

NIK-EC-810-05

**NITTO KOHKI GROUP**  
**GREEN PROCUREMENT STANDARD**

**Edition 8.3**

Prepared : July 26, 2004

Revised: April 1, 2018



**NITTO KOHKI CO., LTD.**  
**Green Procurement Committee**

## 1. ISO(Quality and Environmental)Policy of NITTO KOHKI

NITTO KOHKI established "Environmental Policy" in July, 2003 and since then, based on this policy NITTO KOHKI has promoted environmental conservation activities.  
Changed to "ISO (quality and environment) policy" from 2017.

### Philosophy

NITTO KOHKI has exerted every effort to design, develop and manufacture the best quality, most sophisticated and highly reliable products based upon its ingenious technology with a view to realizing laborsaving and improving working conditions in industrial circles. NITTO KOHKI will execute its social responsibility in all aspects with the recognition that the most urgent and important assignments of NITTO KOHKI are to reduce environmental load and improve customer satisfaction through its business activity together with its contribution to the environment by way of design, development and manufacture of its eco-friendly products.

### COMPANY POLICY

- (1) Being dedicated to raising the environmental consciousness of individual employees toward effectively applying ISO (quality and environmental management systems), and to improving customer satisfaction and conserving the environment by methods that include maintaining product quality in all activities including business processes of designing, developing, manufacturing and marketing quick-connecting fluid couplings, machine tools (pneumatic / hydraulic / electric), air compressors and pumps including application products, and door closers.
- (2) Striving to prevent the environmental pollution through design of environmental conscious products, green procurement and green purchase, resource saving, reduction of energy consumption, recycling and reuse program and waste minimization.
- (3) Complying with obligations related to environmental regulations in corporate activities.
- (4) Setting and practicing quality and environment targets, periodically conducting internal audits and management reviews, to continuously improve the quality and environment management system as activities matching to our business.
- (5) Clarifying business processes in corporate activities and carrying out business improvements.
- (6) Having this policy documented and keeping the employees informed about it, as well as disclosing the policy on the request of stakeholders.

## 2. Regarding the green procurement standard

### 2-1 Objective

This standard describes the basic concept and specific items requested to suppliers of the NITTO KOHKI group (hereinafter referred to as "NITTO KOHKI") in terms of green procurement. In this procurement, the objective is to clarify substance names and manage classification of chemical substances contained in raw materials or manufacturing process for all parts, semi-finished products, secondary materials and manufacturing that compose NITTO KOHKI brand products. The aim is to promote prohibition and reduction of their use, for compliance and environmental conservation and also to reduce the impact on the ecological system.

\*1 The NITTO KOHKI group referred to here are the NITTO KOHKI and its affiliated and associated companies described in the Table EC-810-05-01.

### 2-2 Green procurement policy

- (1) NITTO KOHKI procures raw materials, parts, products and secondary materials (hereinafter referred to as "procured items") conforming to laws and regulations related to chemical substances.
- (2) NITTO KOHKI prohibits or reduces the use of chemical substances harmful to people and environment in the manufacturing process.
- (3) NITTO KOHKI gives priority to procure from suppliers that are addressing their efforts to construct an environment management system and a system to manage chemical substances contained in products.
- (4) NITTO KOHKI identifies information of chemical substances contained in products to satisfy demands from clients and promotes disclosure of information.

### 2-3 Scope of application

This standard applies to procured items manufactured or sold by NITTO KOHKI and to their manufacturing processes.

- (1) NITTO KOHKI brand products.
- (2) NITTO KOHKI products being sold or distributed with NITTO KOHKI logos on them, of which design and production are outsourced to third parties. (OEM and ODM supplied products)
- (3) Products of which design and production are outsourced to NITTO KOHKI by third parties (special order products, OEM and ODM products) excluding parts and materials to be specified by the third parties.
- (4) Procurement item necessary for NITTO KOHKI for production
  - ① Raw material
  - ② Parts (structural parts, electrical parts, packaging materials, packaging components, plated/painted parts, etc.)
  - ③ Semi-finished products (electrical motors, functional units, PC boards, etc.)
  - ④ Auxiliary materials to be used in products (adhesives, greases, oils, soldering materials, labels, adhesive tapes, etc.)
  - ⑤ Instruction manuals, cautions for use, etc.
  - ⑥ Packaging materials used for delivery and protection (wooden crates, trays, bags, buffer materials, sheets, wraps, cardboards, tapes, binding bands, labels, printing inks, paints, etc.)
- (5) Chemical substances used in manufacturing processes

### 2-4 Green Procurement Standard requirement item (Requirement item to suppliers)

NITTO KOHKI group selects suppliers by taking into account conventional prerequisites for procurement such as quality, cost and delivery in addition to environmental conservation activities, and management of chemical substances in products of suppliers.

Specific requirements are described below.

- (1) Implementation of green procurement by supplier.
- (2) Form an environment management system. For formulation, it is desirable to acquire a third-party certification.

\* Examples of third-party certifications: ISO14001, Eco-Action 21, Ecostage, KES, etc.

- (3) Implementation and operation of system to manage chemical substances in products.
- (4) Forwarding of environment information of suppliers of secondary, tertiary and onward from the standpoint of NITTO KOHKI.
- (5) Provision of required environment information when requested by NITTO KOHKI.
- (6) Consideration to energy saving and resource conservation.

### 2-5 Identification and evaluation of activities for system to manage chemical substances contained in products by suppliers

NITTO KOHKI identifies and evaluates activities for the system to manage chemical substances contained in products by suppliers.

- (1) Supplier Survey Sheet of Green Procurement (Form EC-810-04-01)
  - ① The objective of this survey sheet is to identify basic information and the statuses of activities for environment management system of suppliers.
  - ② Form EC-810-04-01 "Supplier Survey Sheet of Green Procurement" will be provided from the contact person in charge of NITTO KOHKI at new transactions or when necessary. Enter the required items and submit the form.
- (2) Implementation Item List and Check Sheet (Issued by JAMP)
  - ① This check sheet is an attachment of the "Guidelines for the Management of Chemical Substances in Products" issued by JAMP in which is a form for self auditing.
  - ② The objective of this check sheet is to confirm the non-use guarantee structure of suppliers in terms of chemical substances to be managed by NITTO KOHKI stipulated in the document No. NK-02 [Chemical Substances List].
  - ③ It will be requested from the contact person in charge of NITTO KOHKI when conducting new transactions and when it would be needed. Enter the required items and submit the form.

- ④ The submitted Check Sheet will be evaluated objectively based on the self-evaluation and final judgment where comments (improvement request) will be provided by the Quality Assurance Department. Suppliers are requested to confirm the comments and use them to improve the system to manage chemical substances in their own products.
- ⑤ Suppliers are requested to use this check sheet to identify and evaluate the statuses of activities for the system to manage chemical substances contained in products for their suppliers.
- ⑥ The "Guidelines for the Management of Chemical Substances in Products" and "Implementation Item List and Check Sheet" will be posted on the JAMP website.

<http://www.jamp-info.com/dl>

(3) Confirmation by plant audit

Request for corrective action and plant audit will be implemented according to the contents of evaluation of the "Implementation Item List and Check Sheet" described in (2).

## **2-6 Review of Green Procurement Standard**

(1) Information of revision

- ① The Green Procurement Standard will be revised when necessary according to revisions of Japanese and/or foreign regulations, industry trends, and revision of correspondence to chemical substances of NITTO KOHKI.
- ② You will be informed of any revision by the contact person in charge of NITTO KOHKI. Please confirm and correspond to the informed revision.

(2) Prior notification (Notification of prior information)

- ① We may change part of the standard by issuing a change notification sheet when any deficiency is observed in the issued Green Procurement Standard.
- ② Please confirm the contents of the change notification and correspond accordingly.
- ③ The contents of the changed notification will be reflected in the Green Procurement Standard at the subsequent revision.

## **3. Definitions of terms**

Confirm the attached Table EC-810-05-08 "The list of definition of terms"

## 4. Survey of Chemical Substances

### 4-1 Chemical substances managed by NITTO KOHKI

#### (1) Control object chemical substances

Substances indicated below shall be the chemical substances subject to management.

- ① The attached Table EC-810-05-02, Document No. NK-02, "List of Chemical Management Substances" shows the classification and timing of prohibition of chemical substances determined according to Japanese and foreign laws and regulations, JAMP\_Declarable\_Substances and IEC62474.
- ② The attached Table EC-810-05-03, "List of chemical substances shall be prohibited by laws and regulations" describes the class 1 of the Chemical Substances Control Law, chemical substances prohibited to be manufactured by the industrial safety and health law, the Law Concerning the Protection of the Ozone Layer through the control of specified substances and other measures and Poisonous and Deleterious Substances Control Act in which they are substances prohibited to be used.
- ③ Typical examples of chemical substances and compounds described in NK-02 are shown in the Table EC-810-05-04, "List of a typical example of chemical substances." The classification and timing of prohibition of NK-02 are applied by scope containing chemical substances and compounds.
- ④ The attached Table EC-810-05-05 "Investigation object substances of REACH regulation (SVHC)" describes SVHC of REACH regulation.

\*Some chemical substances are listed in ①, ②, ③ and ④.

#### (2) Standard of classification

Chemical substances managed by NITTO KOHKI shall be classified in three levels as follows:

- ① Level A: Banned substances . . .  
Chemical substances and their usage classified in this level shall be prohibited immediately.
- ② Level B: Substances to be banned . . .  
Chemical substances and their usage classified in this level shall be prohibited in the application and at the time that NITTO KOHKI designates.
- ③ Level C: Containment controlled substances . . .  
The information of chemical substances which are classified in this level and contained in the procured items shall be reported.

### 4-2 Survey

- (1) Suppliers are requested to survey chemical substances contained in investigation object parts and auxiliary materials and report the results. Suppliers must report the content rate when chemical substances are intentionally added or when the content rate exceeds the threshold.
- (2) Suppliers are requested to report the component name (substance name) and content rate of the investigation object item when its constituent is clarified\*<sup>2</sup>.
- (3) Conduct a survey on each component when the investigation object is a semi-finished product composed of a plural number of components.
- (4) Since components are normally generated by a plural number of metal elements and chemical substances, investigate the contained chemical substances without omission by listing those generated elements.
- (5) Content report of the chemical substances in heat treatment process is unnecessary since heat treatment (quenching tempering, carburizing, nitriding, etc.) is reforming process of the base material.
- (6) The chemical substances that contain plating film, coating, etc. are the substances that remain (separate) in the plating film, coating, etc. after drying or hardening in the treatment process in which it is not a part of the component or component amount of chemicals used in the treatment process.
- (7) Suppliers are requested to report not the component before the application but the component of after hardening, reaction and drying for adhesive agents.
- (8) Investigation according to relevant agreement items is requested for products in scope of agreements concluded with NITTO KOHKI.
- (9) A reminder email will be sent from the contact person in charge of NITTO KOHKI when the deadline to reply to the survey has passed. Ask the contact person in charge of NITTO KOHKI when any problem occurs with the survey.
- (10) The contact person in charge of NITTO KOHKI will contact you when there is any unclear issue regarding the replied survey results. Please cooperate to solve unclear issues.

\*<sup>2</sup> For example, amount of copper content in a copper alloy. (It is the content of the managed substance "copper" in GADSL.)

#### 4-3 Concept of contained

- (1) Environmental management substances are deemed to be apparently contained in products regardless of the component or the amount of content when relevant environmental management substances are intentionally added.
- (2) When environmental management substances are not added intentionally to products, such environmental management substances are treated as impurities. However, suppliers are requested to fill out the form for the impurities as much as suppliers can figure out. However this does not mean that suppliers are requested to make analysis once again.
- (3) With regard to substances of which contained amount suppliers do not describe, suppliers are deemed not to add such substances to products.

#### 4-4 Calculation of contained amount

- (1) Suppliers are requested to inform NITTO KOHKI group of actual measurement value, controlled value, theoretical value or calculated value of the contained amount of chemical substances.  
If the contained amount has some range of value, then suppliers shall inform NITTO KOHKI group of the maximum value.
- (2) Reply by stating the total contained amount of chemical substances in a part, not only of those contained during the manufacturing process but also by investigating chemical substances contained in materials composing the relevant part.

#### 4-5 Calculation of contained amount in product with surface treatment

Suppliers are requested to inform the actual measurement value, controlled value, theoretical value or calculated value of the unit area (1cm<sup>2</sup>) for the chemical substances when surface treatment such as plating and coating is to be provided to parts. If the contained amount has some range of value, then suppliers shall inform the maximum value.

#### 4-6 Chemical substances used in manufacturing processes

- (1) Promote reduction of the substances described Table1 used in manufacturing processes as solvents and detergents.
- (2) If in case using any one of three substances described Table1 in a manufacturing process, reply by ①or②.
  - ① When reply by using AIS, enter the substance's name and applications in "Requester remarks 3" in the requester information (optional) sheet of AIS.
  - ② When reply by using chemSHERPA, report the substance's name and applications to the contact person in charge of NITTO KOHKI separately.

