Act : TSCA JAPAN. Industrial Safety and Health Act (Articl 55)
2	Specific azo compounds which form certain aromatic amines	E U. REACH Regulation (EC) No. 1907/2006 Annex XVII
3	Beryllium Oxide (BeO)	EU. WEEE Directive 2002/96/EC and EU Directive 1999/45/EC DIGITALEUROPE/CECED/EERA:European Industry Agreement
4	Cadmium and Cadmium compounds	E U. REACH Regulation (EC) No. 1907/2006 Annex XVII E U. RoHS Directive 2011/65/EU China. Law Measures for Restriction of the Use of Hazardous Substances in Electrical Appliances and Electronic Products Denmark. Statutory Order No. 1199.
5	Brominated flame retardants (BFR) (other than PBBs, PBDEs, or HBCDD)	U.S. JS709 (Definition of the low halogen)
6	Chlorinated flame retardants (CFR)	U.S. JS709 (Definition of the low halogen)
7	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo [12.2.1.1.16,9.02,13.05,10]octadeca-7,15-diene (DechloranePlus)	E U. (EU) No.2019/1021(POPs Regulation) Japan. Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc
8	Chromium VI compounds	E U. RoHS Directive 2011/65/EU. E U. REACH Regulation (EC) No. 1907/2006 Annex XVII China. Law Measures for Restriction of the Use of Hazardous Substances in Electrical Appliances and Electronic Products
9	Cobalt dichloride	E U. REACH Regulation (EC) No. 1907/2006 Annex XVII
10	Diarsenic Trioxide, Diarsenic Pentoxide	E U. REACH Regulation (EC) No. 1907/2006 Annex XIV
11	Dibutyltin compounds (DBT)	E U. REACH Regulation (EC) No. 1907/2006 Annex XVII
12	Diocetyl tin compounds (DOT)	E U. REACH Regulation (EC) No. 1907/2006 Annex XVII
13	Dimethyl fumarate (DMF)	E U. REACH Regulation (EC) No. 1907/2006 Annex XVII
14	Polycyclic aromatic hydrocarbons (PAH)	E U. REACH Regulation (EC) No. 1907/2006 Annex XVII E U. REACH Regulation (EC) No. 1907/2006 Articl 33 and 7.2 Germany. Produktsicherheitsgesetz(ProdSG) SafeGuardS 136/19
15	Fluorinated greenhouse gases (PFC, SF ₆ , HFC)	E U. (EU) 2024/573 United Nation. Montreal Protocol AnnexF
16	Formaldehyde	Germany. ChemVerbotsV Denmark. No.289, 22 June 1983 USA. Toxic Substances Control Act (TSCA) Austria. BGB I 1990/194: Formaldehydverordnung, §2, 12/2/1990
17	Hexabromocyclododecane (HBCDD) and all major diastereoisomers	E U. (EU) No.2019/1021(POPs Regulation) Japan. Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc
18	Lead and Lead compounds	E U. RoHS Directive 2011/65/EU China. Law Measures for Restriction of the Use of Hazardous Substances in Electrical Appliances and Electronic Products
19	Mercury and Mercury compounds	E U. RoHS Directive 2011/65/EU China. Law Measures for Restriction of the Use of Hazardous Substances in Electrical Appliances and Electronic Products
20	Nickel and Nickel compounds	E U. REACH Regulation (EC) No. 1907/2006 Annex XVII

