

# Sumitomo Electric Group Standards for Chemical Substance Management

**Ver 6.0a Jan. 2025**

# Sumitomo Electric Industries, Ltd.

# Sumitomo Electric Group Standards for Chemical Substance Management

Safety & Environment Department  
Sumitomo Electric Industries, Ltd.

This standard is an annex to the “Sumitomo Electric Group Guidelines for Green Quality Purchases” and specifies “Prohibited substances,” “Controlled substances,” and “Complete abolition substances,” including due dates for complete abolition and cases exempt from such restrictions, in the following tables. As essential requirements for supplying goods to Sumitomo Electric Group (hereinafter SEG), suppliers shall guarantee that no “Prohibited substances” are included, disclose information regarding the inclusion of “Controlled substances,” and guarantee no “Complete abolition substances” are included throughout their 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

In SEG, chemical substances subject to control are classified into four control ranks. For reference, the four control ranks are summarized in 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 SEG, 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 SEG 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 SEG, it is needed to pay attention.

Understanding and cooperation on this standard would be highly appreciated.

## &lt;Revision History&gt;

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

The history before the version 1.0 is archived in “SEG 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"> <li>• Adding definitions of terms such as “Prohibited Substances,” “Controlled Substances,” etc.</li> <li>• Deleting exemptions of each legal regulation and substituting with references of relating legal regulations instead.</li> <li>• 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.</li> <li>• Adding missing footnotes.</li> <li>• Substance group of “PCBs and PCTs” was divided into two independent groups, “PCBs” and “PCTs.”</li> <li>• “Specific benzotriazole” was added to the list of prohibited substance as A21 of the rank A substances. (Table 5-A21)</li> <li>• Class I Specified Chemical Substances under the Act on the Regulation of Manufacture and Evaluation of Chemical Substances (Chemical Substances Control Law: CSCL, JPN) and Substances Prohibited for Manufacturing under the Industrial Safety and Health Act (JPN) were changed from controlled substances to prohibited substances. (Tables 5-A22 &amp; -A23)</li> <li>• Added definitions of terms.</li> <li>• For details of the changes, refer to the attached “Changes in the Standard for Chemical Substance Management from Ver. 1.0 to Ver. 2.0.”</li> </ul> <p>(Ver.2.0 → Ver.2.0a)</p> <ul style="list-style-type: none"> <li>• Changing the title of A07 from “Dibutyltin compounds” to “Dibutyltin compounds &amp; Dioctyltin compounds” for adding dioctyltin compounds as the prohibited substances.</li> <li>• 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).</li> </ul>	
Ver. 3.0a	Document ID No.	Date of issue
	E19-001	Apr. 10, 2019
Contents & grounds	<ul style="list-style-type: none"> <li>• Annexed Table 1-1. Added four specific phthalates as A16 to control rank A (prohibiting inclusion in single substances, mixtures, and articles), and renumbered the subsequent numbers.</li> <li>• 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 &amp; 2 are accordingly renewed.</li> <li>• Annexed Table 2-2. The materials from the Ministry of the Environment in Note 8 (*8) were replaced with the relevant regulations: “Act on Promotion of Global Warming Countermeasures” and “Order for Enforcement of the Act on Promotion of Global Warming Countermeasures,” including a link.</li> <li>• Annexed Table 4. Rank C controlled substances were changed to “Declarable Substances of chemSHERPA,” and the criteria for providing composition information were made equivalent to those of the “Rules on the Use of Information on Chemicals in Products Under the chemSHERPA.” In addition, the content of Note 10 (*10) was changed.</li> <li>• Annexed Table 5-A1 and A4. “Dir. 2013/56/EU on batteries and accumulators (EU)” was added side by side to “Dir. 2006/66/EC on batteries and accumulators (EU)” under Major regulations.</li> <li>• Annexed Tables 5-A01 to A04, A08, and A09. The description of the “Law for Promotion of Effective Utilization of Resources (J-Moss) under Major regulations was changed to “J-MOSS (JIS C 0950)” to match the other descriptions.</li> <li>• Annexed Tables 5-A2 to A4, and A13. Descriptions of EC Nos. were added to some of the listed substances.</li> <li>• Annexed Table 5-A03. Trilead bis(carbonate) dihydroxide (CAS RN 13009-77-3) was deleted because it was deleted from CAS RN.</li> <li>• Annexed Table 5-A04. Mercury(II) dichloride (CAS RN.33631-63-9) was deleted because the relevant material and CAS RN did not match.</li> <li>• Annexed Table 5-A12. The number of chlorine atoms was revised to “(limited to those containing at least two chlorine atoms)” in accordance with the revision of the Chemical Substances Control Law (JPN).</li> <li>• Annexed Table 5-A16. Four phthalates that fall under controlled substance A16 were added as A16, and the subsequent table numbers were renumbered.</li> <li>• Annexed Table 5-A19. The order of the description, substance name, and CAS RN were reviewed in accordance with the contents of the Montreal Protocol.</li> </ul> <p>(Ver. 3.0 → Ver. 3.0a)</p>	

Ver. 4.0	Document No.	Date of Release
	E20-018	February 1, 2021
Revisions and Their Reasons	<ul style="list-style-type: none"> <li>Annexed Table 1-1. Perfluorooctanoic acid (PFOA) and its salts, and PFOA-related substances have been added to control rank A (prohibiting containing to single substance, mixtures and assembly) as A15, and the following numbers have been renumbered.</li> <li>Annexed Table 1-2. The substances in control rank B (prohibiting containing to single substance and mixtures) have been changed from chlorinated volatile organic compounds to Class 1 Specified Substances subject to the Soil Contamination Countermeasures Act (JPN).</li> <li>Annexed Table 2-1. Following the revision of the target standards of chemSHERPA, “EU (Medical Device Regulation (MDR)) (EU) 2017/745 Annex I 10.4 Chemical Substances” has been added to control rank C (needing information of containing for single substance, mixtures and articles).</li> <li>Annexed Table 2-1. 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.</li> <li>Annexed Table 2-2. The “Specified substances under the Ozone Layer Protection Law (JPN)” have been added to control rank D (needing information of containing for single substance and mixtures), and together with the “Greenhouse gases specified under the Act on Promotion of Global Warming Countermeasures (JPN),” have been classified under D02.</li> <li>Annexed Table 2-2. 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).</li> <li>Annexed Table 3. Complete abolition substances in manufacturing process has been re-edited and the exemption has been updated.</li> <li>Annexed Table 4. JAMP MSDSplus/AIS has been deleted from Note 10 (*10), and JAMA/JAPIA has been changed to JAPIA integrated data sheets.</li> <li>Annexed 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.</li> <li>Annexed 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.”</li> <li>Annexed Table 5-A06. The substances listed as tri-substituted organotin substances (tributyltins (TBTs), triphenyltin chlorides (TPTs), etc.) have been reviewed. Two substances, bis(tributan-1-ylstannyl)=but-2-enedioate (CAS RN 24291-45-0) and bis(tributyltin)= 2,3- dibromosuccinate (CAS RN 56323-17-2) have been added, and CAS RN 7342-38-3 has been deleted from tributyltin=chloride.</li> <li>Annexed Table 5-A10. The table has been changed to “Polychlorobiphenyls (PCBs) and specified substitutes” to square with the actual conditions.</li> <li>Annexed Table 5-A15. “Perfluorooctanoic acid (PFOA) and its salts, and PFOA-related substances” have been added as A15, listing eight substances and their salts, and other related substances, and the following numbers have been renumbered.</li> <li>Annexed Table 5-A19. Following a revision of the Montreal Protocol, A19 “Ozone-Depleting Substances” has been modified as follows: 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)</li> <li>Annexed Table 5-A23. The following substance has been added to A23 “Class 1 Specified Substance subject to the Chemical Substances Control Law (JPN).” 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 Substances Control Law in April 2021” has been added as Note 17 (*17).</li> <li>Annexed Table 5.-B01 “Volatile organic compounds (Class 1 Specified Substances under the Soil Contamination Countermeasures Act (JPN))” 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 product appended. The CAS RNs of the Z product and E product have been appended to 1,3-Dichloropropene (Synonym: D-D). Benzene (CAS RN 71-43-2) has been added.</li> </ul>	