**Table 1 Chemical substances promoting reduction in**

	Substance name	CAS #	Applicable regulation
(1)	Trichloroethylene	79-01-6	Air Pollution Control Law (VOC emission controlled substance) EU/REACH regulation (SVHC list), (Annex14/Authorized substance)
(2)	Tetrachloroethylene	127-18-4	Air Pollution Control Law (VOC emission controlled substance)
(3)	Methylene chloride	75-09-2	Air Pollution Control Law (VOC emission controlled substance) EU/REACH regulation (Annex XVII / Restricted substance)

#### 4-7 Survey Data

- (1) Reply by stating information on the contained chemical substances using the format created by the entry supporting tool of the website publicized free of charge by JAMP. Please make sure to use the supporting tool with the latest date.
- (2) Use the format of JAMP AIS, MSDSplus or chemSHERPA. When parts are supplied by supplier, use AIS or chemSHERPA-AI. And when materials are supplied, use MSDSplus or chemSHERPA-CI.
- (3) Use JAMP AIS, MSDSplus and chemSHERPA by downloading new version.
  - ① AIS <http://www.jamp-info.com/ais>
  - ② MSDSplus <http://www.jamp-info.com/msds>
  - ③ chemSHERPA (-CI/-AI) <https://chemsherpa.net/chemSHERPA/tool/>
- (4) For the time being, it's possible to use conventional format "AIS", "MSDSplus" and the new format "chemSHARPA" for reply. But may use chemSHERPA instead of "AIS" and "MSDSplus" in the future.
- (5) Create the survey data using the supporting tool following the relevant "Operation manual of the entry supporting tool." Contact the contact person in charge of NITTO KOHKI if there is any question regarding creation of the survey data.

#### 4-8 Guidance for creating survey data of each industry

- (1) Guidance is prepared by the relevant industry association to create AIS for industries related to processes and products such as plating, trading, packaging and electric wire.
- (2) Refer to the guideline to control chemical substances contained in products of JAMP website when creating AIS.

**Table 2 List of guidance issued by JAMP**

	Document name	Issued by
(1)	Guideline to control chemical substances contained in products	JAMP / Japan Chemical Industry Association (JCIA) / The Japan Iron and Steel Federation (JISF) / Japan Plating Suppliers Association (KZK) / Advisory committee of chemical substances contained in products of four electric and electronic associations / JGPSSI
(2)	Implementation items list and check sheet	JAMP
(3)	Guidance for trading company	JAMP
(4)	Manual for controlling chemical substances contained in products for small to medium enterprises (Basic version)	Committee for creating manual to control chemical substances contained in products / National Federation of Small Business Associations
(5)	Guidance for converting process (common in processes converting mixture (compound) to article)	JAMP
(6)	Guidance for fabrication (ejection fabrication of thermoplastic resin)	JAMP / Japan Plastics Industry Federation
(7)	Guidance for machining (pressing, cutting and grinding version)	JAMP
(8)	Guidance for plating process	JAMP / Japan Plating Suppliers Association / Federation of Electro Plating Industry Association, Japan
(9)	Guidance for coating and printing process	JAMP
(10)	Guidance for mounting process	JAMP
(11)	Guidance for thermosetting resin (1) (manufacturing of prepreg for printed wiring board and <b>manufacturing method of printed board</b> )	JAMP / Japan Thermosetting Plastics Industry Association
(12)	Guidance for electric wiring and cable	The Japanese Electric Wire & Cable Makers' Association / Japan Electric Cable Technology Center
(13)	Guidance for adhesive tape and adhesive sheet	Japan Adhesive Tape Manufacturers Association
(14)	Guidance for transport packaging	JAMP / Japan Packaging Institute (JPI)
(15)	Guidance for fabrication (Unsaturated polyester resin)	JAMP / Japan Thermosetting Plastics Industry Association
(16)	Guideline of Ceramic material displayed in the electronic parts	Japan EInformation and Information Technology Industries Association
(17)	Basic document of controlling chemical substances contained in products	JAMP

Various types of guidance can be downloaded from the JAMP website described below.

<http://www.jamp-info.com/>

**4-9 Storage of survey sheet**

Suppliers are requested to manage the analysis data or constituent data etc. that suppliers obtained to create the survey sheet. Suppliers may be requested to submit these pieces of data to NITTO KOHKI.

Storage limitation : 10 years after obtaining

**4-10 Inquiry regarding the survey sheet**

Inquire the contact person in charge of NITTO KOHKI.

**4-11 Points to note at delivery**

Confirm the conformity and enter a "O" or "✓ (check)" mark in the "Conforms to NK-02" column in the Delivery Sheet at the time of delivery.

**4-12 Change in manufacturing processes or employed raw materials**

- (1) When there is any change in a process, used raw material, etc., notify using the specified form following the arrangement made with the department in charge of NITTO KOHKI.
- (2) Also, submit the investigation data of chemical substances using JAMP AIS, JAMP MSDSplus or chemSHERPA.

**4-13 Nonconformity response**

- (1) When nonconformity in the products delivered has occurred, please report immediately to the person in charge of Nitto Kohki.
- (2) To investigate the influence of non-conforming, please report immediately. (Lot, quantity, non-conforming substance and concentration, cause, etc.)
- (3) Corresponding to the non-conforming, in consultation with the Nitto Kohki person in charge, please minimize the impact.

FIG.1 Chemical substance survey management diagram

1) : Order for reply / ①: Type of reply

Contents	NITTO KOHKI	Request Reply	Suppliers of procured item	Request Reply	raw material manufacturer or Analytical laboratory
(1) GREEN PROCUREMENT STANDARD	<b>1) Request for confirming</b> ① Request for Downloading from the Homepage. ② Distribution	→	2) Confirm the contents ① Download ② Receiving		
(2) New Transaction (procurement and change the suppliers)	<b>1) Request for the data</b> 5) Receiving and confirming the data	→ ←	2) Request for survey or analysis 4) Prepare and submit the data ① AIS or chemSHERPA	→ ←	raw material manufacturer 3) Reply
(3) Resurvey associated with changes in standards etc.	<b>1) Request for the data</b> 5) Receiving and confirming the data	→ ←	2) Request for survey or analytical 4) Prepare and submit the data ① AIS or chemSHERPA	→ ←	raw material manufacturer 3) Reply
(4) the latest and detail data	<b>1) Request for the data</b> 5) Receiving and confirming the data	→ ←	2) Request for survey or analytical 4) Prepare and submit the data ① AIS or chemSHERPA ② Analysis data ③ Constituent data (MSDSplus, Mill test report, SDS, etc)	→ ←	raw material manufacturer or Analytical laboratory 3) reply or report for result
(5) At the time of Delivery	<b>1) Request for confirming the conformity of the products delivered</b> 5) Confirms and check that Delivery Sheet "conforms to NK-02"	→ ←	2) Confirming the conformity of GREEN PROCUREMENT STANDARD 3) Confirms that Delivery Sheet "conforms to NK-02" (check by "O" or "✓") 4) Delivery (Delivered Product and Slip)		
(6) At the time of Change in manufacturing processes or employed raw materials	2) Request for the data ① AIS or chemSHERPA 6) Receiving and confirming the data 7) Change the design (when necessary) 8) Acceptance of the change	← → ← →	<b>1) Request for the change</b> ① Phone ② Verbal communication ③ E-mail 3) Request for survey or analytical 5) Prepare and submit the data ① AIS or chemSHERPA 9) Operation	→ ←	raw material manufacturer 4) Reply

## 5. Establishment of management system

Establish a system to be able to continuously promote environment management system and approaches to control chemical substances contained in products referring to sections 5-1 and 5-2 described below.

### 5-1 Formulation of environmental management system

Form an environment management system. For formulation, it is desirable to acquire a third-party certification. Examples of third-party certifications: ISO14001

### 5-2 Formulation of management system of chemical substances contained in products

- (1) Suppliers are requested to formulate a management system of chemical substances contained in products to appropriately manage chemical substances contained in products and exchange information of chemical substances contained in products in a highly reliable manner.
- (2) A system complying with the "Guidelines for the Management of Chemical Substances in Products" conforming to JISZ7201: 2012 issued by JAMP is recommended when suppliers are required to develop the system.
- (3) Implementation items (summary) of the system for the management of chemical substances contained in products of JAMP are described in Table 3 as a reference.

**Table 3 Implementation item of the system for the management of chemical substances in products**

No.	Implementation item	Point of implementation item
(1)	Declaration of Policy of Management System of Chemical Substances Contained in Products	Declaring that the top management related to the management of chemical substances contained in products stipulates the policy of management of chemical substances contained in products and provides appropriate actions for the management.
(2)	Definition of Management Standard of Chemical Substances Contained in Products	Management criteria to be followed shall be clarified based on legislation, industry criteria and customer's requests, etc. and conveyed to related corporate units.
(3)	Objectives & Planning for Implementation	Objectives and plans shall be clarified and revised.
(4)	Clarification of responsibilities and rights	Roles, rights and responsibilities for management of chemical substances in products shall be clarified.
(5)	Management of Chemical Substances Contained in Products for Design and Development *3	Compliance with the defined requirements in the process of design and development shall be checked.
(6)	Obtaining and Confirmation of Information of Environmentally Hazardous Substances Contained in Products	A system for acquiring and verifying information from suppliers, and conveying requirements to suppliers shall be constructed.
(7)	Confirmation of supplier's management status for chemical substances contained in products	The management status of suppliers for chemical substances contained in products is confirmed and recorded when concluding a new contract or renewing a contract with suppliers.
(8)	Management of Chemical Substances Contained in Products When Receiving	When NITTO KOHKI receives materials, conformity check with company criteria shall be implemented.
(9)	General Management of Chemical Substances Contained in Products in Production Process	The production process is managed and results are recorded based on the management standard for chemical substances contained in products in production process.
(10)	Prevention of incorrect use, admixture and contamination	Measures to prevent incorrect use, admixture and contamination of chemical substances subject to management are implemented.
(11)	Management at delivery	Compliance with management standards related to chemical substances contained in products at delivery shall be confirmed and the results shall be recorded and delivered. The warehouse of products shall be managed as well to prevent shipping errors and contamination by mixture errors.
(12)	Confirmation of outsourcing contractor's management status for chemical substances contained in products	The management status of outsourcing contractors for chemical substances contained in products is confirmed and recorded to comply with the management standard for chemical substances contained in products of our company at the outsourcing contractors.

(13)	Traceability <sup>*4</sup>	Product traceability shall be clarified.
(14)	Information exchange with customers	Information sharing system shall be constructed.
(15)	Change Control	Handling procedure shall be clarified for the time when composition of chemical substances contained in products is changed due to the change of design, production process, and suppliers, etc.
(16)	Non-conformity Response	Procedures for "contacting stakeholders," "emergency treatment method," "identification of cause and countermeasure," "recurrence prevention," and "record" at occurrence of non-conformity are specified.
(17)	Training	Contents of necessary education and training as well as subject personnel shall be specified and the education and training shall be implemented and recorded.
(18)	Management of Documentation and Records	Procedures for storage and management of documentation and records shall be clarified.
(19)	Performance Evaluation and Improvement	Validity and appropriateness of the management implementation status shall be confirmed at specified intervals and items that require corrective action shall be corrected. The internal audit and results of the corrective action shall be reviewed by top management.

\*3 When a supplier can select materials and components etc., the supplier has a design capability.

\*4 Traceability (history management) provides an understanding of constituent materials, timing and location of manufacture, chemical substances contained in constituent materials, and information on chemical substances contained in manufactured products, in terms of risk to permit identification of the scope of any non-conformance occurring, and provision of information when a change occurs, and provides a structure for the rapid and smooth use, disclosure, and transmission of that information.

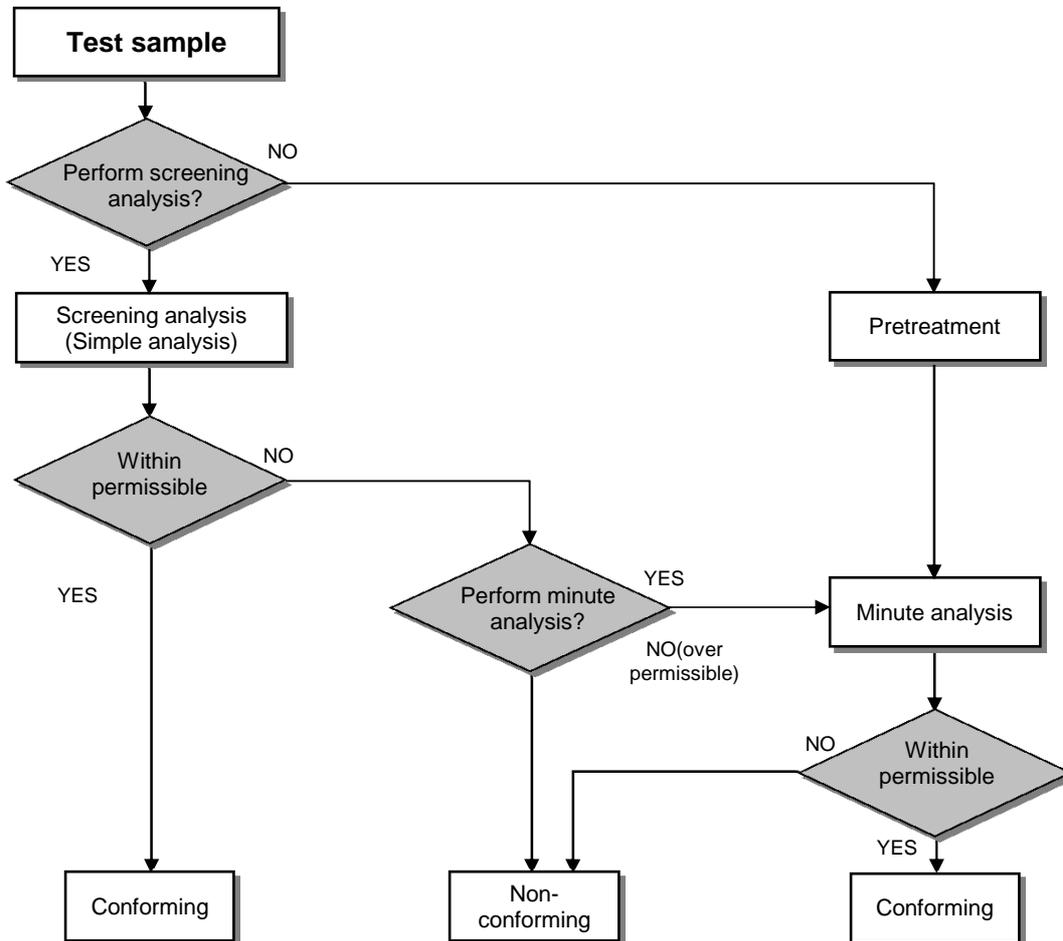
## 6. Submission of survey data

Submission of survey data may be requested. Please follow the procedure shown below when submission is requested.