No.	Substances/Substance group	Laws and regulations (examples)
21	Ozone Depleting Substances	United Nation. Montreal Protocol E U. (EC) 2024/590 U.S. Clean Air Act Amendments of 1990.
22	Perchlorates	U.S. California. Perchlorate Contamination Prevention Act of 2003
23	Perfluorooctane sulfonates (PFOS) and its salts and related substances	E U. (EU) No.2019/1021(POPs Regulation) Japan. Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc
24	Perfluorooctanoic acid (PFOA) and its branched isomers, its salts, and PFOA-related substances	E U. (EU) No.2019/1021(POPs Regulation) Japan. Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc
25	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	Japan. Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc
26	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	E U. (EU) No.2019/1021(POPs Regulation) Japan. Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc
27	Bis (2-ethylhexyl) phthalate (DEHP)	E U. RoHS Directive 2011/65/EU
28	Benzyl butyl phthalate (BBP)	E U. REACH Regulation (EC) No. 1907/2006 Annex XVII
29	Dibutyl phthalate (DBP)	China. Law Measures for Restriction of the Use of Hazardous Substances in Electrical Appliances and Electronic Products
30	Diisobutyl phthalate (DIBP)	E U. REACH Regulation (EC) No. 1907/2006 Annex XVII
31	Diisodecyl phthalate (DIDP)	U.S. CPSIA : Consumer Product Safety Improvement Act of 2008
32	Diisononyl phthalate (DINP)	
33	Di-n-octyl phthalate (DNOP)	
34	Polybrominated Biphenyls (PBBs)	E U. (EU) No.2019/1021(POPs Regulation) E U. RoHS Directive 2011/65/EU China. Law Measures for Restriction of the Use of Hazardous Substances in Electrical Appliances and Electronic Products
35	Polybrominated Diphenylethers (PBDEs)	E U. (EU) No.2019/1021(POPs Regulation) E U. RoHS Directive 2011/65/EU China. Law Measures for Restriction of the Use of Hazardous Substances in Electrical Appliances and Electronic Products Japan. Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc
36	Polychlorinated Biphenyls (PCBs) and specific substitutes	E U. (EU) No.2019/1021(POPs Regulation) U.S. 40CFR761 Japan. Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc
37	Polychlorinated Terphenyls (PCTs)	E U. REACH Regulation (EC) No. 1907/2006 Annex XVII
38	Polychlorinated Naphthalenes	E U. (EU) No.2019/1021(POPs Regulation) Japan. Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc
39	Polyvinyl chloride (PVC), PVC Copolymers and its blends	U.S. JS709 (Definition of the low halogen)
40	Radioactive substances	E U. Directive 2013/59/Euratom Japan. Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors
41	Shortchain Chlorinated Paraffins (C10–C13)(SCCP)	E U. (EU) No.2019/1021(POPs Regulation) Japan. Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc
42	Medium-chain Chlorinated Paraffins (C14–C17, and chlorination rate of 45wt% or more)(MCCP)	United Nation. Stockholm Convention 'Persistent Organic Pollutants Review Committee (POPRC)
43	Specified organic tin compounds (trisubstituted stannanes(include TBT, TPT))	E U. REACH Regulation (EC) No. 1907/2006 Annex XVII Japan. Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc
44	Chlorinated phosphate ester flame retardants (TCEP, TCPP, TDCPP)	U.S. Vermont. State Law Act 85 E U. REACH Regulation (EC) No. 1907/2006 Article 33 and 7.2
45	Long-Chain Perfluoroalkyl Carboxylate and Perfluoroalkyl Sulfonate Chemical Substances (LCPFACs)	USA. Toxic Substances Control Act (TSCA)
46	Phenol, isopropylated Phosphate (3:1) (PIP(3:1))	
47	Pentachlorothiophenol(PCTP)	
48	Perfluorohexane-1-sulphonic acid (PFHxS) and its salts and related substances	E U. (EU) No.2019/1021(POPs Regulation) Japan. Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc Singapore. Environmental Protection AND Management Act (EPMA)
49	Long-chain Perfluorocarboxylic acids (PFCAs), its salts and related substances	E U. REACH Regulation (EC) No. 1907/2006 Annex XVII United Nation. Stockholm Convention 'Persistent Organic Pollutants Review Committee (POPRC)
50	Perfluorohexanoic acid (PFHxA) and its salts and related substances	E U. REACH Regulation (EC) No. 1907/2006 Annex XVII Candidate substance
51	Decabromodiphenylethane (DBDPE)	Canada. Prohibition of Certain Toxic Substances Regulations Candidate substance

