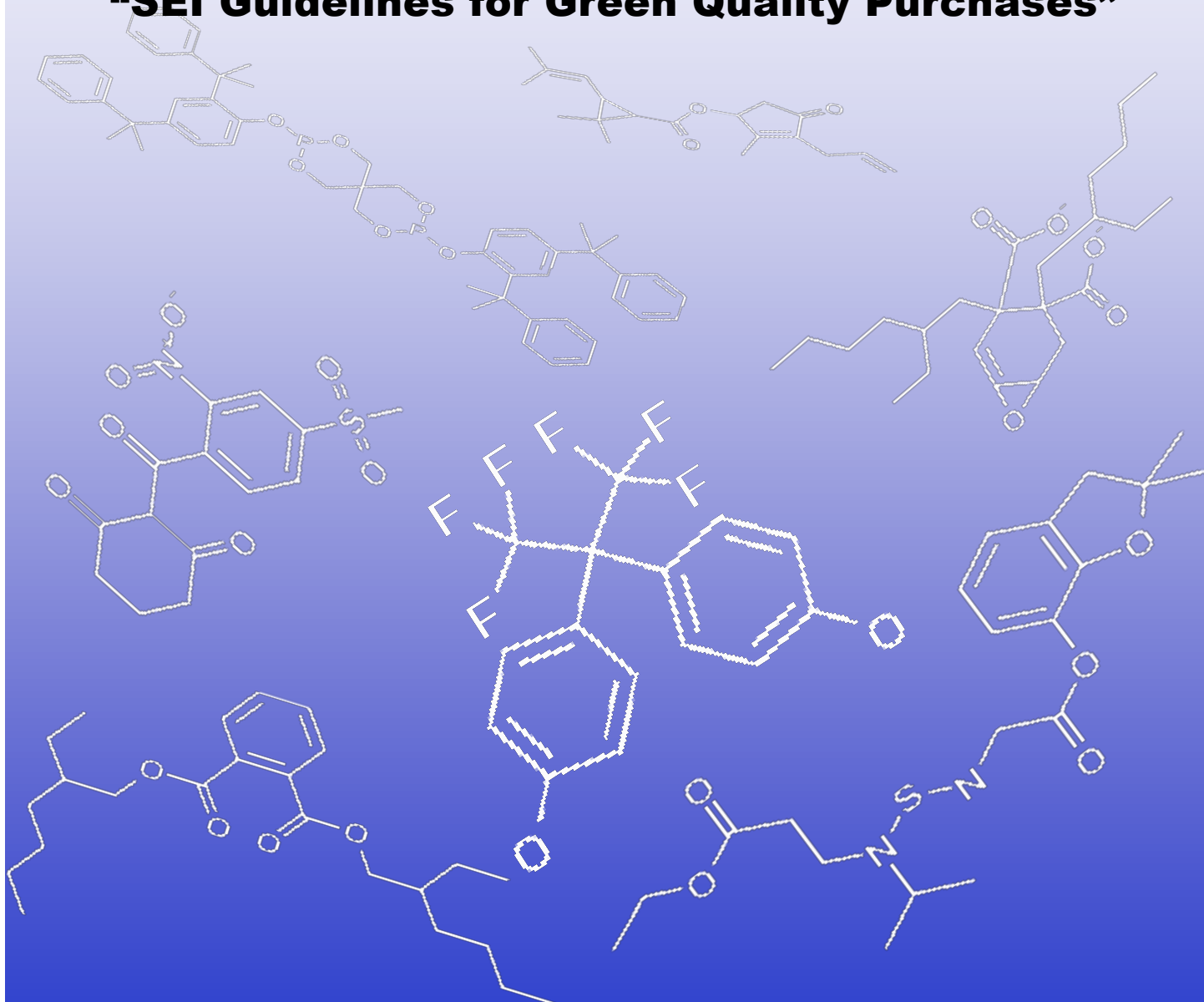


SEI Standards for Chemical Substance Management

Annex I to

“SEI Guidelines for Green Quality Purchases”



Ver 4.0, Feb. 2021

Sumitomo Electric Industries, Ltd.

SEI Standards for Chemical Substance Management

Safety & Environment Department
Sumitomo Electric Industries, Ltd.

This standard is an annex to "SEI Guidelines for Green Quality Purchases" and specifies "Prohibited substances," "Controlled substances" and "Complete abolition substances" including due date and exempted cases from such restrictions in following tables. As indispensable condition to supply goods to Sumitomo Electric Industries Group (herein after SEI group), suppliers shall assure not containing "Prohibited substances," shall disclose information of containing "Controlled substances," and shall assure not using "Complete abolition substances" in their whole manufacturing processes.

Table 1. Prohibited substances

Table 2. Controlled substances

Table 3. Complete abolition substances in manufacturing process

Table 4. Criteria for providing composition information of controlled substances

Table 5. Reference lists of prohibited substances (A01-A24, B01)

Table 6. Terms and definitions

By way of reference, chemical substances are classified into 4 ranks in SEI group as the following table.

Substance category	Control rank	Objects		
		Single Substance	Mixtures	Articles
Prohibited substances	A	●	●	●
	B	●	●	-
Controlled substances	C	○	○	○
	D	○	○	-

- : Concentration over the threshold value is prohibited for goods supplying to SEI group, unless it is the exempted case of applicable regulation. Even in the exempted case or lower concentration than the threshold value, related information (relating to the exemption and concentration) shall be disclosed.
- : The information (existence of the substance, containing amount, containing part, application, etc.) of containing the substances for goods supplying to SEI group shall be disclosed.

Even if it isn't a specified substance or series of substances in this standard, because certain substance or series of substances specified legal obligation with local regulations (e.g., Hazardous materials in JPN Fire Service Act, Specified chemical substances in JPN Industrial Safety and Health Act, etc.) shall be controlled complying the applicable legal regulation and added company rules (rule-book, BR, etc.) of SEI group, it is needed to pay attention.

Understanding and cooperation on this standard would be highly appreciated.

<Revision History>

Within the newly issued title “SEI Standard for Chemical Substances Management.”

The history before the version 1.0 is archived in “SEI Guidelines for Green Quality Purchases.”

Ver. 1.0	Document ID No.	Date of issue
	E12-003	Jul. 01, 2012
Contents & grounds	Established as “Standards for chemical substances in products” by separating lists for chemical substance to be prohibited or controlled from “SEI Guidelines for Green Quality Purchases”.	
Ver. 2.0a	Document ID No.	Date of issue
	E13-003	Nov. 01, 2013
Contents & grounds	<ul style="list-style-type: none"> - Adding definitions of terms such as “Prohibited Substances,” “Controlled Substances,” etc. (Table 6) - Deleting exemptions of each legal regulation and substituting with references of relating legal regulations instead. - Chemical substances to be prohibited or controlled are classified into four (4) ranks from rank A to D. Specifying the rank A and B as the prohibited substances and the rank C and D as the controlled substances respectively. - Adding missing footnotes. - Substance group of “PCBs and PCTs” was divided into two independent groups, “PCBs” and “PCTs”. - “Specific benzotriazole” was added to list of prohibited substance as A20 of rank A substances. (Table 5-A20) - Class I specified Chemical Substances of Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture (JPN) and Substances Prohibited for Manufacturing under Industrial Safety & Health Act (JPN) are changed from the controlled substances to the prohibited substances. (Table 5-A21 & 22) (Ver.2.0 → Ver.2.0a) - Changing the title of A07 from “Dibutyltin compounds” to “Dibutyltin compounds & Dioctyltin compounds” for adding dioctyltin compounds as the prohibited substances. - Changing the title of A06 from “TBTs, TOTs” to “Tri-substituted organostannic compounds (such as TBTs, TPTs, etc.)” in accordance with the contents of Annex XVII of REACH (EU). 	
Ver. 3.0a	Document ID No.	Date of issue
	E19-001	Apr. 10, 2019
Contents & grounds	<ul style="list-style-type: none"> - Adding four specific phthalates as A15, Rank A (prohibiting containing to single substance, mixtures and articles), and the following numbers have been renumbered. - Because the information sharing scheme "JAMP MSDSplus/AIS" will be expired in June 2018, controlled substances of the rank C are newly selected with criteria for transferring composition information under alternative information sharing scheme "chemSHERPA", and the contents of Note No. 1 & 2 are accordingly renewed. (Ver.3.0 → Ver.3.0a) - Corrected descriptions in Table 3 to Table 5 on page 2/24. - Error correction: Corrected sPCAs in Table 1-1A12 to PCAs. 	

Ver. 4.0	Document No.	Date of Release
	E20-018	February 26, 2021
Revisions and Their Reasons	<ul style="list-style-type: none"> • Table 1-1. Perfluorooctanoic acid (PFOA) and its salts, and PFOA-related substances have been added as A15, and the following numbers have been renumbered. • Table 1-2. B01 has been changed to Volatile organic compounds. • Table 2-1. “EU (Medical Device Regulation (MDR)) (EU) 2017/745 Annex I 10.4 Chemical Substances” has been added. • A description of the disclosure of information required for registration in the SCIP database, which is made mandatory by the revised Waste Framework Directive (WFD) (EU), has been added as Note 3 (*3), and the following numbers have been renumbered. • Table 2-2. The “Specified substances under the Ozone Layer Protection Law (JPN)” have been added and together with the “Greenhouse gases specified under the Act on Promotion of Global Warming Countermeasures (JPN)”, have been classified under D02. • A related treaty, “Vienna Convention for the Protection of the Ozone Layer” covered by Montreal Protocol Annex F, Groups I and II, has been added as Note 9 (*9). • Table 3. Complete abolition substances in manufacturing process has been re-edited and the exemption has been updated. • JAMP MSDSplus/AIS has been deleted from Note 10 (*10), and JAMA/JAPIA has been changed to JAPIA integrated data sheets. • Table 5-A1 to A4. “Dir. 2004/12/EC on packaging and packaging waste (EU)” has been added side-by-side with the “Dir. 94/62/EC on packaging and packaging waste (EU)” under Major regulation. • Table 5-A05. “Bis(tributyltin)oxide=oxide” has been specified as a substance name and the regulation contents (contents, application) have been changed to “Prohibiting intentional use”. • Table 5-A06. The substances listed as tri-substituted organotin substances (tributyltins (TBTs), triphenyltin chlorides (TPTs), etc.) have been reviewed; bis(tributyltin)=but-2-enedioate (CAS RN 24291-45-0) has been added; bis(tributyltin)= 2,3- dibromosuccinate (CAS RN 56323-17-2) has been added; CAS RN 7342-38-3 has been deleted from tributyltin=chloride. • Table 5-A10. The table has been changed to “Polychlorobiphenyls (PCBs) and specified substitutes” to square with the actual conditions. • “Perfluorooctanoic acid (PFOA) and its salts, and PFOA-related substances” have been added as Table 5-A15, and the following numbers have been renumbered. • Table 5-A19. The following substance has been added as “Ozone-Depleting Substances”: B-I. 1-Chloro-1,1,2,2,3,3,3-heptafluoropropane (CFC-217) (CAS RN 422-86-6) C-II. 2-Bromo-1,1-difluoroethane (CAS RN 359-07-9) • Table 5-A23. The following substance has been added as A23: 2,2,2-trichloro-1-(2-chlorophenyl)-1-(4-chlorophenyl) ethanol (Synonym: o,p’-dicofol) (CAS RN 10606-46-9) • “Will be added as a Class 1 Specified Substance subject to the Chemical Substance Control Law in April 2021” has been added as Note 17 (*17). • Table 5.-B01 “Volatile organic compounds” has been modified as follows: Chloroethylene (Synonym: vinyl chloride or vinyl chloride polymer) (CAS RN 75-01-4) has been added. cis-1,2-Dichloroethylene has been changed to 1,2-Dichloroethylene, with CAS RN of the trans-form product added. The CAS RNs of the Z-form product and E-form product have been added to 1,3-Dichloropropene (Synonym: D-D). Benzene (CAS RN 71-43-2) has been added. 	