### 6-1 Survey procedure

- (1) Follow FIG.2 Survey Flow Chart to perform the survey.

FIG .2 Survey Flow Chart  
(Conform to IEC62321 for the flow chart)



- (2) Screening analysis (fluorescent X-ray analysis) IEC 62321-3-1/Ed.1:2013

- ① Simple analysis to identify content of specified toxic substances (lead, cadmium, mercury, hexavalent chromium, PBB and PBDE) of RoHS directive using fluorescent X-ray analysis before conducting minute analysis (ICP analysis).
- ② Hexavalent chromium is analyzed as total chromium and PBB as well as PBDE are analyzed as total bromine in this analysis
- ③ Following items are necessary since the fluorescent X-ray analysis is an analysis method with fluctuation.
  - a. Shall be analysis value  $> 3\sigma$ .
  - b. Test sample shall be the same.

- (3) Minute analysis

Follow the procedure of section 6-3,6-4 and 6-5 described below.

## 6-2 Items of the analysis report

- (1) Information on an analysis organization
  - ① Name of the organization (Common seal to be affixed)
  - ② Names of the person and the manager in charge of the analysis
  - ③ Date of report
- (2) Information on a client who ask an analysis
  - ① Name of the client (Name of a company and department in charge)
- (3) Information on the method of analysis
  - ① Selection of samples (Name of materials such as metals, plastics, etc.)
  - ② Substances to be analyzed for each of sample
- (4) Information on the method of analysis and equipment, etc.
  - ① Method of analysis
  - ② Name of equipment (Name of a manufacturer and model of equipment)
  - ③ Lower limit of analysis
- (5) Information on preconditioning of analysis
- (6) Information on concentration, etc.
- (7) Analysis data includes analysis flowchart of pretreatment and measurement method.

## 6-3 Analysis of rubbers, plastics, paints, inks, etc.

Analysis of cadmium and lead

- (1) Preconditioning

Typical preconditioning methods: e.g., IEC 62321-5/Ed.1:2013

  - a. Closed system for acid decomposition method; e.g., microwave decomposition method
  - b. Acid digestion method
  - c. Dry ashing method
- (2) Measurement methods

Typical measurement methods: e.g., IEC 62321-5/Ed.1:2013

  - a. Inductively Coupled Plasma-Optical (Atomic) Emission Spectroscopy (ICP-OES [ICP-AES])
  - b. Atomic Absorption Spectroscopy (AAS)
  - c. Inductively Coupled Plasma Mass Spectroscopy (ICP-MS)

## 6-4 Analysis of hexavalent chromium

Conform to " IEC 62321-7-1/Ed.1:2015 Test for the presence of hexavalent chromium in colorless and colored corrosion-protected coating on metals."

Conform to " IEC 62321-7-2/Ed.1:2016 Determination of hexavalent chromium in polymers and electronics by the quantitation method,"

- (1) Screening analysis

Suppliers are requested first to analyze hexavalent chromium such as screening analysis as total chromium, and then analyze hexavalent chromium when the total chrome exceeds 100 ppm.
- (2) Conform to IEC 62321-7-1/Ed.1:2015 Test for the presence of hexavalent chromium in colorless and colored corrosion-protected coating on metals.

Supplement

  - ① Existence of hexavalent chromium is judged comparing with  $0.02 \mu\text{g}/\text{cm}^2$  (equivalent to 0.02 mg/kg) of absorbance in  $50 \text{ cm}^2$  of surface area of sample in constant concentration.

Pretreatment : Boiling water extracion / Equipments : UV-Vis

    - a.  $< 0.10 \mu\text{g}/\text{m}^2$  , negative , coating is considered non-CrVI based.
    - b. Between  $0.10 \mu\text{g}/\text{m}^2$  and  $0.13 \mu\text{g}/\text{m}^2$  , inconclusive, unavoidable coating variations may influence the determination;
    - c.  $> 0.13 \mu\text{g}/\text{m}^2$  , positive , coating is considered to contain CrVI
- (3) Conform to IEC 62321-7-2/Ed.1:2016 Determination of hexavalent chromium in polymers and electronics by the colormetric method.

## 6-5 Analysis of packaging materials

- (1) Target substances  
Heavy metals (cadmium, lead, hexavalent chromium and mercury)
- (2) Regulated concentration (threshold level)  
Less than 100 ppm is determined as the threshold levels of the total-concentration of four heavy metals (cadmium, lead, hexavalent chromium and mercury) contained in each part, ink, or paint that constitutes a package.
- (3) Measurement methods
  - ① Suppliers are requested to analyze hexavalent chromium as total chromium, and confirm that the total amount of the four elements is less than 100 ppm. Preconditioning of hexavalent chromium may be conducted together with cadmium and lead simultaneously.
  - ② Suppliers are requested to confirm that the total amount of cadmium, lead and mercury is less than 100 ppm, if the total amount of the four elements exceeds 100 ppm.  
Suppliers are requested to detect hexavalent chromium and confirm finally no detection of the hexavalent chromium.
  - ③ Suppliers are requested to confirm that when the total amount of cadmium, lead and mercury is less than 100 ppm, perform hexavalent chromium detection judgment and confirm that no hexavalent chromium is detected at the final phase.
- (4) Standard of measurement
  - ① Preconditioning
    - a. Preconditioning of cadmium and lead shall conform to the preconditioning applied to cadmium and lead of "6-3 Analysis of rubbers, plastics, paints, inks, etc.". (IEC 62321-5/Ed.1:2013)
    - b. For mercury, typical measurement methods are as follows: (IEC 62321-4/Ed.1:2013)
      1. Closed system for acid decomposition method : e.g., microwave decomposition method
      2. A heating evaporation-cold-vapor mercury-atomic-absorption method (TG(G)-AAS
      3. A wet decomposition method (e.g., Kjeldahl Method) in which a decomposition flask with a reflux condenser is used to decompose mercury by sulfuric acid or nitric acid.

Note : In the process of preconditioning, particular attention is required to avoid mercury sublimation, and precipitates must be completely dissolved by some technical means.
  - ② Measurement methods
    - a. Measurement methods of cadmium, lead and total-chromium concentrations shall conform to the measurement methods applied to cadmium and lead of "6-3 Analysis of rubbers, plastics, paints, inks, etc.". (IEC 62321-5/Ed.1:2013)
    - b. Although the measurement method of mercury is the same as cadmium and lead of "6-3 Analysis of rubbers, plastics, paints, inks, etc.", when content of low concentration is assumed, it is more adequate to use analysis of the reduction vaporizing atomic absorption method or ICP-OES (ICP-AES) with hydride generator ICP-MS method. (IEC 62321-4/Ed.1:2013)
  - ③ Detection and determination of hexavalent chromium (IEC 62321-7-2/Ed.1:2016)  
(Standard methods specified hereafter are applicable when total concentration of the four elements of cadmium, lead, mercury and total chromium in packaging materials is 100 ppm or more.)
    - a. Detection methods:
      1. Preconditioning  
Extraction methods [boiling water extraction and alkaline extraction]
      2. Measurement methods  
Ultraviolet-Visible (UV/VIS) Spectroscopy
    - b. Judgment  
If a combination of a preconditioning method and a measurement method can ensure that the limit of quantification individually for mercury is less than 5 ppm, for cadmium is less than 5 ppm, total chrome is less than 5 ppm, and for lead is less than 30 ppm, the combination is applicable.

## 7. Quotation of term and substance

Terms and substances of this standard (including attached table) are quoted from substance added to substance lists of JAMP (Joint Article Management Promotion Consortium) and IEC62474DB.

**Green Procurement Standard : Revision history**

Edition	Date	Details of revision
1.0	Jul. 26, 2004	Make up new guidelines in Japanese and English.
-		
8.2	Apr.1.2017	<p>1 Changed "Environmental policy" to "ISO (quality and environment) policy".</p> <p>(1) 5-1 Formulation of environmental management system. Removed "Table 1 Requirements items for environmental management system".</p> <p>(2)-1 6. Submission of survey data. To comply with the IEC 62321 standard. 6-1 Survey procedure (2) Screening analysis (fluorescent X-ray analysis) IEC 62321-3-1/Ed.1:2013 6-3 Analysis of rubbers, plastics, paints, inks, etc. Analysis of cadmium and lead (1) Preconditioning : Typical preconditioning methods: e.g., IEC 62321-5/Ed.1:2013 (2) Measurement methods : Typical measurement methods: e.g., IEC 62321-5/Ed.1:2013</p> <p>(2)-2 6-4 (2) CrVI in colourless and coloured corrosion-protected coating on metals. (IEC 62321-7-1:2015) ① Pretreatment : Boiling water extracion / Equipments : UV-Vis a. &lt; 0.10µg/m<sup>2</sup> , negative , coating is considered non-CrVI based. b. Between 0.10 µg/m<sup>2</sup> and 0.13 µg/m<sup>2</sup> , inconclusive, unavoidable coating variations may influence the determination; c. &gt; 0.13 µg/m<sup>2</sup> , positive , coating is considered to contain CrVI (3) Determination of certain substances in electrotechnical products - Determination of hexavalent chromium (Cr(VI)) in polymers and electronics by the colorimetric method. (IEC 62321-7-2:2016)</p> <p>(2)-3 6-5 Analysis of packaging materials (4) Standard of measurement ② Measurement methods Measurement methods of cadmium, lead and total-chromium concentrations shall conform to the measurement methods applied to cadmium and lead of "6-3 Analysis of rubbers, plastics, paints, inks, etc". (IEC 62321-5/Ed.1:2013)  Although the measurement method of mercury is the same as cadmium and lead of "6-3 Analysis of rubbers, plastics, paints, inks, etc.", when content of low concentration is assumed, it is more adequate to use analysis of the reduction vaporizing atomic absorption method or ICP-OES (ICP-AES) with hydride generator ICP-MS method. (IEC 62321-4/Ed.1:2013)  ③ Detection and determination of hexavalent chromium (IEC 62321-7-2/Ed.1:2016)</p> <p>(3) Changed substance groups of the attached table 810-05-02 document No. NK-02 "NITTO KOHKI Chemical Substances List."  29. Phthalic acid ester (DEHP, DBP, BBP, DIBP) Change substance Standard of Classification to level A Changed the expiration date of heavy metal use of EU RoHS directive. Because the extension is under deliberation, the deadline is set up again.</p> <p>(4) Added substance to Table 810-05-04 " List of a typical example of chemical substances" .</p> <p>(5) Added investigation object substances in the attached table 810-05-05 REACH Regulation SVHC in accordance with the 15th and 16th publications of substances of very high concern (SVHC) of the EU REACH Regulation. •One substance groups were added to the 15th publication released on June 20, 2016. •Four substance groups were added to the 16th publication released on December 20, 2017.</p>