No.	Substances/Substance group	Laws and regulations (examples)
52	4,4'-isopropylidenediphenol (Bisphenol A) and a substance group containing Tetrabromo-bisphenol A (TBBPA)	E U. REACH Regulation (EC) No. 1907/2006 Annex XVII Candidate substance U.S. California. Safe Drinking Water and Toxic, Proposition 65
53	Di-n-hexyl Phthalate (DnHP)	E U. REACH Regulation (EC) No. 1907/2006 Article 33 and 7.2 U.S. California. Safe Drinking Water and Toxic, Proposition 65
54	Octamethylcyclotetrasiloxane (D4), Decamethylcyclopentasiloxane (D5), Dodecamethylcyclohexasiloxane (D6)	E U. REACH Regulation (EC) No. 1907/2006 Annex XVII
55	Per- and polyfluoroalkyl substances (PFAS)	E U. REACH Regulation (EC) No. 1907/2006 Annex XVII Candidate substance USA. Toxic Substances Control Act (TSCA) U.S. Maine. State, Minnesota. State
56	IEC 62474 listed substances (others)	IEC. IEC 62474
57	Hexachlorobenzene (HCB)	E U. (EU) No. 2019/1021 (POPs Regulation)
58	Pentachlorophenol (PCP) and its salts and esters	E U. (EU) No. 2019/1021 (POPs Regulation)
59	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc : Class I Specified Chemical Substances	Japan. Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc
60	Industrial Safety and Health Act (Article 55) : Harmful Substances, etc., Prohibited for Manufacturing, etc.	Japan. Industrial Safety and Health Act (Article 55)
61	Poisonous and Deleterious Substances Control Act : Specified Poisonous Substances	Japan. Poisonous and Deleterious Substances Control Act
62	Arsenic and arsenic compounds	E U. REACH Regulation (EC) No. 1907/2006 Annex XVII
63	Halogen compound and Halogen resin	—
64	Mineral oil aromatic hydrocarbons (MOAH)	Reference regulation: French circular economy law "Anti-Waste and Circular Economy Law (AGEC law)" (L2020-105), Decree: MOAH/MOSH regulation (D.543-213)
65	Saturated hydrocarbons (C16-35) (MOSH)	Reference regulation: French circular economy law "Anti-Waste and Circular Economy Law (AGEC law)" (L2020-105), Decree: MOAH/MOSH regulation (D.543-213)
-	Additional requirements concerning battery	EU: (EU) 2023/1542 (Batteries Regulation) China. Content limitation of mercury, cadmium and lead for zinc anode primary battery (GB 24427-2021) United Nation. Minamata Convention on Mercury

4.2. Substances requiring communication of information

Chemical substances for which it is necessary to determine whether or not they are contained in a product and in what amount. However, the restriction does not apply to intentional use.

If the substance also falls under the category of prohibited substances, the name, scope and instructions regarding when delivery is prohibited contained in (Table 2) shall be followed, and information shall be communicated as appropriate.

The chemical substances for which communication is required as per this document shall be those that are listed in the laws and industry standards found in (Table 8).

These substances correspond to objects to be managed (latest version) in "chemSHERPA," which is a scheme facilitates sharing information on chemical substances in products developed and promoted under the initiative of the Ministry of Economy, Trade and Industry.

If any of the following conditions apply to the chemical substance in question, information on it being contained shall be communicated as appropriate.

- A case with the intentional addition
- Information that the substance is contained was received from the supplier
- Data showing that the substance is contained was found by some means or another

Except for cases where it is required for legal compliance, the packaging material used by the party delivering the part to transport or protect it shall not be subject to the

For information transmission, use the chemSHERPA.

chemSHERPA tool and reference material (Declarable Substances Reference List, etc.)

<https://chemsherpa.net/chemSHERPA/>

(Table 8) Regulatory control and industry-wide standard of substances requiring communication of information

Target law and industry standard
Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. [Class I Specified Chemical Substance] (Japan Chemical Substances Control Law)
US Substances prohibited or restricted by Toxic Substances Control Act (TSCA)
EU Directive 2000/53/EC (ELV)
EU Directive 2011/65/EU (RoHS recast)
EU POPs Regulation (EU) No.2019/1021 Annex I
EU REACH Regulation (EC) No.1907/2006 Candidate List of SVHC for Authorisation and ANNEX XIV
EU Waste Framework Directive WFD (EU) No.2018/851 (SCIP)
EU REACH Regulation (EC) No.1907/2006 Annex XVII
EU Medical Devices Regulation (MDR) (EU)2017/745 : Annex I 10.4 Substances
China. Law Measures for Restriction of the Use of Hazardous Substances in Electrical Appliances and Electronic Products (China RoHS)
Global Automobile Declarable Substances List (GADSL)
IEC 62474 DB Declarable substance groups and declarable substances