Ver. 5.0	Document No.	Date of Release
	E23-054	February 19, 2024
Revisions and Their Reasons	<ul style="list-style-type: none"> <li>Annexed Table 1-1. Perfluorohexanesulfonic acid (PFHxS) and its salts have been added to control rank A (prohibiting inclusion in single substances, mixtures, and articles) as A16, and the subsequent numbers were renumbered.</li> <li>Annexed Table 2-1. Following the revision of the target standards of chemSHERPA, “China Administrative Measures on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Products (China RoHS)” was added to control rank C (requiring information on inclusion for single substances, mixtures, and articles).</li> <li>Annexed Table 3. A description was added above the table, and “Refrigerants for air conditioners, etc. (only C-I)” was removed from Exemptions in response to the agreement on complete abolition of HCFC (C-I) in 2020.</li> <li>Annexed Tables 5-A1 and A4. Major regulations were changed to “Reg (EU)2023/15422006/66/EC (EU battery regulation).”</li> <li>Annexed Table 5-A14. “POPs” was deleted from Major regulations, and “POPs Regulation (EU)” was added to Major regulations.</li> <li>Annexed Table 5-A15. “Chemical Substances Control Law (Class I Specified Chemical Substances)” was added to Major regulations, while POPs Regulation was deleted from Major regulations. The regulation content was changed to “Prohibiting intentional use”<sup>*12</sup>.</li> <li>Annexed Tables 5-A23 and A24. <sup>*12</sup> was added to “Prohibiting intentional use” under the regulation content.</li> <li>Annexed Table 5-A24. The following three substances were added to the Chemical Substances Control Law, Class I Specified Chemical Substance, JPN. <ul style="list-style-type: none"> <li>Methoxy-[2,2,2-trichloro-1-(methoxyphenyl)ethyl]benzene (Synonym: Methoxychlor)</li> <li>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-1,4,7,10-dimethanodibenzo[a,e][8]annulene (Synonym: Dechlorane Plus)</li> <li>2-(2H1,2,3-Benzotriazol-2-yl)-4,6-bis(2-Methylbutan-2-yl) phenol (Synonym: UV-328)</li> </ul> </li> </ul> <p>“Will be added as a Class I Specified Chemical Substance subject to the Chemical Substances Control Law in April 2024 or later” was added as Note 17 (<sup>*17</sup>).</p>	
Ver. 6.0a	Document No.	Date of Release
	E24-042	January 20, 2025
Revisions and Their Reasons	<ul style="list-style-type: none"> <li>Annexed Table 1-1. “Non-approved active substances and active substances with non-approved uses under the European Biocidal Products Regulation (BPR)” was added as A26 to Table 1-1 Rank A Prohibited Substances (Prohibiting containing to single substance, mixtures and articles).</li> <li>Annexed Table 5-A15. 159 substances were added as PFOA-related substances to Table 5-A15 Perfluorooctanoic acid (PFOA) and its salts, and PFOA-related substances.</li> <li>Annexed Table 5-A24. Note <sup>*17</sup> was added to the following three substances listed in Table 5-A24 CSCL, Class I Specified Chemical Substance, JPN was deleted and the subsequent notes were renumbered accordingly since a Cabinet Order for the Partial Revision of the Order for Enforcement of the Act on the Regulation of Manufacture and Evaluation of Chemical Substances related to these substances was promulgated on December 18, 2024: <ul style="list-style-type: none"> <li>Methoxy-[2,2,2-Trichloro-1-(methoxyphenyl)ethyl]benzene (Synonym: Methoxychlor)</li> <li>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-1,4,7,10-dimethanodibenzo[a,e][8]annulene (Synonym: Dechlorane Plus)</li> <li>2-(2H-Benzotriazol-2-yl)-4,6-bis(2-Methylbutan-2-yl) phenol (Synonym: UV-328)</li> </ul> </li> <li>Annexed Table 5-A26. Table 5-A26 Non-approved Active Substances and Active Substances with Non-approved Uses Under the European Biocidal Products Regulation has been newly established and a link to a website providing information on active substances was included as note <sup>*18</sup>.</li> </ul> <p>(Changes from Ver 6.0 to Ver 6.0a).</p> <ul style="list-style-type: none"> <li>Deletion of duplicate lines Page 16/30 Table 5-A15 Deletion of lines 9 to 11.</li> </ul>	

(For the past revision history (Ver. 2.0 or before), see “Sumitomo Electric Group Guidelines for Green Quality Purchases.”)

**Table 1. Prohibited substances**

The prohibited substances of SEG are aggregated in Tables 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 a local legal 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)**

No.	Classification	Name of substance / series of substances	Detail of substance
A01	Metals and Metallic compounds	Cadmium and its compounds	Table 5-A01
A02		Hexavalent chromium (chromium(VI), Cr(VI), chromium 6) compounds	Table 5-A02
A03		Lead and its compounds	Table 5-A03
A04		Mercury and its compounds	Table 5-A04
A05		Bis(tributyltin)oxide	Table 5-A05
A06		Tri-substituted organostannic compounds (such as TBTs, TPTs, etc.)	Table 5-A06
A07		Dibutyltin (DBT) and Dioctyltin (DOT) compounds	Table 5-A07
A08	Halogenated organic compounds	Polybrominated biphenyls (PBBs)	Table 5-A08
A09		Polybrominated diphenyl ethers (PBDEs)	Table 5-A09
A10		Polychlorobiphenyls (PCBs) and specified substitutes	Table 5-A10
A11		Polychlorinated terphenyls (PCTs)	Table 5-A11
A12		Polychlorinated naphthalenes (PCNs, excluding C <sub>10</sub> H <sub>7</sub> Cl)	Table 5-A12
A13		C <sub>10</sub> –C <sub>13</sub> Polychloro-n-alkanes (PCAs, SCCPs)	Table 5-A13
A14		Perfluorooctane sulfonic acid (PFOS) and its salts	Table 5-A14
A15		Perfluorooctanoic acid (PFOA) and its salts, and PFOA-related substances	Table 5-A15
A16		Perfluorohexanesulfonic acid (PFHxS) and its salts	Table 5-A16
A17	Others	Specific phthalates (DEHP, BBP, DBP & DIBP)	Table 5-A17
A18		Asbestos	Table 5-A18
A19		Azo dyes liberating specific toxic & carcinogenic amines. (only for textiles and leather)	Table 5-A19
A20		Ozone-Depleting Substances (Details of Table 3 “Complete Abolition Substances”)	Table 5-A20
A21		Radioactive isotopes	Table 5-A21
A22		Dimethyl fumarate (DMF)	Table 5-A22
A23		Specified Benzotriazol	Table 5-A23
A24		Substances/substance groups specified as Class I Specified Chemical Substances under the Chemical Substances Control Law (JPN) that are not listed as specified substances/substance groups in Annexed Table 1 of this Standard	Table 5-A24
A25		Substances/substance groups specified as substances prohibited for manufacturing under the Industrial Safety and Health Act (JPN) that are not specified as Rank A substances. (Substances specified in Industrial Safety and Health Act Cabinet Order Article 16, paragraph 1)	Table 5-A25
A26		Non-approved active substances and active substances with non-approved uses under the European Biocidal Products Regulation (BPR)	Table 5-A26

**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)	See Table 5-B01

**Table 2. Controlled substances**

The controlled substances of SEG 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 *2	Class I Specified Chemical Substances under the Chemical Substances Control Law (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 in the Candidate List of Substances of Very High Concern (SVHC) for Authorisation and ANNEX XIV (List of substances subject to authorisation) of EU Regulation EC (No.) 1907/2006 (Registration, Evaluation, Authorisation and Restriction of Chemicals: REACH)*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)	
		China Administrative Measures on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Products (China RoHS)	
		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 have been revised in accordance with amendments of relevant regulations and their annexes. When checking substances to be supplied to us, please utilize the latest version of the “Data Entry Support Tool (chemSHERPA-CI/-AI).” The list of declarable substance groups and substances can be obtained from the following URL.

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

\*2: Substances such as Class I Specified Chemical Substances under the Chemical Substances Control Law (CSCL, JPN) are specified as declarable substances in chemSHERPA. However, in this Standard, all such substances belong to control rank A (prohibiting inclusion in single substances, mixtures, and articles). Although “C01” is specified as “Declarable Substances of chemSHERPA” in Annexed Table 2-1, this does not mean that inclusion of substances of this rank into articles is approved.

\*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 the Assessment of Releases of Specified Chemical Substances in the Environment and the Promotion of Management Improvement (Pollutant Release and Transfer Register (PRTR) Law) (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)	

\*4: Need to declare information on inclusion by provision of an SDS.

\*5: Poisonous and Deleterious Substances Control Act (Ministry of Health, Labour and Welfare)  
Deleterious substances: [http://www.nihs.go.jp/law/dokugeki/eng\\_geki.html](http://www.nihs.go.jp/law/dokugeki/eng_geki.html)

\*6: Chemical substances subject to the SDS system under the Act on the Assessment of Releases of Specified Chemical Substances in the Environment and the Promotion of Management Improvement (Ministry of Economy, Trade and Industry)  
[https://www.nite.go.jp/en/chem/chrip/chrip\\_search/intSrhSpLst?\\_e\\_trans=&slScNm=RJ\\_02\\_002](https://www.nite.go.jp/en/chem/chrip/chrip_search/intSrhSpLst?_e_trans=&slScNm=RJ_02_002)

\*7: Dangerous Articles and Harmful Substances Whose Names, etc. Should Be Indicated (Substances Subject to Notice) under the Industrial Safety and Health Act (Ministry of Health, Labour and Welfare)  
[https://www.nite.go.jp/en/chem/chrip/chrip\\_search/intSrhSpLst?\\_e\\_trans=&slScNm=RJ\\_04\\_021](https://www.nite.go.jp/en/chem/chrip/chrip_search/intSrhSpLst?_e_trans=&slScNm=RJ_04_021)

\*8: Ministry of the Environment, Greenhouse Gas Emissions Calculation, Reporting and Publication System.  
Related regulations: Article 2, paragraph 3 of the “Act on Promotion of Global Warming Countermeasures”  
Articles 2 and 3 of the “Order for Enforcement of the Act on Promotion of Global Warming Countermeasures”  
<https://ghg-santeikohyo.env.go.jp/law>

\*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/ozone/files/outline/Annex\\_F.pdf](https://www.meti.go.jp/policy/chemical_management/ozone/files/outline/Annex_F.pdf)

**Table 3. Complete abolition substances in manufacturing process**

Substances required by SEG to be completely abolished from manufacturing processes are listed in Annexed Table 3. All of these substances are listed in Annexes A to C and E of the Montreal Protocol as specified substances under the Act on the Protection of the Ozone Layer Through the Control of Specified Substances, etc. and Other Measures (JPN). Accordingly, their use in the manufacturing processes of products supplied to SEG is prohibited.