8.3	Apr.1.2018	New issued : EC-810-05-08 attached table "The list of definition of terms"
<p>(1) Revised Details of "Green Procurement Standard"</p> <ul style="list-style-type: none"> <li>① 2-5(2)Point 3, line 2 : periodically (every two years) → when it would be needed</li> <li>② 3. Definitions of terms : Removed "Definiton of terms listed in text" to The attached table EC-810-05-08 "The list of definition of terms"</li> <li>③ 4-1(1)① : Changed "JIG (Joint Industry Guideline) and customer's requests" to "JAMP_Declarable_Substances and IEC62474"</li> <li>④ 4-1(1)① : Removed "Typical examples of chemical substances described in NK-02 are shown in the Table EC-810-05-04, "List of a typical example of chemical substances."</li> <li>⑤ 4-1(1) : Changed existing sentence ③ to ④ and added new sentence ③</li> <li>⑥ 4-1(1) : Changed "*Some chemical substances are listed in ①, ② and ③." to " *Some chemical substances are listed in ①, ②, ③ and ④."</li> <li>⑦ 4-6 : Divided sentence into two topics (1) and (2), and listed the way of reporting by using AIS, chemSHERPA</li> <li>⑧ 4-7(2)(3)(4) : Added the details about chemSHERPA</li> <li>⑨ 4-7(3) : Changed the listed contents</li> <li>⑩ 4-7(4) : Add new sentence</li> <li>⑪ 4-7(5) : removed existing sentence (4) to (5)</li> <li>⑫ 4-8, Table2(17): Added "Basic document of controlling chemical substances contained in products"</li> <li>⑬ 4-12 : Added "chemSHERPA" to line3.</li> <li>⑭ 4-13 : Added "or chemSHERPA" to 8 items of "JAMP AIS" in FIG.1</li> <li>⑮ 6-1(1): Changed The way of listing FIG. 2 "Survey Flow Chart"</li> <li>⑯ 7 : Removed "partially of JIG-101Ed4.1" from "7. Quotation of term and substance"</li> </ul> <p>(2) Revised Details of attached table EC-810-05-03</p> <ul style="list-style-type: none"> <li>① 1.Chemical Substances Control Law No.8 : Add Cas No. "12789-03-6", "27304-13-8"</li> <li>② 1.Chemical Substances Control Law No.31 : Add Cas No. "2917-31-9"</li> <li>③ 1.Chemical Substances Control Law : Added No.32)"Decabromodiphenyl oxide", 33)"Chlorinated paraffins"</li> </ul> <p>(3) Revised details of attached table EC-810-05-04</p> <ul style="list-style-type: none"> <li>① 21.:Added 99)Azodyes which, by reductive cleavage of one or more azo groups, may release one or more of the specific aromatic amines [group]</li> </ul> <p>(4) Revised Details of attached table EC-810-05-05</p> <ul style="list-style-type: none"> <li>① 3. Dibutyl phthalate (DBP) : Added potential uses</li> <li>② 9. Bis (2-ethylhexyl) phthalate (DEHP) : Added potential uses</li> <li>③ 14. Benzyl butyl phthalate (BBP) : Added potential uses</li> <li>④ 23. Diisobutyl phthalate : Added potential uses</li> <li>⑤ 170. 4,4' -isopropylidenediphenol (bisphenol A) : Added and relisted in 17th - 18th SVHC</li> <li>⑥ 174. p-(1,1-dimethylpropyl) phenol : Added Perfluorohexane-1-sulphonic acid and its salts listed in 17th SVHC</li> <li>⑦ 175 - 181 : Added new substance in 18th SVHC</li> <li>⑧ Column of Annex XIV : Added and changed <ul style="list-style-type: none"> <li>- Expired the period of Application for authorization: 7. 33. 34. 35. 36. 43. 44. 56. 60. 61. 62. 66.</li> <li>- Added the period of Application for authorization: 16. 21. 47. 51. 65. 85. 93. 94. 106. 108. 109. 110. 141. 144. 170.</li> </ul> </li> </ul>		

**Table EC-810-05-01**

**List of NITTO KOHKI Group companies**

NITTO KOHKI Group companies
- NITTO KOHKI CO.,LTD. <JAPAN>
- TOCHIGI NITTO KOHKI CO.,LTD. <JAPAN>
- SHIRAKAWA NITTO KOHKI CO.,LTD. <JAPAN>
- MEDOTECH CO.,LTD. <JAPAN>
- NITTO KOHKI INDUSTRY(THAILAND) CO.,LTD. <THAILAND>
- NITTO KOHKI AUSTRALIA MFG PTY.,LTD. <AUSTRALIA>

List of Nitto-Kohki Group Companies for "GREEN PROCUREMENT STANDARD" is subject to change.

## Document No.NK-02 [ List of chemical substances controlled by NITTO KOHKI ]

No.	Substances	General purpose & use example	Standard of classification	Limited / Prohibited Criteria / Threshold level	Laws and Regulations / Industry Criteria	Remarks
1	Cadmium / Cadmium Compounds CAS # : See Table EC-810-05-04	Pigment, anti-corrosion surface treatment (plating), electric and electronic materials (electrode, solder, electric contact), optical glass, stabilizer, fluorescent, stabilizer for PVC, battery, and packaging material	Level A	<ul style="list-style-type: none"> <li>0.01wt% (100 ppm) of homogeneous materials in all uses (excluding batteries and packaging materials described below)</li> <li>Note: Metal conversion value is applied for the contained concentration</li> </ul>	<ul style="list-style-type: none"> <li>REACH Regulation (EC) No 1907/2006 Annex 17 (Limited substances)</li> <li>EU RoHS Directive (2011/65/EU)</li> </ul>	Immediately
				<ul style="list-style-type: none"> <li>0.002wt%(20ppm) of battery (including battery pack) (0.001wt%(10ppm) for manganese, alkali and nickel-metal hydride) / (Nickel-cadmium is immediately prohibited)</li> </ul>	<ul style="list-style-type: none"> <li>EU Battery Directive 2006/66/EC</li> </ul>	Immediately
				<ul style="list-style-type: none"> <li>Intentional use</li> <li>For packaging material</li> <li>100 ppm is determined as the total-weight concentration of heavy metals (cadmium, lead, mercury, and hexavalent chromium) contained as impurities in each part, ink, or paint that constitutes a package.</li> </ul>	<ul style="list-style-type: none"> <li>EU Packaging Directive (94/62/EEC)</li> </ul>	Immediately
2	Lead / Lead Compounds CAS # : See Table EC-810-05-04	Rubber hardener, pigment, paint, lubricant, plastic stabilizer, free machining alloy, free cutting steels, optical materials, X-ray shielding in CRT glass, solder material, mechanical solder materials, curing agent, vulcanizing agent, ferroelectrics, plating, metal alloy, resin additive	Level A	<ul style="list-style-type: none"> <li>0.1 wt% (1,000 ppm) of homogeneous materials in all uses (excluding electric wires, cords, batteries and packaging materials described below)</li> <li>Note: Metal conversion value is applied for the contained concentration</li> </ul>	<ul style="list-style-type: none"> <li>REACH Regulation (EC) No 1907/2006 Annex 17 (Limited substances)</li> <li>EU RoHS Directive (2011/65/EU)</li> </ul>	Immediately
				<ul style="list-style-type: none"> <li>0.03wt% (300 ppm) of surface coating of electric wires and cords</li> </ul>	<ul style="list-style-type: none"> <li>US/CA Proposition 65 Case law</li> </ul>	Immediately
				<ul style="list-style-type: none"> <li>0.4wt%(4000ppm) of battery (including battery pack), (alkali-manganese battery 0.004wt%(40ppm)) (manganese battery and alkali-manganese button battery 0.1wt%(1000ppm))</li> </ul>	<ul style="list-style-type: none"> <li>EU Battery Directive (2006/66/EC)</li> </ul>	Immediately
				<ul style="list-style-type: none"> <li>Intentional use</li> <li>For packaging material</li> <li>100 ppm is determined as the total-weight concentration of heavy metals (cadmium, lead, mercury, and hexavalent chromium) contained as impurities in each part, ink, or paint that constitutes a package.</li> </ul>	<ul style="list-style-type: none"> <li>EU Packaging Directive (94/62/EEC)</li> </ul>	Immediately
		Exemption	<ul style="list-style-type: none"> <li>6. Lead as an alloying element in steel containing up to 0.35wt% lead by weight, aluminium containing up to 0.4wt% lead by weight and as a copper alloy containing up to 4wt% lead by weight.</li> </ul>	Under discussion (RoHS Directive) Note 7		
			<ul style="list-style-type: none"> <li>7a. Lead in high-melting-temperature type solders (i.e. lead-based alloys containing 85wt% by weight or more lead),</li> <li>7c. Lead in electronic ceramic parts (e.g., piezoelectronic devices).</li> <li>9b. Lead in lead-bronze bearing shells and bushes.</li> <li>15. Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip</li> <li>24. Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors.</li> </ul>			
3	Mercury / Mercury Compounds CAS # : See Table EC-810-05-04	Fluorescent bulb, contact point material, pigment, anti-corrosion, switches, high-efficiency phosphor, antibacterial treatment	Level A	<ul style="list-style-type: none"> <li>Intentional use</li> <li>0.1wt% (1,000 ppm) of homogeneous materials as impurities in all uses (excluding batteries and packaging materials described below)</li> <li>Note: Metal conversion value is applied for the contained concentration</li> </ul>	<ul style="list-style-type: none"> <li>EU REACH Regulation (EC) No 1907/2006 Annex 17 (Limited substances)</li> <li>EU RoHS Directive (2011/65/EU)</li> </ul>	Immediately
		Silver-oxide button cells, alkaline batteries, zinc carbon batteries		<ul style="list-style-type: none"> <li>0.0005 wt%(5ppm) of homogeneous material in battery (Intentional addition into button battery / 0.0005 wt% as impurity)</li> <li>Intentional addition to manganese battery · alkaline battery (As an impurity, 0.0001 wt% in the battery or 0.0005 wt%(5ppm) in the homogeneous material)</li> <li>0.0001 wt% in nickel-metal hydride battery (including battery pack) or 0.0005 wt%(5ppm) in homogeneous material</li> </ul>	<ul style="list-style-type: none"> <li>EU Battery Directive (2006/66/EC)</li> </ul>	Immediately

No.	Substances	General purpose & use example	Standard of classification	Limited / Prohibited Criteria / Threshold level	Laws and Regulations / Industry Criteria	Remarks
3	Mercury / Mercury Compounds CAS # : See Table EC-810-05-04	Packaging materials.	Level A	<ul style="list-style-type: none"> <li>Intentional use</li> <li>For packaging material</li> <li>100 ppm is determined as the total-weight concentration of heavy metals (cadmium, lead, mercury, and hexavalent chromium) contained as impurities in each part, ink, or paint that constitutes a package.</li> </ul>	<ul style="list-style-type: none"> <li>EU Packaging Directive (94/62/EEC)</li> </ul>	Immediately
4	Hexavalent Chromium Compounds CAS # : See Table EC-810-05-04	Pigment, paint, ink, catalyst, plating, anti-corrosion surface treatment, dye.	Level A	<ul style="list-style-type: none"> <li>0.1wt% (1,000 ppm) of homogeneous materials in all uses (excluding batteries and packaging materials described below)</li> <li>Note: Metal conversion value is applied for the contained concentration</li> </ul>	<ul style="list-style-type: none"> <li>EU REACH Regulation (EC) No 1907/2006 Annex 17 (Limited substances)</li> <li>EU RoHS Directive (2011/65/EU)</li> </ul>	For leather, 3ppm is added in Annex17
		Packaging materials		<ul style="list-style-type: none"> <li>Intentional use</li> <li>For packaging material</li> <li>100 ppm is determined as the total-weight concentration of heavy metals (cadmium, lead, mercury, and hexavalent chromium) contained as impurities in each part, ink, or paint that constitutes a package.</li> </ul>	<ul style="list-style-type: none"> <li>EU Packaging Directive (94/62/EEC)</li> </ul>	Immediately
5	Polychlorinated Biphenyls (PCBs) and specific substitutes CAS # : See Table EC-810-05-04	Insulation oil, lubricant oil, electrical insulation medium, solvent, electrolytic solution; plasticizers, fire retardants, flame retardants, dielectric sealants, instruments containing mixture (condenser, etc.)	Level A	<ul style="list-style-type: none"> <li>Intentional use</li> <li>0.005 wt%(50ppm) in homogeneous material as impurities</li> </ul>	<ul style="list-style-type: none"> <li>Japan/Chemical Substance Control Law (Class 1 Specified Chemical Substances), commercial manufacturing/ process / distribution and use prohibition regulation</li> <li>EU REACH Regulation (EC) No 1907/2006 Annex 17 (Limited substances)</li> <li>EU/POPs Regulation (EC) No 850/2004</li> </ul>	Immediately
6	Polychlorinated Terphenyls (PCTs) CAS # : See Table EC-810-05-04	Insulation oil, lubricant oil, electrical insulation medium, solvent, electrolytic solution; plasticizers, fire retardants, flame retardants, coating agent for electric wire and cable, dielectric sealants, instruments containing mixture (condenser, etc.)	Level A	<ul style="list-style-type: none"> <li>0.005wt% (50 ppm) of homogeneous material</li> </ul>	<ul style="list-style-type: none"> <li>EU REACH Regulation (EC) No 1907/2006 Annex 17 (Limited substances)</li> </ul>	Immediately
7	Polychlorinated naphthalenes (more than 3chlorine atoms) (PCNs) CAS # : See Table EC-810-05-04	Lubricant, paint, stabilizer (electric characteristic, flame-resistant) insulator, flame retardant	Level A	<ul style="list-style-type: none"> <li>Intentional use</li> </ul>	<ul style="list-style-type: none"> <li>Japan Law concerning the evaluation of chemical substances</li> <li>EU/POPs Regulation (EC) No 850/2004</li> </ul>	Immediately
8	Short Chain Chlorinated Paraffins (SCCPs) (C10 - 13) CAS # : Refer to the Attached table EC-810-05-04 (Refer to 11 Chlorinated Flame Retardants for middle and long chain chlorinated paraffins)	Plasticizer for PVC, flame retardant, mixture such as grease and metal machining oil	Level A	<ul style="list-style-type: none"> <li>Intentional use</li> <li>0.1wt% (1,000 ppm) in homogeneous material as impurities</li> </ul>	<ul style="list-style-type: none"> <li>EU REACH Regulation (EC) NO 1907/2006 (list of SVHC)</li> <li>EU/POPs Regulation (EC) No 850/2004</li> <li>Norway Regulation of use of specified toxic substance</li> </ul>	Immediately
9	Polyvinyl chloride (PVC) & PVC Copolymers CAS # : See Table EC-810-05-04	Plastic, insulator, film, power cords, CUPLA's dust cap, and packaging material	Level A	<ul style="list-style-type: none"> <li>Intentional use in packaging material</li> </ul>	<ul style="list-style-type: none"> <li>EU Packaging Directive (94/62/EEC)</li> </ul>	Immediately
			Level C	<ul style="list-style-type: none"> <li>0.1wt% (1,000 ppm) of total of contained chloride in plastic material</li> <li>Refer to 11 Chlorinated Flame Retardants for laminated printed board</li> </ul>	<ul style="list-style-type: none"> <li>USA/JS709 (Industry definition: Defining Low-Halogen)</li> </ul>	
			Excluded from application	<ul style="list-style-type: none"> <li>Added binding agent (binder) for resin used in paint, ink, coating agent, adhesive, etc.</li> </ul>		
10	Tris(2-chloroethyl)phosphate (TCEP) CAS # : 115-96-8	Plastic, fiber, flame retardants for cloth material, and packaging material	Level C	<ul style="list-style-type: none"> <li>0.1wt% (1,000 ppm) of parts</li> </ul>	<ul style="list-style-type: none"> <li>EU REACH Regulation (EC) No 1907/2006 Annex14(Authorized substances)</li> </ul>	
11	Chlorinated flame retardants CAS # : See Table EC-810-05-04	Flame retardant for housing, connectors, package molding sealing and laminated printed board	Level C	<ul style="list-style-type: none"> <li>0.1wt%(1,000 ppm) total chlorine content in the plastic material</li> </ul>	<ul style="list-style-type: none"> <li>USA/JS709 (Industry definition: Defining Low-Halogen)</li> </ul>	
				<ul style="list-style-type: none"> <li>0.09wt%(900 ppm) total bromine content in the laminate</li> </ul>	<ul style="list-style-type: none"> <li>IPC-4101(Specification for Base Materials for Rigid and Multilayer Printed Boards) and IEC61249-2-21 (International Electrotechnical Commission)</li> </ul>	
12	Perchlorates CAS # : See Table EC-810-05-04	Coin cell batteries	Level C	<ul style="list-style-type: none"> <li>0.000006wt% (0.006 ppm) of the product</li> </ul>	<ul style="list-style-type: none"> <li>USA/California-Perchlorate Contamination Prevention Act of 2003</li> </ul>	