4.3. Additional requirements concerning plastic recycling materials

Material fracture occurred at a factory controlled by the suppliers (junk products, such as runners) use only, and circulations that the component chemical substance doesn't be guaranteed clearly are banned to use. In addition to the above, material fractures occurred at a factory which concurrently produces a product containing phthalate, which is a target of RoHS Directive, must not be used.

Note: Since phthalate is easily transmitted and mixed, recycling material fractures occurred a factory which concurrently produces a product containing phthalate is prohibited for the present. This restriction shall be reviewed at any time as needed.

4.4. Supplementary provision

The "TAMURA Group Green Procurement Standards Appendix ver.16" shall start to be applied from May 1, 2025.

5. Main revisions (Changes from the previous edition)

Effective from	revision contents
Version 16	1. Changed the thresholds for hexabromocyclododecane (HBCDD) and pentachlorophenol (PCP) in consideration of the POPs Regulation 2. Changed the following substances to Level 1 due to reaching the specified date - 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) 3. Reflected the pending application for update of addition to exemptions for RoHS directive 4. The following substance regulations have been added or changed based on movements by the Stockholm Convention on Persistent Organic Pollutants and the Review Committee - Revised the substance name of medium-chain chlorinated paraffins (C14-C17) (MCCP) and changed to "Level 2" - Long-chain (C9-C21) Perfluorocarboxylic acids (PFCAs), its salts and related substances : as Level 2 5. Changed regulation content and exclusions for tris(isopropylphenyl) phosphate (PIP (3:1)) based on amendments to the TSCA 6. Changed and added the following substances based on the REACH Regulation - Perfluorohexanoic acid (PFHxA) and its salts and related substances: as Level 2 - Octamethylcyclotetrasiloxane (D4), Decamethylcyclopentasiloxane (D5), Dodecamethylcyclohexasiloxane (D6): as Level 2 - Per- and polyfluoroalkyl substances (PFAS) as Level 3 7. Added pentachlorophenol (PCP) based on the POPs Regulation 8. Deleted cyanide compounds as they are not regulated for containment based on domestic laws and regulations 9. Changed description of by-products of unintended substances (impurities) per the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. 10. Moved the names of substances subject to the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc., Industrial Safety and Health Act, and Poisonous and Deleterious Substances Control Act to the list of containing banned substances (exemplification) 11. Added mineral oil aromatic hydrocarbons (MOAH) and saturated hydrocarbons (C16-35) (MOSH) as "Level 3" regulated substances for packaging materials 12. Changed the section on batteries to take into account the Minamata Convention on Mercury and the EU Battery Regulation 13. Reviewed and revised the list of containing banned substances (exemplification)