No.	Substance group	Substance group of Montreal Protocol	Exemption
1	Chlorofluorocarbons (CFCs)	A-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- II	
5	1,1,1-trichloroethane	B-III	
6	Hydrochlorofluorocarbons (HCFCs)	C-I	
7	Hydrobromofluorocarbons (HBFCs)	C-II	
8	Bromochloromethane	C-III	
9	Methyl bromide	E-I	



**Table 4. Criteria for providing composition information**

(Cited from “chemSHERPA Rules on the Use [Version 1.5].” “chemSHERPA” is a scheme sharing information on chemical substances in products. <https://chemsherpa.net/chemSHERPA/english/doc/>)\*<sup>10</sup>

- ☐ 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 0.1 wt% 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 0.1 wt%	Equal to or greater than allowable concentration under Regulations	Requires providing composition information, including declarable substances.
		Equal to or greater than 0.1 wt% 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 0.1 wt% of chemSHERPA’s voluntary criteria	Not required to provide composition information on declarable substances. Optional reporting.
	Prescribed threshold is equal to or below 0.1 wt%	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 0.1 wt% of chemSHERPA’s voluntary criteria	Provide composition information including declarable substances, in line with voluntary criteria under chemSHERPA.
		Below 0.1 wt% 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 Chemical Substances Control Law (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**

SEG's regulation contents		Major regulations
Contents	Application	
Concentration shall not exceed 100 ppm.* <sup>11</sup>	Packaging or packaging components	<ul style="list-style-type: none"> <li>• Dir. 94/62/EC on packaging and packaging waste (EU)</li> <li>• Dir. 2004/12/EC on packaging and packaging waste, revised (EU)</li> </ul>
Prohibiting containing more than 20 ppm by weight.	Portable batteries or accumulators, including those incorporated into appliances	<ul style="list-style-type: none"> <li>• Reg. (EU)2023/1542 (EU battery regulation)</li> </ul>
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"> <li>• JIS C 0950 (J-MOSS, JPN)</li> <li>• EU RoHS directive, ELV directive</li> <li>• Testing methods for hazardous substances in electronic information products (China RoHS, CHN)</li> <li>• The Act for Resource Recycling of Electrical and Electronic Equipment and Vehicles (Korea RoHS, KOR)</li> </ul>
Substance name		CAS RN
Cadmium		7440-43-9
Cadmium oxide		1306-19-0
Cadmium sulfide		1306-23-6
Cadmium chloride		10108-64-2
Cadmium sulfate		10124-36-4
Other Cadmium compounds		-

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

SEG's regulation contents		Major regulations
Contents	Application	
Concentration shall not exceed 100 ppm.* <sup>7</sup>	Packaging or packaging components	<ul style="list-style-type: none"> <li>• Dir. 94/62/EC on packaging and packaging waste (EU)</li> <li>• Dir. 2004/12/EC on packaging and packaging waste, revised (EU)</li> </ul>
No more than 1000 ppm by weight	Other goods.	<ul style="list-style-type: none"> <li>• JIS C 0950 (J-MOSS, JPN)</li> <li>• EU RoHS directive, ELV directive</li> <li>• Testing methods for hazardous substances in electronic information products (China RoHS, CHN)</li> <li>• The Act for Resource Recycling of Electrical and Electronic Equipment and Vehicles (Korea RoHS, KOR)</li> </ul>
Substance name	EC No.	CAS RN
Chromium(VI) oxide	215-607-8	1333-82-0
Barium chromate(VI)	233-660-5	10294-40-3
Calcium chromate(VI)	237-366-8	13765-19-0
Lead(II) chromate(VI)	231-846-0	7758-97-6
Lead chromate molybdate sulfate red(C.I. Pigment Red 104)	235-759-9	12656-85-8
C.I. Pigment yellow 34 (Lead sulfochromate yellow, etc.)	215-693-7	1344-37-2
Sodium chromate(VI)	231-889-5	7775-11-3

(Continued from Annexed Table 5-A02) Substance name	EC No.	CAS RN
Sodium dichromate(VI)	234-190-3	10588-01-9
Strontium chromate(VI)	232-142-6	7789-06-2
Potassium dichromate(VI)	231-906-6	7778-50-9
Potassium chromate	232-140-5	7789-00-6
Zinc chromate	236-878-9	13530-65-9
Other hexavalent chromium compounds	-	-

**Table 5-A03 Lead and its compounds**

SEG's regulation contents		Major regulations
Contents	Application	
Concentration shall not exceed 100 ppm.* <sup>11</sup>	Packaging or packaging components	<ul style="list-style-type: none"> <li>• Dir. 94/62/EC on packaging and packaging waste (EU)</li> <li>• Dir. 2004/12/EC on packaging and packaging waste, revised (EU)</li> </ul>
Prohibiting intentional use and refusing contamination exceeding over 300 ppm in weight.	Most outer jacket of electric wire	<ul style="list-style-type: none"> <li>• The Safe Drinking Water and Toxic Enforcement Act (Proposition 65, California, US)</li> </ul>
No more than 1000 ppm by weight.	Other goods.	<ul style="list-style-type: none"> <li>• JIS C 0950 (J-MOSS, JPN)</li> <li>• EU RoHS directive, ELV directive</li> <li>• Testing methods for hazardous substances in electronic information products (China RoHS, CHN)</li> <li>• The Act for Resource Recycling of Electrical and Electronic Equipment and Vehicles (Korea RoHS, KOR)</li> </ul>
Substance name	EC No.	CAS RN
Lead	231-100-4	7439-92-1
Lead(II) sulfate	231-198-9	7446-14-2
Lead carbonate	209-943-4	598-63-0
Lead(II) chromate	231-846-0	7758-97-6
Lead chromate molybdate sulphate red	235-759-9	12656-85-8
Lead hydrocarbonate	215-290-6	1319-46-6
Lead acetate	206-104-4	301-04-2
Lead(II) acetate trihydrate	612-031-2	6080-56-4
Lead phosphate	231-205-5	7446-27-7
Lead selenide	235-109-4	12069-00-0
Lead(IV) dioxide	215-174-5	1309-60-0
Lead (II,IV) oxide	215-235-6	1314-41-6
Lead(II) sulfide	215-246-6	1314-87-0
Lead (II) oxide	215-267-0	1317-36-8
Lead(II) carbonate basic	215-290-6	1319-46-6
Lead(II) phosphate	231-205-5	7446-27-7
C.I. Pigment yellow 34	215-693-7	1344-37-2
Lead(II) titanate	235-038-9	12060-00-3
Lead sulfate	239-831-0	15739-80-7
Lead tribasic sulphate	235-380-9	12202-17-4
Lead distearate	214-005-2	1072-35-1
Other lead compounds	-	-

**Table 5-A04 Mercury and its compounds**

SEG's regulation contents		Major regulations
Contents	Application	
Concentration shall not exceed 100 ppm.* <sup>11</sup>	Packaging or packaging components	<ul style="list-style-type: none"> <li>• Dir. 94/62/EC on packaging and packaging waste (EU)</li> <li>• Dir. 2004/12/EC on packaging and packaging waste, revised (EU)</li> </ul>
Prohibiting containing more than 5 ppm by weight.	Portable batteries or accumulators, including those incorporated into appliances	<ul style="list-style-type: none"> <li>• Reg. (EU)2023/1542 (EU battery regulation)</li> </ul>
No more than 1000 ppm by weight	Other goods.	<ul style="list-style-type: none"> <li>• JIS C 0950 (J-MOSS, JPN)</li> <li>• EU RoHS directive</li> <li>• Testing methods for hazardous substances in electronic information products (China RoHS, CHN)</li> <li>• The Act for Resource Recycling of Electrical and Electronic Equipment and Vehicles (Korea RoHS, KOR)</li> </ul>
Substance name	EC No.	CAS RN
Mercury	231-106-7	7439-97-6
Mercury(II) dichloride	231-299-8	7487-94-7
Mercury(II) sulfate	231-992-5	7783-35-9
Mercury(II) nitrate	233-152-3	10045-94-0
Mercury(II) oxide	244-654-7	21908-53-2
Mercury(II) sulfide	215-696-3	1344-48-5
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**

SEG's regulation contents (Contents and Application)		Major regulations
Prohibition of intentional use* <sup>12</sup>		<ul style="list-style-type: none"> <li>• Chemical Substances Control Law (CSCL, Class I Specified Chemical Substance, JPN)</li> <li>• REACH Regulation (Entry 20, Annex XVII, Restricted substances, EU)</li> </ul>
Substance name	EC No.	CAS RN
BiS (tributyltin) = oxide (TBTO)	200-268-0	56-35-9

\*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.

[Example: Transformer oil (< 0.5 ppm, in accordance with the Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes (PCB Special Measures Act)), organic pigment (< BAT level<sup>(Note)</sup> (Under consideration by the Ministry of Economy, Trade and Industry))

Other articles (< 50 ppm, in accordance with the Stockholm Convention on Persistent Organic Pollutants (POPs))

On the other hand, if inclusion is known and there is no threshold value, inclusion is prohibited.

(Note) An abbreviation of "Best Available Technology." The "BAT level" refers to the lowest concentration that can be achieved with the best technology that is currently available. It is used as a provisional concentration threshold for harmful impurities.

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

SEG's regulation contents	Major regulations
No more than 1000 ppm by weight of tin in the article, or part thereof.* <sup>13</sup>	<ul style="list-style-type: none"> <li>• CSCL, JPN (Class II Specified Chemical Substances)</li> <li>• EU REACH Regulation Annex XVII (restricted substances)</li> </ul>
Substance name	CAS RN
Triphenyltin N,N-dimethyldithiocarbamate	1803-12-9
Triphenyltin fluoride	379-52-2
Triphenyltin acetate	900-95-8
Triphenyltin chloride	639-58-7
Triphenyltin hydroxide	76-87-9
Triphenyltin fatty acid(C=9-11) ester	18380-71-7 18380-72-8 47672-31-1 94850-90-5
Triphenyltin chloroacetate	7094-94-2
Tributyltin methacrylate	2155-70-6
Bis(tributyltin) fumarate	6454-35-9
Bis(tributan-1-ylstannyl) maleate = but-2-enedioate	24291-45-0
Tributyltin fluoride	1983-10-4
Bis(tributyltin) 2,3-dibromosuccinate	31732-71-5 56323-17-2
Tributyltin acetate	56-36-0
Tributyltin laurate	3090-36-6
Bis(tributyltin) phthalate	4782-29-0
Copolymer of alkyl acrylate, methyl methacrylate, and tributyltin methacrylate(alkyl; C=8)	67772-01-4
Tributyltin sulfamate	6517-25-5
Bis(tributyltin) maleate	14275-57-1
Triisobutyltin chloride	1461-22-9
Mixture of tributyltin=cyclopentanecarboxylate and its analogous compounds (Tributyltin naphthenate)	85409-17-2
Mixture of tributyltin=1,2,3,4,4a,4b,5,6,10,10a-decahydro-7-isopropyl- 1,4a-dimethyl-1-phenanthrenecarboxylate and its analogous compounds (Tributyltin salt of rosin)	26239-64-5
Other tri-substituted organotin compounds (Note: This substance is prohibited based on the restrictions of the REACH regulation and is not targeted by the CSCL.)	—

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

SEG's regulation contents	Major regulations
No more than 1000 ppm by weight of tin in the article, or part thereof.* <sup>13</sup>	• REACH Regulation (Entry 20, Annex XVII, Restricted substances, EU)
Substance name	CAS RN
Dibutyltin oxide	818-08-6
Dibutyltin diacetate	1067-33-0
Dibutyltin dilaurate	77-58-7
Dibutyltin maleate	78-04-6
Other dibutyltin compounds	—
Dioctyltin oxide	870-08-6
Dioctyltin di (isooctyl thioglycolate)	26401-97-8
Dioctyltin maleate (DOTM)	16091-18-2
Dibutyltin di (isooctylthioglycolate)	25168-24-5
Other dioctyltin compounds	—