(For the past revision history (Ver. 2.0 or before), see "SEI Guidelines for Green Quality Purchases".)

Table 1. Prohibited substances

The prohibited substances of SEI group are aggregated in Table 1-1 and 1-2. Table 1-1 covers substances of control rank A (prohibiting containing to single substance, mixtures and assembly.) and Table 1-2 covers substances of control rank B (prohibiting containing to single substance and mixtures.) respectively. The details such as threshold concentration, applications, etc. can be referred at individual Table of Table 5. If the goods correspond to an exempted application of local regal regulation, such an exemption can be applied only in a case that the final products are consumed within the region.
(e.g.; drinking water for our workers.)

Table 1-1 Rank A Prohibited Substances (Prohibiting containing to single substance, mixtures and articles)

Classification	No.	Name of substance / series of substances	Detail of substance
Metals and Metallic compounds	A01	Cadmium and its compounds	See Table 5-A01
	A02	Hexavalent chromium (chromium(VI), Cr(VI), chromium 6) compounds	See Table 5-A02
	A03	Lead and its compounds	See Table 5-A03
	A04	Mercury and its compounds	See Table 5-A04
	A05	Bis(tributyltin)oxide	See Table 5-A05
	A06	Tri-substituted organostannic compounds (such as TBTs, TPTs, etc.)	See Table 5-A06
	A07	Dibutyltin (DBT) and Dioctyltin (DOT) compounds	See Table 5-A07
Halogenated organic compounds	A08	Polybrominated biphenyls (PBBs)	See Table 5-A08
	A09	Polybrominated diphenyl ethers (PBDEs)	See Table 5-A09
	A10	Polychlorobiphenyls (PCBs) and specified substitutes	See Table 5-A10
	A11	Polychlorinated terphenyls (PCTs)	See Table 5-A11
	A12	Polychlorinated naphthalenes (PCNs, excluding C ₁₀ H ₇ Cl)	See Table 5-A12
	A13	C ₁₀ –C ₁₃ Polychloro-n-alkanes (PCAs, SCCPs)	See Table 5-A13
	A14	Perfluorooctane sulfonic acid (PFOS) and its salts	See Table 5-A14
Others	A15	Perfluorooctanoic acid (PFOA) and its salts, and PFOA-related substances	See Table 5-A15
	A16	Specific phthalates (DEHP, BBP, DBP & DIBP)	See Table 5-A16
	A17	Asbestos	See Table 5-A17
	A18	Azo dyes liberating specific toxic & carcinogenic amines. (only for textiles and leather)	See Table 5-A18
	A19	Ozone-Depleting Substances (Details of Table 3 “Complete Abolition Substances”)	See Table 5-A19
	A20	Radioactive isotopes	See Table 5-A20
	A21	Dimethyl fumarate (DMF)	See Table 5-A21
	A22	Specified Benzotriazol	See Table 5-A22
	A23	CSCL, Class I Specified Chemical Substance, JPN (excluding substances / substance-groups which have been described in other sub-Table of Table 5)	See Table 5-A23
	A24	Substances Prohibited for Manufacturing under Industrial Safety & Health Act (JPN)	See Table 5-A24

Table 1-2. Rank B (prohibited from containing in substance and mixture)

No.	Name of substance / series of substances	Detail of substance
B01	Volatile organic compounds (Class I Specified Hazardous Substances under the Soil Contamination Countermeasures Act (JPN))	See Table 5-B01

Table 2. Controlled substances

The controlled substances of SEI group are aggregated in Table 2-1 and 2-2. Table 2-1 covers substances of control rank C (needing information of containing for single substance, mixtures and articles.) and Table 2-2 covers substances of control rank D (needing information of containing for single substance and mixtures.) respectively. If certain substances are categorized in both Table 1 and Table 2, the substances shall be managed with the regulation of Rank A. The criteria of minimum concentration of controlled substances to report are specified in Table 4.

TABLE 2-1 Rank C (Controlled its inclusion in substance, mixture and article)

No.	Scope	Relevant standards (Laws, regulations, and, industrial criteria)	Notes
C01	Declarable Substances of chemSHERPA*1	Class I Specified Chemical Substances under the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (CSCL , JPN)	Excluding substance groups and substances which have been designated as the rank A and B in this standard.*2
		Chemicals under Section 6 of the Toxic Substances Control Act (TSCA , US)	
		Substances under Article 4 of Dir. 2000/53/EC on End-of Life Vehicles (ELV , amended with Dir. 2011/37/EU, EU)	
		Substances listed in Annex II of Dir. 2011/65/EU on Restriction of the use of certain Hazardous Substances (RoHS2 , EU)	
		Substances listed in Annex I of Reg. 850/2004/EC on Persistent Organic Pollutants (POPs , EU)	
		Substances of Substances of Very High Concern under Reg. 1907/2006/EC on concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (SVHC , REACH , EU)	
		Substances included in Annex XIV to Reg. 1907/2006/EC (" Authorisation List ", REACH , EU)*3	
		Substances restricted under Annex XVII to Reg. 1907/2006/EC (Restricted substances , REACH , EU)	
		Chemical substances under Annex I 10.4 to Reg. 2017/745/EU (Medical Device Regulation (MDR)) (EU)	
		Substances requiring declaration specified in Global Automotive Declarable Substance List (GADSL).	
		Declarable substance groups and declarable substances of IEC 62474 DB	

*1: The declarable substances of chemSHERPA are revised in accordance with amendments of relevant regulations and annexes of them. (Basically twice a year, in January and July.) When checking the substance to supply to us, please utilize the latest version of "Data Entry Support Tool" of chemSHRPA. The list of declarable substance groups and substances can be obtained from following URL.

"Data Entry Support Tool"; <https://chemsherpa.net/chemSHERPA/english/tool/>

*2: For example, **Class I Specified Chemical Substances under the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (CSCL, JPN)** have been prohibited intentional use with Table 1-1 as **Rank A prohibited substances** already. Therefore, this Table specifying Rank C substances covers unintentional use of such substances

*3: For the articles containing SVHCs under the REACH Regulation that are obligated to be registered in the Substances of Concern In Products (SCIP) database by the revised Waste Framework Directive (WFD) (EU) 2018/851 (EU), the information required for registration shall be disclosed.

Revised Waste Framework Directive (WFD) (EU) 2018/851

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018L0851&from=EN>

Waste Framework Directive (WFD) 2008/98/EC

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008L0098&from=EN>

ECHA SCIP database

<https://echa.europa.eu/scip>

Table 2-2 Rank D (needing information of containing for single substance and mixtures)

No,	Contents	Notes
D01*4	Deleterious substances specified under the Poisonous and Deleterious Substances Control Act. (JPN)*5	Excluding substance groups and substances which have been designated as the rank A, B and C in this standard.
	Class 1 and Class 2 Designated Chemical Substances under the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof. (JPN)*6	
	Labeling and SDS issuance obligatory substances under Industrial Safety & Health Act (JPN)*7	
D02	Greenhouse gases specified under the Act on Promotion of Global Warming Countermeasures (JPN)*8	
	Substances alternative to specified substances*9 under the Ozone Layer Protection Law (JPN)*9	

*4: Need to declare the information of containing by SDS.

*5: The list of the substances is available in English with following URL.

Deleterious substances; http://www.nihs.go.jp/law/dokugeki/eng_geki.html

*6: The list of the substances is available in English with following URLs.

Class 1 substances; http://www.meti.go.jp/policy/chemical_management/law/msds/sin1shueng.pdf

Class 2 substances; http://www.meti.go.jp/policy/chemical_management/law/msds/sin2shueng.pdf

*7: **Chemical Substances Requiring Labeling and Delivery of Documents**

https://www.nite.go.jp/en/chem/chrip/chrip_search/intSrhSpcLst?_e_trans=&slScNm=RJ_04_021

*8: The greenhouse gases are shown in Table 2-2-1 (Paragraph 3, Article 2 of the Act on Promotion of Global Warming Countermeasures.)

*9: Substances alternative to specified substances under the Ozone Layer Protection Law (Ministry of Economy, Trade and Industry)

Vienna Convention for the Protection of the Ozone Layer (related treaty)

Group I and Group II, Montreal Protocol Annex F

https://www.meti.go.jp/policy/chemical_management/ozon/files/outline/Annex_F.pdf

Table 2-2-1 Greenhouse Gases

Chemical formula	Substance name	CAS RN	EC No.
CO ₂	Carbon dioxide (over 100 kg per one delivery)	124-38-9	204-696-9
CH ₄	Methane (intentional use)	74-82-8	200-812-7
N ₂ O	Dinitrogen oxide	10024-97-2	233-032-0
SF ₆	Sulphur hexafluoride	2551-62-4	219-854-2
NF ₃	Nitrogen trifluoride	7783-54-2	232-007-1
CHF ₃	Trifluoromethane (HFC-23)	75-46-7	200-872-4
CH ₂ F ₂	Difluoromethane (HFC-32)	75-10-5, 2154-59-8	200-839-4, 606-795-6
CH ₃ F	Fluoromethane (HFC-41)	593-53-3, 13453-52-6	209-796-6
C ₂ HF ₅	1,1,1,2,2-Pentafluoroethane (HFC-125)	354-33-6	206-557-8
C ₂ H ₂ F ₄	1,1,2,2-Tetrafluoroethane (HFC-134)	359-35-3	206-628-3
	1,1,1,2-Tetrafluoroethane (HFC-134a)	811-97-2, 29759-38-4	212-377-0
C ₂ H ₃ F ₃	1,1,2-Trifluoroethane (HFC-143)	430-66-0	207-066-1
	1,1,1-Trifluoroethane (HFC-143a)	420-46-2, 27987-06-0	206-996-5, 248-764-6
C ₂ H ₄ F ₂	1,2-Difluoroethane (HFC-152)	624-72-6	824-248-1
	1,1-Difluoroethane (HFC-152a)	75-37-6	200-866-1
C ₂ H ₅ F	Fluoroethane (HFC-161)	353-36-6	206-531-6
C ₃ HF ₇	1,1,1,2,3,3,3-Heptafluoropropane (HFC-227ea)	431-89-0	207-079-2
C ₃ H ₂ F ₆	1,1,1,3,3,3-Hexafluoropropane (HFC-236fa)	690-39-1	425-320-1, 614-909-0
	1,1,1,2,3,3-Hexafluoropropane (HFC-236ea)	431-63-0	207-076-6
	1,1,1,2,2,3-Hexafluoropropane (HFC-236cb)	677-56-5	—
C ₃ H ₃ F ₅	1,1,2,2,3-Pentafluoropropane (HFC-245ca)	679-86-7	633-257-8
	1,1,1,3,3-Pentafluoropropane (HFC-245fa)	460-73-1	419-170-6, 610-280-1
C ₄ H ₅ F ₅	1,1,1,3,3-Pentafluorobutane (HFC-365mfc)	406-58-6	430-250-1, 609-856-5
C ₅ H ₂ F ₁₀	1,1,1,2,3,4,4,5,5,5-Decafluoropentane (HFC-43-10mee)	138495-42-8	420-640-8, 604-080-3
CF ₄	Tetrafluoromethane (PFC-14)	75-73-0	200-896-5
C ₂ F ₆	Hexafluoroethane (PFC-116)	76-16-4	200-939-8
C ₃ F ₈	Octafluoropropane (PFC-218)	76-19-7	200-941-9
C ₃ F ₆	Hexafluorocyclopropane	931-91-9	—
C ₄ F ₁₀	Decafluorobutane (PFC-31-10)	355-25-9	206-580-3
C ₄ F ₈	Octafluorocyclobutane (PFC-c318)	115-25-3	204-075-2
C ₅ F ₁₂	Dodecafluoropentane (PFC-41-12)	678-26-2	211-647-5
C ₆ F ₁₄	Tetradecafluorohexane (PFC-51-14)	355-42-0	206-585-0
C ₁₀ F ₁₈	Octadecafluoronaphthalene (PFC-91-18)	306-94-5	206-192-4

Table 3. Complete abolition substances in manufacturing process

Abolition substances under the Montreal Protocol and the Act on the Protection of the Ozone Layer Through the Control of Specified Substances and Other Measures (JPN).