Table EC-810-05-02

No.	Substances	General purpose & use example	Standard of classification	Limited / Prohibited Criteria / Threshold level	Laws and Regulations / Industry Criteria	Remarks
13	Polybrominated Biphenyls (PBBs) CAS # : See Table EC-810-05-04	Flame retardant	Level A	• Intentional use to fiber products that touch human skin	• EU REACH Regulation (EC) No 1907/2006 Annex 17 (Limited substances)	Immediately
				• 0.1wt% (1,000 ppm) of homogeneous materials in all uses other than described above	• EU/RoHS Directive (2011/65/EU)	
14	Polybrominated Diphenylethers (PBDEs) CAS # : See Table EC-810-05-04	Flame retardant	Level A	• Intentional use • 0.1 wt% (1,000 ppm) in homogeneous material as impurities	• Japan/Chemical Substance Control Law • REACH Regulation (EC) No 1907/2006 Annex 17 (Limited substances) • EU/RoHS Directive (2011/65/EU)	Immediately
15	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified CAS # : See Table EC-810-05-04	Flame retardant mainly used for expanded polystyrene and some types of fiber	Level A	• Intentional use • 0.1 wt% (1000 ppm) contained in the parts as impurities	• Japan/Chemical Substance Control Law • REACH Regulation (EC) No 1907/2006 Annex 14 (Authorised substance)	Immediately
16	Brominated flame retardants (other than PBBs, PBDEs, or HBCDD) CAS # : See Table EC-810-05-04	Flame retardant for housing, connectors, package molding sealing.	Level C	• 0.1wt% (1,000 ppm) of plastic material	• USA/JS709 (Industry definition: Defining Low-Halogen)	
				• 0.09wt% total bromine content (900 ppm) in the laminate	• IPC-4101 and IEC 61249-2-21	
17	Tri-substituted organostannic compounds [including TBT and TPT] CAS # : See Table EC-810-05-04	Stabilizer, antioxidant, antibacterial and antifungal agents, antifoulant, antiseptic, mildew-proofing agents, paint, pigment, antistainings	Level A	• Intentional use • 0.1wt% (1,000 ppm) of homogeneous materials as impurities Note: Metal conversion value is applied for the contained concentration	• Japan/Chemical Substance Control Law • REACH Regulation (EC) No 1907/2006 Annex 17 (Limited substances)(Commission Regulation (EU) No.276 / 2010)	Immediately
			Exemption	• Metal tin, tin alloys, tin plating and tin inorganic compounds		
18	Dibutyltin (DBT) compounds CAS # : See Table EC-810-05-04	Stabilizer for PVC, curing catalyst for silicone resin and urethane resin	Level A	• 0.1wt% (1,000 ppm) of tin in homogeneous materials Note: Metal conversion value is applied for the contained concentration	• REACH Regulation (EC) No 1907/2006 Annex 17 (Limited substances) (Commission Regulation (EU) No.276/2010)	Immediately
			Exemption	• Metal tin, tin alloys, tin plating and tin inorganic compounds		
19	Diocetyl tin (DOT) compounds CAS # : See Table EC-810-05-04	Stabilizer for PVC, curing catalyst for silicone resin and urethane resin	Level A	[1] Textiles and leather products intended to touch human skin, [2] nursery item, [3] 2 component room temperature vulcanized molding kit • 0.1wt% (1,000 ppm) of tin in homogeneous materials Note: Metal conversion value is applied for the contained concentration	• REACH Regulation (EC) No 1907/2006 Annex 17 (Limited substances) (Commission Regulation (EU) No.276/2010)	Immediately
			Level C	• 0.1wt% (1,000 ppm) of parts Note: Metal conversion value is applied for the contained concentration	IEC62474/GADSL	
			Exemption	• Metal tin, tin alloys, tin plating and tin inorganic compounds		
20	Asbestos CAS # : See Table EC-810-05-04	Brake lining pad, insulator, filler, abrasive, pigment, paint, talc, adiabatic material	Level A	• Intentional use	• REACH Regulation (EC) No 1907/2006 Annex 17 (Limited substances) • Japan/Industrial Safety and Health Law (substance prohibited to be manufactured) • US/TSCA Toxic Substances Control Act	Immediately
21	Azocolorants and azodyes which form certain aromatic amines CAS # : See Table EC810-05-04	Pigment, dyes, colorants	Level A	• 0.003wt% (30 ppm) of the finished textile/leather product	• REACH Regulation (EC) No 1907/2006 Annex 17 (Limited substances)	Immediately
			Exemption	• Use for other than textile products, leather products or parts that could come in contact with human skin (or mouth) directly and for a long period of time		

Table EC-810-05-02

No.	Substances	General purpose & use example	Standard of classification	Limited / Prohibited Criteria / Threshold level	Laws and Regulations / Industry Criteria	Remarks
22	Formaldehyde CAS # : 50-00-0	Textile product, Wood product (plywood, particle board, MDF)	Level A	· 75 ppm or less in textile product	· Austria-BGB I 1990/194; Formaldehydverordnung, §2, 12/2/1990	Immediately
				· Intentional use in wood product	· US/California CARB Regulation	Immediately
23	Specific benzotriazole [Phenol,2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl) 1] CAS # : 3846-71-7	Adhesive, paints, printing ink, plastics, inked ribbons, putty, caulking or sealing fillers, ultraviolet protectants and ultraviolet absorbers.	Level A	· Intentional use	· Japan/Chemical Substance Control Law	Immediately
24	Dimethyl fumarate 1 (DMF) CAS # : 624-49-7	Moisture prevention agents, mildew-proofing agents	Level A	· 0.00001wt% (0.1 ppm) of the product	· REACH Regulation (EC) No 1907/2006 Commission Decision 2009/251/EC · REACH Regulation (EC) No 1907/2006 Annex 17 (Limited substances)	Immediately
25	Beryllium oxide (BeO) CAS # : 1304-56-9	Ceramics	Level C	· 0.1wt% (1,000 ppm) of parts	· DIGITALEUROPE /CECED / AeA / EERA guidance	
26	Cobalt dichloride(II) (CoCl2) CAS # : 7646-79-9	Coloring agents, surface treatment agents, process control agents, reducing agents (metalworking industry, rubber industry)	Level A	· Intentional use in moisture indicator used for a desiccant agent (e.g., silica gel)	· REACH Regulation (EC) No 1907/2006 Annex 17 (Limited substances)	Immediately
			Level C	· 0.1wt% (1,000 ppm) of parts	· REACH Regulation (EC)N0 1907/2006(SVHC list)	
27	Diarsenic pentoxide CAS # : 1303-28-2	Additive in wood, metal, glass and plastics	Level C	· 0.1wt% (1,000 ppm) of parts	· REACH Regulation (EC)N0 1907/2006(SVHC list) Annex14/Authorized substances	
28	Diarsenic trioxide CAS # : 1327-53-3	Additive in wood, metal, glass and plastics	Level C	· 0.1wt% (1,000 ppm) of parts	· REACH Regulation (EC)N0 1907/2006(SVHC list) Annex14/Authorized substances	
29	Phthalic acid ester Bis (2-ethylhexyl)phthalate (DEHP) CAS # : 117-81-7 Dibutyl phthalate (DBP) CAS # : 84-74-2 Butyl bezy phthalate (BBP) CAS # : 85-68-7 Diisobutyl phthalate (DIBP) CAS # : 84-69-5	Material used for plasticizer of plastic and rubber, dye, pigment, paint, ink, adhesive, and external/internal covering material	Level A	· All uses other than Level C · 0.1wt% (1,000 ppm) of homogeneous materials.	· REACH Regulation (EC)N0 1907/2006 Annex14/Authorized substances · RoHS Directive(2015/863/EU)	Immediately
33	Specific phthalates (DIDP,DINP,DNOP,DNHP) CAS # : See Table EC-810-05-04	Material used for plasticizer of plastic and rubber, dye, pigment, paint, ink, adhesive, and external/internal covering material	Level C	· Intentional use in subject products that may be touched, collect in or be inhaled (sucked) by human body such as fine particles of grip and expendable parts	· US/California Proposition 65 case law) DIDP,DnHP	
			Level C	· 0.1wt% (1,000 ppm) of homogeneous materials.	· REACH Regulation (EC) No 1907/2006(SVHC) · USA/Consumer Product Safety improvement Act of 2008 (PUBLIC LAW 110-314)	
34	Fluorinated greenhouse gases (PFC, SF6, HFC) CAS # : See Table EC-810-05-04	Refrigerants, blowing agents, extinguishing agents, cleaning agents, insulating media, caustic gas	Level A	· Intentional use	· EU/EU Regulation (EC) No. 512/2014	Immediately
35	Ozone depleting substances CAS # : See Table EC-810-05-04	Refrigerant, foaming agent, extinguishant, solvent cleaner	Level A	· Intentional use	· Securing implementation of Montreal Protocol · Japan/Ozone Layer Protection Law · EU/EU Regulation (EC) No. 2037/2000 · U.S. A Clean Air Act	Immediately
36	Perfluorooctane sulfonate (PFOS) CAS # : See Table EC-810-05-04	Hydraulic oil, Water repellent agent, oil repellent agent, surface treatment agents for plating, etching agent, and photographic film	Level A	· Intentional use · 0.1wt% (1,000 ppm) of homogeneous materials contained as impurities	· EU/POPs Regulation (EC) No 850/2004 · EU/EU POPs Regulation Annex 1 · Japan/Chemical Substance Control Law · Canadian Environmental Protection Act (SOR/2008-178)	Immediately

Table EC-810-05-02

No.	Substances	General purpose & use example	Standard of classification	Limited / Prohibited Criteria / Threshold level	Laws and Regulations / Industry Criteria	Remarks
37	Tributyl tin oxide (TBTO) CAS # : 56-35-9	Antiseptic, antifungal agent, paint, pigment, antistaining, refrigerant, foaming agent, extinguishant, solvent cleaner	Level A	• Intentional use • 0.1wt% (1,000 ppm) of parts contained as impurities	• Japan/Chemical Substance Control Law • REACH Regulation (EC) No 1907/2006 Annex 17 (Limited substances) • REACH Regulation (EC) No 1907/2006 (SVHC list)	Immediately
38	Nickel CAS # : 7440-02-0	Nickel plating, alloy (SUS, etc.)	Level C	• Intentional addition to parts touched on human skin for a long time	• REACH Regulation (EC) No 1907/2006 Annex 17 (Limited substances)	
39	Radioactive substances CAS # : See Table EC-810-05-04	Optical properties (thorium), measuring devices, gauges, detector	Level C	• Intentional use	• Japan Law for the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors, 1986	
40	Polycyclic aromatic hydrocarbon (PAH) CAS # : See Table EC-810-05-04	Color pigment of rubber, plastisizer and plastic Adhesives, paints	Level A	• Rubber or plastic part that will for an extended period of time or repeatedly in a short time touch directly the human skin or an oral cavity (grip, handle, etc.) • 0.0001wt% (1 ppm) of material	• REACH Regulation (EC) No 1907/2006 Annex 17 (Limited substances)	Immediately
			Level C	• 0.1wt% (1,000 ppm) of parts	• REACH Regulation (EC) No 1907/2006 (SVHC)	Immediately
41	Perfluorooctanoic acid (PFOA), its salt and ester CAS # : See Table EC-810-05-04	Coating agent for paper, metal plating, hydraulic oil, stabilizer for plastic, and adhesive in semiconductor	Level C	• 0.1wt% (1,000 ppm) of parts • 0.001wt% (10 ppm) of mixture	• REACH Regulation (EC) No 1907/2006 (SVHC)	
42	Benzenamine, N-phenyl-, reaction products with styrene and 2,4,4-trimethylpentenyl (BNST) CAS # : See Table EC-810-05-04	Additive in rubber Additive in lubricant (e.g. vehicle engine oils, commercial and industrial lubricants)	Level A	• Intentional use	• Canada 2012 (SOR/212-282)	Immediately
			Exemption	• Additive in rubber		

Note

- Chemical substances specified in class 1 of the Chemical Substances Control Law, chemical substances prohibited to be manufactured by the industrial safety and health law, the Law Concerning the Protection of the Ozone Layer through the control of specified substances and other measures and Poisonous and Deleterious Substances Control Act are listed in table EC-810-05-03, "List of chemical substances shall be prohibited by laws and regulations" and these substances are prohibited substance of level A.
- \* The item described before the Cas No. is a substance already publicized as an authorized substance and publicized again as REACH Regulation (SVHC).
  - Although REACH Regulation, etc. are taken into consideration for the time limit of delivery in the remarks column, the time limit may change due to the trends of laws and regulations as well as social trends in the future. Please have an alternative before the time limit of prohibition of delivery.
  - No. 30, No. 31 and No. 32 are vacant since they are compiled in No. 29 Phthalic acid ester.
  - When "limited / prohibition criteria / threshold level" is described, in scope when applicable to either of the descriptions.
  - Exemption items related to NITTO KOHKI only are shown. For other items, refer to the Official Journal of the European Union (2010/571/EU)
  - Changed the "Exemption expiration date" of the specified toxic substances of the EU RoHS directive. Nitto Kohki will set a new deadline as soon as it is finalized for the purpose of extension during deliberation, excluding the application of specified hazardous substances under the EU / RoHS directive.

