

Hitachi Group Sustainable Procurement Guidelines

# **Green Procurement Guidelines**

Ver. 13.0: Revised July 2023

**Sustainability Promotion Division**

**Value Integration Division**

**Hitachi, Ltd.**

These guidelines are attached to the Hitachi Group Sustainable Procurement Guidelines and provide specific guidelines for green procurement.

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# **1. Requests to our suppliers for their cooperation in green procurement investigations**

With the support of our suppliers, the Hitachi Group will reinforce its endeavors to provide environmentally-conscious products. Our suppliers (in an upstream supply chain) are encouraged to cooperate with us in the investigation of their status.

## **1.1 Investigation overview**

### **(1) Investigation categories**

Investigations are to be conducted for each of the following categories:

- (i) The status of the supplier's environmental activities
- (ii) The status of reduction of the environmental burden of procured products
- (iii) Information about chemical substances included in procured products

### **(2) Method for replying to investigations**

Suppliers are kindly requested to provide the Hitachi Group with information, in general, by means of its web-based Green Procurement System (A Gree'Net).

Advance user registration is required to access A Gree'Net. Contact the procurement department to which you deliver your products, or the Environment Data System Center in Sustainability Promotion Division. For details about input operations, see the manual for the Green Procurement System (A Gree'Net) after log in to this system.

If the procurement department has specified a response method (system, etc.) for these investigations, please follow it.

Green Procurement System (A Gree'Net) login screen:

<https://portal.chemicalmanagement.ext.hitachi.co.jp/portal/static/html/index.htm>

Contact information for the Environment Data System in Sustainability Promotion Division:

[encsr.support.rp@hitachi.com](mailto:encsr.support.rp@hitachi.com)

### **(3) Investigation frequency**

Suppliers are requested to review the following items periodically (once a year) and enter updated data into the Green Procurement System (A Gree'Net):

- (i) the status of their environmental activities
  - (ii) the status of reducing the environmental burden of products delivered to Hitachi
- Investigations related to (iii) information on chemical substances included in the products, will be requested when necessary. If applicable, enter your answers into the Green Procurement System (A Gree'Net).

## **1.2 Content of investigation**

### **(1) The status of environmental activities of suppliers**

Investigations of the following items will be made for each supplier (or each business place of a supplier):

#### **(a) Items related to environmental certifications**

■ Acquisition of the ISO 14001 certification or other external certifications approved by Hitachi

- 1) Already obtained the ISO 14001 certification.
- 2) Already obtained another EMS certification.
- 3) Facilitating or have finalized a plan to acquire external certifications including ISO 14001.

#### **(b) Items related to endeavors for Green Procurement**

■ Status of planning Green Procurement

- 1) Implementing Green Procurement.
- 2) Planning to implement Green Procurement.

#### **(c) Items related to environmental activities (20 items)**

■ Corporate philosophy and policy

- 1) Have a corporate policy for environmental protection
- 2) Setting environmental guidelines to ensure continuous improvement in the prevention of global warming, the cyclical use of resources, and the preservation of the ecosystem.
- 3) The company's environmental policy is committed to observing legal restrictions.
- 4) Company environmental policy is known to all employees and available to any third party.

■ Plan and organization

- 5) Have a goal/target for environmental protection.
- 6) Assigning specific organizations/persons to carry out relevant responsibilities toward the goal/target.
- 7) Have an implementation plan to achieve the goal/target.

■ Environment assessment/system

Control and assess the following items in the manufacturing process to strive for improvement:

- 8) Reducing water pollution.
- 9) Reducing air pollution.
- 10) Reducing noise and vibration.
- 11) Treating waste properly and reducing the amount of waste disposal.
- 12) Reducing energy consumption (electricity, gas, fuel, etc.).
- 13) Purchasing raw materials to reduce environmental burdens.
- 14) Reducing the use and discharge of hazardous chemical substances.
- 15) Have a product assessment program.
- 16) Have a systematic plan for emergencies.
- 17) Have any internal environment audit program.