No.	Substance group	Substance grope of Montreal Protocol	Deadline for total elimination	Exemption
1	Chlorofluorocarbons (CFCs)	A-I,B-I	Immediately	<ul style="list-style-type: none"> ·Refrigerants for air conditioners, etc. (only C-I) ·Items falling under the exception rules in the Montreal Protocol
2	Halons	A-II		
3	Other chlorofluorocarbons (CFCs)	B-I		
4	Carbon tetrachloride	B-I		
5	1,1,1-trichloroethane	B-III		
6	Hydrobromofluorocarbons (HBFCs)	C-II		
7	Bromochloromethane	C-III		
8	Methyl bromide	E-I	Year 2020	
9	Hydrochlorofluorocarbons (HCFCs)	C-I		

Table 4. Criteria for providing composition information (Cited from "chemSHERPA Rules on the Use [Version 1.1]". "chemSHERPA" is a scheme sharing information on chemical substances in products. <https://chemsherpa.net/chemSHERPA/english/doc/>)*¹⁰

- ❑ Criteria for transferring composition information shall be as shown in below table. These criteria are applicable to weight concentration on a per-product basis for chemicals and on a per-material basis for articles.
- ❑ For facilitating transfer of composition information, the chemSHERPA introduces the threshold of 0.1wt% as its own voluntary criteria.

Threshold under Regulations		Concentration of declarable substance	Whether to transfer composition information
Clarified as reportable application, or application unknown	Prescribed threshold is greater than 0.1wt%	Equal to or greater than allowable concentration under Regulations	Requires providing composition information, including declarable substances.
		Equal to or greater than 0.1wt% of chemSHERPA’s voluntary criteria and below allowable concentration under Regulations	Provide composition information including declarable substances, in line with voluntary criteria under chemSHERPA.
		Below 0.1wt% of chemSHERPA’s voluntary criteria	Not required to provide composition information on declarable substances. Optional reporting.
	Prescribed threshold is equal to or below 0.1wt%	Equal to or greater than allowable concentration under Regulations	Requires providing composition information of declarable substances in products.
		Below allowable concentration under Regulations	Not required to provide composition information of declarable substances in products. Optional reporting.
	Clarified as other than reportable application		Equal to or greater than 0.1wt% of chemSHERPA’s voluntary criteria
Below 0.1wt% of chemSHERPA’s voluntary criteria			Not required to provide composition information of declarable substances in products. Optional reporting.

[Note] "Threshold under Regulations" in this table indicates allowable concentration of declarable substances under a relevant standard selected from Regulations. If there is more than one value, the most stringent shall be used in principle.

- ❑ Product suppliers shall determine whether to transfer information depending on applicability to reportable application. If possible, the determination result shall be shared with us through appropriate communication. If the supplier is unable to identify how products would be used by us, it falls under "application unknown".

(Note 1) Examples of "clarified as other than reportable application" may include cases where: product suppliers have been informed by the receiving party that the usage of supplied products is not relevant to reportable application; the usage of products is restricted by suppliers within non-reportable application.

(Note 2) Regarding Japan's Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (herein after "CSCL"), suppliers shall consider the threshold value at zero ("0") in principle. When content of a declarable substance under CSCL is not intentional and the product is applied to best available technology (BAT) or the content is below the voluntary management threshold authorized by Japan's Ministry of Economy, Trade and Industry (METI), suppliers should conduct information transfer with explanations on such conditions as Remarks. Where the threshold value is "0," the term "equal to or greater than the threshold" means to include least content and "below threshold" means no content. Any intentional addition is subject to control as Class I Specified Chemical Substances and virtually banned from production.

*10: When using information transmission tools other than chemSHERPA, such as JAPIA integrated data sheets, IMDS, etc., their specifications shall be followed.

Table 5 Detailed list of the prohibited substances

- The following tables don't always cover all prohibited substances and contents of regulation information, but show typical ones which can be identified with CAS or EC number as examples.
- In a case that a relevant regulation is revised, suppliers shall comply the latest one.
- In a case that an exception to the relevant regulation can be applied to supplied goods, suppliers can follow such an exception. Please refer the requirement of the regulation and specification (application) of the goods for detailed procedures.

Table 5-A01 Cadmium and its compound

SEI's regulation contents		Major regulations	
Contents	Application		
Concentration shall not exceed 100 ppm.*7	Packaging or packaging components	<ul style="list-style-type: none"> • Dir. 94/62/EC on packaging and packaging waste (EU) • Dir. 2004/12/EC on packaging and packaging waste, revised (EU) 	
Prohibiting containing more than 20 ppm by weight.	Portable batteries or accumulators, including those incorporated into appliances	<ul style="list-style-type: none"> • Dir. 2006/66/EC & Dir. 2013/56/EC on batteries and accumulators (EU) 	
No more than 100 ppm by weight	Other goods. (For paints, ink, pigments, dyes, polymers including rubbers, the threshold is applied to concentration in dry state.)	<ul style="list-style-type: none"> • Dir. 2011/65/EU on Restriction of Hazardous Substances (RoHS, EU), Dir. 2000/53/EC on End-of Life Vehicles (ELV, EU) • Testing methods for hazardous substances in electronic information products (China RoHS, CHN) • The Act for Resource Recycling of Electrical and Electronic Equipment and Vehicles (Korea RoHS, KOR) • JIS C 0950 (J-MOSS, JPN) 	
Chemical formula	Substance name	CAS RN	EC No.
Cd	Cadmium	7440-43-9	231-152-8
CdO	Cadmium oxide	1306-19-0	215-146-2
CdS	Cadmium sulfide	1306-23-6	215-147-8
CdCl ₂	Cadmium chloride	10108-64-2	233-296-7
CdSO ₄	Cadmium sulfate	10124-36-4	233-331-6
-	Other Cadmium compounds	-	-

Table 5-A02 Hexavalent chromium (chromium(VI), Cr(VI), chromium 6) compounds

SEI's regulation contents		Major regulations	
Contents	Application		
Concentration shall not exceed 100 ppm.*7	Packaging or packaging components	<ul style="list-style-type: none"> • Dir. 94/62/EC on packaging and packaging waste (EU) • Dir. 2004/12/EC on packaging and packaging waste, revised (EU) 	
No more than 1000 ppm by weight	Other goods.	<ul style="list-style-type: none"> • Dir. 2011/65/EU on Restriction of Hazardous Substances (RoHS, EU), Dir. 2000/53/EC on End-of Life Vehicles (ELV, EU) • Testing methods for hazardous substances in electronic information products (China RoHS, CHN) • The Act for Resource Recycling of Electrical and Electronic Equipment and Vehicles (Korea RoHS, KOR) • JIS C 0950 (J-MOSS, JPN) 	
Chemical formula	Substance name	CAS RN	EC No.
CrO ₃	Chromium(VI) oxide	1333-82-0	215-607-8
BaCrO ₄	Barium chromate(VI)	10294-40-3	233-660-5
CaCrO ₄	Calcium chromate(VI)	13765-19-0	237-366-8
PbCrO ₄	Lead(II) chromate(VI)	7758-97-6	231-846-0
Pb ₃ CrO ₄ MoO ₄ SO ₄	Lead chromate molybdate sulfate red(C.I. Pigment Red 104)	12656-85-8	235-759-9
PbH ₂ CrO ₄ , etc.	C.I. Pigment yellow 34 (Lead sulfochromate yellow, etc.)	1344-37-2	215-693-7
Na ₂ CrO ₄	Sodium chromate(VI)	7775-11-3	231-889-5
Na ₂ Cr ₂ O ₇	Sodium dichromate(VI)	10588-01-9	234-190-3
SrCrO ₄	Strontium chromate(VI)	7789-06-2	232-142-6
K ₂ Cr ₂ O ₇	Potassium dichromate(VI)	7778-50-9	231-906-6
K ₂ CrO ₄	Potassium chromate	7789-00-6	232-140-5
ZnCrO ₄	Zinc chromate	13530-65-9	236-878-9
-	Other hexavalent chromium compounds	-	-

Table 5-A03 Lead and its compounds

SEI's regulation contents		Major regulations	
Contents	Application		
Concentration shall not exceed 100 ppm.*7	Packaging or packaging components	<ul style="list-style-type: none"> • Dir. 94/62/EC on packaging and packaging waste (EU) • Dir. 2004/12/EC on packaging and packaging waste, revised (EU) 	
Prohibiting intentional use and refusing contamination exceeding over 300 ppm in weight.	Most outer jacket of electric wire	<ul style="list-style-type: none"> • The Safe Drinking Water and Toxic Enforcement Act (Proposition 65, California, US) 	
No more than 1000 ppm by weight.	Other goods.	<ul style="list-style-type: none"> • Dir. 2011/65/EU on Restriction of Hazardous Substances (RoHS, EU), Dir. 2000/53/EC on End-of Life Vehicles (ELV, EU) • Testing methods for hazardous substances in electronic information products (China RoHS, CHN) • The Act for Resource Recycling of Electrical and Electronic Equipment and Vehicles (Korea RoHS, KOR) • JIS C 0950 (J-MOSS, JPN) 	
Chemical formula	Substance name	CAS RN	EC No.
Pb	Lead	7439-92-1	231-100-4
PbSO ₄	Lead(II) sulfate	7446-14-2	231-198-9
PbCO ₃	Lead(II) carbonate	598-63-0	209-943-4
PbCrO ₄	Lead(II) chromate(VI)	7758-97-6	231-846-0
Pb ₃ CrO ₄ MoO ₄ SO ₄	Lead chromate molybdate sulfate red (C.I. Pigment Red 104)	12656-85-8	235-759-9
(PbCO ₃) ₂ Pb(OH) ₂	Trilead bis(carbonate) dihydroxide	1319-46-6, 1344-36-1	215-290-6
Pb(CH ₃ CO ₂) ₂	Lead(II) diacetate	301-04-2, 15347-57-6	206-104-4, 239-379-4
Pb(CH ₃ CO ₂) ₂ (H ₂ O) ₃	Lead diacetate trihydrate	6080-56-4	612-031-2
Pb ₃ (PO ₄) ₂	Trilead bis(orthophosphate)	7446-27-7	231-205-5
PbSe	Lead selenide	12069-00-0	235-109-4
PbO ₂	Lead(IV) dioxide	1309-60-0	215-174-5
Pb(PbO ₂) ₂	Lead (II,IV) oxide	1314-41-6	215-235-6
PbS	Lead(II) sulfide	1314-87-0	215-246-6
PbO	Lead(II) oxide	1317-36-8	215-267-0
PbH ₂ CrO ₄ , etc.	C.I. Pigment yellow 34(Lead sulfochromate yellow, etc.)	1344-37-2	215-693-7
PbTiO ₃	Lead(II) titanate	12060-00-3	235-038-9
PbSO ₄	Lead(II) sulfate	7446-14-2, 15739-80-7, 52732-72-6, 90583-07-6	231-198-9, 239-831-0, 258-142-6, 292-204-3
Pb ₄ O ₃ SO ₄	Lead tribasic sulphate	12202-17-4	235-380-9
Pb(C ₁₇ H ₃₅ CO ₂) ₂	Lead(II) distearate	1072-35-1, 7428-48-0, 56189-09-4, 90459-52-2	214-005-2, 231-068-1, 260-043-8, 291-696-7
-	Other lead compounds	-	-