5. 1.Revision history

Effective from	Description
Version 1 Oct 15, 2009	Version 1 issued. - Registration number change from JT-S2-002 ver.4. - Definition change in Environmental control substances. - Change according to revision of JIG-101Ed2.0. - Restriction substance addition of domestic law. - Addition Certificate of non-use guarantees. - Other.
Version 2 Apr 1, 2010	Version 2 issued. - A change with the revision of Japan Chemical Substances Control Law. - A change with the revision of 67/548/EEC and 76/769/EEC. - Correction of mistakes.
Version 3 Oct 1, 2010	Version 3 issued. - Change according to revision of JIG-101Ed3.1. - Correction of mistakes.
Version 4 May 25, 2011	Version 4 issued. - Along with publication of JIG-101Ed4.0, Three materials are added as Containing banned substances. - Change according to revision of applications exempted from the prohibition in Article 4 (RoHS Directive). - Level 2 is added to the following material. - Diarsenic Pentoxide, Diarsenic Trioxide - Dibutyltin compounds (DBT) - Dioctyltin compounds (DOT) - Hexabromocyclododecane - Part of phthalate - Tris (2-chloroethyl) phosphate - Notation review of Table2 and Table6. - The list of GADSL and JIG101 is updated to the latest version. - Correction of mistakes.
Version 5 Dec 20, 2011	Version 5 issued. - Along with publication of JIG-201Ed1.0, Three materials are added as Containing banned substances applied to a Packaging. - Some contents of Exclusion in RoHS Directive are written clearly. (Lead, Cadmium) - The list of SVHC is updated to the latest version. - Correction of mistakes.
Version 6 Aug 8, 2012	Version 6 issued. - Along with publication of JIG-101Ed4.1, six substances are added as Containing banned substances. - Correction corresponding to mention of revised JIG-101. - Relaxation of the original limit about cadmium - Update of the list of REACH ANNEX17. - Update of the list of REACH SVHC. - Update of the list of JIG-101's substances. - Update of the list of GADSL. - Correction of mistakes.
Version 7 Mar 25, 2013	Version 7 issued. - Change with the phthalate esters regulation of Denmark. - Postscript with the correction of ANNEX4 of the RoHS Directive. - Update of the list of REACH ANNEX17. - Update of the list of REACH SVHC.
Version 8 Jun 9, 2014	Version 8 issued. - Update expired "Containing banned substances". - In consideration of the REACH regulation, the following new substances were included as "Containing banned substances". - Polycyclic aromatic hydrocarbons (PAHs) - Ethylene glycol dimethyl ether (EGDME) - Trixylyl phosphate (TXP) - Endosulfan - "Level" was reviewed in consideration of domestic and overseas legal regulations. [Level 3 ⇒ Level 1] - Hexabromocyclododecane (HBCDD) and all major diastereoisomers

Effective from	Description
Version 8 Jun 9, 2014	[Level 1 ⇒ Level 3] - 4-[4,4'-Bis(dimethylamino)benzhydrylidene] cyclohexa2,5-dien-1-ylidene] dimethylammonium chloride (C.I.Basic Violet 3) - Boric acid and specific sodium borates - Refractory Ceramic Fibres,Aluminosilicate Refractory Ceramic Fibres,Zirconia Aluminosilicate - Triethyl arsenate - Fixed "threshold" in consideration of domestic and overseas legal regulations. - Asbestos - PFOS/PFOS compound (include PFOSF) - Beryllium Oxide (BeO) - Other bromine-based compounds - Cobalt dichloride - Polychlorinated Biphenyls (PCBs) and specific substitutes - Polychlorinated Terphenyls (PCTs) - Polychlorinated Naphthalenes (3 or more chlorine atom) - Radioactive substances - Cyanogen compound - Dioxins and dioxin-like compounds - In conjunction with the dissolution of JGPSSI (Japan Green Procurement Survey Standardization Initiative), issuing body for the previously widely-used JIG (industry standards), corrections were made to the industry standards "JIG 101" which were used by the applicable groups and to content related to the applicable groups.
Version 9 Nov 18, 2015	Version 9 issued. - Update expired "Containing banned substances". - In consideration of domestic and overseas laws and regulations, the following new substances are added as prohibited substances. - Benzenamine, N-phenyl-, reaction products with styrene and 2,4,4-trimethylpentene (BNST) - 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) - 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) - Pentachlorophenol and its salts and esters - Modified the expression "... or more", "more than", "... or less", "less than" based on domestic and overseas legal regulations - Update various lists (including list of prohibited substances). - Correction of mistakes.
Version 9a Dec 18, 2015	Version 9a issued. - Clerical error correction of (Table 2)" 2- (2H-1,2,3-Benzotriazol-2-yl) -4,6-di-tert-pentylphenol (UV-328). " 【False】"level1", "Banned already" 【True】"level3", "Possible until specified date"
Version 9b Feb 19, 2016	Version 9b issued. - Corrected the mistyping of "(Table 2) pentachlorophenol (PCP) and its salt and esters" 【False】 "level1" 【True】 "level2"
Version 10 Oct 31, 2017 (To the next page)	Version 10 issued. • Summarized Level 3 containing banned substances of which reference source is SVHC as "IEC 62474 listed substances (others)" based on IEC 62474 and listed chemical substances which are not listed in Green Procurement Standards. • Carried out the following for consistency of this appendix with contents of IEC 62474. • Changed details and descriptions of "reference values and threshold levels" according to legal requirements and IEC 62474. - "Asbestos" - "Specific azo compounds which form certain aromatic amines" - "Beryllium Oxide (BeO)" - "Brominated flame retardants (BFR)", "Chlorinated flame retardants (CFR)" - "Cadmium and Cadmium compounds" - "Chromium VI compounds" - "Cobalt dichloride" - "Diarsenic Trioxide, Diarsenic Pentoxide" - "Dimethyl fumarate (DMF)"