■ Provision of education, training, and information

- 18) Implementing an environmental education program.
- 19) Implementing training for personnel engaged in work that might significantly affect the environment. Have a list of such personnel.
- 20) Providing information related to environmental protection.

#### **(d) Manufacturing process information**

■ Use or non-use of ozone-layer-depleting substances in the manufacturing process

- 1) Used in the product manufacturing process.
- 2) Not used in the product manufacturing process.
- 3) Under survey.

(2) The status of reducing the environmental burden of procured products

(a) Reducing the environmental burden of delivered products (12 items)

Regarding products the Hitachi Group procures from suppliers, suppliers are requested to comply with the items below. Suppliers are also requested to make the same considerations for raw materials and parts that they procure themselves.

■ Resource saving

- 1) Making an effort to reduce weight and size.
- 2) Using recycled parts or resources (recycled material content rate).
- 3) Taking into consideration product durability improvement.
- 4) Endeavoring to properly use water.

■ Energy saving

- 5) Taking into consideration energy saving during use/stand-by time (reduction rate of energy).

■ Recycling

- 6) Collecting and recycling products (recycling rate).
- 7) Using uniform and standardized materials.
- 8) Considering ease of disassembly and sorting.

■ Packaging materials

- 9) Reducing packaging materials and considering collection, reuse, and recycling.

■ Provision of information

- 10) Providing environmental information related to products.

■ Preservation of ecosystems

- 11) Endeavoring to reduce the burden on ecosystems
- 12) Endeavoring to properly use chemical substances.

(3) Information about chemical substances included in procured products

(a) Information about included chemical substances to be input into A Gree'Net

In accordance with Attachments 1 and 2, enter the following information:

- (i) Basic product information
- (ii) Product composition information
- (iii) Information about inclusion or non-inclusion of regulated chemical substances
- (iv) Information about the submission or non-submission of a Warranty of Non-Inclusion

## (b) Investigation format for chemical substances included in products

A Gree'Net provides flexible support for formats of controlling chemical substances included in products, that are widely adopted in the industrial world, primarily considering usability for suppliers.

The following formats can be used to input information to A Gree'Net:

- chemSHERPA-CI
- chemSHERPA-AI
- JAMP AIS #1 (2018/7~)

JAMP: Joint Article Management Promotion consortium: <https://chemsherpa.net/english/jamp/about>

AIS: Information transmission format for chemical substances provided by JAMP. AIS covers chemical substances that are included in molds.

chemSHERPA : A format for communicating information of chemical substances which JAMP provides. chemSHERPA-CI is for chemical substances contained in chemical goods. chemSHERPA-AI is for those contained in articles.

#1 : The latest law & regulation may not be included.

## 2. Regulating chemical substances included in suppliers' products

### 2.1 Chemical substances regulated by Hitachi Group

The Hitachi Group uses the "chemical substances regulated by the Hitachi Group guidelines" to classify chemical substances contained in procured products into two separate categories, prohibited substances and controlled substances.

Chemical substances regulated by the Hitachi Group guidelines

Classification	Regulated substances	Main legal regulations
<b>Level 1 - Prohibited substances</b>	These chemical substances are prohibited for inclusion in supplied products. Under regulations inside and outside Japan, these chemical substances are basically prohibited for use in products (including packaging), but might be used in products supplied to the Hitachi Group. For details, see Separate table 1 or Attached list 1.	See Separate table 1 or Attached list 1
<b>Level 2 - Controlled substances</b>	Under regulations inside and outside Japan, these are substances whose actual use must be known, and for which appropriate management is required, or controlled substances whose recycling and proper disposal must be considered. This also includes substance groups whose inclusion in supplied products might be restricted according to utility. For details, see Separate table 2 or Attached list 2.	See Separate table 2 or Attached list 2

Note that the regulation factors (such as substance groups, control levels, and threshold values) might vary depending on the operating division in the Hitachi Group due to circumstances such as industry trends. Pay attention to the division's requested items, and check the items accordingly.