Table 5-A04 Mercury and its compounds

SEI's regulation contents		Major regulations	
Contents	Application		
Concentration shall not exceed 100 ppm.* ¹¹	Packaging or packaging components	<ul style="list-style-type: none"> • Dir. 94/62/EC on packaging and packaging waste (EU) • Dir. 2004/12/EC on packaging and packaging waste, revised (EU) 	
Prohibiting containing more than 5 ppm by weight.	Portable batteries or accumulators, including those incorporated into appliances	<ul style="list-style-type: none"> • Dir. 2006/66/EC & Dir. 2013/56/EC on batteries and accumulators (EU) 	
No more than 1000 ppm by weight	Other goods.	<ul style="list-style-type: none"> • Dir. 2011/65/EU on Restriction of Hazardous Substances (RoHS, EU) • Testing methods for hazardous substances in electronic information products (China RoHS, CHN) • The Act for Resource Recycling of Electrical and Electronic Equipment and Vehicles (Korea RoHS, KOR) • JIS C 0950 (J-MOSS, JPN) 	
Chemical formula	Substance name	CAS RN	EC No.
Hg	Mercury	7439-97-6	231-106-7
HgCl ₂	Mercury(II) dichloride	7487-94-7	231-299-8
HgSO ₄	Mercury(II) sulfate	7783-35-9	231-992-5
Hg(NO ₃) ₂	Mercury(II) nitrate	10045-94-0	233-152-3
HgO	Mercury(II) oxide	21908-53-2	244-654-7
HgS	Mercury(II) sulfide	1344-48-5	215-696-3
-	Other mercury compounds	-	

***11: The sum of the concentration levels of lead, cadmium, mercury and hexavalent chromium present in any homogeneous mixture (e.g., polymer compound, ink, paint, adhesive, etc.) of package or packaging component shall not exceed 100 ppm by weight of those elements.**

Table 5-A05 Bis(tributyltin)oxide

SEI's regulation contents		Major regulations	
Contents and Application			
Prohibition of intentional use* ¹²		• REACH Regulation (Entry 20, Annex XVII, Restricted substances, EU) • Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (CSCL, Class I Specified Chemical Substance, JPN)	
Chemical formula	Substance name	CAS RN	EC No.
((C ₄ H ₉) ₃ Sn) ₂ O	BiS (tributyltin) = oxide (TBTO)	56-35-9	200-268-0

***12: Even if the substance isn't used intentionally, the goods to supply to us shall not be contaminated with the substance over the specified threshold value.**

Table 5-A06 Tri-substituted organostannic compounds (such as TBTs, TPTs, etc.)

SEI's regulation contents		Major regulations	
No more than 1000 ppm by weight of tin in the article, or part thereof.* ¹³		<ul style="list-style-type: none"> • REACH Regulation (Entry 20, Annex XVII, Restricted substances, EU) • Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (CSCL, Class II Specified Chemical Substance, JPN) 	
Chemical formula	Substance name	CAS RN	EC No.
(C ₆ H ₅) ₃ SnS ₂ CN(CH ₃) ₂	Triphenyltin N,N-dimethyldithiocarbamate	1803-12-9	808-995-0
(C ₆ H ₅) ₃ SnF	Triphenyltin fluoride	379-52-2	206-833-8
(C ₆ H ₅) ₃ Sn CH ₃ CO ₂	Triphenyltin acetate	900-95-8	212-984-0
(C ₆ H ₅) ₃ SnCl	Triphenyltin chloride	639-58-7	211-358-4
(C ₆ H ₅) ₃ SnH ₂ O	Triphenyltin hydroxide	76-87-9	200-990-6
(C ₆ H ₅) ₃ SnC ₈ H ₁₇ CO ₂	Triphenyltin 2,2,4,4-tetramethylpentanoate	18380-71-7	—
	Triphenyltin 2-isopropyl-2,3-dimethylbutanoate	18380-72-8	—
(C ₆ H ₅) ₃ SnC ₁₀ H ₂₁ CO ₂	Triphenyltin decanoate	47672-31-1	—
(C ₆ H ₅) ₃ SnC ₁₁ H ₂₃ CO ₂	Triphenyltin undecanoate	94850-90-5	—
(C ₆ H ₅) ₃ SnCH ₂ ClCO ₂	Triphenyltin chloroacetate	7094-94-2	230-401-8
(C ₄ H ₉) ₃ SnC ₃ H ₅ CO ₂	Tributyltin methacrylate	2155-70-6	218-452-4
((C ₄ H ₉) ₃ Sn) ₂ C ₄ H ₂ O ₄	Bis(tributyltin) fumarate	6454-35-9	229-262-6
	Bis(tributan-1-ylstannyl) maleate = but-2-enedioate	24291-45-0	238-166-3
(C ₄ H ₉) ₃ SnF	Tributyltin fluoride	1983-10-4	217-847-9
((C ₄ H ₉) ₃ Sn) ₂ C ₄ Br ₂ O ₄	Bis(tributyltin) 2,3-dibromosuccinate	31732-71-5 56323-17-2	250-782-4
(C ₄ H ₉) ₃ SnCH ₃ CO ₂	Tributyltin acetate	56-36-0	200-269-6
(C ₄ H ₉) ₃ SnC ₁₁ H ₂₃ CO ₂	Tributyltin laurate	3090-36-6	221-434-9
((C ₄ H ₉) ₃ SnCO ₂) ₂ C ₆ H ₄	Bis(tributyltin) phthalate	4782-29-0	225-327-8
[C ₂ H ₃ (C ₈ H ₁₇ CO ₂)C ₂ H ₂ (CH ₃)(CH ₃ CO ₂)C ₂ H ₂ (CH ₃ CO ₂)] _n ((C ₄ H ₉) ₃ Sn) _n	Poly[(methyl methacrylate)-co-(octan-1-yl acrylate)-co-(tributyltin methacrylate)]	67772-01-4	—
(C ₄ H ₉) ₃ SnSO ₃ NH ₂	Tributyltin sulfamate	6517-25-5	—
(C ₄ H ₉) ₃ SnCl	Tributyltin chloride	1461-22-9	215-958-7
	Triisobutyltin chloride	7342-38-3	230-859-9
—	Tributyltin-, mono(naphthenoyloxy) derivatives	85409-17-2	287-083-9
(C ₄ H ₉) ₃ SnCO ₂ C ₁₉ H ₂₉	Tributyltin abietate	26239-64-5	247-53-16
—	Other Tri-substituted organostannic compounds	—	—

Table 5-A07 Dibutyltin (DBT) and Dioctyltin (DOT) compounds

SEI's regulation contents		Major regulations	
No more than 1000 ppm by weight of tin in the article, or part thereof.* ¹³		• REACH Regulation (Entry 20, Annex XVII, Restricted substances, EU)	
Chemical formula	Substance name	CAS RN	EC No.
(C ₄ H ₉) ₂ SnO	Dibutyltin oxide	818-08-6	212-449-1
(C ₄ H ₉) ₂ Sn(CH ₃ CO ₂) ₂	Dibutyltin diacetate	1067-33-0	213-928-8
(C ₄ H ₉) ₂ Sn(C ₁₁ H ₂₃ CO ₂) ₂	Dibutyltin dilaurate	77-58-7	201-039-8
(C ₄ H ₉) ₂ SnC ₄ H ₂ O ₄	Dibutyltin maleate	78-04-6	201-077-5
—	Other dibutyltin compounds	—	—
(C ₈ H ₁₇) ₂ SnO	Dioctyltin oxide	870-08-6	212-791-1
(C ₈ H ₁₇) ₂ Sn(C ₈ H ₁₇ CH ₂ CO ₂ S) ₂	Dioctyltin di(isooctyl thioglycolate)	26401-97-8	247-666-0
(C ₈ H ₁₇) ₂ SnC ₄ H ₂ O ₄	Dioctyltin maleate (DOTM)	16091-18-2	240-253-6
(C ₄ H ₉) ₂ Sn(C ₈ H ₁₇ CH ₂ CO ₂ S) ₂	Dibutyltin di(isooctylthioglycolate)	25168-24-5	246-703-8
—	Other dioctyltin compounds	—	—

*¹³: The concentration shall be calculated with weight of tin element.

Table 5-A08 Polybrominated biphenyls (PBBs)

SEI's regulation contents	Major regulations		
No more than 1000 ppm by weight	<ul style="list-style-type: none"> • Dir. 2011/65/EU on Restriction of Hazardous Substances (RoHS, EU) • Testing methods for hazardous substances in electronic information products (China RoHS, CHN) • The Act for Resource Recycling of Electrical and Electronic Equipment and Vehicles (Korea RoHS, KOR) • JIS C 0950 (J-MOSS, JPN) • Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (CSCL, Class I Specified Chemical Substance, JPN) 		
Chemical formula	Substance name	CAS RN	EC No.
C ₁₂ H ₈ Br ₂	Dibromobiphenyl	92-86-4	202-198-6
C ₁₂ H ₉ Br	2-Bromobiphenyl	2052-07-5	218-141-3
	3-Bromobiphenyl	2113-57-7	218-304-9
	4-Bromobiphenyl	92-66-0	202-176-6
C ₁₂ H ₇ Br ₃	Tribromobiphenyl	59080-34-1	—
C ₁₂ H ₆ Br ₄	Tetrabromobiphenyl	40088-45-7	—
C ₁₂ H ₅ Br ₅	Pentabromobiphenyl	56307-79-0	—
C ₁₂ H ₄ Br ₆	Hexabromobiphenyl	59080-40-9	614-131-1
	Hexabromo-1,1'-biphenyl	36355-01-8	252-994 - 2
-	Firemaster FF-1	67774-32-7	—
C ₁₂ H ₃ Br ₇	Heptabromobiphenyl	35194-78-6	—
C ₁₂ H ₂ Br ₈	Octabromobiphenyl	61288-13-9	—
C ₁₂ HBr ₉	Nonabromo-1,1'-biphenyl	27753-52-2	248-637-5
C ₁₂ Br ₁₀	Decabromobiphenyl	13654-09-6	237-137-2
C ₁₂ H _{10-m} Br _m	Other Polybrominated biphenyls (PBBs, Firemaster BP-6)	59536-65-1	—

Table 5-A09 Polybrominated diphenyl ethers (PBDEs)