Table EC-810-05-03

**List of environmental management substances shall be prohibited by laws and regulations**

Obligated to correspond regardless of prohibition of use by various environmental regulations of Japan and list of chemical substances of NITTO KOHKI (NK-02).

\* See the laws and regulations for details.

**1. Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (Chemical Substances Control Law).**

**Chemical substances specified in class 1. (31chemical substance groups prohibited.)**

No	Substance Name	Cas No.
1)	Polychlorinated Biphenyls (PCB)	1336-36-3
2)	Polychlorinated Naphthalenes (with more than 2 chlorine atoms)	1321-65-9
3)	Hexachlorobenzene (HCB)	118-74-1
4)	Aldrin	309-00-2
5)	Dieldrin	60-57-1
6)	Endrin	72-20-8
7)	DDT	50-29-3
8)	Chlordanes	57-74-9
		12789-03-6
		27304-13-8
9)	Bis (tributyltin) Oxide (TBTO)	56-35-9
10)	N,N'- ditolyl - p - phenylenediamine N - tolyl - N' - xylyl - p - phenylenediamine N,N' - dixylyl - p - phenylenediamine	27417-40-9
		28726-30-9
		70290-05-0
11)	2,4,6 - tri - tert - butylphenol	732-26-3
12)	Toxaphene	8001-35-2
13)	Mirex	2385-85-5
14)	Kelthane	115-32-2
15)	Hexachlorobutadiene	87-68-3
16)	2- (2' - Hydroxy - 3', 5'- di - t - butylphenyl ) benzotriazole	3846-71-7
17)	Perfluoro(octane-1-sulfonic acid) (Synonym: PFOS) or its salts	1763-23-1
18)	Perfluoro(octane-1-sulfonyl) fluoride (Synonym: PFOSF)	307-35-7
19)	Pentachlorobenzene	608-93-5
20)	α - Hexachlorocyclohexane	319-84-6
21)	β - Hexachlorocyclohexane	319-85-7
22)	γ - Hexachlorocyclohexane	58-89-9
23)	Chlordecone	143-50-0
24)	Polybrominatedbiphenyl	36355-01-8
25)	Tetrabromodiphenylether	40088-47-9
26)	Pentabromodiphenylether	32534-81-9
27)	Hexabromodiphenyl ether	68631-49-2
28)	2,2',3,3,4,5',6-Heptabromodipheny ether	446255-22-7
29)	Endosulfan, Benzoepin	115-29-7
30)	Hexabromocyclododecane (HBCDD)	25637-99-4
31)	Pentachlorophenol(PCP) and its salts (Pentachlorophenolate)	87-86-5
		131-52-2
		27735-63-3
		27735-64-4
		2917-31-9
32)	Decabromodiphenyl oxide	1163-19-5
33)	Chlorinated paraffins (Short-Chain Chlorinated Paraffins (SCCPs)) (C10 - C13, and Chlorinated ratio is over 48 weight %)	18993-26-5
		36312-81-9
		219697-10-6
		219697-11-7
		221174-07-8
		276673-33-7
		601523-20-0
		601523-25-5
		85535-84-8
		68920-70-7
		71011-12-6
		85536-22-7
		85681-73-8
108171-26-2		

\*\*\* The typical isomer which is contained in the octabromodiphenyl ether for the commerce Substance name and CASNo. Is a typical example.

**2. Industrial safety and health law.****(8 chemical substance groups prohibited to be manufactured.)**

No	Substance Name	Cas No.
1)	Yellow phosphorous	12185-10-3
2)	Benzidine and its salts *	92-87-5,etc.
3)	4-Aminodiphenyl and its salts *	92-67-1
4)	Asbestos	-
5)	4-Nitorodiphenyl and its salts *	92-93-3
6)	Bis (chloromethyl) ether	542-88-1
7)	$\beta$ -naphthylamine and its salts *	91-59-8,etc.
8)	Benzene	71-43-2

\* Azo compound and aromatic-amines

**3. The Law Concerning the Protection of the Ozone Layer Through the Control of Specified Substances and Other Measures (9 chemical substance groups )**

No	Substance Name	Cas No.
1)	Specified freons	76-13-1,etc.
2)	Halons	75-63-8,etc.
3)	Carbon tetrachloride	56-23-5
4)	1.1.1-Trichloroethane	71-55-6
5)	HBFCs	1868-53-7,etc.
6)	Bromochloromethane	74-97-5
7)	Methylbromide	74-83-9
8)	HCFCs	75-43-4,etc.

**4. Poisonous and Deleterious Substances Control Act (9 chemical substance groups )**

No	Substance Name	Cas No.
1)	Specified freons	152-16-9
2)	Tetra-alkyl lead	75-74-1
3)	Parathion	56-38-2
4)	Carbon tetrachloride	8022-00-2
5)	1.1.1-Trichloroethane	13171-21-6
6)	HBFCs	298-00-0
7)	Tetraethylpyrophosphate	107-49-3
8)	Methylbromide	144-49-0
9)	HCFCs	640-19-7

## 1. Cadmium / Cadmium compounds (Groups)

No.	Substance Name	Metal Conversion Factor	CAS No.
1)	Cadmium	1.000	7440-43-9
2)	Cadmium oxide	0.875	1306-19-0
3)	Cadmium sulfide	0.778	1306-23-6
4)	Cadmium chloride	0.613	10108-64-2
5)	Cadmium sulfate	0.538	10124-36-4
6)	Cadmium sulfate	-	31119-53-6
7)	Cadmium fluoride(CdF <sub>2</sub> )	0.747	7790-79-6
8)	Cadmium nitrate	-	10325-94-7
9)	Cadmium carbonate	-	513-78-0
10)	Cadmium selenide sulfide (Cd <sub>2</sub> SeS)	-	12214-12-9
11)	Cadmium selenide (CdSe)	-	1306-24-7
12)	Cadmium telluride (CdTe)	-	1306-25-8
13)	Cadmium hydroxide (Cd(OH) <sub>2</sub> )	-	21041-95-2
14)	Cadmium distearate; Cadmium stearate	-	2223-93-0
99)	Other cadmium compounds	-	JAMP-SN0016

Note: "JAMP-SNxxxx" JAMP Substance Numbers have been introduced as a measure to resolve this issue for substances that do not have a CAS No.  
(Refer the Table EC-810-05-08 "The list of definition of terms".)

## 2. Lead / Lead compounds (Groups)

No.	Substance Name	Metal Conversion Factor	CAS No.
1)	Lead	1.000	7439-92-1
2)	Lead ( II ) sulfate	0.683	7446-14-2
3)	Lead ( II ) carbonate	0.775	598-63-0
4)	Lead ( II ) chromate	0.641	7758-97-6
5)	C.I.Pigment Red 104 (Lead chromate molybdate sulphate red )	-	12656-85-8
6)	Lead hydroxidcarbonate	0.801	1319-46-6
7)	Lead acetate	0.637	301-04-2
8)	Lead( II ) acetate,tryhydrate	0.546	6080-56-4
9)	Dilead Pyrophosphate	0.766	13453-66-2
10)	Lead selenide	0.724	12069-00-0
11)	Lead ( IV ) oxide	0.866	1309-60-0
12)	Lead ( II ,IV ) oxide	0.907	1314-41-6
13)	Lead ( II ) sulfide	0.866	1314-87-0
14)	Lead ( II ) oxide	0.928	1317-36-8
15)	Lead hydroxidcarbonate	0.801	1344-36-1
16)	Trilead bis (Orthophosphate)	0.766	7446-27-7
17)	C.I.Pigment Yellow 34 (Lead sulfochromate yellow )	-	1344-37-2
18)	Lead ( II ) titanate	0.686	12060-00-3
19)	Lead zirconate	-	12060-01-4
20)	Hydroxylead	-	1311-11-1
21)	Lead(II) hydroxide; Lead hydroxide	-	19783-14-3
22)	Lead sulfate,sulphuric acid,lead salt	1.000	15739-80-7
23)	Lead sulphate,tribasic	0.850	12202-17-4

## 2. Lead / Lead compounds (Groups)

No.	Substance Name	Metal Conversion Factor	CAS No.
24)	Lead stearate	0.268	1072-35-1
25)	Dibasic lead stearate	-	56189-09-4
26)	Zinc chromate	-	13530-65-9
27)	Pentazine chromate octahydroxide	-	49663-84-5
28)	Zinc potassium chromate, potassium hydroxyoctaoxodi zincatedi-chromate	-	11103-86-9
29)	Lead dinitrate	0.626	10099-74-8
30)	Silicic acid, lead salt	-	11120-22-2
31)	Lead oxide sulfate	-	12036-76-9
32)	Pentalead tetraoxide sulphate	-	12065-90-6
33)	Trilead dioxide phosphonate	-	12141-20-7
34)	Dioxobis(stearato)trilead	-	12578-12-0
35)	Lead titanium zirconium oxide	-	12626-81-2
36)	Lead diazide, Lead azide	-	13424-46-9
37)	Lead bis(tetrafluoroborate)	-	13814-96-5
38)	Lead styphnate	-	15245-44-0
39)	Lead(II) bis(methanesulfonate)	-	17570-76-2
40)	Lead cyanamidate	-	20837-86-9
41)	Trilead diarsenate	-	3687-31-8
42)	Acetic acid, lead salt, basic	-	51404-69-4
42)	Sulfurous acid, lead salt, dibasic	-	62229-08-7
44)	Lead dipicrate	-	6477-64-1
45)	Silicic acid (H <sub>2</sub> SiO <sub>5</sub> ), barium salt (1:1), lead-doped [with lead (Pb) content above the applicable generic concentration limit for 'toxicity for reproduction' Repr. 1A (CLP) or category 1 (DSD); the substance is a member of the group entry of lead compounds, with index number 082-001-00-6 in Regulation (EC) No 1272/2008]	-	68784-75-8
46)	[Phthalato(2-)]dioxotrilead (dibasic lead phthalate)X	-	69011-06-9
47)	Lead hydrogen arsenate	-	7784-40-9
48)	Tetraethyllead	0.640	78-00-2
49)	Pyrochlore, antimony lead yellow	-	8012-00-8
50)	Fatty acids, C16-18, lead salts	-	91031-62-8
99)	Other lead compounds	-	JAMP-SN0023

## 3. Mercury / Mercury compounds (Groups)

No.	Substance Name	Metal Conversion Factor	CAS No.
1)	Mercury	1.000	7439-97-6
2)	Mercuric chloride	-	33631-63-9
3)	Mercury ( II ) chlonide	0.739	7487-94-7
4)	Mercuric sulfate	0.676	7783-35-9
5)	Mercury(I) oxide (black); Mercurous oxide	-	15829-53-5
6)	Dimethylmercury	-	593-74-8
7)	Dimercury dichloride; Mercury chloride	-	10112-91-1
8)	Mercuric nitrate	0.618	10045-94-0
9)	Mercuric ( II ) oxide	0.926	21908-53-2
10)	Mercuric sulfide	0.862	1344-48-5
11)	(2-ethylhexanoato)phenylmercury; Mercury, (2-ethylhexanoato-O)phenyl-	-	13302-00-6
12)	phenylmercury octanoate	-	13864-38-5

### 3. Mercury / Mercury compounds (Groups)

No.	Substance Name	Metal Conversion Factor	CAS No.
13)	Phenylmercury acetate	–	62-38-4
14)	(neodecanoato-O)phenylmercury;Mercury,(neodecanoato-O)phenyl-	–	26545-49-3
15)	Phenylmercury propionate;Mercury,phenyl(propanoato-O)-	–	103-27-5
99)	Other mercury compounds	–	JAMP-SN0024