In addition, we might request an investigation of the chemical substances used in the production, storage, and transport stages before delivery (even if the substances are not included in the delivered product) with the objective of conserving supplies. Suppliers' cooperation is also requested.

## **2.2 Warranty of non-inclusion of chemical substances in procured products**

In the Basic Agreement entered into when trading materials, the Hitachi Group requests our suppliers to make certain considerations for the environment. Regarding chemical substances in their products, suppliers are requested to conduct quality control by warranting the non-inclusion of chemical substances in their products as necessary.

If non-inclusion of chemical substances in products is stated as a purchase specification requirement in the trade, documentations such as "Warranty of Non-Inclusion Concerning Banned Chemical Substances in Products" (Warranty of Non-Inclusion) must be submitted to the Hitachi Group as a delivery specification requirement.

"Non-inclusion" indicates that the following is rationally proved regardless of whether inclusion of the substance is intentional:  
- Certain chemical substances are not included, or they are included but at an amount less than the designated threshold value.

## **2.3 Guidelines for regulating information about chemical substances included in products (prohibition and control)**

When collecting information about chemical substances contained in products, choose the best way to do so from an economical and engineering standpoint.

Use of level 1 prohibited substances groups is basically prohibited according to regulations inside and outside Japan, so legally, their non-inclusion in products must be guaranteed.

For level 2 controlled substance groups, appropriate management of inclusion information is required regardless of whether the substances are included in the products. Suppliers are requested to file reports in all cases; even statements such as "There is no information available that shows inclusion of the chemical substances" are to be reported when appropriate.

## **2.4 Regarding changes in materials, manufacturing methods, and information about included chemical substances**

If any changes in materials, manufacturing methods, production location, major manufacturing equipment, persons in charge of manufacturing, etc. are to be made for procured products, suppliers are required to submit a notice about the details of the change and the scope of effect each time. In addition, for information on inclusion of chemical substances, submission of a notice is mandatory when a new inclusion is discovered, or when previously-reported inclusions have changed.

No.	Month	Revision History
Ver. 7.0	Apr. 2013	Revision of controlled substance groups in Separate table 1 and Separate table 2. Correction of related body text according to the above changes.
Ver. 7.1	Jun. 2015	Revision of a part of link-address and division name
Ver. 8.0	May 2015	Revision of controlled substance groups in Separate table 1 and Separate table 2
Ver. 8.1	Feb. 2016	Add the login address of Green Procurement System (A Gree'Net) in 4.1
Ver. 8.2	Apr. 2016	Revision of Analysis guideline for RoHS Directive in attachment2. Ver2.0→ Ver3.0
Ver. 8.3	Sep. 2016	Change of the number of chlorine of Polychlorinated naphthalenes (with 3 or more chlorines → with 2 or more chlorines)
Ver. 8.4	Oct. 2016	Revision of Hitachi's Environmental Vision. Add the 4.2(2)(a) Reducing the environmental burden of delivered products 4). (11items->12items)
Ver. 8.5	Sep. 2017	Revision of Main relevant regulations in Separate table 1
Ver. 8.6	Mar. 2018	Adding chemSHERPA related information
Ver. 9.0	Jan. 2019	Revision of controlled substance groups in Separate table 1 and Separate table 2
Ver. 9.1	Jan. 2020	1. Reflection of revision of Hitachi Group Codes of Conduct 2. Change of Hitachi's Environmental Vision symbol 4.1.(2) Change of Green Procurement System (A Gree'Net) login URL 4.2(3)(b) Change of JAMP and JAMA link URLs
Ver.10.0	Jan. 2020	Revision of controlled substance groups in Separate table 1 and Separate table 2
Ver.10.1	Apr. 2020	1. Reflection of repeal of Hitachi Action Guidelines for Environmental Conservation
Ver.11.0	Apr. 2021	Revision of prohibited substances and main relevant regulations in Separate table 1 Addition of controlled substances in Separate table 2
Ver.11.1	Jul. 2021	Revision of all the structure to provide specific guidelines for green procurement in line with the publication of the Hitachi Group Sustainable Procurement Guidelines.
Ver.11.2	Sep. 2021	1.1 (2) Revision of Method for replying to investigations
Ver.11.3	Mar. 2022	Revision of controlled substance groups in Separate table 2
Ver.12.0	Sep. 2022	Revision of controlled substance groups in Separate table 1 and Separate table 2
Ver.12.1	Mar. 2023	Revision of investigation format Addition of notes (substances to be transferred to Lv1) to Separate table 2
Ver.13.0	Jul. 2023	Revision of prohibited substances and main relevant regulations in Separate table 1 Addition of controlled substances in Separate table 2