Effective from	Description
Version 10 Oct 31, 2017 (Continued)	- "Hexabromocyclododecane (HBCDD) and all major diastereoisomers" - "Lead and Lead compounds" - "Perchlorates" - "Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA" - "Part of phthalate (Target of RoHS Directive)" - "Shortchain Chlorinated Paraffins (C10-C13)" - "Tris (2-chloroethyl) phosphate (TCEP) and specific chlorine-based compound" • Changed substance names due to legal requirements and IEC 62474. - "Brominated flame retardants (BFR)", "Chlorinated flame retardants (CFR)" - "Polycyclic aromatic hydrocarbons (PAH)" - "Part of phthalate (Target of RoHS Directive)" - "Polychlorinated Naphthalenes (2 or more chlorine atom)" • Carried out the following to simplify this appendix. - Removed English names from "(Table 1) List of containing banned substance group." - Removed "EC No." from (Table 6) List of Containing banned substances (exemplification). - Removed the list of chemical substances requiring communication of information. - Simplified the revision history. - Removed the change marks.
Version 11 Feb 5, 2019	Version 11 issued. - Fixed "2. Application". Clarified that packaging materials are included in the scope of application. - Changed names of chemical components (groups) to more commonly used ones for consistency with industrial standards IEC62474. - "Cadmium / Cadmium compounds" ⇒ "Cadmium and Cadmium compounds" - "Lead / Lead compounds" ⇒ "Lead and Lead compounds" - "Mercury / Mercury compounds" ⇒ "Mercury and Mercury compounds" - "Nickel" ⇒ "Nickel and nickel compounds" - Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA - Halogen compounds and halogen resins - Removed the item "Benzenamine, N-phenyl-, reaction products with styrene and 2,4,4-trimethylpentene", a Level 1 containing banned substance. The reason of removal is that a restriction was removed from toxic substances regulations in Canada (Prohibition of Certain Toxic Substances Regulations, 2012), which is the source. - Changed excluded items in "Lead and Lead compounds" and "Cadmium and Cadmium Compounds." Modified them according to changes in EU RoHS Directive and organized them for easier reading. - Added reference values to "Formaldehyde" based on TSCA in the US. - Modified and changed term definitions. - Achieved consistency with Tamura Group Green Procurement Standards (the superior document). - Added the term "Part" to make the terms more imaginable. - Changed the note of Definition of Packaging to the following. - Modified a restriction on mercury in batteries. - Along with elimination of AIS, changed "AIS" in the definition of substances requiring communication of information to "chemSHERPA." - Added the following to "4.3 Additional requirements concerning plastic recycling materials." - Modified parts of (Table 7) Containing banned substances and examples of applicable laws and regulations. - Correction for typos
Version 12 Oct 31, 2019 (To the next page)	Version 12 issued. - (Table 2) was changed based on the REACH Regulations Appendix XVII Entry 51 (phthalate ester). - The scope of the RoHS Directive "Parts and materials used in electrical and electronic equipment" and the scope of the REACH Regulations "Other than that" are written separately. In addition, the regulations regarding "Toys or childcare products," which are clearly stated in the REACH Regulations were added. In regards to the "Other than that" and "Toys and childcare products" that originate from the REACH Regulations, regulate the total containing the 4 or 3 phthalate ester substances pursuant to the laws and regulations.