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

**Table 5-A08 Polybrominated biphenyls (PBBs)**

SEG's regulation contents	Major regulations
No more than 1000 ppm by weight	<ul style="list-style-type: none"> <li>• CSCL, JPN (Class I Specified Chemical Substances)</li> <li>• JIS C 0950 (J-MOSS, JPN)</li> <li>• EU RoHS directive</li> <li>• Testing methods for hazardous substances in electronic information products (China RoHS, CHN)</li> <li>• The Act for Resource Recycling of Electrical and Electronic Equipment and Vehicles (Korea RoHS, KOR)</li> </ul>
Substance name	CAS RN
Polybrominated biphenyls	59536-65-1
Dibromobiphenyl	92-86-4
2-Bromobiphenyl	2052-07-5
3-Bromobiphenyl	2113-57-7
4-Bromobiphenyl	92-66-0
Tribromobiphenyl	59080-34-1
Tetrabromobiphenyl	40088-45-7
Pentabromobiphenyl	56307-79-0
Hexabromobiphenyl	59080-40-9
Hexabromo-1,1'-biphenyl	36355-01-8
Firemaster FF-1	67774-32-7
Heptabromobiphenyl	35194-78-6
Octabromobiphenyl	61288-13-9
Nonabromo-1,1'-biphenyl	27753-52-2
Decabromobiphenyl	13654-09-6

**Table 5-A09 Polybrominated diphenyl ethers (PBDEs)**

SEG's regulation contents	Major regulations
No more than 1000 ppm by weight	<ul style="list-style-type: none"> <li>• CSCL, JPN (Class I Specified Chemical Substances)</li> <li>• JIS C 0950 (J-MOSS, JPN)</li> <li>• EU RoHS directive</li> <li>• Testing methods for hazardous substances in electronic information products (China RoHS, CHN)</li> <li>• The Act for Resource Recycling of Electrical and Electronic Equipment and Vehicles (Korea RoHS, KOR)</li> </ul>
Substance name	CAS RN
Bromodiphenyl ether	101-55-3
Dibromodiphenyl ether	2050-47-7
Tribromodiphenyl ether	49690-94-0
Tetrabromodiphenyl ether	40088-47-9
Pentabromodiphenyl ether (Note: Commercially available PeBDPO is a complex reaction mixture containing a variety of brominated diphenyl oxides.)	32534-81-9 (CAS RN used for commercial grades of PeBDPO)
Hexabromodiphenyl ether	36483-60-0
Heptabromodiphenyl ether	68928-80-3
Octabromodiphenyl ether	32536-52-0
Nonabromodiphenyl ether	63936-56-1
Decabromodiphenyl ether	1163-19-5

**Table 5-A10 Polychlorobiphenyls (PCBs) and specified substitutes**

SEG's regulation contents (contents, application)	Major regulations
Prohibiting intentional use* <sup>12</sup>	<ul style="list-style-type: none"> <li>• CSCL, JPN (Class I Specified Chemical Substances)</li> <li>• Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes</li> <li>• EU REACH Regulation Annex XVII (restricted substances)</li> </ul>
Substance name	CAS RN
Polychlorinated biphenyls (all isomers and homologs)	1336-36-3
(Dichlorophenyl)(dichlorotolyl)methane (Synonym; Ugilec 141)	76253-60-6
(Chlorophenyl)(chlortolyl)methane (Synonym; Ugilec 121, Ugilec 21)	81161-70-8
Monomethyl-dibromo-diphenyl methane (Synonym; DBBT )	99688-47-8

**Table 5-A11 Polychlorinated terphenyls (PCTs)**

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

**Table 5-A12 Polychlorinated naphthalenes ) (limited to those containing at least two chlorine atoms)**

SEG's regulation contents (contents, application)	Major regulations
Prohibiting intentional use* <sup>12</sup>	<ul style="list-style-type: none"> <li>• CSCL, JPN (Class I Specified Chemical Substances)</li> <li>• EU POPs Regulation</li> </ul>
Substance name	CAS RN
Polychlorinated naphthalenes (PCNs)	70776-03-3
Other polychlorinated naphthalenes	—

**Table 5-A13 Some short-chain chlorinated paraffins (carbon chain length of 10-13)**

SEG's regulation contents (contents, application)	Major regulations	
Prohibiting intentional use* <sup>12</sup>	<ul style="list-style-type: none"> <li>• CSCL, JPN (Class I Specified Chemical Substances)</li> <li>• EU REACH Regulation Annex XVII (restricted substances)</li> </ul>	
Substance name	EC No.	CAS RN
Chloroalkanes, C10-13	287-476-5	85535-84-8
Chloroalkanes, C10-12	600-857-6	108171-26-2
Chloroalkanes, C12-13	—	71011-12-6
Chloroalkanes	263-004-3	61788-76-9
Other short-chain chlorinated paraffins	—	—

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

SEG's regulation contents (contents, application)	Major regulations
Prohibiting intentional use <sup>*12</sup>	<ul style="list-style-type: none"> <li>• CSCL, JPN (Class I Specified Chemical Substances)</li> <li>• EU POPs Regulation</li> </ul>
Substance name	CAS RN
Perfluorooctane sulfonate (PFOS) C <sub>8</sub> F <sub>17</sub> SO <sub>3</sub> X (X is H, metal, ammonium, alkyl, or other derivatives)	—
Perfluorooctane sulfonic acid	1763-23-1
Potassium perfluorooctane-1-sulfonate	2795-39-3
Sodium perfluorooctane sulphonate	4021-47-0
Ammonium perfluorooctane sulfonate	29081-56-9
Lithium perfluorooctane sulfonate	29457-72-5
Tetraethylammonium perfluorooctane sulfonate	56773-42-3
Perfluorooctane sulfonic acid, compound with 2,2'-iminodiethanol (1:1)	70225-14-8
Piperidin-1-ium perfluorooctane-1-sulfonate	71463-74-6
Magnesium bis[perfluorooctanesulphonate]	91036-71-4
Didecan-1-yl(dimethyl)ammonium perfluorooctane-1-sulfonate	251099-16-8

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

SEG's regulation contents (contents, application)	Major regulations
<ul style="list-style-type: none"> <li>• Prohibiting intentional use<sup>*12</sup></li> </ul>	<ul style="list-style-type: none"> <li>• CSCL, JPN (Class I Specified Chemical Substances)</li> <li>• EU POPs Regulation</li> </ul>
Substance name	CAS RN
Perfluorooctanoic acid (PFOA)	335-67-1
Potassium salt of PFOA	2395-00-8
Sodium salt of PFOA	335-95-5
Ammoniumpentadecafluorooctanoate	3825-26-1
Silver salt of PFOA	335-93-3
Methylperfluorooctanoate	376-27-2
Ethylperfluorooctanoate	3108-24-5
Pentadecafluorooctyl fluoride	335-66-0
1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-Heptadecafluoro-8-iodooctane (Synonym: Perfluorooctyl iodide)	507-63-1
3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-Heptadecafluorodecan-1-ol (Synonyms: 8:2 Fluorotelomer alcohol, 2-(perfluorooctyl)ethanol)	678-39-7
Alkyl iodides, C4-20, γ-ω-perfluoro	68188-12-5
1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-Heptadecafluoro-10-iododecane	2043-53-0
3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-Heptadecafluoro-1-decene (Perfluoro-n-octyl)ethane	21652-58-4
Decane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-10-isocyanato-	77117-48-7
Thiocyanic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl ester	142010-50-2
Disulfide, bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)	26650-10-2
Octanamide, N-[3-(dimethyloxidoamino)propyl]-2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-	42977-21-9
N-[3-(Dimethylazinoyl)propyl]-3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecane-1-sulfonamide	30295-53-5
3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-Heptadecafluoro-N,N-dimethyldodecan-1-amine N-oxide	80475-33-8
Ethanaminium, N,N,N-trimethyl-2-[(2,2,3,3,4,4, 5,5,6,6,7,7,7-pentadecafluoro-1-oxooctyl)amino]-, chloride (1:1)	—
Ethanaminium, 2-[2-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9, 10,10,10-heptadecafluorodecyl)thio]ethoxy]-N,N,N-trimethyl-, iodide (1:1)	178766-44-4
Salt of N-ethyl-2-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)oxy]carbonyl]amino(methyl)phenyl]methanimidamido(methyl)phenyl]methanimidamido(methyl)phenyl]carbonyl]oxy]-N,N-dimethylethan-1-aminium	71625-52-0
	—