## Appendixes

### **Separate table 1 (Level 1: Prohibited substances group list)**

- Separate table 1 shows each level 1 (prohibited substances) substance or substance group, and its representative control value and relevant regulations.

For details about other utility, control values, and relevant regulations that fall under this restriction, see Attached list 1. (See page 12)

- Any items corresponding to those excluded from application according to laws and regulations are excluded. However, you must report the reason for exclusion (in the case referred to the RoHS orders (EU), see Attached list 3-1 or Attached list 3-2 (See page 12)).

No.	Chemical substance	Legal limit	Main relevant regulations
1	Cadmium and its compounds <sup>#1</sup>	100ppm or less 100ppm or less (packaging materials) <sup>#5</sup>	RoHS directive (EU) Packaging directive (EU)
2	Hexavalent chromium compounds <sup>#1</sup>	1000ppm or less 100ppm or less (packaging materials) <sup>#5</sup>	RoHS directive (EU) Packaging directive (EU)
3	Lead and its compounds <sup>#1</sup>	1000ppm or less 100ppm or less (packaging materials) <sup>#5</sup>	RoHS directive (EU) Packaging directive (EU)
4	Mercury and its compounds <sup>#1</sup>	1000ppm or less 100ppm or less (packaging materials) <sup>#5</sup>	RoHS directive (EU) Packaging directive (EU)
5	Polybrominated biphenyls (PBBs)	1000ppm or less	RoHS directive (EU)
6	Polybrominated diphenyl ethers (PBDEs)	1000ppm or less Use is prohibited (DecaBDE) <sup>#6</sup>	RoHS directive (EU) TSCA PBT Regulation
7	Tri-substituted organostannic compounds <sup>#2</sup> Tributyltin compounds (TBT) Triphenyltin compounds (TPT) Bis (tributyltin) oxide (TBTO), etc.	Intentional use is prohibited, and 1000ppm or less as tin	Japan Chemical Examination Law/Type 1 specified chemical substances REACH regulation (EU)
8	Polychlorinated biphenyls (PCBs)	Intentional use is prohibited	Japan Chemical Examination Law/Type 1 specified chemical substances POPs
9	Polychlorinated terphenyls <sup>#2</sup> (PCTs)	Intentional use is prohibited	REACH regulation (EU)
10	Polychlorinated naphthalenes (with 1 or more chlorines)	Intentional use is prohibited	Japan Chemical Examination Law/Type 1 specified chemical substances POPs
11	Short-chain chlorinated paraffins <sup>#2 #3</sup>	Intentional use is prohibited	POPs REACH regulation (EU)
12	Asbestos <sup>#2</sup>	Intentional use is prohibited, and 1000ppm or less	REACH regulation (EU)