### 4. Hexavalent chromium compounds (Group)

No.	Substance Name	Metal Conversion Factor	CAS No.
1)	Chromium (VI) oxide	0.520	1333-82-0
2)	Barium chromate	0.205	10294-40-3
3)	Calcium chromate	0.333	13765-19-0
4)	Lead (II) chromate	0.161	7758-97-6
5)	C.I.Pigment Red 104 (Lead chromate molybdate sulphate red )	–	12656-85-8
6)	C.I.Pigment Yellow 34 (Lead sulfochromate yellow )	–	1344-37-2
7)	Sodium chromate	0.321	7775-11-3
8)	Sodium dichromate	0.397	10588-01-9
9)	Strontium chromate	0.255	7789-06-2
10)	Potassium dichromate	0.353	7778-50-9
11)	Potassium chromate	0.268	7789-00-6
12)	Zinc chromate	0.287	13530-65-9
13)	Sodium dichromate dihydrate	–	7789-12-0
14)	Pentazinc chromate octahydroxide	0.090	49663-84-5
15)	Zinc Potassium chromate	0.250	11103-86-9
16)	Ammonium dichromate; Ammonium bichromate	–	7789-09-5
17)	Acids generated from chromium trioxide and their oligomers	–	–
18)	Chromic acid	–	7738-94-5
19)	Dichromic acid	0.477	13530-68-2
20)	Other hexavalent chromium compounds	–	–
21)	Dichromium tris(chromate)	–	24613-89-6
22)	C.I. Pigment Orange 21	–	1344-38-3
99)	Other hexavalent chromium compounds	–	JAMP-SN0019

### 5. Polychlorinated biphenyls (PCBs) and specific substitutes (Groups)

No.	Substance Name	–	CAS No.
1)	Polychlorinated biphenyls (PCB)	–	1336-36-3
2)	Monomethyl-tetrachloro-diphenyl methane (Ugilec141)	–	76253-60-6
3)	Monomethyl-dichloro-diphenyl methane (Ugilec121,Ugilec21)	–	81161-70-8
4)	Monomethyl-dibromo-diphenyl methane (DBBT)	–	99688-47-8

### 6. Polychlorinated terphenyls (PCTs) Groupa

No.	Substance Name	–	CAS No.
1)	Polychlorinated Terphenyls (PCT)	–	61788-33-8

## 7. Polychlorinated naphthalenes (PCN) Groups

No.	Substance Name	–	CAS No.
	Polychlorinated Naphthalenes (Cl $\geq$ 2)	–	70776-03-3
	Polychlorinated Naphthalenes (Cl $\geq$ 2)	–	1321-65-9
	Dichloronaphtalenes(PCN);(Cl=2)	–	28699-88-9
	1,2-Dichloronaphtaiene	–	2050-69-3
	1,3-Dichloronaphtaiene	–	2198-75-6
	1,4-Dichloronaphtaiene	–	1825-31-6
1)	1,5-Dichloronaphtaiene	–	1825-30-5
	1,6-Dichloronaphtaiene	–	2050-72-8
	1,7-Dichloronaphtaiene	–	2050-73-9
	1,8-Dichloronaphtaiene	–	2050-74-0
	2,3-Dichloronaphtaiene	–	2050-75-1
	2,6-Dichloronaphtaiene	–	2065-70-5
	2,7-Dichloronaphtaiene	–	2198-77-8
99)	Other polychlorinated Naphthalenes	–	–

## 8. Short chain chlorinated paraffins (SCCPs) Groups

No.	Substance Name	–	CAS No.
1)	Alkanes,C10-C13,chloro	–	85535-84-8
2)	Alkanes,C10-C12,chloro	–	108171-26-2
3)	Alkanes,C12-C13,chloro	–	71011-12-6
4)	Alkanes,chloro	–	61788-76-9
99)	Other Short Chain Chlorinated Paraffins	–	–

## 9. (PVC) Polyvinyl chloride & PVC Copolymers (Groups)

No.	Substance Name	–	CAS No.
1)	Polivinyll chloride (PCV)	–	9002-86-2
2)	PVC Copolymers	–	–
99)	Other Polyvinyl chlorides	–	–

## 11. Chlorinated Flame Retardants (Groups)

No.	Substance Name	–	CAS No.
1)	Tetrakis (2-chloroethyl) dichloroisopentyldiphosphate	–	38051-10-4
2)	Tris (1-chloro-2-propyl) phosphate	–	13674-84-5
3)	Tris (2,3-dichloro-1-propyl) phosphate	–	66108-37-0
99)	Other Chlorinated Flame Retardants	–	–

## 12. Perchlorate compounds (Groups)

No.	Substance Name	–	CAS No.
1)	Lithium perchlorate	–	7791-03-9
99)	Other perchlorate compounds	–	–

### 13. Polybrominated biphenyls (PBBs) Groups

No.	Substance Name	–	CAS No.
1)	Polybrominated biphenyls	–	59536-65-1
2)	Dibromobiphenyl	–	92-86-4
3)	2-Bromobiphenyl	–	2052-07-5
4)	3-Bromobiphenyl	–	2113-57-7
5)	4-Bromobiphenyl	–	92-66-0
6)	Tribromobiphenyl	–	59080-34-1
7)	Tetrabromobiphenyl	–	40088-45-7
8)	Pentabromobiphenyl	–	56307-79-0
9)	Hexabromobiphenyl	–	59080-40-9
10)	Hexabromo-1,1-biphenyl	–	36355-01-8
11)	Firemaster FF-1	–	67774-32-7
12)	Heptabromobiphenyl	–	35194-78-6
13)	Octabromobiphenyl	–	61288-13-9
14)	Nonabiphenyl	–	27753-52-2
15)	Decabromobiphenyl	–	13654-09-6
16)	1,1'-Biphenyl,3,3',4,4-tetrabromo-	–	77102-82-0
17)	1,1'-Biphenyl,1,2,2',4,5,5'-pentabromo-	–	67888-96-4

### 14. Polybrominated diphenylethers (PBDEs) Groups

No.	Substance Name	–	CAS No.
1)	Bromodiphenyl ether	–	101-55-3
2)	Dibromodiphenyl ethers	–	2050-47-7
3)	Tribromodiphenyl ether	–	49690-94-0
4)	Terabromodiphenyl ethers	–	40088-47-9
5)	pentabromodiphenyl ether (note: Commercially available PeBDPO is a complex reaction mixture containing a variety of brominated diphenyloxides.)	–	32534-81-9
6)	Hexabromodiphenyl ether	–	36483-60-0
7)	Heptabromodiphenyl ether	–	68928-80-3
8)	Octabromodiphenyl ether	–	32536-52-0
9)	Nonabromodiphenyl ether	–	63936-56-1
10)	Decabromodiphenyl ether	–	1163-19-5

### 15. Hexabromocyclododecane (HBCDD) Groups

No.	Substance Name	–	CAS No.
1)	Hexabromocyclododecane (HBCDD)	–	25637-99-4 4736-49-6 65701-47-5 138257-17-7 138257-18-8 138757-19-9 169102-57-2 678970-15-5 678970-16-6 678970-17-7 3194-55-6
2)	$\alpha$ -hexabromocyclododecane	–	134237-50-6
3)	$\beta$ -hexabromocyclododecane	–	134237-51-7
4)	$\gamma$ -hexabromocyclododecane	–	134237-52-8

## 16. Brominated flame retardants (other than PBBs, PBDEs or HBCDD) Groups

No.	Substance Name	–	CAS No.
1)	Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(14) [Aliphatic/alicyclic brominated compounds]	–	–
2)	Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(15) [Aliphatic/alicyclic brominated compounds in combination with antimony compounds]	–	–
3)	Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(16) [Aromatic brominated compounds excluding brominated diphenyl ether and biphenyls]	–	–
4)	Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(17) [Aromatic brominated compounds excluding brominated diphenyl ether and biphenyls] in combination with antimony compounds]	–	–
5)	Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(22) [Aliphatic/alicyclic chlorinated and brominated compounds]	–	–
6)	Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(42) [Brominated organic phosphorus compounds]	–	–
7)	Poly(2,6-dibromo-phenylene oxide)	–	69882-11-7
8)	Tetra-decabromo-diphenoxy-benzene	–	58965-66-5
9)	1,2-Bis(2,4,6-tribromo-phenoxy) ethane	–	37853-59-1
10)	3,5,3',5'-Tetrabromo-bisphenol A (TBBA)	–	79-94-7
11)	TBBA, unspecified	–	30496-13-0
12)	TBBA-epichlorhydrin oligomer	–	40039-93-8
13)	TBBA-TBBA-diglycidyl-ether oligomer	–	70682-74-5
14)	TBBA carbonate oligomer	–	28906-13-0
15)	TBBA carbonate oligomer, phenoxy end capped	–	94334-64-2
16)	TBBA carbonate oligomer, 2,4,6-tribromo-phenol terminated	–	71342-77-3
17)	TBBA-bisphenol A-phosgene polymer	–	32844-27-2
18)	Brominated epoxy resin end-capped with tribromophenol	–	139638-58-7
19)	Brominated epoxy resin end-capped with tribromophenol	–	135229-48-0
20)	TBBA-(2,3-dibromo-propyl-ether)	–	21850-44-2
21)	TBBA bis-(2-hydroxy-ethyl-ether)	–	4162-45-2
22)	TBBA-bis-(allyl-ether)	–	25327-89-3
23)	TBBA-dimethyl-ether	–	37853-61-5
24)	Tetrabromo-bisphenol S	–	39635-79-5
25)	TBBS-bis-(2,3-dibromo-propyl-ether)	–	42757-55-1
26)	2,4-Dibromo-phenol	–	615-58-7
27)	2,4,6-tribromo-phenol	–	118-79-6
28)	Pentabromo-phenol	–	608-71-9
29)	2,4,6-Tribromo-phenyl-allyl-ether	–	3278-89-5
30)	Tribromo-phenyl-allyl-ether, unspecified	–	26762-91-4
31)	Bis(methyl)tetrabromo-phtalate	–	55481-60-2
32)	Bis(2-ethylhexyl)tetrabromo-phtalate	–	26040-51-7
33)	2-Hydroxy-propyl-2-(2-hydroxy-ethoxy)-ethyl-TBP	–	20566-35-2
34)	TBPA, glycol-and propylene-oxide esters	–	75790-69-1
35)	N,N'-Ethylene -bis-(tetrabromo-phthalimide)	–	32588-76-4
36)	Ethylene-bis(5,6-dibromo-norbornane-2,3-dicarboximide)	–	52907-07-0
37)	2,3-Dibromo-2-butene-1,4-diol	–	3234-02-4
38)	Dibromo-neopentyl-glycol	–	3296-90-0
39)	Dibromo-propanol	–	96-13-9
40)	Tribromo-neopentyl-alcohol	–	36483-57-5
41)	Poly tribromo-styrene	–	57137-10-7
42)	Tribromo-styrene	–	61368-34-1
43)	Dibromo-styrene grafted PP	–	171091-06-8

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## 16. Brominated flame retardants (other than PBBs, PBDEs or HBCDD) Groups

No.	Substance Name	–	CAS No.
44)	Poly-dibromo-styrene	–	31780-26-4
45)	Bromo-/Chloro-paraffins	–	68955-41-9
46)	Bromo-/Chloro-alpha-olefin	–	82600-56-4
47)	Vinylbromide	–	593-60-2
48)	Tris-(2,3-dibromo-propyl)-isocyanurate	–	52434-90-9
49)	Tris(2,4-Dibromo-phenyl) phosphate	–	49690-63-3
50)	Tris(tribromo-neopentyl) phosphate	–	19186-97-1
51)	Chlorinated and brominated phosphate ester	–	125997-20-8
52)	Pentabromo-toluene	–	87-83-2
53)	Pentabromo-benzyl bromide	–	38521-51-6
54)	1,3-Butadiene homopolymer, brominated	–	68441-46-3
55)	Pentabromo-benzyl-acrylate, monomer	–	59447-55-1
56)	Pentabromo-benzyl-acrylate, polymer	–	59447-57-3
57)	Decabromo-diphenyl-ethane	–	84852-53-9
58)	Tribromo-bisphenyl-maleinimide	–	59789-51-4
59)	Tetrabromo-chyclo-octane	–	31454-48-5
60)	1,2-Dibromo-4-(1,2 dibromo-methyl)-cyclo-hexane	–	3322-93-8
61)	TBPA Na salt	–	25357-79-3
62)	Tetrabromo phthalic anhydride	–	632-79-1
63)	Octabromo-1,1,3-trimethyl-1-phenylindane (FR-1808)	–	155613-93-7
99)	Other brominated flame retardants	–	–

## 17. Tri-substituted organostannic compounds (Groups)

No.	Substance Name	Metal Conversion Factor	CAS No.
1)	Triphenyltin-N,N-dimethyldithiocarbamate	0.252	1803-12-9
2)	Triphenyltinfluoride	0.322	379-52-2
3)	Triphenyltinacetate	0.290	900-95-8
4)	Triphenyltinchloride	0.308	639-58-7
5)	Triphenyltinhydroxide	0.323	76-87-9
6)	Triphenyltin fattyacide ((0-11)salt)	0.234	18380-71-7
		0.234	18380-72-8
		0.228	47672-31-1
		0.222	94850-90-5
7)	Triphenyltinchloroacetate	0.268	7094-94-2
8)	Tributyltinmethacrylate	0.316	2155-70-6
9)	Bis (tributyltin) fumarate	0.342	6454-35-9
10)	Tributyltinfluoride	0.384	1983-10-4
11)	Bis(tributyltin)2,3-dibromosuccinate	0.278	31732-71-5
12)	Tributyltinacetate	0.340	56-36-0
13)	Tributyltinlaurate	0.243	3090-36-6
14)	Bis(tributyltin)phthalate	0.319	4782-29-0
15)	Copolymer of alkyl(c=8)acrylate,methyl methacrylate and tributyltin methacryate	0.180	67772-01-4
16)	Tributyltinsulfamate	0.307	6517-25-5
17)	Bis (tributyltin) maleate	0.341	14275-57-1
18)	Tributyltinchloride	0.365	1461-22-9
			7342-38-3
19)	Tributyltin cyclopentane carbonate = mixture	0.420	85409-17-2