(Continued from Annexed Table 5-A15) Substance name	CAS RN
Ethanaminium, N-ethyl-2-[[[[3-[[[[3-[[[[3-[[[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)oxy]carbonyl]amino]methylphenyl]amino]carbonyl]amino]methylphenyl]amino]carbonyl]amino]methylphenyl]amino]carbonyl]oxy]-N,N-dimethyl-, ethyl sulfate	100155-23-5
N-[3-(Perfluorooctanoylamido) propyl]-N,N,N-trimethylammonium chloride	53517-98-9
1-Propanaminium, N,N,N-trimethyl-3-[(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1-oxooctyl)amino]-, iodide (1:1)	335-90-0
1-Propanaminium, 2-hydroxy-N,N,N-trimethyl-3-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)thio]-	727351-53-3
1-Propanaminium, 2-hydroxy-N,N,N-trimethyl-3-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)thio]-, chloride (1:1)	71940-07-3
1-Propanaminium, 2-hydroxy-N,N,N-trimethyl-3-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)sulfinyl]-	1513864-19-1
1-Propanaminium, 3-[[[(3,3,4,4,5,5,6,6,7,7,8,8, 9,9,10,10,10-heptadecafluorodecyl)sulfonyl]amino]-N,N,N-trimethyl-, 4-methylbenzene sulfonate (1:1)	438237-77-5
1-Propanaminium, 3-[[2-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)thio]acetyl] amino]-N,N,N-trimethyl-	704870-51-9
1-Propanaminium, 3-[[4-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)oxy]-1,4dioxo-2-buten-1-yl]amino]-N,N,N-trimethyl-, iodide (1:1)	121912-26-3
1-Propanaminium, N-ethyl-3-[[3-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)thio]-2-methyl-1-oxopropyl]amino]-N,N-dimethyl-, ethyl sulfate (1:1)	67333-62-4
Pyridinium, 1-[2-[(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1-oxooctyl)amino]ethyl]-, chloride (1:1)	308-01-0
Pyridinium, 1-[2-[(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1-oxooctyl)amino]ethyl]-, bromide (1:1)	331755-02-3
Pyridinium, 1-(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)-, iodide (1:1)	25935-14-2
1-Pentanaminium, N,N,N-trimethyl-5-[(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1-oxooctyl)amino]-, iodide (1:1)	91707-61-8
Piperazinium, 1-(2-hydroxyethyl)-1-methyl-4-(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1-oxooctyl)-, chloride (1:1)	103555-98-2
1-Decanaminium, N-(carboxymethyl)-3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-N,N-dimethyl-	2089109-26-0
Ethanol, 2-[2-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)oxy]ethoxy]-	56900-98-2
3,6,9,12-Tetraoxadocosan-1-ol, 15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,22-heptadecafluoro-	55427-54-8
3,6,9,12,15,18-Hexaoxaoctacosan-1-ol, 21,21,22,22,23,23,24,24,25,25,26,26,27,27,28,28,28-heptadecafluoro-	88247-39-6
3,6,9,12,15,18,21,24-Octaoxatettratriacontan-1-ol, 27,27,28,28,29,29,30,30,31,31,32,32,33,33,34,34,34-heptadecafluoro-	88247-40-9
Ethanol, 2-[2-[2-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)oxy]methylethoxy] methylethoxy]-	88243-12-3
3,6,9,12-Tetraoxadocosan-1-ol, 15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,22-heptadecafluorodimethyl-	88271-22-1
3,6,9,12,15,18-Hexaoxaoctacosan-1-ol, 21,21,22,22,23,23,24,24,25,25,26,26,27,27,28,28,28-heptadecafluoropentamethyl-	88243-11-2
3,6,9,12,15,18,21-Heptaohaxentriacontan-1-ol, 24,24,25,25,26,26,27,27,28,28,29,29,30,30,31,31,31-heptadecafluoropentamethyl-	88243-10-1
Propanol, [2-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)oxy]methylethoxy]-	88243-13-4
3,6,9,12-Tetraoxadocosan-1-ol, 15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,22-heptadecafluorotetramethyl-	88243-14-5
3,6,9,12,15-Pentaoxapentacosan-1-ol, 18,18,19,19,20,20,21,21,22,22,23,23,24,24,25,25,25-heptadecafluoropentamethyl-	88243-15-6
3,6,9,12,15,18-Hexaoxaoctacosan-1-ol, 21,21,22,22,23,23,24,24,25,25,26,26,27,27,28,28,28-heptadecafluoro hexamethyl-	88243-16-7
3,6,9,12,15,18,21,24-Octaoxatettratriacontan-1-ol, 27,27,28,28,29,29,30,30,31,31,32,32,33,33,34,34,34-heptadecafluorooctamethyl-	88243-17-8

(Continued from Annexed Table 5-A15) Substance name	CAS RN
1,2-Propanediol, 3-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl)oxy]-	121500-31-0
2-Propanol, 1-[(2-decyltetradecyl)oxy]-3-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl)thio]-	160819-49-8
2-Propanol, 1-[(2-dodecylhexadecyl)oxy]-3-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl)thio]-	160819-50-1
2-Propanol, 1,3-bis[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl)thio]-	160819-47-6
2,5,8,11,14,17,20,23-Octaoxa-27-thiaheptatria contan-25-ol, 30,30,31,31,32,32,33,33,34,34,35,35,36,36,37,37-heptafluoro-	121912-28-5
3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-Heptafluorodecane-1-thiol	34143-74-3
Heptafluoro-1-[(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentafluorooctyl)oxy]nonene	84029-60-7
Oxirane, 2-[[[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl)oxy]methyl]-	114482-33-6
Propanoic acid, 3-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl)thio]-	54207-62-4
Butanoic acid, 4-[[3-(dimethylamino)propyl] amino]-2- [(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl) thio]-4-oxo-	1383438-89-8
Decanoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluoro-	27854-31-5
2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-Pentafluorooctanoyl fluoride	335-66-0
Pentafluorooctanoyl chloride	335-64-8
2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentafluorooctanoyl bromide	222037-87-8
Acetic acid, 2-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl)thio]-, lithium salt (1:1)	441765-12-4
Propanoic acid, 3-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl)thio]-, lithium salt (1:1)	481050-04-8
$\beta$ -Alanine, N-(2-carboxyethyl)-N-[6-[[[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl)sulfonyl]amino]hexyl]-, dipotassium salt	98900-53-9
Compound of 4,4-bis[(gamma-omega-perfluoro-C8-20-alkyl)thio]pentanoic acid and 2,2'-iminodiethanol	71608-61-2
3,6,9,12,15-Pentaoxapentacosan-1-ol, 18,18,19,19,20,20,21,21,22,22,23,23,24,24,25,25,25-heptafluoropentamethyl-, acetate	88243-09-8
2-Propenoic acid, perfluoro-C8-16-alkyl esters	85681-64-7
3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-Heptafluorodecyl acrylate	27905-45-9
2-Propenoic acid, $\gamma$ - $\omega$ -perfluoro-C8-14-alkyl esters	85631-54-5
2-(Perfluorooctyl)ethyl methacrylate	1996-88-9
Pentanedioic acid, 3-[2-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl)oxy]-2-oxoethyl]-3-hydroxy-, 1,5-bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl) ester	302911-86-0
Methyl pentafluorooctanoate	376-27-2
Ethyl pentafluorooctanoate	3108-24-5
Tridecanoic acid, 27,27,28,28,29,29,30,30,31,31, 32,32,33,33,34,34,34-heptafluoro-3,6,9,12,15,18,21,24-octaoxatetra triacont-1-yl ester	67535-33-5
11,14,17,20,23,26,29,32-Octaoxaoctatetracontan-33-one, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptafluoro-	67549-47-7
9-Octadecenoic acid (9Z)-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl ester	167289-73-8
Octadecanoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl ester	99955-83-6
Octanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentafluoro-, 1,1'-anhydride	33496-48-9
Telomers of gamma-omega-perfluoro-C8-20-thiols with acrylamide	70969-47-0
Propanamide, 3-[( $\gamma$ - $\omega$ -perfluoro-C4-10-alkyl)thio] derivatives	68187-42-8
Acetamide, N-[3-(dimethylamino)propyl]-2-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl)thio]-	1513863-91-6
N-(3-Aminopropyl)-2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentafluorooctanamide	85938-56-3
Octanamide, N-[3-(dimethylamino)propyl]-2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentafluoro-	376-23-8
Amides, C7-19, $\alpha$ - $\omega$ -perfluoro-N,N-bis(hydroxyethyl)	90622-99-4
N-[3-[bis(2-hydroxyethyl)amino]propyl]-2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentafluorooctanamide	41358-63-8
Octanamide, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentafluoro-N-[3-(trimethoxysilyl)propyl]-	98046-76-5

(Continued from Annexed Table 5-A15) Substance name	CAS RN
Octanamide, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-N-(14-hydroxy-3,6,9,12-tetraoxatetradec-1-yl)-	89932-71-8
1-Decanaminium, N-(carboxymethyl)-3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-N,N-dimethyl-, inner salt	145441-32-3
[Dimethyl(3-pentadecafluorooctanamidopropyl)ammonio]acetate	90179-39-8
1-Propanaminium, N-(carboxymethyl)-3-[[3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)sulfonyl]amino]-N,N-dimethyl-, inner salt	34455-21-5
1-Propanaminium, N-(carboxymethyl)-3-[[2-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)thio]acetyl] amino]-N,N-dimethyl-, inner salt	1513863-96-1
3-{Dimethyl[3-(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctanido)propyl]ammonio}propanoate	5158-52-1
1-Propanaminium, N-(2-carboxyethyl)-N,N-bis(2-hydroxyethyl)-3[(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1-oxooctyl)amino]-, inner salt	39186-68-0
Ethanaminium, N-(2-carboxyethyl)-2-[[3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)sulfonyl]amino]-N,N-dimethyl-, inner salt	34695-29-9
1-Propanesulfonic acid, 2-[[3-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)thio]-1-oxopropyl]amino]-2-methyl-	755698-73-8
1-Propanesulfonic acid, 2-[[3-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)sulfinyl]-1-oxopropyl]amino]-2-methyl-	1513864-12-4
3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-Heptadecafluorodecane-1-sulphonic acid	39108-34-4
3,4-bis[(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1-oxooctyl)amino]benzenesulphonyl chloride	24216-05-5
3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-Heptadecafluorodecane-1-sulfonyl chloride	27619-90-5
Ethanesulfonic acid, 2-[ethyl(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1-oxooctyl)amino]-, potassium salt (1:1)	57670-46-9
Ethanesulfonic acid, 2-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)thio]-, lithium salt (1:1)	441765-14-6
1-Propanesulfonic acid,3-[ethyl(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1-oxooctyl)amino]-, sodium salt (1:1)	89685-61-0
1-Propanesulfonic acid, 3-[(3-aminopropyl) (2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1-oxooctyl)amino]-2-hydroxy-, sodium salt (1:1)	98900-76-6
1-Propanesulfonic acid, 2-[[3-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)thio]-1-oxopropyl]amino]-2-methyl-, sodium salt (1:1)	62880-96-0
Succinic acid, 2-sulfo-, 1,4-bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)ester, sodium salt (1:1)	54950-06-0
Benzenesulfonic acid, 4-[[[3-(methylamino) propyl](2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1-oxooctyl)amino]methyl]-, sodium salt (1:1)	98900-75-5
1-Decanesulfonic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-, potassium salt (1:1)	438237-73-1
1-Decanesulfonamide, N-[3-(dimethylamino) propyl]-3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-	34455-23-7
2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-Pentadecafluorooctanal	335-60-4
3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-Heptadecafluorodecanal	135984-68-8
Phosphinic acid, bis(perfluoro-C6-12-alkyl) derivs.	68412-69-1
Phosphinic acid, bis(perfluoro-C6-12-alkyl) derivs., aluminum salts	93062-53-4
Perfluorohexylperfluorooctyl phosphinate, C6/C8-PFPIA	610800-34-5
Bis(perfluorooctyl)phosphinic acid; C8/C8-PFPIA	40143-79-1
Diammonium 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecan-1-yl phosphate	93857-44-4
1-Decanesulfonamide, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-N-[3(phosphono oxy)propyl]-N-propyl-, sodium salt (1:2)	441765-20-4
1-Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-, 1-(dihydrogenphosphate), ammonium salt(1:1)	93776-20-6
1,3-Propanediol, 2,2-bis[[3-(γ-perfluoro-C4-10-alkyl)thio]methyl] derivatives, phosphates, ammonium salts	148240-85-1
1,3-Propanediol, 2,2-bis[[3-(γ-perfluoro-C6-12-alkyl)thio]methyl] derivatives, phosphates, ammonium salts	148240-87-3