No.	Chemical substance	Legal limit	Main relevant regulations
13	Ozone-layer-depleting substances (Class I) <sup>#4</sup> For substances that apply, see Attached list 4	Intentional use is prohibited	Montreal Protocol on Substances that Deplete the Ozone Layer
14	PFOS and its analogous compounds For substances that apply, see Attached list 5	Intentional use is prohibited	Japan Chemical Examination Law/Type 1 specified chemical substances POPs
15	2-(2H-1,2,3-Benzotriazole-2-YL)-4,6-di-tert-Butylphenol (UV-320)	Intentional use is prohibited	Japan Chemical Examination Law/Type 1 specified chemical substances REACH regulation (EU)
16	Hexachlorobenzene	Intentional use is prohibited, and 10ppm or less	Japan Chemical Examination Law/Type 1 specified chemical substances REACH regulation (EU) Regulation on Classification, Labelling and Packaging of substances and mixtures POPs
17	Dimethyl fulmarate (DMF) <sup>#2</sup>	0.1ppm or less	REACH regulation (EU)
18	Hexabromocyclododecane (HBCD or HBCDD) For substances that apply, see Attached list 9	Intentional use is prohibited	Japan Chemical Examination Law/Type 1 specified chemical substances POPs
19	Bis (2-ethylhexyl) phthalate (DEHP)	1000ppm or less	RoHS directive (EU) REACH regulation (EU)
20	Benzyl butyl phthalate (BBP)	1000ppm or less	
21	Dibutylphthalate (DBP)	1000ppm or less	
22	Diisobutyl phthalate (DIBP)	1000ppm or less	
23	Perfluorooctanoic acid (PFOA) and its salts and PFOA-related compounds (For applicable substances, see Attached list 10)	Intentional use is prohibited, and 0.025 ppm or less of PFOA including its salts, or 1 ppm of one or a combination of PFOA-related compounds	POPs Japan Chemical Examination Law/Type 1 specified chemical substances
24	Perfluorocarboxylic acids containing 9 to 14 carbon atoms in the chain (C9-C14 PFCAs), their salts and C9-C14 PFCA-related substances	Intentional use is prohibited, and less than 0.025 ppm of C9-C14 PFCAs including its salts, or 0.26 ppm of one or a combination of C9-C14 PFCA-related substances	REACH regulation (EU)
25	Perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds	Intentional use is prohibited	POPs
26	Dechlorane Plus (DP)	Intentional use is prohibited	POPs
27	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	Intentional use is prohibited	POPs

## **Separate table 2 (Level 2: Controlled substances group list)**

- Separate table 2 shows each substance or substance group that belongs to level 2 (controlled substances). For details about relevant laws, see Attached List 2. (See page 12)
- For substances that count as REACH/restricted substances, or for details, see Attached list 6, and for details about REACH/permitted substances or SVHC substances, see Attached list 7. (See page 12)
- In order to use this for work such as information disclosure in supply chains, report information on the presence of the chemical substances below.

No.	Chemical substance or substance group name
1	Antimony and its compounds <sup>#7</sup>
2	Arsenic and its compounds <sup>#7</sup>
3	Beryllium and its compounds <sup>#7</sup>
4	Nickel and its compounds <sup>#7</sup>
5	Selenium and its compounds <sup>#7</sup>
6	Un-specific brominated flame retardants <sup>#8</sup>
7	Polyvinyl chlorides (PVCs) and its mixture, its copolymer
8	Phthalate esters other than No.19 - No.22 of Separate table 1 List
9	Ozone-layer-depleting substances (Class II: HCFC) <sup>#9</sup> (For applicable substances, see Attached list 4)
10	Radioactive substances
11	Di-substituted organostannic compounds (DBT, DOT, etc.)
12	Cobalt and its compounds <sup>#7</sup>
13	Azodyes and azocolourants which form specific amines (For applicable substances, see Attached list 8)
14	Formaldehyde
15	Benzene
16	Fluorine-based greenhouse gases
17	Phenol, 2,4,6-tris(1,1-dimethylethyl) (2,4,6-TTBP)
18	Isopropylphenyl phosphate (PIP(3:1))
19	Pentachlorothiophenol (PCTP)
20	Hexachlorobutadiene (HCBd)
21	Per/polyfluoroalkyl compounds (PFAS)
22	Decabromodiphenylethane (DBDPE)
23	Polycyclic-aromatic hydrocarbons (PAHs) corresponding to REACH/restriction substance (For applicable substances, see Attached list 6)
24	REACH/restriction substances (For applicable substances, or for details, see Attached list 6)
25	REACH/authorization substances (For applicable substances, see Attached list 7)
26	REACH/SVHC (For applicable substances, see Attached list 7)
27	JAMP declarable substances <sup>#10</sup> (Including chemSHERPA <sup>#11</sup> )