SEI's regulation contents	Major regulations		
No more than 1000 ppm by weight	<ul style="list-style-type: none"> • Dir. 2011/65/EU on Restriction of Hazardous Substances (RoHS, EU) • Testing methods for hazardous substances in electronic information products (China RoHS, CHN) • The Act for Resource Recycling of Electrical and Electronic Equipment and Vehicles (Korea RoHS, KOR) • JIS C 0950 (J-MOSS, JPN) • Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (CSCL, Class I Specified Chemical Substance, JPN) 		
Chemical formula	Substance name	CAS RN	EC No.
C ₁₂ H ₉ BrO	Bromodiphenyl ether	101-55-3	202-952-4
C ₁₂ H ₈ Br ₂ O	Dibromodiphenyl ether	2050-47-7	218-090-7
C ₁₂ H ₇ Br ₃ O	Tribromodiphenyl ether	49690-94-0	256-431-1
C ₁₂ H ₆ Br ₄ O	Tetrabromodiphenyl ether	40088-47-9	254-787-2
C ₁₂ H ₅ Br ₅ O	Pentabromodiphenyl ether	32534-81-9	251-084-2
C ₁₂ H ₄ Br ₆ O	Hexabromodiphenyl ether	36483-60-0	253-058-6
C ₁₂ H ₃ Br ₇ O	Heptabromodiphenyl ether	68928-80-3	273-031-2
C ₁₂ H ₂ Br ₈ O	Octabromodiphenyl ether	32536-52-0	251-087-9
C ₁₂ HBr ₉ O	Nonabromodiphenyl ether	63936-56-1	264-565-7
C ₁₂ Br ₁₀ O	Decabromodiphenyl ether	1163-19-5	214-604-9
C ₁₂ H _{10-m} Br _m O	Other Polybrominated diphenyl ethers (PBDEs)	—	—

Table 5-A10 Polychlorobiphenyls (PCBs) and specified substitutes

SEI's regulation contents (contents, application)	Major regulations			
Prohibiting intentional use ^{*12}	<ul style="list-style-type: none"> Stockholm Convention on Persistent Organic Pollutants (POPs) (UNEP) REACH Regulation (Entry 24, 25 & 26, Annex XVII, Restricted substances, EU) Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (CSCL, Class I Specified Chemical Substance, JPN) Law Concerning Special Measures Against PCB Waste (JPN) 			
Chemical formula	Substance name	CAS RN	EC No.	Contamination
C ₁₂ H _{10-m} Cl _m	Polychlorobiphenyls (PCBs) and homologues	1336-36-3, etc.	215-648-1, etc.	0.5 ppm max.
(C ₆ H ₃ Cl ₂)CH ₂ (C ₆ H ₂ CH ₃ Cl ₂)	(Dichlorophenyl)(dichlorotolyl)methane (Synonym; Ugilec 141)	76253-60-6, 121107-29-7	278-404-3	50 ppm max.
(C ₆ H ₄ Cl)CH ₂ (C ₆ H ₃ CH ₃ Cl)	(Chlorophenyl)(chlortolyl)methane (Synonym; Ugilec 121, Ugilec 21)	81161-70-8	400-140-6	50 ppm max.
(C ₆ H ₄ Br)CH ₂ (C ₆ H ₃ CH ₃ Br)	Monomethyl-dibromo-diphenyl methane (Synonym; DBBT)	99688-47-8	402-210-1	50 ppm max.

^{*12}: Even if the substance isn't used intentionally, the goods to supply to us shall not be contaminated with the substance over the specified threshold value.

Table 5-A11 Polychlorinated terphenyls (PCTs)

SEI's regulation contents (contents, application)	Major regulations		
No more than 50 ppm by weight	• REACH Regulation (Entry 1, Annex XVII, Restricted substances, EU)		
Chemical formula	Substance name	CAS RN	EC No.
-	Polychlorinated terphenyls (PCTs) and homologues	61788-33-8, etc.	262-968-2, etc.

Table 5-A12 Polychlorinated naphthalenes (PCNs, excluding C₁₀H₇Cl)

SEI's regulation contents (contents, application)	Major regulations			
Prohibiting intentional use ^{*12}	<ul style="list-style-type: none"> Stockholm Convention on Persistent Organic Pollutants (POPs) (UNEP) Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (CSCL, Class I Specified Chemical Substance, JPN) 			
Chemical formula	Substance name	CAS RN	EC No.	Contamination
C ₁₀ H _{8-m} Cl _m	Polychlorinated naphthalenes (PCNs)	70776-03-3, etc.	274-864-4, etc.	10 ppm max.

^{*12}: Even if the substance isn't used intentionally, the goods to supply to us shall not be contaminated with the substance over the specified threshold value.

Table 5-A13 C₁₀–C₁₃ polychloro-n-alkanes (sPCAs, SCCPs)

SEI's regulation contents (contents, application)	Major regulations			
Prohibiting intentional use ^{*12}	<ul style="list-style-type: none"> Stockholm Convention on Persistent Organic Pollutants (POPs) (UNEP) POPs Regulation (Annex I, EU) Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (CSCL, Class I Specified Chemical Substance, JPN) 			
Chemical formula	Substance name	CAS RN	EC No.	Contamination
C ₁₀ H _{22-m} Cl _m	Chloroalkanes, C10-13 (Short Chain Chlorinated Paraffins)	85535-84-8	287-476-5	50 ppm max.
C ₁₁ H _{24-m} Cl _m		108171-26-2	600-857-6	
C ₁₂ H _{26-m} Cl _m		71011-12-6	—	
C ₁₃ H _{28-m} Cl _m		61788-76-9	263-004-3	

^{*12}: Even if the substance isn't used intentionally, the goods to supply to us shall not be contaminated with the substance over the specified threshold value.

Table 5-A14 Perfluorooctane sulfonic acid (PFOS) and its salts

SEI's regulation contents (contents, application)		Major regulations	
Prohibiting intentional use		<ul style="list-style-type: none"> Stockholm Convention on Persistent Organic Pollutants (POPs) (UNEP) Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (CSCL, Class I Specified Chemical Substance, JPN) 	
Chemical formula	Substance name	CAS RN	EC No.
$\text{H}^+\text{C}_8\text{F}_{17}\text{SO}_3^-$	Perfluorooctane sulfonic acid	1763-23-1	217-179-8
$\text{K}^+\text{C}_8\text{F}_{17}\text{SO}_3^-$	Potassium perfluorooctane sulfonate	2795-39-3	220-527-1
$\text{Na}^+\text{C}_8\text{F}_{17}\text{SO}_3^-$	Sodium perfluorooctane sulphonate	4021-47-0	–
$\text{NH}_4^+\text{C}_8\text{F}_{17}\text{SO}_3^-$	Ammonium perfluorooctane sulfonate	29081-56-9	249-415-0
$\text{Li}^+\text{C}_8\text{F}_{17}\text{SO}_3^-$	Lithium perfluorooctane sulfonate	29457-72-5	249-644-6
$\text{N}(\text{C}_2\text{H}_5)_4^+\text{C}_8\text{F}_{17}\text{SO}_3^-$	Tetraethylammonium perfluorooctane sulfonate	56773-42-3	260-375-3
$\text{H}^+\text{C}_8\text{F}_{17}\text{SO}_3^-$, $\text{CH}_3\text{N}(\text{C}_2\text{H}_4\text{OH})_2$	Perfluorooctane sulfonic acid, compound with 2,2'-iminodiethanol (1:1)	70225-14-8	274-460-8
$\text{C}_{30}\text{H}_{48}\text{F}_{17}\text{NO}_3\text{S}$	Didecan-1-yl(dimethyl)ammonium perfluorooctane-1-sulfonate	251099-16-8	–
$\text{H}^+\text{C}_8\text{F}_{17}\text{SO}_3^-$, $\text{C}_5\text{H}_{11}\text{N}$	Piperidin-1-ium perfluorooctane-1-sulfonate	71463-74-6	–
$\text{Mg}^{2+}(\text{C}_8\text{F}_{17}\text{SO}_3^-)_2$	Magnesium bis[perfluorooctanesulphonate]	91036-71-4	293-022-7
$\text{M}^+\text{C}_8\text{F}_{17}\text{SO}_3^-$	Other perfluorooctane sulphonates and delivertives	–	–

Table 5-A15 Perfluorooctanoic acid (PFOA) and its salts, and PFOA-related substances

SEI's regulation contents (contents, application)		Major regulations	
Prohibiting containing more than 25 ppb by weight of PFOA and its salt Prohibiting containing more than 1000 ppb by weight of PFOA-related substances Exemptions: <ul style="list-style-type: none"> PFOA-related substances of 20 ppm or less generated during the production of fluorine compounds with C=6 PFOA and its salts of 1000 ppb or less existing in PTFE fine powder 		<ul style="list-style-type: none"> Stockholm Convention (POPs) (UNEP) POPs Regulation (Annex I, EU) 	
Chemical formula	Substance name	CAS RN	EC No.
$\text{C}_8\text{HF}_{15}\text{O}_2$	Perfluorooctanoic acid (PFOA)	335-67-1	206-397-9
$\text{C}_8\text{F}_{15}\text{KO}_2$	Potassium salt of PFOA	2395-00-8	219-248-8
$\text{C}_8\text{F}_{15}\text{NaO}_2$	Sodium salt of PFOA	335-95-5	206-404-5
$\text{C}_8\text{H}_4\text{F}_{15}\text{NO}_2$	Ammoniumpentadecafluorooctanoate	3825-26-1	223-320-4
$\text{C}_8\text{AgF}_{15}\text{O}_2$	Silver salt of PFOA	335-93-3	206-402-4
$\text{C}_9\text{H}_3\text{F}_{15}\text{O}_2$	Methylperfluorooctanoate	376-27-2	206-808-1
$\text{C}_{10}\text{H}_5\text{F}_{15}\text{O}_2$	Ethylperfluorooctanoate	3108-24-5	221-468-4
$\text{C}_8\text{F}_{16}\text{O}$	Pentadecafluorooctyl fluoride	335-66-0	206-396-3
–	Other salts of perfluorooctanoic acid	–	–
–	Other substances related to perfluorooctanoic acid	–	–

Table 5-A16 Specific phthalates (DEHP, BBP, DBP & DIBP)

SEI's regulation contents (contents, application)		Major regulations	
Shall not be used as substances or in mixtures, in concentrations greater than 1000 ppm by weight		• Dir. 2011/65/EU on Restriction of Hazardous Substances (RoHS, EU)	
Chemical formula	Substance name	CAS RN	EC No.
$\text{C}_6\text{H}_4(\text{CO}_2)_2(\text{C}_8\text{H}_{17})_2$	Diethylhexyl Phthalate (DEHP)	117-81-7 8033-53-2 15495-94-0 82208-43-3	204-211-0, 617-060-4
$\text{C}_6\text{H}_4(\text{CO}_2)_2(\text{C}_4\text{H}_9)_2$	Dibutyl phthalate (DBP)	84-74-2 93952-11-5	201-557-4
	Diisobutyl phthalate (DIBP)	84-69-5	201-553-2
$\text{C}_6\text{H}_4(\text{CO}_2)_2(\text{C}_6\text{H}_5\text{CH}_2)(\text{C}_4\text{H}_9)$	Benzyl butyl phthalate (BBP)	85-68-7	201-622-7

Table 5-A17 Asbestos

SEI's regulation contents (contents, application)	Major regulations		
Prohibiting intentional use and refusing contamination exceeding over 1000 ppm by weight in supplied goods to us.	<ul style="list-style-type: none"> • REACH Regulation (Annex XVII, Restricted substances, EU) • Industrial Safety and Health Act (Prohibited substances for Manufacturing, JPN) • Air Pollution Control Act (Specified Particulates, JPN) 		
Chemical formula	Substance name	CAS RN	EC No.
Crystalline fiber like forms of silicate minerals	Asbestos	1332-21-4	–
$\text{Ca}_2(\text{Mg,Fe})_5(\text{Si}_8\text{O}_{22})(\text{OH})_2$	Actinolite	77536-66-4	616-471-6
$(\text{Fe,Mg})_7(\text{Si}_8\text{O}_{22})(\text{OH})_2$	Amosite, Grunerite	12172-73-5	601-801-3
$(\text{Mg,Fe})_7(\text{Si}_8\text{O}_{22})(\text{OH})_2$	Anthophyllite	77536-67-5	616-472-1
$\text{Mg}_3(\text{Si}_2\text{O}_5)(\text{OH})_4$	Chrysotile	12001-29-5 132207-32-0	601-650-3
$\text{Fe}_2\text{Mg}_3\text{Na}_2(\text{Si}_8\text{O}_{22})(\text{OH})_2$	Crocidolite	12001-28-4	601-649-8
$\text{Ca}_2\text{Mg}_5(\text{Si}_8\text{O}_{22})(\text{OH})_2$	Tremolite	77536-68-6	616-473-7

Table 5-A18 Azo dyes liberating specific toxic & carcinogenic amines. (only for textiles and leather.)