(Continued from Annexed Table 5-A15) Substance name	CAS RN
1,3-Propanediol, 2,2-bis[(γ-ω-perfluoro-C10-20-alkyl)thio]methyl derivs., phosphates, ammonium salts	148240-89-5
1-Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-, 1-(hydrogen sulfate), ammonium salt (1:1)	63225-57-0
3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-Heptadecafluorodecyl dihydrogen phosphate	57678-03-2
Bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl) hydrogen phosphate	678-41-1
Phosphoric acid, mono(3,3,4,4,5,5,6,6,7,7,8,8, 9,9,10,10,11,11,12,12,12-heneicosafluorododecyl) mono(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl) ester	1158182-60-5
Phosphoric acid, mono(3,3,4,4,5,5,6,6,7,7,8,8, 9,9,10,10,10-heptadecafluorodecyl) mono(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-pentacosafluorotetradecyl) ester	1578186-42-1
Phosphoric acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl bis(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) ester	1578186-53-4
Phosphoric acid, bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl) 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl ester	1578186-56-7
Phosphoric acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorododecyl 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl ester	1578186-64-7
1-Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-, 1,1',1"-phosphate	149790-22-7
Carbamic acid, [2-(sulphothio)ethyl]-, C-(γ-ω-perfluoro-C6-9-alkyl) esters, monosodium salts	95370-51-7
Diphosphoric acid, mono(3,3,4,4,5,5,6,6,7,7,8,8, 9,9,10,10,10-heptadecafluorodecyl) ester, compd. with 2-aminoethanol (1:3)	98005-84-6
Diphosphoric acid, mono(3,3,4,4,5,5,6,6,7,7,8,8, 9,9,10,10,10-heptadecafluorodecyl) ester, compd. with 2,2',2"-nitritoltris[ethanol] (1:3)	98005-85-7
Perfluorooctylethyldimethylchlorosilane	74612-30-9
Perfluorooctylethyldichloromethyl silane	3102-79-2
(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)trimethoxysilane	83048-65-1
Trichloro(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)silane	78560-44-8
Triethoxy(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)silane	101947-16-4
(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-Heptadecafluorodecyl)tris(1-methylethoxy)silane	246234-80-0
Silane, tetrakis[2-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)thio]ethyl]-	1189587-64-1
Glycine, N-ethyl-N-(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1-oxooctyl)-, ammonium salt	138473-79-7
Glycine, N-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)sulfonyl]-N-propyl-, lithium salt	441765-18-0
Glycine, N-[3-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)thio]-2-hydroxypropyl]-N-methyl-	93128-66-6
Poly(oxy-1,2-ethanediyl), α-[2-(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1-oxooctyl)amino]ethyl]-ω-hydroxy-	93480-00-3
Poly(oxy-1,2-ethanediyl), α-[dimethoxy[3-[(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1-oxooctyl)amino]propyl]silyl]-ω-[[dimethoxy[3-[(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1-oxooctyl)amino]propyl]silyl]oxy]-	154380-30-0
Polymer of 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl acrylate	74049-08-4
1-Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-, reaction products with [(trimethylsilyl)oxy]-modified silica	254889-67-3
Butanedioic acid, monopolyisobutylene derivs., 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl ester	253683-00-0
2-Propenamide, telomer with 3,3,4,4,5,5,6,6,7,7, 8,8,9,9,10,10,10-heptadecafluoro-1-decanethiol	76830-13-2
Block polymer of 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl acrylate / methyl methacrylate	121065-52-9
2-Propenoic acid, 2-methyl-, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctyl ester, polymer with 2-propenoic acid	53515-73-4

(Continued from Annexed Table 5-A15) Substance name	CAS RN
Polymer of 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl methacrylate / methyl methacrylate	93705-98-7
Oxirane, methyl-, polymer with oxirane, mono[2hydroxy-3-[( $\gamma$ - $\omega$ -perfluoro-C8-20alkyl)thio]propyl] ethers	183146-60-3
2-Propenoic acid, dodecyl ester, polymers with Bu (1-oxo-2-propenyl)carbamate and $\gamma$ - $\omega$ -perfluoro-C8-14-alkyl acrylate	144031-01-6
2-Propenoic acid, 2-methyl-, C10-16-alkyl esters, polymers with 2-hydroxyethyl methacrylate, Me methacrylate and perfluoro-C8-14-alkyl acrylate	125328-29-2
2-Propenoic acid, 2-methyl-, octadecyl ester, polymer with 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorododecyl 2-propenoate, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl 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	142636-88-2
2-Propenoic acid, 2-methyl-, C10-16-alkyl esters, polymers with 2-hydroxyethyl methacrylate, Me methacrylate and $\gamma$ - $\omega$ -perfluoro-C8-14-alkyl acrylate	129783-45-5
Polymer of 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-henicosafuorododecyl methacrylate / 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl methacrylate / methyl methacrylate / 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 methacrylate / 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl methacrylate	65104-45-2
2-Propenoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorododecyl 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
Polymer of 3-chloro-2-hydroxypropyl methacrylate / 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorododecyl acrylate / 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl acrylate / N-(hydroxymethyl)acrylamide / 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 acrylate / octadecyl acrylate / 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 acrylate	119973-85-2
2-Propenoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorododecylester, polymer with 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl 2-propenoate, $\alpha$ (2-methyl-1-oxo-2-propenyl)- $\omega$ [(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, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorododecyl ester, polymer with 3,3,4,4,5,5,6,6,7,7,8,8,9,9, 10,10,10-heptadecafluorodecyl 2-propenoate, $\alpha$ (2-methyl-1-oxo-2-propenyl)- $\omega$ [(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, 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 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,18-tritriacontafuorooctadecyl 2-propenoate	116984-14-6
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-heneicosafluorododecyl 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
Other salts of perfluorooctanoic acid	—
Other substances related to perfluorooctanoic acid	—



**Table 5-A16 Perfluorohexanesulfonic acid (PFHxS) and its salts**

SEG's regulation contents (contents, application)	Major regulations
Prohibiting intentional use <sup>*12</sup>	<ul style="list-style-type: none"> <li>•CSCL, JPN (Class I Specified Chemical Substances)</li> <li>•EU POPs Regulation</li> </ul>
Substance name	CAS RN
Perfluorohexanesulfonic acid (PFHxS) C <sub>6</sub> F <sub>13</sub> SO <sub>3</sub> X (X is H, metal, ammonium, alkyl, or other derivatives)	—
Perfluorohexane-1-sulphonic acid	355-46-4
Potassium perfluorohexane-1-sulfonate	3871-99-6
Sodium perfluorohexanesulfonate	82382-12-5
Ammonium perfluorohexane-1-sulphonate	68259-08-5
Lithium perfluorohexanesulfonate	55120-77-9
Compounds of tridecafluorohexane-1-sulfonic acid and 2,2'-iminodiethanol (1:1)	70225-16-0
Other perfluorohexanesulfonic acids	—

**Table 5-A17 Specific phthalates (DEHP, BBP, DBP & DIBP)**

SEG's regulation contents (contents, application)	Major regulations	
Shall not be used as substances or in mixtures, in concentrations greater than 1000 ppm by weight	•EU RoHS directive	
Substance name	EC No.	CAS RN
Diethylhexyl Phthalate (DEHP)	204-211-0	117-81-7
Dibutyl phthalate (DBP)	201-557-4	84-74-2
Benzyl butyl phthalate (BBP)	201-622-7	85-68-7
Diisobutyl phthalate (DIBP)	201-553-2	84-69-5

**Table 5-A18 Asbestos**

SEG'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"> <li>•Air Pollution Control Act (Specified Particulates, JPN)</li> <li>•Industrial Safety and Health Act (Prohibited substances for Manufacturing, JPN)</li> <li>•REACH Regulation (Annex XVII, Restricted substances, EU)</li> </ul>
Substance name	CAS RN
Asbestos	1332-21-4
Actinolite	77536-66-4
Amosite, Grunerite	12172-73-5
Anthophyllite	77536-67-5
Chrysotile	12001-29-5 132207-32-0
Crocidolite	12001-28-4
Tremolite	77536-68-6

**Table 5-A19 Azo dyes liberating specific toxic & carcinogenic amines. (only for textiles and leather.)**

SEG'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 (Annex XVII, Restricted substances, EU)
Specific Amines* <sup>14</sup>	CAS RN
4-Aminobiphenyl	92-67-1
Benzidine	92-87-5
4-Chloro-2-methylaniline	95-69-2
2-Naphthylamine	91-59-8
<i>o</i> -Aminoazotoluene	97-56-3
5-Nitro- <i>o</i> -toluidine	99-55-8
<i>p</i> -Chloroaniline	106-47-8
2,4-Diaminoanisole	615-05-4
4,4'-Methylenedianiline (MDA)	101-77-9
3,3'-Dichlorobenzidine	91-94-1
3,3'-Dimethoxybenzidine	119-90-4
3,3'-Dimethylbenzidine	119-93-7
4,4'-Diamino-3,3'-dimethyldiphenylmethane	838-88-0
6-Methoxy- <i>m</i> -toluidine	120-71-8
4,4'-Methylene bis(2-chloroaniline)	101-14-4
4,4'-Oxydianiline	101-80-4
4,4'-Thiodianiline	139-65-1
<i>o</i> -Toluidine	95-53-4
4-Methyl- <i>m</i> -phenylenediamine	95-80-7
2,4,5-Trimethylaniline	137-17-7
<i>o</i> -Anisidine	90-04-0
4-Aminoazobenzene	60-09-3

\*14: The European Community ban on the use of azo dyes applies to specific azo dyes and pigments in which one of the 22 specified aromatic amines is produced by the reductive cleavage of azo groups.