Notes on Separate tables 1 and 2:

- #1: For metals, alloys are included.
- #2: REACH/restriction substances whose utility and treatment is judged to satisfy all regulations.
- #3: Applies to short-chain chlorinated paraffins of carbon chain length 10 through 13.
- #4: Class I substances according to the Montreal Protocol on Substances that Deplete the Ozone Layer (ozone-depleting chemicals excluding HCFC).
- #5: For packaging materials, the total of four substances must be 100ppm or less.
- #6: Only for articles for the U,S. covered by TSCA PBT regulations
- #7: For metals, alloys are included.
- #8: Those other than PBBs and PBDEs listed in Separate table 1 (Prohibited).
- #9: Class II substances according to the Montreal Protocol on Substances that Deplete the Ozone Layer.
- #10: Declarable substances regulated by the Joint Article Management Promotion consortium (JAMP).

Substances to which the following laws and industry standards apply are included:

1. Japan Chemical Examination Law/Type 1 specified chemical substances
2. Japan Industrial Safety and Health Law (substances whose manufacture is prohibited)
3. Poisonous and Deleterious Substances Control Law (specific toxic substances)
4. RoHS directive
5. ELV directive
6. CLP (Annex VI Table3.1/CMR-Cat 1a and 1b as well as Table3.2/CMR-Cat 1 and 2)
7. REACH Annex XVII (restriction substances)
8. REACH authorization substance candidates (SVHC)
9. POPs regulation Annex I
10. ESIS PBT (parts that apply to the PBT evaluation criteria)
11. GADSL
12. IEC62474

#11 : Declarable substances regulated by chemSHERPA

Substances to which the following laws and industry standards apply are included:

1. Japan Chemical Examination Law/Type 1 specified chemical substances
- 2.Toxic Substances Control Act (TSCA)(Section 6)
- 3.ELV directive
- 4.RoHS directive
5. POPS regulation Annex I
- 6.REACH SVHC(authorization substance candidates) and Annex XIV(authorization substance)
- 7.REACH Annex XVII(Restricted substances)
- 8.GADSL
- 9.IEC62474
- 10.Medical Device Regulation(MDR) Annex I 10.4 Substances

For details, see the following document and list:

chemSHERPA declarable substance handbook and chemSHERPA declarable substance reference list (Latest version)

<https://chemsherpa.net/english>

### **Attachment list**

Attached list 1: List of details on utility/control values/reference laws relating to each level 1 (Prohibited) substance group

Attached list 2: List of details on utility/control values/reference laws relating to each level 2 (Managed) substance group

Attached list 3-1: RoHS directive/list of exemptions (Annex 3)

Attached list 3-2: RoHS directive/list of exemptions (Annex 4)

Attached list 4: Ozone-layer-depleting substances list

Attached list 5: PFOS and its analogous compounds list

Attached list 6: REACH/restriction substance list

Attached list 7: REACH/authorization substance/SVHC list

Attached list 8: Specific amine list

Attached list 9: Hexabromocyclododecane list

Attached list 10: List of Perfluorooctanoic acid (PFOA), its salts and PFOA-related compounds

(Home page for Attached lists:[http://www.hitachi.com/environment/library/pdf/green\\_annex\\_en.pdf](http://www.hitachi.com/environment/library/pdf/green_annex_en.pdf))

## Attachment 1 (Survey of chemical substances)

### ■ Survey of chemical substances included in raw materials, parts, and half-finished and finished products

To determine each denominator and numerator, follow the definitions for calculating the content percentage of the mass of included chemical substances shown below.  
Even if the content percentage is no more than the threshold value, follow the policy for registering surveyed values.