Effective from	Description
Version 12 Oct 31, 2019 (Continued)	- (Table 2) was changed based on the REACH Regulations Appendix XVII Entry 68 (PFOA). - The implementation date for the regulation of "perfluorooctanoic acid (PFOA)" stated in Level 2 was moved up 6 months based on requests from inside and outside the company. In addition, of the items prescribed for the implementation period by the laws and regulations, those that were deemed to have a strong relationship with the company were added. - Perfluorohexanesulfonic acid (PFHxS), its salts, and PFHxS-related substances were added based on the contents reviewed by the Stockholm Convention Review Committee. - This was made a prohibited substance Level 3 since it is being considered as a complete abolition substance for production, import, and use by the Persistent Organic Pollutants Review Committee (POPRC14) and since Singapore has already regulated it in its Environmental Protection Management Act (EPMA). - Of the items in (Table 2), the application exemption of those shown below, state that they are equivalent to the RoHS Directive application exemption items. In addition to the above, the RoHS Directive application exemption items deemed to have a strong relationship to our company that have been stated from before were updated. - Cadmium and Cadmium compounds - Lead and Lead compounds - Mercury and Mercury compounds - The PFOS application exemption items were deleted based on the results of the Stockholm Convention Conference of the Parties. - Dioxins and dioxin-like compounds were deleted - This was revised based on domestic and overseas laws and regulations. The Act on Special Measures concerning Countermeasures against Dioxins and the Stockholm Convention target emissions and formation and do not regulate content, so this was deleted. - The written format for "(Table 5) Additional requirements concerning battery" was corrected to match that of (Table 2). - The "formaldehyde" standard value based on the American TSCA added to Version 11 was deleted. - This was deleted because it can be covered by the individual product specifications. - The chemical group numbers were added to (Table 2) and (Table 6). - This was added to link with the List of containing banned substance group (Table 1) and the Certificate of Non-Use Guarantees. - The "European Medical Devices Regulation Annex I 10.4 Chemical Substances" was added to (Table 8) based on the chemSHERPA update. - The "(Table 6) List of Containing banned substances (exemplification)" was revised accompanying the IEC62474 update.
Version 12a Dec 18, 2019	Version 12a issued. - Clerical error correction of 'Certificate of non-use guarantees'. It has changed because of the clerical error from "No.3 Cadmium and Cadmium compounds ~ No.40" to "No.3 Beryllium Oxide (BeO) ~ No.41".
Version 13 Mar 5, 2021	Version 13 issued. - Reference legislation revised due to the establishment of POPs regulations According to POPs regulations, the restriction on two or more chlorine atoms of polychlorinated naphthalene was deleted. - In consideration of the Toxic Substances Control Act (TSCA) of the US, the following substances are added as a prohibited substance. - long-chain perfluoroalkyl carboxylate (LCPFAC) - Phenol, isopropylated Phosphate (3:1) (PIP(3:1)) - Pentachlorothiophenol(PCTP) - In consideration of legislation trends, the following IEC62474 Declarable Substance List, etc., are listed as "Level 3" substances. - Polycyclic aromatic hydrocarbons (PAH) [Germany. ProdSG SafeGuardS 136/19] - 4,4'-isopropylidenediphenol (Bisphenol A, BPA) [U.S. California. Safe Drinking Water and Toxic, Proposition 65] - Di-n-hexyl Phthalate (DnHP) [U.S. California. Safe Drinking Water and Toxic, Proposition 65] - The period of the exemption No. where the application for renewal of the RoHS exemption deadline applies was changed to requested for renewal. The quotation source for RoHS exemption was changed, and the exemption column for phthalic - The PFOS application exemption items were deleted based on the results of the Stockholm Convention Conference of the Parties.