**Table 5-A20 Ozone-Depleting Substances (Specified Substances under Act on the Protection of the Ozone Layer Through the Control of Specified Substances and Other Measures)**

SEG's regulation contents (contents, application)		Major regulations
Prohibiting intentional use		<ul style="list-style-type: none"> <li>• Act on the Protection of the Ozone Layer Through the Control of Specified Substances and Other Measures (JPN)</li> <li>• The Montreal Protocol</li> </ul>
Substance name*15		CAS RN
Trichlorofluoromethane (CFC-11)	A-I	75-69-4
Dichlorodifluoromethane (CFC-12)	A-I	75-71-8
Trichlorotrifluoroethane (CFC-113)	A-I	26523-64-8
1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)	A-I	76-13-1
1,1,1-Trichloro-2,2,2-trifluoroethane (CFC-113a)	A-I	354-58-5
Dichlorotetrafluoroethane (CFC-114)	A-I	1320-37-2
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC-114)	A-I	76-14-2
1,1-Dichloro-1,2,2,2-tetrafluoroethane (CFC-114)	A-I	374-07-2
Chloropentafluoroethane (CFC-115)	A-I	76-15-3
Bromochlorodifluoromethane (Halon-1211)	A-II	353-59-3
Bromotrifluoromethane (Halon-1301)	A-II	75-63-8
Dibromotetrafluoroethane (Halon-2402)	A-II	25497-30-7
1,2-Dibromo-1,1,2,2-tetrafluoroethane (Halon-2402)	A-II	124-73-2
1,1-Dibromo-1,2,2,2-tetrafluoroethane (Halon-2402)	A-II	27336-23-8
Chlorotrifluoromethane (CFC-13)	B-I	75-72-9
Pentachlorofluoroethane (CFC-111)	B-I	354-56-3
Tetrachloro(difluoro)ethane (CFC-112)	B-I	28605-74-5
1,1,2,2-Tetrachloro-1,2-difluoroethane (CFC-112)	B-I	76-12-0
1,1,1,2-Tetrachloro-2,2-difluoroethane (CFC-112a)	B-I	76-11-9
1,1,1,2,2,3,3-heptachloro-3-fluoro-propane (CFC-211)	B-I	—
1,1,1,3,3,3-hexachloro-2,2-difluoro-propane (CFC-212)	B-I	3182-26-1
Pentachlorotrifluoropropane (CFC-213)	B-I	134237-31-3
1,2,2,3-Tetrachloro-1,1,3,3-tetrafluoropropane (CFC-214)	B-I	29255-31-0
1,1,1,3-Tetrachloro-2,2,3,3-tetrafluoropropane (CFC-214)	B-I	2268-46-4
Trichloropentafluoropropane (CFC-215)	B-I	—
1,2,2-Trichloro-1,1,3,3,3-pentafluoropropane (CFC-215)	B-I	1599-41-3
1,1,3-Trichloro-1,2,2,3,3-pentafluoropropane (CFC-215)	B-I	1652-81-9
Dichlorohexafluoropropane (CFC-216)	B-I	42560-98-5
1,2-Dichlorohexafluoropropane (CFC-216)	B-I	661-97-2
Chloroheptafluoropropane (CFC-217)	B-I	—
1-Chloro-1,1,2,2,3,3,3-heptafluoropropane (CFC-217)	B-I	422-86-6
2-Chloro-1,1,1,2,3,3,3-heptafluoropropane (CFC-217)	B-I	76-18-6
Tetrachloromethane	B-II	56-23-5
1,1,1-Trichloroethane	B-III	71-55-6
Dichlorofluoromethane (HCFC-21)	C-I	75-43-4
Chlorodifluoromethane (HCFC-22)	C-I	75-45-6
Chlorofluoromethane (HCFC-31)	C-I	593-70-4
Tetrachlorofluoroethane (HCFC-121)	C-I	134237-32-4
1,1,2,2-Tetrachloro-1-fluoroethane (HCFC-121)	C-I	354-14-3
1,1,1,2-Tetrachloro-2-fluoroethane (HCFC-121)	C-I	354-11-0
Trichlorodifluoroethane (HCFC-122)	C-I	—
1,2,2-Trichloro-1,1-difluoroethane (HCFC-122)	C-I	134237-33-5
1,1,2-Trichloro-1,2-difluoroethane (HCFC-122)	C-I	354-15-4



**Table 5-A20 Ozone-Depleting Substances (cont.)**

(Continued from Annexed Table 5-A20) Substance name* <sup>15</sup>		CAS RN
Dichlorotrifluoroethane (HCFC-123)	C-I	34077-87-7
2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)	C-I	306-83-2
1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123)	C-I	354-23-4
Chlorotetrafluoroethane (HCFC-124)	C-I	63938-10-3
2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124)	C-I	2837-89-0
1-Chloro-1,1,2,2-tetrafluoroethane (HCFC-124)	C-I	354-25-6
Trichlorofluoroethane (HCFC-131)	C-I	134237-34-6
1,1,2-Trichloro-2-fluoroethane (HCFC-131)	C-I	27154-33-2
1,1,2-Trichloro-1-fluoroethane (HCFC-131)	C-I	811-95-0
Dichlorodifluoroethane (HCFC-132)	C-I	25915-78-0
Chlorotrifluoroethane (HCFC-133)	C-I	1330-45-6
2-Chloro-1,1,1-trifluoroethane (HCFC-133)	C-I	75-88-7
1-Chloro-1,1,2-trifluoroethane (HCFC-133)	C-I	421-04-5
1-Chloro-1,2,2-trifluoroethane (HCFC-133)	C-I	431-07-2
Dichlorofluoroethane (HCFC-141)	C-I	25167-88-8
1,2-Dichloro-1-fluoroethane (HCFC-141)	C-I	430-57-9
1,1-Dichloro-1-fluoroethane (HCFC-141b)	C-I	1717-00-6
Chlorodifluoroethane (HCFC-142)	C-I	25497-29-4
1-Chloro-1,2-difluoroethane (HCFC-142)	C-I	338-64-7
1-Chloro-1,1-difluoroethane (HCFC-142b)	C-I	75-68-3
Chlorofluoroethane (HCFC-151)	C-I	110587-14-9
1-Chloro-1-fluoroethane (HCFC-151)	C-I	1615-75-4
1-Chloro-2-fluoroethane (HCFC-151)	C-I	762-50-5
Hexachlorofluoropropane (HCFC-221)	C-I	134237-35-7
Pentachlorodifluoropropane (HCFC-222)	C-I	134237-36-8
1,1,3,3-Tetrachloro-1,2,2-trifluoropropane (HCFC-223)	C-I	134237-37-9
Trichlorotetrafluoropropane (HCFC-224)	C-I	127564-91-4
1,3,3-Trichloro-1,1,2,2-tetrafluoropropane (HCFC-224)	C-I	134237-38-0
Dichloropentafluoropropane (HCFC-225)	C-I	127564-92-5
3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)	C-I	422-56-0
1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)	C-I	507-55-1
1,1-Dichloro-1,2,2,3,3-pentafluoropropane (HCFC-225)	C-I	13474-88-9
1,1-Dichloro-1,2,3,3,3-pentafluoropropane (HCFC-225)	C-I	111512-56-2
1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225)	C-I	422-44-6
1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC-225)	C-I	431-86-7
1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225)	C-I	136013-79-1
2,2-Dichloro-1,1,1,3,3-pentafluoropropane (HCFC-225)	C-I	128903-21-9
2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC-225)	C-I	422-48-0
1-Chloro-1,1,2,2,3,3-hexafluoropropane (HCFC-226)	C-I	422-55-9
2-Chloro-1,1,1,3,3,3-hexafluoropropan (HCFC-226)	C-I	431-87-8, 134308-72-8
3-Chloro-1,1,1,2,2,3-hexafluoropropane (HCFC-226)	C-I	422-57-1
Pentachlorofluoropropane (HCFC-231)	C-I	134190-48-0
Tetrachlorodifluoropropane (HCFC-232)	C-I	127564-82-3, 134237-39-1
Trichlorotrifluoropropane (HCFC-233)	C-I	134237-40-4
Dichlorotetrafluoropropane (HCFC-234)	C-I	127564-83-4
Chloropentafluoropropane (HCFC-235)	C-I	134237-41-5
1-Chloro-1,1,3,3,3-pentafluoropropane (HCFC-235fa)	C-I	460-92-4