	Unit of survey	Unit and definition of surveyed values	Policy of registering the surveyed values	
			Substance intentionally added	Substance potentially added unintentionally
<b>Level 1</b> Prohibited substances group	RoHS: For each homogeneous materials  Not RoHS: For each supplied product or for each arbitrary class into which supplied products are divided	Unit: a) The mass of the denominator and the mass of the numerator or b) The mass and concentration of the denominator for each region that includes chemical substances Definition: The maximum value (theoretical or actual measured value)	Register regardless of the value.	Also register if the substance is potentially added.
<b>Level 2</b> Controlled substances group		Unit: The mass of the substances concerned included in each delivered product, or the mass of the substances concerned included in each class obtained by dividing delivered products into arbitrary classes Definition: The mean value (theoretical or actual measured value) or the maximum value (theoretical or actual measured value)	Register regardless of the value.	Also register if presence is confirmed and the value is obtained.

- Note that individual controls for substances groups not listed above might also be requested depending on the product group to be surveyed.
- Some prohibited substances were used for various applications in the past as additive agents to achieve product performance characteristics. These might even be included in current products. Various cases of erroneous use, mixing, and contamination of prohibited substances have been reported, including those usually contained in raw materials in nature, remaining in products after generation as by-products or used as subsidiary materials in the manufacturing process, being mixed into products due to shared production lines or the use of alternative materials available in inventory.  
Suppliers are requested to properly control prohibited materials in order to prevent their mixture into products in excess of the threshold value by understanding their characteristics and tracking their history, including those exempt from laws and regulations.

**■ Definition of the denominator and the numerator for calculating the content percentage of the mass of included chemical substances**

(1) Definition of the denominator

RoHS regulations : Homogeneous materials

Regulations other than RoHS : For each procured product or for each arbitrary class into which procured products are divided

[Definition of homogeneous material]

Homogeneous material refers to material that cannot be mechanically separated into other materials.

The following are homogeneous substances or homogeneous materials:

Composites	Judgment criteria
Chemical compounds, polymer alloys, metallic alloys, etc.	Homogeneous materials
Materials that have undergone painting, printing, plating (chromate treatment) or other treatments	Individual monolayers are considered homogeneous material. (In the case of zinc plating chromate treatment, the zinc plating layer and the chromate treatment layer are considered separate homogeneous materials. However, if it is difficult to obtain the values for individual monolayers by separating multilayers, the minimum separable unit is considered a homogeneous material unit (JIS C 0950).)

(2) Definition of a numerator

“Chemical substances” refers to chemical elements or compounds.

Chemical substances	Definition of a numerator
Metals and metallic compounds etc.	Mass of metallic elements
Substances other than metals and metallic compounds	Mass of the chemical substance

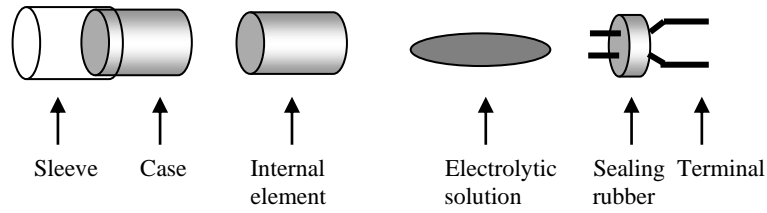
The molecular mass relevant to the CAS number is to be filled in (actually larger than the mass of metallic elements in the molecule) for the potential REACH SVHC.