Effective from	Description
Version 13 Mar 5, 2021 (Continued)	- Reflects the regulation contents of Perfluorooctanoic acid (PFOA) in response to being regulated by 'POPs Regulation' and 'the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc'. - Bis(tri-n-butyltin)oxide(TBTO) is changed from 'Specified organic tin compounds' to regulated substances under 'the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc', and intentional addition was prohibited. - SCIP of the EU Waste Framework Directive WFD was added to the substances requiring communication of information. - Item 3 and 4 of 'Green procurement supplier questionnaire' is changed to request documents only when there are changes to contents submitted in the past. - Attached document was added to 'the Certificate of non-use guarantees' to make it possible to answer by limiting the target for non-use guarantees.
Version 14 Dec 20, 2021	Version 14 issued. - Added compliance with the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc., to the definition for the term "intentional addition" - Changed the non-use guarantee to segment management and deleted it. Added the method for requesting a non-use guarantee for prohibited substances. - The following substance regulations have been added or changed based on movements by the Stockholm Convention on Persistent Organic Pollutants and the Review Committee - 1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene (DechloranePlus) - 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) - Perfluorohexane-1-sulphonic acid and its salts (PFHxS) and PFHxS-related substances : as Level 2 - Changed polybrominated diphenyl ethers to listing for both the POPs Regulation and RoHS Directive - Added the following substances based on the REACH regulation - Long-chain (C9-C14) Perfluorocarboxylic acids (PFCAs), its salts and related substances : as Level 2 - Perfluorohexanoic acid (PFHxA) and its salts and related substances : as Level 3 - In consideration of Canada "Prohibition of Certain Toxic Substances Regulations" trends, Decabromodiphenylethane (DBDPE) are listed as "Level 3" substance - o,p'-Dicofol (Benzenemethanol, 2-chloro-α-(4-chlorophenyl)-α-(trichloromethyl)-) was added to Japan, "Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc" - Modified and added substances of "A list of Containing banned substances (Exemplification)" - Changed name of China regulation to 'Law Measures for Restriction of the Use of Hazardous Substances in Electrical Appliances and Electronic Products from "Administrative Measure on the Control of Pollution Caused by Electronic Information Products".
Version 15 Dec 26, 2022	Version 15 issued. - Changed the following substances to Level 1 due to reaching the specified date - 1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene (DechloranePlus) - Perfluorohexane-1-sulphonic acid (PFHxS), its salts and related substances - Long-chain (C9-C14) Perfluorocarboxylic acids (PFCAs), its salts and related substances - Reflected the pending application for update of addition to exemptions for RoHS directive - The following substance regulations have been added or changed based on movements by the Stockholm Convention on Persistent Organic Pollutants and the Review Committee - 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) : as Level 2 - Medium-chain Chlorinated Paraffins (C14–C17)(MCCP) : as Level 3 - Long-chain (C9-C21) Perfluorocarboxylic acids (PFCAs), its salts and related substances : as Level 3 - Based on REACH regulation, changed BPA to a substance group containing Tetrabromo-bisphenol A(TBBPA), which is a similar substance - In consideration of the POPs regulation, changed hexachlorobenzene (HCB) from the Act on the Regulation of Manufacture and Evaluation of Chemical Substances to separate management - Added China's "Content Limitation of Mercury, Cadmium and Lead for Zinc Anode Primary Battery (GB24427-2021)" to the battery-related additional items (Table 5) - Deleted substances for which legal regulations have been confirmed from the list of prohibited substances (example substances) - Added China's " Law Measures for Restriction of the Use of Hazardous Substances in Electrical Appliances and Electronic Products (China RoHS)" to the Regulatory control of substances requiring communication of information (Table 8)

"Green procurement" supplier questionnaire

1. Information of primary business partner

Date of entry	
Company name	
Post/organization	
Person making entry	
TEL	
FAX	
E-mail	

2. About an agreement of the "Green Procurement standard"

Please fill in the check mark to the corresponding section.

- ☐ We agree the "Green Procurement standard"and your request .
- ☐ We can't agree the "Green Procurement standard"and your request .

(Please fill in a point and the reason why you cannot agree to.)

3. Is the green procurement executed? (Please fill in the check mark on corresponding □.)

☐ Executed

→

Only when there are changes to contents submitted in the past
Please append, and submit standard" or
"Green procurement corresponding Document to this questionnaire.

☐ Not executed

4. Is the certification of "ISO14001" obtained? (Please fill in the check mark on corresponding □.)

☐ Obtained

→

Only when there are changes to contents submitted in the past
Please append, and submit "Environmental policy" to this questionnaire.

☐ Obtaining plan

→

Please append and submit "**Plan table**" for the certification to this questionnaire.

☐ No obtaining plan

→

☐ One has corporate doctrine and policies

☐ One has targets for environmental

☐ One has an environmental evaluation system

☐ The education and training is executed.

☐ Information on environmental preservation is offered.