**Table 5-A20 Ozone-Depleting Substances (cont.)**

(Continued from Annexed Table 5-A20) Substance name*15		CAS RN
Tetrachlorofluoropropane (HCFC-241)	C-I	134190-49-1
Trichlorodifluoropropane (HCFC-242)	C-I	127564-90-3, 134237-42-6
Dichlorotrifluoropropane (HCFC-243)	C-I	134237-43-7
3,3-Dichloro-1,1,1-trifluoropropane (HCFC-243)	C-I	460-69-5
Chlorotetrafluoropropane (HCFC-244)	C-I	134190-50-4
3-Chloro-1,1,2,2-tetrafluoropropane (HCFC-244)	C-I	679-85-6
Trichlorofluoropropane (HCFC-251)	C-I	134190-51-5
1,1,3-Trichloro-1-fluoropropane (HCFC-251)	C-I	818-99-5
Dichlorodifluoropropane (HCFC-252)	C-I	134190-52-6
Chlorotrifluoropropane (HCFC-253)	C-I	134237-44-8
3-Chloro-1,1,1-trifluoropropane (HCFC-253)	C-I	460-35-5
Dichlorofluoropropane (HCFC-261)	C-I	134237-45-9
1,1-Dichloro-1-fluoropropane (HCFC-261)	C-I	7799-56-6
1,2-Dichloro-2-fluoropropane (HCFC-261)	C-I	420-97-3
Chlorodifluoropropane (HCFC-262)	C-I	134190-53-7
2-Chloro-1,3-difluoropropane (HCFC-262)	C-I	102738-79-4
Chlorofluoropropane (HCFC-271)	C-I	134190-54-8
Dibromofluoromethane	C-II	1868-53-7
Bromodifluoromethane (HBFC-22b1)	C-II	1511-62-2
Bromofluoromethane	C-II	373-52-4
Tetrabromofluoroethane	C-II	306-80-9
Tribromodifluoroethane	C-II	–
Dibromotrifluoroethane	C-II	354-04-1
Bromotetrafluoroethane	C-II	124-72-1
Tribromofluoroethane	C-II	–
Dibromodifluoroethane	C-II	75-82-1
Bromotrifluoroethane	C-II	421-06-7
Dibromofluoroethane	C-II	358-97-4
Bromodifluoroethane	C-II	420-47-3
2-Bromo-1,1-difluoroethane	C-II	359-07-9
Bromofluoroethane-	C-II	762-49-2
Hexabromofluoropropane	C-II	–
Pentabromodifluoropropane	C-II	–
Tetrabromotrifluoropropane	C-II	–
Tribromotetrafluoropropane	C-II	–
Dibromopentafluoropropane	C-II	431-78-7
Bromohexafluoropropane	C-II	2252-78-0
Pentabromofluoropropane	C-II	–
Tetrabromodifluoropropane	C-II	–
Tribromotrifluoropropane	C-II	–
Dibromotetrafluoropropane	C-II	–
Bromopentafluoropropane	C-II	460-88-8
Tetrabromofluoropropane	C-II	–
Tribromodifluoropropane	C-II	70192-80-2
Dibromotrifluoropropane	C-II	431-21-0
Bromotetrafluoropropane	C-II	679-84-5
Tribromofluoropropane	C-II	75372-14-4
Dibromodifluoropropane	C-II	460-25-3
Bromotrifluoropropane	C-II	421-46-5
Dibromofluoropropane	C-II	51584-26-0

**Table 5-A20 Ozone-Depleting Substances (cont.)**

(Continued from Annexed Table 5-A20) Substance name* <sup>15</sup>		CAS RN
Bromodifluoropropane	C-II	—
Bromofluoropropane	C-II	1871-72-3
Bromochloromethane (Halon-1011)	C-III	74-97-5
Bromomethane (Methyl bromide)	E-I	74-83-9

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

**Table 5-A21 Radioactive isotopes**

SEG's regulation contents (contents, application)	Major regulations
Prohibiting intentional use	<ul style="list-style-type: none"> <li>• Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (JPN)</li> <li>• Act on Prevention of Radiation Hazards due to Radioisotopes, etc. (JPN)</li> </ul>
Substance name	CAS RN
Uranium-238	7440-61-1
Radon	10043-92-2
Americium-241	14596-10-2
Thorium-232	7440-29-1
Caesium-137	10045-97-3
Strontium-90	10098-97-2
Other radioactive isotopes which nucleus decays exceeding 0.1 Bq/g.	—

**Table 5-A22 Dimethyl fumarate (DMF)**

SEG'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)
Substance name	CAS RN
Dimethyl fumarate (DMF)	624-49-7

**Table 5-A23 Specified Benzotriazol**

SEG's regulation contents (contents, application)	Major regulations
Prohibiting intentional use* <sup>12</sup>	• Chemical Substances Control Law (CSCL, Class I Specified Chemical Substance, JPN)
Substance name	CAS RN
2-(Benzotriazol-2-yl)-4,6-di-tert-butylphenol	3846-71-7

**Table 5-A24 CSCL, Class I Specified Chemical Substance, JPN**

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

SEG's regulation contents (contents, application)	Major regulations	
Prohibiting intentional use*12	• Chemical Substances Control Law (CSCL, Class I Specified Chemical Substance, JPN)	
Substance name	CAS RN	MITI No. (JPN)
Hexachlorobenzene	118-74-1	3-76
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	4-303
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	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	
1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane (Synonym: DDT)	50-29-3	4-910
Mixtures of 1,2,4,5,6,7,8,8-Octachloro-2,3,3a,4,7,7a-hexahydro-4,7-methano-1H-indene, 1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene or their relative compounds (Synonym: chlordane or heptachlor)	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	4-637, 9-1646
N,N'-Diphenyl-p-phenylenediamine, N-Tolyl-N'-xylyle-p-phenylenediamine, or N,N'-Dixylyl-p-phenylenediamine	620-91-7, 15017-02-4, 27417-40-9, 28726-30-9, 70290-05-0	3-146, 3-365, 4-332
2,4,6-tri-tert-butylphenol	732-26-3	3-540
Polychloro-2,2-dimethyl-3-methylidenebicyclo[2.2.1]heptane (Synonym: Toxaphene)	8001-35-2	—
Dodecachloropentacyclo[5.3.0.0(2,6).0(3,9).0(4,8)]decane (Synonym: Mirex)	2385-85-5	—
2,2,2-trichloro-1,1-bis(4-chlorophenyl)ethanol (Synonym: Kelthane or Dicofol)	115-32-2	4-226
2,2,2-trichloro-1-(2-chlorophenyl)-1-(4-chlorophenyl) ethanol (Synonym: o,p'-dicofol)	10606-46-9	—
Hexachlorobuta-1,3-diene	87-68-3	2-121
Perfluoro(octane-1-sulfonyl) fluoride (Synonym: PFOSF)	307-35-7	2-2803
Pentachlorobenzene	608-93-5	3-76
r-1,c-2,t-3,c-4,t-5,t-6-Hexachlorocyclohexane (Synonym: alpha-Hexachlorocyclohexane)	319-84-6	3-2250, 9-1652
r-1,t-2,c-3,t-4,c-5,t-6-Hexachlorocyclohexane (Synonym: beta-Hexachlorocyclohexane)	319-85-7	
r-1,c-2,t-3,c-4,c-5,t-6-Hexachlorocyclohexane (Synonym: gamma-Hexachlorocyclohexane or Lindane)	58-89-9	
6,7,8,9,10,10-Hexachloro-1,5,5a,6,9,9a-hexahydro-6,9-methano-2,4,3-benzodioxathiepine 3-oxide (Synonym: endosulfan or benzoepin)	115-29-7 959-98-8 33213-65-9	-

**Table 5-A24 CSCL, Class I Specified Chemical Substance, JPN (cont.)**

Substance name	CAS RN	MITI No. (JPN)
Hexabromocyclododecane	3194-55-6 4736-49-6 25637-99-4 65701-47-5 134237-50-6 134237-51-7 134237-52-8 138257-17-7 138257-18-8 138257-19-9 169102-57-2 678970-15-5 678970-16-6 678970-17-7	3-2254
Methoxy-[2,2,2-Trichloro-1-(methoxyphenyl)ethyl]benzene (Synonym: Methoxychlor) <sup>*17</sup>	72-43-5 30667-99-3 76733-77-2 255065-25-9 255065-26-0 59424-81-6 1348358-72-4	—
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-1,4:7,10-dimethanodibenzo[a,e][8]annulene (Synonym: Dechlorane Plus) <sup>*17</sup>	13560-89-9 135821-74-8 135821-03-3	4-296
2-(2H-Benzotriazol-2-yl)-4,6-bis(2-Methylbutan-2-yl) phenol (Synonym: UV-328) <sup>*17</sup>	25973-55-1	5-3604

<sup>\*16</sup>: 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](http://www.safe.nite.go.jp/jcheck/list6.action?category=211&request_locale=en)

**Table 5-A25 Substances Prohibited for Manufacturing under Industrial Safety & Health Act (JPN)<sup>\*18</sup>**

SEG's regulation contents (contents, application)		Major regulations
Prohibiting intentional use		• Industrial Safety and Health Act (Harmful Substances Prohibited for Manufacturing)
Order No.	Substance name	
(i)	Yellow phosphorus matches	
(ii)	Benzidine and its salts	
(iii)	4-Aminobiphenyl and its salts	
(v)	4-Nitrodiphenyl and its salts	
(vi)	Bis(chloromethyl) ether	
(vii)	β-Naphthylamine and its salts	
(viii)	Rubber cement containing benzene, where the benzene content exceeds 5% of the solvent (diluent) of the rubber cement	
(ix)	Preparations and other substances containing the substances listed in items (ii), (iii), or (v) through (vii) in excess of 1% of the weight of the preparations and other substances, or containing the substances listed in item (iv) in excess of 0.1% of the weight of the preparations and other substances	

<sup>\*17</sup>: Asbestos (order No. iv) is not listed in this table because it is specified as a rank A substance.

**Table 5-A26 Non-approved Active Substances and Active Substances with Non-approved Uses Under the European Biocidal Products Regulation (BPR)<sup>\*18</sup>**

SEG's regulation contents (contents, application)	Major regulations
Prohibition of use intended for biocidal function (The regulation only applies to products shipped ultimately to Europe.)	• European Biocidal Products Regulation (BPR)

<sup>\*18</sup>: Check the approved active substances and their uses on the following URL.  
 Active substances not listed on this website are non-approved active substances and their use is prohibited.  
<https://echa.europa.eu/information-on-chemicals/biocidal-active-substances>

**Table 5-B01 Chlorinated volatile organic compounds (Cl-VOCs)**  
**(Only designated hazardous substances under the Soil Contamination Countermeasures Act (JPN).)**

Regulation contents (contents, application)	Major regulations
Prohibiting intentional use and refusing contamination exceeding over 1 weight percent in supplied goods to us.	• Cl-VOCs among the designated hazardous substances under the Soil Contamination Countermeasures Act (JPN)
Substance name	CAS RN
Chloroethylene (Synonym: vinyl chloride or vinyl chloride monomer)	75-01-4
Tetrachloromethane (Synonym: methylene chloride)	56-23-5
1,2-Dichloroethylene	107-06-2
1,1-Dichloroethylene (Synonym: vinylidene chloride)	75-35-4
1,2-Dichloroethylene	540-59-0 156-59-2 (cis form) 156-60-5 (trans form)
1,3-Dichloroethylene (Synonym: D-D)	542-75-6 10061-01-5 (Z isomer) 10061-02-6 (E isomer)
Dichloromethane (Synonym: methylene chloride)	75-09-2
Tetrachloroethylene	127-18-4
1,1,1-Trichloroethane	71-55-6
1,1,2-Trichloroethane	79-00-5
Trichloroethylene	79-01-6

**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 Regulation of Manufacture and Evaluation of Chemical Substances (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.