**■ Example registration of product composition information (Electrical part)**

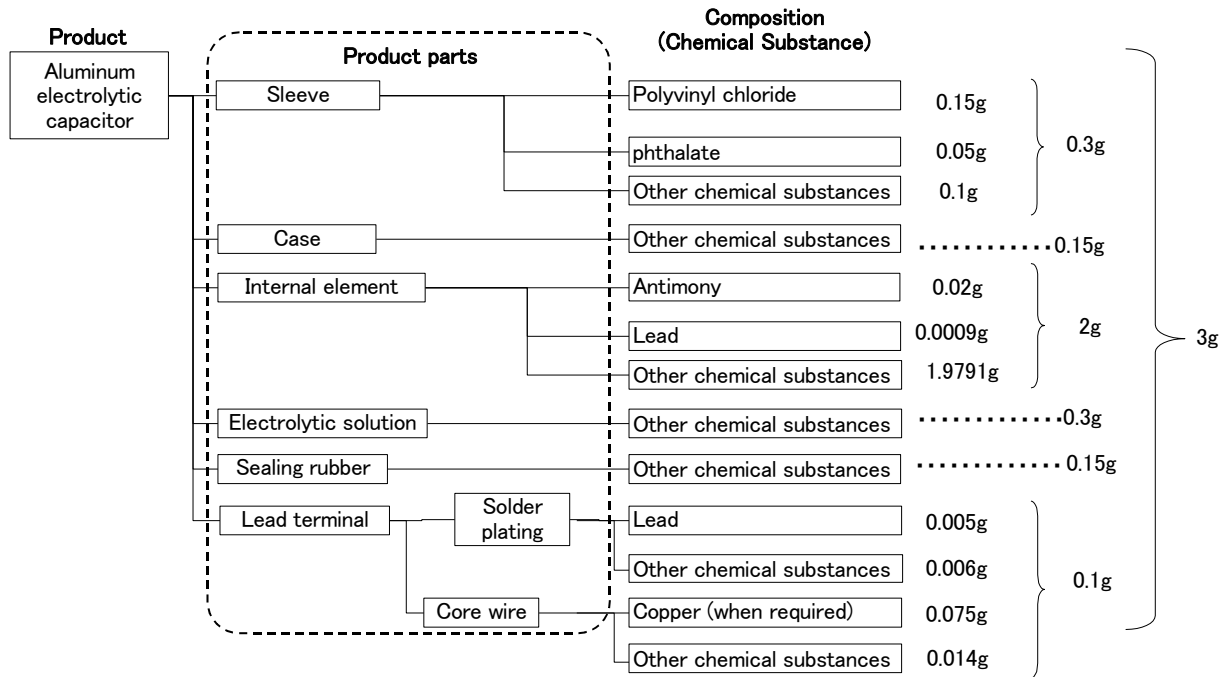
The Hitachi Group defines products, regions, and compositions (chemical substances) as shown in the table and class chart below.

- Exempted substances not included in prohibited or controlled substances can all be categorized as “other chemical substances”.
- “Chemical substances” refers to chemical elements or compounds.
- “Product parts” refers to the minimum unit that can be mechanically separated from other materials and is composed of homogeneous substances. (For details, see the A Gree’Net user’s manual.)

**Ex) Aluminum electrolytic capacitor (weight: 3g)**



Product parts		Composition (Chemical substance)				
Product parts	Mass /g	Chemical substance name	Use	CASnumber	Content/g	
Sleeve (Outer tube)	0.3	Polyvinyl chloride		9002-86-2	0.15	
		Phthalate	Plasticizer	117-81-7	0.05	
		Other chemical substances		—	0.1	
Case	0.15	Other chemical substances		—	0.15	
Internal element	2	Antimony		7440-36-0	0.02	
		Lead		7439-92-1	0.0009	
		Other chemical substances		—	1.9791	
Electrolytic solution	0.3	Other chemical substances		—	0.3	
Sealing rubber	0.15	Other chemical substances		—	0.15	
Lead terminal	Solder plating	0.011	Lead	Solder	7439-92-1	0.005
			Other chemical substances		—	0.006
Core wire	0.089	Copper (when required)		7440-50-8	0.075	
		Other chemical substances		—	0.014	





## **Attachment 2 (Measurement method)**

### **■ Measurement method for the mass of included chemical substances**

(1) Measurement method for specified substances regulated by RoHS Directive etc.

Use the measurement method shown in the Hitachi Group's "Analysis guideline for RoHS Directive" ([http://www.hitachi.com/environment/library/pdf/RoHS\\_en.pdf](http://www.hitachi.com/environment/library/pdf/RoHS_en.pdf)) or the equivalent with the same or higher accuracy.

(2) Measurement method for other chemical substances

For the measurement method for other chemical substances, follow the instructions of the Quality Assurance Division of the business office where your products are delivered.