*10: Azodyes which, by reductive cleavage of one or more azo groups, may release one or more of the aromatic amines listed above in 30 ppm by weight in the articles or in the dyed parts thereof, according to the testing methods (Appendix X, REACH), shall not be used.

SEI's regulation contents (contents, application)	Major regulations		
Any Azo Dye that liberates any of following amines over 30 ppm cannot be used in textiles and leather.	• REACH Regulation (Entry 43, Annex XVII, Restricted substances, EU)		
Chemical formula	Specific Amines*10	CAS RN	EC No.
$\text{C}_6\text{H}_5\text{-C}_6\text{H}_4\text{NH}_2$	4-Aminobiphenyl	92-67-1	202-177-1
$(\text{C}_6\text{H}_4\text{NH}_2)_2$	Benzidine	92-87-5	202-199-1
$\text{CH}_3\text{C}_6\text{H}_3\text{Cl}(\text{NH}_2)$	4-Chloro- <i>o</i> -toluidine	95-69-2	202-441-6
$\text{C}_{10}\text{H}_7\text{NH}_2$	2-Naphthylamine	91-59-8	202-080-4
$\text{C}_6\text{H}_4\text{CH}_3\text{N}=\text{NC}_6\text{H}_3\text{CH}_3\text{NH}_2$	<i>o</i> -Aminoazotoluene	97-56-3	202-591-2
$\text{C}_6\text{H}_3\text{CH}_3\text{NO}_2\text{NH}_2$	2-Amino-4-nitrotoluene	99-55-8	202-765-8
$\text{ClC}_6\text{H}_4\text{NH}_2$	4-Chloroaniline	106-47-8	203-401-0
$\text{CH}_3\text{OC}_6\text{H}_3(\text{NH}_2)_2$	2,4-Diaminoanisole	615-05-4	210-406-1
$\text{CH}_2(\text{C}_6\text{H}_4\text{NH}_2)_2$	4,4'-Methylenedianiline (MDA)	101-77-9	202-974-4
$(\text{C}_6\text{H}_3\text{Cl}(\text{NH}_2))_2$	3,3'-Dichlorobenzidine	91-94-1	202-109-0
$(\text{C}_6\text{H}_3(\text{OCH}_3)\text{NH}_2)_2$	3,3'-Dimethoxybenzidine	119-90-4	204-355-4
$(\text{C}_6\text{H}_3\text{CH}_3\text{NH}_2)_2$	3,3'-Dimethylbenzidine	119-93-7	204-358-0
$\text{CH}_2(\text{C}_6\text{H}_3\text{CH}_3\text{NH}_2)_2$	4,4'-Diamino-3,3'-dimethyldiphenylmethane	838-88-0	212-658-8
$\text{CH}_3\text{OC}_6\text{H}_3(\text{CH}_3)\text{NH}_2$	2-Methoxy-5-methylaniline	120-71-8	204-419-1
$\text{CH}_2(\text{C}_6\text{H}_3\text{ClNH}_2)_2$	4,4'-Methylene bis(2-chloroaniline)	101-14-4	202-918-9
$\text{O}(\text{C}_6\text{H}_4\text{NH}_2)_2$	4,4'-Oxydianiline	101-80-4	202-977-0
$\text{S}(\text{C}_6\text{H}_4\text{NH}_2)_2$	4,4'-Thiodianiline	139-65-1	205-370-9
$\text{C}_6\text{H}_4\text{CH}_3\text{NH}_2$	<i>o</i> -Toluidine	95-53-4	202-429-0
$\text{C}_6\text{H}_3\text{CH}_3(\text{NH}_2)_2$	2,4-Diaminotoluene	95-80-7	202-453-1
$\text{C}_6\text{H}_2(\text{CH}_3)_3\text{NH}_2$	2,4,5-Trimethylaniline	137-17-7	205-282-0
$\text{C}_6\text{H}_4\text{OCH}_3\text{NH}_2$	<i>o</i> -Anisidine	90-04-0	201-963-1
$\text{C}_6\text{H}_5\text{N}=\text{NC}_6\text{H}_4\text{NH}_2$	<i>p</i> -Aminoazobenzene	60-09-3	200-453-6

Table 5-A19 Ozone-Depleting Substances (Details of Table 3 “Complete Abolition Substances”)

Chlorofluorocarbons (CFCs), Halons, Hydrobromofluorocarbons (HBFCs), Hydrochlorofluorocarbons (HCFCs) and others.

SEI's regulation contents (contents, application)		Major regulations		
Prohibiting intentional use		<ul style="list-style-type: none"> • The Montreal Protocol • Act on the Protection of the Ozone Layer (JPN) 		
Chemical formula	Substance name*15	CAS RN	EC No.	Group of the Montreal Protocol
CCl ₃ F	Trichlorofluoromethane (CFC-11)	75-69-4	200-892-3	A-I
CCl ₂ F ₂	Dichlorodifluoromethane (CFC-12)	75-71-8	200-893-9	A-I
C ₂ Cl ₃ F ₃	Trichlorotrifluoroethane (CFC-113)	26523-64-8	–	A-I
	1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)	76-13-1	200-936-1	A-I
	1,1,1-Trichloro-2,2,2-trifluoroethane (CFC-113a)	354-58-5	206-564-6	A-I
C ₂ Cl ₂ F ₄	Dichlorotetrafluoroethane (CFC-114)	1320-37-2	215-300-9	A-I
	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC-114)	76-14-2	200-937-7	A-I
	1,1-Dichloro-1,2,2,2-tetrafluoroethane (CFC-114)	374-07-2	206-774-8	A-I
C ₂ ClF ₅	Chloropentafluoroethane (CFC-115)	76-15-3	200-938-2	A-I
CBrClF ₂	Bromochlorodifluoromethane (Halon-1211)	353-59-3	206-537-9	A-II
CBrF ₃	Bromotrifluoromethane (Halon-1301)	75-63-8	200-887-6	A-II
C ₂ Br ₂ F ₄	Dibromotetrafluoroethane (Halon-2402)	25497-30-7	247-042-8	A-II
	1,2-Dibromo-1,1,2,2-tetrafluoroethane (Halon-2402)	124-73-2	204-711-9	A-II
CCl ₃ F	Chlorotrifluoromethane (CFC-13)	75-72-9	200-894-4	B-I
C ₂ Cl ₅ F	Pentachlorofluoroethane (CFC-111)	354-56-3	–	B-I
C ₂ Cl ₄ F ₂	Tetrachloro(difluoro)ethane (CFC-112)	28605-74-5	249-101-3	B-I
	1,1,2,2-Tetrachloro-1,2-difluoroethane (CFC-112)	76-12-0	200-935-6	B-I
	1,1,1,2-Tetrachloro-2,2-difluoroethane (CFC-112a)	76-11-9	249-101-3	B-I
C ₃ Cl ₇ F	1,1,1,2,2,3,3-heptachloro-3-fluoro-propane (CFC-211)	–	–	B-I
C ₃ Cl ₆ F ₂	1,1,1,3,3,3-hexachloro-2,2-difluoro-propane (CFC-212)	3182-26-1	–	B-I
C ₃ Cl ₅ F ₃	Pentachlorotrifluoropropane (CFC-213)	134237-31-3	–	B-I
C ₃ Cl ₄ F ₄	1,2,2,3-Tetrachloro-1,1,3,3-tetrafluoropropane (CFC-214)	29255-31-0	–	B-I
	1,1,1,3-Tetrachloro-2,2,3,3-tetrafluoropropane (CFC-214)	2268-46-4	218-868-6	B-I
C ₃ Cl ₃ F ₅	1,2,2-Trichloro-1,1,3,3,3-pentafluoropropane (CFC-215)	1599-41-3	–	B-I
	1,1,3-Trichloro-1,2,2,3,3-pentafluoropropane (CFC-215)	1652-81-9	216-718-4	B-I
C ₃ Cl ₂ F ₆	Dichlorohexafluoropropane (CFC-216)	42560-98-5	255-884-2	B-I
	1,2-Dichlorohexafluoropropane (CFC-216)	661-97-2	211-551-3	B-I
C ₃ ClF ₇	1-Chloro-1,1,2,2,3,3,3-heptafluoropropane (CFC-217)	422-86-6	–	B-I
	2-Chloro-1,1,1,2,3,3,3-heptafluoropropane (CFC-217)	76-18-6	200-940-3	B-I
CCl ₄	Tetrachloromethane	56-23-5	200-262-8	B-II
C ₂ H ₃ Cl ₃	1,1,1-Trichloroethane	71-55-6	200-756-3	B-III
CHCl ₂ F	Dichlorofluoromethane (HCFC-21)	75-43-4	200-869-8	C-I
CHClF ₂	Chlorodifluoromethane (HCFC-22)	75-45-6	200-871-9	C-I
CH ₂ ClF	Chlorofluoromethane (HCFC-31)	593-70-4	209-803-2	C-I
C ₂ HCl ₄ F	Tetrachlorofluoroethane (HCFC-121)	134237-32-4	–	C-I
	1,1,2,2-Tetrachloro-1-fluoroethane (HCFC-121)	354-14-3	206-546-8	C-I
	1,1,1,2-Tetrachloro-2-fluoroethane (HCFC-121)	354-11-0	206-545-2	C-I
C ₂ HCl ₃ F ₂	Trichlorodifluoroethane (HCFC-122)	–	–	C-I
	1,2,2-Trichloro-1,1-difluoroethane (HCFC-122)	354-21-2	206-548-9	C-I
	1,1,2-Trichloro-1,2-difluoroethane (HCFC-122)	354-15-4	940-543-9	C-I
C ₂ HCl ₂ F ₃	Dichlorotrifluoroethane (HCFC-123)	34077-87-7	–	C-I
	2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)	306-83-2	206-190-3	C-I
	1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123)	354-23-4	206-549-4	C-I
C ₂ HClF ₄	Chlorotetrafluoroethane (HCFC-124)	63938-10-3	264-567-8	C-I
	2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124)	2837-89-0	220-629-6	C-I
	1-Chloro-1,1,2,2-tetrafluoroethane (HCFC-124)	354-25-6	206-552-0	C-I

Table 5-A19 Ozone-Depleting Substances (cont.)

Chemical formula	Substance name* ¹¹	CAS RN	EC No.	Group of the Montreal Protocol
C ₂ H ₂ Cl ₃ F	Trichlorofluoroethane (HCFC-131)	134237-34-6	–	C-I
	1,1,2-Trichloro-2-fluoroethane (HCFC-131)	27154-33-2	–	C-I
	1,1,2-Trichloro-1-fluoroethane (HCFC-131)	811-95-0	–	C-I
C ₂ H ₂ Cl ₂ F ₂	Dichlorodifluoroethane (HCFC-132)	25915-78-0	–	C-I
C ₂ H ₂ ClF ₃	Chlorotrifluoroethane (HCFC-133)	1330-45-6	–	C-I
	2-Chloro-1,1,1-trifluoroethane (HCFC-133)	75-88-7	200-912-0	C-I
	1-Chloro-1,1,2-trifluoroethane (HCFC-133)	421-04-5	–	C-I
	1-Chloro-1,2,2-trifluoroethane (HCFC-133)	431-07-2	–	C-I
C ₂ H ₃ Cl ₂ F	Dichlorofluoroethane (HCFC-141)	25167-88-8	–	C-I
	1,2-Dichloro-1-fluoroethane (HCFC-141)	430-57-9	–	C-I
	1,1-Dichloro-1-fluoroethane (HCFC-141b)	1717-00-6	404-080 - 1	C-I
C ₂ H ₃ ClF ₂	Chlorodifluoroethane (HCFC-142)	25497-29-4	–	C-I
	1-Chloro-1,2-difluoroethane (HCFC-142)	338-64-7	–	C-I
	1-Chloro-1,1-difluoroethane (HCFC-142b)	75-68-3	200-891-8	C-I
C ₂ H ₄ ClF	Chlorofluoroethane (HCFC-151)	110587-14-9	–	C-I
	1-Chloro-1-fluoroethane (HCFC-151)	1615-75-4	–	C-I
	1-Chloro-2-fluoroethane (HCFC-151)	762-50-5	–	C-I
C ₃ HCl ₆ F	Hexachlorofluoropropane (HCFC-221)	134237-35-7	–	C-I
C ₃ HCl ₅ F ₂	Pentachlorodifluoropropane (HCFC-222)	134237-36-8	–	C-I
C ₃ HCl ₄ F ₃	1,1,3,3-Tetrachloro-1,2,2-trifluoropropane (HCFC-223)	134237-37-9	–	C-I
C ₃ HCl ₃ F ₄	Trichlorotetrafluoropropane (HCFC-224)	127564-91-4	–	C-I
	1,3,3-Trichloro-1,1,2,2-tetrafluoropropane (HCFC-224)	134237-38-0	–	C-I
C ₃ HCl ₂ F ₅	Dichloropentafluoropropane (HCFC-225)	127564-92-5	–	C-I
	3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)	422-56-0	207-016-9	C-I
	1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)	507-55-1	208-076-9	C-I
	1,1-Dichloro-1,2,2,3,3-pentafluoropropane (HCFC-225)	13474-88-9	–	C-I
	1,1-Dichloro-1,2,3,3,3-pentafluoropropane (HCFC-225)	111512-56-2	–	C-I
	1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225)	422-44-6	–	C-I
	1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC-225)	431-86-7	–	C-I
	1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225)	136013-79-1	–	C-I
	2,2-Dichloro-1,1,1,3,3-pentafluoropropane (HCFC-225)	128903-21-9	–	C-I
	2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC-225)	422-48-0	–	C-I
C ₃ HClF ₆	1-Chloro-1,1,2,2,3,3-hexafluoropropane (HCFC-226)	422-55-9	207-015-3	C-I
	2-Chloro-1,1,1,3,3,3-hexafluoropropan (HCFC-226)	431-87-8, 134308-72-8	207-078-7	C-I
	3-Chloro-1,1,1,2,2,3-hexafluoropropane (HCFC-226)	422-57-1	–	C-I
C ₃ H ₂ Cl ₅ F	Pentachlorofluoropropane (HCFC-231)	134190-48-0	–	C-I
C ₃ H ₂ Cl ₄ F ₂	Tetrachlorodifluoropropane (HCFC-232)	127564-82-3, 134237-39-1	–	C-I
C ₃ H ₂ Cl ₃ F ₃	Trichlorotrifluoropropane (HCFC-233)	134237-40-4	–	C-I
C ₃ H ₂ Cl ₂ F ₄	Dichlorotetrafluoropropane (HCFC-234)	127564-83-4	–	C-I
C ₃ H ₂ ClF ₅	Chloropentafluoropropane (HCFC-235)	134237-41-5	–	C-I
	1-Chloro-1,1,3,3,3-pentafluoropropane (HCFC-235fa)	460-92-4	–	C-I
C ₃ H ₃ ClF ₄	Tetrachlorofluoropropane (HCFC-241)	134190-49-1	–	C-I
C ₃ H ₃ Cl ₃ F ₂	Trichlorodifluoropropane (HCFC-242)	127564-90-3, 134237-42-6	–	C-I
C ₃ H ₃ Cl ₂ F ₃	Dichlorotrifluoropropane (HCFC-243)	134237-43-7	–	C-I
	3,3-Dichloro-1,1,1-trifluoropropane (HCFC-243)	460-69-5	–	C-I
C ₃ H ₃ ClF ₄	Chlorotetrafluoropropane (HCFC-244)	134190-50-4	–	C-I
	3-Chloro-1,1,2,2-tetrafluoropropane (HCFC-244)	679-85-6	–	C-I

Table 5-A19 Ozone-Depleting Substances (cont.)

Chemical formula	Substance name* ¹¹	CAS RN	EC No.	Group of the Montreal Protocol
C ₃ H ₄ Cl ₃ F	Trichlorofluoropropane (HCFC-251)	134190-51-5	–	C-I
	1,1,3-Trichloro-1-fluoropropane (HCFC-251)	818-99-5	–	C-I
C ₃ H ₄ Cl ₂ F ₂	Dichlorodifluoropropane (HCFC-252)	134190-52-6	–	C-I
C ₃ H ₄ ClF ₃	Chlorotrifluoropropane (HCFC-253)	134237-44-8	–	C-I
	3-Chloro-1,1,1-trifluoropropane (HCFC-253)	460-35-5	207-307-0	C-I
C ₃ H ₅ Cl ₂ F	Dichlorofluoropropane (HCFC-261)	134237-45-9	–	C-I
	1,1-Dichloro-1-fluoropropane (HCFC-261)	7799-56-6	–	C-I
	1,2-Dichloro-2-fluoropropane (HCFC-261)	420-97-3	206-999-1	C-I
C ₃ H ₅ ClF ₂	Chlorodifluoropropane (HCFC-262)	134190-53-7	–	C-I
	2-Chloro-1,3-difluoropropane (HCFC-262)	102738-79-4	–	C-I
C ₃ H ₆ ClF	Chlorofluoropropane (HCFC-271)	134190-54-8	–	C-I
CHBr ₂ F	Dibromofluoromethane	1868-53-7	700-410-6	C-II
CHBrF ₂	Bromodifluoromethane (HBFC-22b1)	1511-62-2	216-149-1	C-II
CH ₂ BrF	Bromofluoromethane	373-52-4	609-414-1	C-II
C ₂ HBr ₄ F	Tetrabromofluoroethane	306-80-9	–	C-II
C ₂ HBr ₃ F ₂	Tribromodifluoroethane	–	–	C-II
C ₂ HBr ₂ F ₃	Dibromotrifluoroethane	354-04-1	206-543-1	C-II
C ₂ HBrF ₄	Bromotetrafluoroethane	124-72-1	–	C-II
C ₂ H ₂ Br ₃ F	Tribromofluoroethane	–	–	C-II
C ₂ H ₂ Br ₂ F ₂	Dibromodifluoroethane	75-82-1	200-905-2	C-II
C ₂ H ₂ BrF ₃	Bromotrifluoroethane	421-06-7	207-001-7	C-II
C ₂ H ₃ Br ₂ F	Dibromofluoroethane	358-97-4	206-621-5	C-II
C ₂ H ₃ BrF ₂	Bromodifluoroethane	420-47-3	807-581-7	C-II
C ₂ H ₃ BrF ₂	2-Bromo-1,1-difluoroethane	359-07-9	807-581-7	C-II
C ₂ H ₄ BrF	Bromofluoroethane-	762-49-2	212-100-3	C-II
C ₃ HBr ₆ F	Hexabromofluoropropane	–	–	C-II
C ₃ HBr ₅ F ₂	Pentabromodifluoropropane	–	–	C-II
C ₃ HBr ₄ F ₃	Tetrabromotrifluoropropane	–	–	C-II
C ₃ HBr ₃ F ₄	Tribromotetrafluoropropane	–	–	C-II
C ₃ HBr ₂ F ₅	Dibromopentafluoropropane	431-78-7	–	C-II
C ₃ HBrF ₆	Bromohexafluoropropane	2252-78-0	–	C-II
C ₃ H ₂ Br ₅ F	Pentabromofluoropropane	–	–	C-II
C ₃ H ₂ Br ₄ F ₂	Tetrabromodifluoropropane	–	–	C-II
C ₃ H ₂ Br ₃ F ₃	Tribromotrifluoropropane	–	–	C-II
C ₃ H ₂ Br ₂ F ₄	Dibromotetrafluoropropane	–	–	C-II
C ₃ H ₂ BrF ₅	Bromopentafluoropropane	460-88-8	–	C-II
C ₃ H ₃ Br ₄ F	Tetrabromofluoropropane	–	–	C-II
C ₃ H ₃ Br ₃ F ₂	Tribromodifluoropropane	70192-80-2	–	C-II
C ₃ H ₃ Br ₂ F ₃	Dibromotrifluoropropane	431-21-0	630-997-3	C-II
C ₃ H ₃ BrF ₄	Bromotetrafluoropropane	679-84-5	–	C-II
C ₃ H ₄ Br ₃ F	Tribromofluoropropane	75372-14-4	–	C-II
C ₃ H ₄ Br ₂ F ₂	Dibromodifluoropropane	460-25-3	–	C-II
C ₃ H ₄ BrF ₃	Bromotrifluoropropane	421-46-5	630-622-3	C-II
C ₃ H ₅ Br ₂ F	Dibromofluoropropane	51584-26-0	–	C-II
C ₃ H ₅ BrF ₂	Bromodifluoropropane	–	–	C-II
C ₃ H ₆ BrF	Bromofluoropropane	1871-72-3	631-536-9	C-II
CH ₂ BrCl	Bromochloromethane (Halon-1011)	74-97-5	200-826-3	C-III
CH ₃ Br	Bromomethane (Methyl bromide)	74-83-9	200-813-2	E-I

*15: We prohibit not only described substances, but also all isomers having mentioned chemical formula as ozone-depleting substances.

Table 5-A20 Radioactive isotopes

SEI's regulation contents (contents, application)	Major regulations			
Prohibiting intentional use	<ul style="list-style-type: none"> • Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (JPN) • Act on Prevention of Radiation Hazards due to Radioisotopes, etc. (JPN) 			
Chemical formula	Substance name	CAS RN	EC No.	Half life
²³⁸ U	Uranium-238	7440-61-1	231-170-6	4.47 billion years
Rn	Radon	10043-92-2	233-146-0	–
²⁴¹ Am	Americium-241	14596-10-2	231-144-4	432.2 years
²³² Th	Thorium-232	7440-29-1	231-139-7	14.05 billion years
¹³⁷ Cs	Caesium-137	10045-97-3	231-155-4	30.2 years
⁹⁰ Sr	Strontium-90	10098-97-2	231-133-4	28.8 years
Other radioactive isotopes which nucleus decays exceeding 0.1 Bq/g.		–	–	–

Table 5-A21 Dimethyl fumarate (DMF)

SEI's regulation contents (contents, application)	Major regulations		
Any goods containing this substance exceeding 1 ppm (in weight) shall not be delivered to us.	• REACH Regulation (Annex XVII, Restricted substances, EU)		
Chemical formula	Substance name	CAS RN	EC No.
C ₂ H ₂ (CH ₃ CO ₂) ₂	Dimethyl fumarate (DMF)	624-49-7	210-849-0

Table 5-A22 Specified Benzotriazol

SEI's regulation contents (contents, application)	Major regulations		
Prohibiting intentional use	<ul style="list-style-type: none"> • REACH Substance of Very High Concern (SVHC, candidate list, EU) • Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (CSCL, Class I Specified Chemical Substance, JPN) 		
Chemical formula	Substance name	CAS RN	EC No.
C ₆ H ₄ N ₃ -C ₆ (C ₄ H ₉) ₂ OH	2-(Benzotriazol-2-yl)-4,6-di-tert-butylphenol	3846-71-7	223-346-6

Table 5-A23 CSCL, Class I Specified Chemical Substance, JPN

(Excluding substances/substance-groups which have been described in other sub-table of Table 5)*¹⁶

SEI's regulation contents (contents, application)	Major regulations			
Prohibiting intentional use	<ul style="list-style-type: none"> • Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (CSCL, Class I Specified Chemical Substance, JPN) 			
Chemical formula	Substance name	CAS RN	EC No.	MITI No. (JPN)
C ₆ Cl ₆	Hexachlorobenzene	118-74-1	204-273-9	3-76
C ₁₂ H ₈ Cl ₆	1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-exo-1,4-end-5,8-dimethanonaphthalene (Synonym: Aldrin)	309-00-2	206-215-8	4-303
C ₁₂ H ₈ Cl ₆ O	1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-exo-1,4-end-5,8-dimethanonaphthalene (Synonym: Dieldrin)	60-57-1	200-484-5	4-299
	1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-end-1,4-end-5,8-dimethanonaphthalene (Synonym: Endrin)	72-20-8	200-775-7	
C ₁₄ H ₉ Cl ₅	1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane (Synonym: DDT)	50-29-3	200-024-3	4-910
C ₁₀ H ₆ Cl ₈	1,2,4,5,6,7,8,8-Octachloro-2,3,3a,4,7,7a-hexahydro-4,7-methano-1H-indene (Synonym: Chlordane) and its analogous compounds	57-74-9, 5103-71-9, 5103-74-2, 5566-34-7, 12789-03-6	200-349-0	4-637
C ₁₀ H ₅ Cl ₇	1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene (Synonym: Heptachlor) and its analogous compounds	76-44-8	200-962-3	9-1646
C ₁₀ H ₆ Cl ₆ O	1,8,9,10,11,11-Hexachloro-4-oxatetracyclo [6.2.1.0(2,7).0(3,5)] undec-9-ene (Synonym: Chlordene epoxide) and its analogous compounds	6058-23-7	–	–

Table 5-A23 CSCL, Class I Specified Chemical Substance, JPN (cont.)

Chemical formula	Substance name	CAS RN	EC No.	MITI No. (JPN)
C ₁₀ H ₄ Cl ₈ O	rel-(1aR,1bS,2R,5S,5aR,6S,6aS)-2,3,4,5,6,6a,7,7-Octachloro-1a,1b,5,5a,6,6a-hexahydro-2H-2,5-methanoindeno[1,2-b]oxirene (Synonym: Oxychlordan) and its analogous compounds	27304-13-8	690-387-8	—
C ₁₀ H ₆ Cl ₆	rel-(1R,4S,7S,8S,9S)-2,3,4,5,6,9-Hexachlorotricyclo [5.2.1.0(4,8)] deca-2,5-diene (Synonym: beta-Chlordene), rel-(1R,4S,7S,8S,10S)-2,3,4,5,6,10-Hexachlorotricyclo [5.2.1.0(4,8)] deca-2,5-diene (Synonym: gamma-Chlordene), and their analogous compounds	56534-03-3, 56641-38-4	—	—
C ₆ H ₄ (NH-C ₆ H ₄ CH ₃) ₂	N,N'-Ditolyl-p-phenylenediamine	620-91-7, 15017-02-4, 27417-40-9	634-710-2	3-146 3-365 4-332
C ₆ H ₄ CH ₃ -NH-C ₆ H ₄ -NH-C ₆ H ₃ (CH ₃) ₂	N-tolyl-N'-xylyl-p-phenylenediamine	70290-05-0	—	3-146
C ₆ H ₄ (NH-C ₆ H ₃ (CH ₃) ₂) ₂	N,N'-Bis(dimethylphenyl)-1,4-phenylenediamine	28726-30-9	—	3-146
C ₆ H ₂ (C ₄ H ₉) ₃ OH	2,4,6-tri-tert-butylphenol	732-26-3	211-989-5	3-540
C ₁₀ H ₈ Cl ₈	Polychloro-2,2-dimethyl-3-methylidenebicyclo[2.2.1]heptane (Synonym: Toxaphene)	8001-35-2	232-283-3	—
C ₁₀ Cl ₁₂	Dodecachloropentacyclo[5.3.0.0(2,6).0(3,9).0(4,8)]decane (Synonym: Mirex)	2385-85-5	219-196-6	—
(C ₆ H ₄ Cl) ₂ C(OH)CCl ₃	2,2,2-trichloro-1,1-bis(4-chlorophenyl)ethanol (Synonym: Kelthane or Dicofol)	115-32-2	204-082-0	4-226
(C ₆ H ₄ Cl) ₂ C(OH)CCl ₃	2,2,2-trichloro-1-(2-chlorophenyl)-1-(4-chlorophenyl)ethanol (Synonym: o,p'-dicofol)* ¹⁷	10606-46-9	—	—
(CCl=CCl) ₂	Hexachlorobuta-1,3-diene	87-68-3	201-765-5	2-121
C ₈ F ₁₇ S(=O) ₂ F	Perfluoro(octane-1-sulfonyl) fluoride (Synonym: PFOSF)	307-35-7	206-200-6	2-2803
C ₆ HCl ₅	Pentachlorobenzene	608-93-5	210-172-0	3-76
(CHCl) ₆	r-1,c-2,t-3,c-4,t-5,t-6-Hexachlorocyclohexane (Synonym: alpha-Hexachlorocyclohexane)	319-84-6	206-270-8	3-2250, 9-1652
	r-1,t-2,c-3,t-4,c-5,t-6-Hexachlorocyclohexane (Synonym: beta-Hexachlorocyclohexane)	319-85-7	206-271-3	
	r-1,c-2,t-3,c-4,c-5,t-6-Hexachlorocyclohexane (Synonym: gamma-Hexachlorocyclohexane or Lindane)	58-89-9	200-401-2	
C ₁₀ Cl ₁₀ O	Decachloropentacyclo[5.3.0.0(2,6).0(3,9).0(4,8)]decan-5-one (Synonym: Chlordecone)	143-50-0	205-601-3	-

*16: The list of the latest Class I Specified Chemical Substances (JPN) is available in English with following URL.
http://www.safe.nite.go.jp/jcheck/list6.action?category=211&request_locale=en

*17: Will be added as a Class 1 Specified Substance subject to the Chemical Substance Control Law in April 2021.

Table 5-A24 Substances Prohibited for Manufacturing under Industrial Safety & Health Act (JPN)*18

SEI's regulation contents (contents, application)		Major regulations		
Prohibiting intentional use		• Paragraph 1 of Article 16 of Order for Enforcement of Industrial Safety and Health Act (JPN)		
Chemical formula	Substance name	CAS RN	EC No.	Item No. of the Act*13
P ₄	Yellow phosphorus matches	7723-14-0, 12185-10-3	231-768-7	(i)
(C ₆ H ₄ NH ₂) ₂	Benzidine and its salts	92-87-5	202-199-1	(ii)
C ₆ H ₅ -C ₆ H ₄ NH ₂	4-aminodiphenyl and its salts	92-67-1	202-177-1	(iii)
C ₆ H ₅ -C ₆ H ₄ NO ₂	4-nitrodiphenyl and its salts	92-93-3	202-204-7	(v)
(CH ₂ Cl) ₂ O	Bis (chloromethyl) ether	542-88-1	208-832-8	(vi)
C ₁₀ H ₇ NH ₂	Beta-naphthylamine and its salts	91-59-8, 612-52-2	202-080-4, 210-313-6	(vii)
C ₆ H ₆	Gum containing benzene, in which the volume of contained benzene exceeds 5 % of the solvent (including diluents) of the said gum	71-43-2, 1076-43-3, 26181-88-4	200-753-7	(viii)
Preparations and other substances containing the substances listed in items (ii), (iii) or (v) to (vii) exceeding 1 % of the weight of the said preparations and other substances, or containing asbestos exceeding 0.1% of the weight of the said preparations and other substances.				(ix)

*18: As the item No. (iv) is asbestos and already specified in the table 5-A16, this table doesn't cover it.

Table 5-B01 Volatile organic compounds (Class I Specified Hazardous Substances under the Soil Contamination Countermeasures Act (JPN))

SEI's regulation contents (contents, application)		Major regulations	
Prohibiting intentional use and refusing contamination exceeding over 1 weight percent in supplied goods to us.		• Volatile organic compounds (VOCs) among the designated Class I specified hazardous substances under the Soil Contamination Countermeasures Act (JPN)	
Chemical formula	Substance name	CAS RN	EC No.
CH ₂ =CHCl	Chloroethylene (Synonym: vinyl chloride or vinyl chloride monomer)	75-01-4	200-831-0
CCl ₄	Tetrachloromethane (Synonym: methylene chloride)	56-23-5	200-262-8
CH ₂ =CCl ₂	1,1-Dichloroethylene (Synonym: vinylidene chloride)	75-35-4, 9002-85-1, 25323-30-2	200-864-0, 920-418-5
CHCl=CHCl	1,2-Dichloroethylene	540-59-0 156-59-2 (cis form) 156-60-5 (trans form)	208-750-2 205-859-7 205-860-2
CHCl=CCl ₂	Trichloroethylene	79-01-6	201-167-4
CCl ₂ =CCl ₂	Tetrachloroethylene	127-18-4	204-825-9
(CH ₂ Cl) ₂	1,2-Dichloroethane	107-06-2	203-458-1
CH ₃ -CCl ₃	1,1,1-Trichloroethane	71-55-6	200-756-3
CHCl ₂ -CH ₂ Cl	1,1,2-Trichloroethane	79-00-5	201-166-9
CHCl=C ₂ H ₃ Cl	1,3-Dichloropropene (Synonym: D-D)	542-75-6 10061-01-5 (Z form) 10061-02-6 (E form)	208-826-5 233-195-8 431-460-4
C ₆ H ₆	Benzene	71-43-2	200-753-7

Table 6 Terms & definitions

Terms	Definition
Prohibited substances	Chemical substances that suppliers shall guarantee that goods to supply to us don't contain those substances in principle. Those were designated as restricted substances of RoHS (EU), restricted substances of REACH (EU), Class I Specified Chemical Substances of the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture (JPN), substances prohibited manufacturing under Industrial Safety & Health Act (JPN), etc., and were considered as chemical substances liable to be contained to range of applications of supplied goods to us and our products.
Controlled substances	Chemical substances in which suppliers shall disclose us the information of the substances (existence of the substance, containing amount, containing part, application, etc.) concerning the goods to supply to us in principle. These are specified in Table 2 of this standard.
Complete abolition substances	Chemical substances that suppliers shall not use in their manufacturing processes of goods which are supplied to us. Those are designated as ozone depletion substances by the Montreal Protocol and "JPN Act on the Protection of the Ozone Layer Through the Control of Specified Substances and Other Measures," and are specified in Table 3 of this standard.
Intentional use (blending)	It is an action intentionally blending or adding the substance to obtain certain characteristics, appearance, identification or productivity in manufacturing process of goods, components, etc.
Unintentional containing	It is a status that goods contain the substance due to an unintentional cause, such as impurities, sub-delivered substances of chemical reaction, decomposed substances, residual monomer of polymer, etc.
Impurities	It is a substance which is originally contained in natural material or is unintentionally generated in process of chemical reaction and is unable to remove with refining process.
Dry state	It is a state that a flowable material including the substance becomes to solid equivalent to a condition for normal use by evaporating solvent (organic, water, etc.), curing with catalyst, hydrating with water, etc.