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### 17. Tri-substituted organostannic compounds (Groups)

No.	Substance Name	Metal Conversion Factor	CAS No.
20)	Tributyltin-1,2,3,4a,4b,5,6,10,110a-decahydro-7-isopropyl-1,4a-dimethyl-1-phenanthrenecarboxylatemix	0.201	26239-64-5
21)	Triethyltin hydroxide	0.533	994-32-1
99)	Other tri-substituted organostannic compounds	-	JAM-SN0068

### 18. Dibutyltin compounds (DBT) Groups

No.	Substance Name	Metal Conversion Factor	CAS No.
1)	Dibutyltin oxide	0.477	818-08-6
2)	Dibutyltin diacetate	0.338	1067-33-0
3)	Dibutyltin dilaurate	0.188	77-58-7
4)	Dibutyltin maleate	0.342	78-04-6
5)	Dibutyltin dichloride (DBTC)	0.391	683-18-1
99)	Other dibutyltin compounds	-	JAMP-SN0072

### 19. Dioctyltin compounds (DOT) Groups

No.	Substance Name	Metal Conversion Factor	CAS No.
1)	Dioctyl Tin Oxide	0.329	870-08-6
2)	Dioctyltin dilaurate	0.160	3648-18-8
3)	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate(DOTE)	0.158	15571-58-1
99)	Other Dioctyltin compounds	-	JAMP-SN0073

### 20. Asbestos (Group)

No.	Substance Name	-	CAS No.
1)	Asbestos	-	1332-21-4
2)	Actinolite	-	77536-66-4
3)	Amosite	-	12172-73-5
4)	Anthophyllite	-	77536-67-5
5)	Chrysotile	-	12001-29-5
6)	Crocidolite	-	12001-28-4
7)	Tremolite	-	77536-68-6

### 21. Azocolorants and azodyes which form certain aromatic amines (Groups)

No.	Substance Name	-	CAS No.
1)	biphenyl-4-ylamine	-	92-67-1
2)	Benzidine	-	92-87-5
3)	4-chloro- <i>o</i> -toluidine	-	95-69-2
4)	2-naphthylamine	-	91-59-8
5)	<i>o</i> -aminoazotoluene	-	97-56-3
6)	5-nitro- <i>o</i> -toluidine	-	99-55-8
7)	<i>p</i> -chloroaniline	-	106-47-8
8)	2,4-methoxy- <i>m</i> -phenylenediamine	-	615-05-4
9)	4,4'-methylenedianiline	-	101-77-9
10)	3,3'-dichlorobenzidine	-	91-94-1
11)	3,3'-dimethoxybenzidine	-	119-90-4

## 21. Azocolorants and azodyes which form certain aromatic amines (Groups)

No.	Substance Name	–	CAS No.
12)	3,3'-dimethylbenzidine	–	119-93-7
13)	4,4'-methylenedi- o -toluidine	–	838-88-0
14)	6-methoxy-m-toluidine	–	120-71-8
15)	4,4'-methyene-bis(2-chlorosniline)	–	101-14-4
16)	4,4'-oxydianiline	–	101-80-4
17)	4,4'-thiodianiline	–	139-65-1
18)	o-toluidine	–	95-53-4
19)	4-methyl-m-phenylenediamine	–	95-80-7
20)	2,4,5-trimethylaniline	–	137-17-7
21)	o-anisidine	–	90-04-0
22)	4-aminoazobenzene	–	60-09-3
23)	C.I.Direct black 38	–	1937-37-7
24)	Disodium 3,3'-[[1,1'biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-subphionate) (CI Direct Red28)	–	573-58-0
99)	Azodyes which, by reductive cleavage of one or more azo groups, may release one or more of the specific aromatic amines [group]	-	JAMP-SN0011

Note : The European Community's ban applies to azocolorants and azodyes that by reductive cleavage of azo groups may release one of the above 24 aromatic amines.

## 33. Other phthalates (DIDP,DINP,DNOP,DNHP) Groups

No.	Substance Name	–	CAS No.
1)	1,2-Benzenedicarboxylic acid diisodecyl ester (DIDP)	–	26761-40-0
2)	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	–	68515-42-4
		–	68515-49-1
3)	Diisononyl phthalate (DINP)	–	28553-12-0
		–	68515--48-0
4)	Di-n-octyl phthalate (DNOP)	–	117-84-0
5)	Bis ( 2-methoxyethyl) phthalate (DNHP)	–	84-75-3
6)	Diisopentylphthalate (DIPP)	–	605-50-5
7)	N-pentyl-isopentylphthalate	–	776297-69-9
8)	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	–	71888-89-6
9)	Bis(2-methoxyethyl) phthalate	–	117-82-8
10)	Dipentyl phthalate	–	131-18-0

## 34. Fluorinated greenhouse gases (Groups)

Perfluorocarbons (PFC), Sulfur hexafluoride (SF6) & Hydrofluorocarbons (HFC)

No.	Substance Name	–	CAS No.
1)	Tetrafluoromethane (Carbon tetrafluoride,PFC-14)	–	75-73-0
2)	Hexafluoroethane (PFC-116)	–	76-16-4
3)	Octafluoropropane (PFC-218)	–	76-19-7
4)	Decafluorobutane (PFC-31-10)	–	355-25-9
5)	Dodecafluoropentane (PFC-41-12)	–	678-26-2
6)	Tetradecafluorohexane (PFC-51-14)	–	355-42-0
7)	Octafluorocyclobutane (PFC-c318)	–	115-25-3
8)	Sulfur Hexafluoride (SF6)	–	2551-62-4
9)	Trifluoromethane (HFC-23)	–	75-46-7
10)	Difluoromethane (HFC-32)	–	75-10-5
11)	Methyl fluoride (HFC-41)	–	593-53-3

### 34. Fluorinated greenhouse gases (Groups)

Perfluorocarbons (PFC), Sulfur hexafluoride (SF6) & Hydrofluorocarbons (HFC)

No.	Substance Name	–	CAS No.
12)	2H,3H-Decafluoropentane (HFC-43-10mee)	–	138495-42-8
13)	Pentafluoroethane (HFC-125)	–	354-33-6
14)	1,1,2,3-Tetrafluoroethane (HFC-134)	–	359-35-3
15)	1,1,1,2-Tetrafluoroethane (HFC-134a)	–	811-97-2
16)	1,1-Difluoroethane (HFC-152a)	–	75-37-6
17)	1,1,2-Trifluoroethane (HFC-143)	–	430-66-0
18)	1,1,1-Trifluoroethane (HFC-143a)	–	420-46-2
19)	1,1,1,2,3,3,32H-Heptafluoropropane (HFC-227ea)	–	431-89-0
20)	1,1,1,2,2,3-Hexafluoropropane (HFC-236cb)	–	677-56-5
21)	1,1,1,2,3,3-Hexafluoropropane (HFC-236ea)	–	431-63-0
22)	1,1,1,3,3,3-Hexafluoropropane (HFC-236fa)	–	690-39-1
23)	1,1,2,2,3-Pentafluoropropane (HFC-245ca)	–	679-86-7
24)	1,1,1,3,3-Pentafluoropropane (HFC-245fa)	–	460-73-1
25)	1,1,1,3,3-Pentafluorobutane (HFC-365mfc)	–	406-58-6
26)	1,2-Difluoroethane	–	624-72-6
27)	Ethylfluorid	–	353-36-6

### 35. Ozone depleting substances (Groups)

Chlorofluorocarbons (CFC), Halons, Hydrobromo (HBFC), Hydrochlorofluorocarbons (HCFC) and others

No.	Substance Name	–	CAS No.
1)	Trichlorofluoromethane (CFC-11)	–	75-69-4
2)	Dichlorodifluoromethane (CFC-12)	–	75-71-8
3)	Chlorotrifluoromethane (CFC-13)	–	75-72-9
4)	Pentachlorofluoroethane (CFC-111)	–	354-56-3
		–	945-56-3
		–	29756-45-4
5)	Tetrachlorodifluoroethane (CFC-112)	–	28605-74-5
	1,1,2,2-Tetrachloro-1,2-difluoroethane (CFC-112)	–	76-12-0
	1,1,1,2-Tetrachloro-2,2-difluoroethane (CFC-112a)	–	76-11-9
6)	Trichlorotrifluoroethane (CFC-113)	–	354-58-5
	1,1,2-Trichloro-1,2,2 trifluoroethane	–	26523-64-8
7)	Dichlorotetrafluoroethane (CFC-114)	–	76-14-2
		–	1320-37-2
8)	Monochloropentafluoroethane (CFC-115)	–	76-15-3
9)	Heptachlorofluoropropane (CFC-211)	–	422-78-6
	1,1,1,2,2,3,3-Heptachloro-3-fluoropropane (CFC-211aa)	–	135401-87-5
	1,1,1,2,3,3,3-Heptachloro-2-fluoropropane (CFC-211ba)	–	422-78-6
10)	Hexachlorodifluoropropane (CFC-212)	–	422-81-1
		–	3182-26-1
11)	Pentachlorotrifluoropropane (CFC-213)	–	134452-44-1
		–	2354-06-5
12)	Tetrachlorotetrafluoropropane (CFC-214)	–	134237-31-3
	1,2,2,3-Tetrachloro-1,1,1,3-tetrafluoropropane (CFC-214aa)	–	29255-31-0
	1,1,1,3-Tetrachloro-2,2,3,3-tetrafluoropropane (CFC-214cb)	–	2268-46-4
		–	677-68-9

### 35. Ozone depleting substances (Groups)

Chlorofluorocarbons (CFC), Halons, Hydrobromo (HBFC), Hydrochlorofluorocarbons (HCFC) and others

No.	Substance Name	–	CAS No.
13)	Trichloropentafluoropropane (CFC-215)	–	–
	1,2,2-Trichloropentafluoropropane (CFC-215)	–	1599-41-3
	1,2,3-Trichloropentafluoropropane (CFC-215)	–	76-17-5
	1,1,2-Trichloropentafluoropropane (CFC-215bb)	–	812-30-6
	1,1,3-Trichloropentafluoropropane (CFC-215ca)	–	1652-81-9
	1,1,1-Trichloropentafluoropropane (CFC-215)	–	4259-43-2
14)	Dichlorohexafluoropropane (CFC-216)	–	661-97-2
			662-01-1
15)	Monochloroheptafluoropropane (CFC-217)	–	422-86-6
			76-18-6
16)	Bromochloromethane (Halon-1011)	–	74-97-5
17)	Dibromodifluoromethane (Halon-1202)	–	75-61-6
18)	Bromochlorodifluoromethane (Halon-1211)	–	353-59-3
19)	Bromotrifluoromethane (Halon-1301)	–	75-63-8
20)	Dibromotetrafluoroethane (Halon-2402)	–	124-73-2
			25497-30-7
			27336-23-8
21)	Tetrachloromethane (Carbon tetrachloride)	–	56-23-5
22)	1,1,1, – Trichloroethane (Methyl chloroform)	–	71-55-6
23)	Bromomethane (Methyl bromide)	–	74-83-9
24)	Bromoethane (Ethyl bromide)	–	74-96-4
25)	1-Bromopropane (n-propyl bromide)	–	106-94-5
26)	Trifluoroiodomethane (Trifluoromethyl iodide)	–	2314-97-8
27)	Chloromethane (Methyl chloride)	–	74-87-3
28)	Dibromodifluoromethane (HBFC-21 B2)	–	1868-53-7
29)	Bromodifluoromethane (HBFC-22 B1)	–	1511-62-2
30)	Bromofluoromethane (HBFC-31 B1)	–	373-52-4
31)	Tetrabromofluoroethane (HBFC-121 B4)	–	306-80-9
			353-93-5
32)	Tribromodifluoroethane (HBFC-122 B3)	–	353-97-9
			677-34-9
			7304-53-2
33)	Dibromodifluoroethane (HBFC-123 B2)	–	354-04-1
34)	Bromotetrafluoroethane (HBFC-124 B1)	–	124-72-1
35)	Tribromofluoroethane (HBFC-131 B3)	–	172912-75-3
35)	Tribromofluoroethane (HBFC-131 B3)	–	420-88-2
			598-67-4
36)	Dibromodifluoroethane (HBFC-123 B2)	–	75-82-1
			359-19-3
			430-85-3
37)	Bromotrifluoroethane (HBFC-133 B1)	–	421-06-7
38)	Dibromofluoroethane (HBFC-141 B2)	–	358-97-4
39)	Bromodifluoroethane (HBFC-142 B1)	–	420-47-3
			359-07-9
40)	Bromofluoroethane (HBFC-151 B1)	–	762-49-2
41)	Hexabromofluoropropane (HBFC-221 B6)	–	–

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### 35. Ozone depleting substances (Groups)

Chlorofluorocarbons (CFC), Halons, Hydrobromo (HBFC), Hydrochlorofluorocarbons (HCFC) and others

No.	Substance Name	–	CAS No.
42)	Pentabromodifluoropropane (HBFC-222 B5)	–	–
43)	Tetrabromotrifluoropropane (HBFC-223 B4)	–	–
44)	Tribromotetrafluoropropane (HBFC-224 B3)	–	666-48-8
45)	Dibromopentafluoropropane (HBFC-225 B2)	–	431-78-7
46)	Bromohexafluoropropane (HBFC-226 B1)	–	–
		–	2252-78-0
47)	Pentabromofluoropropane (HBFC-231 B5)	–	–
48)	Tetrabromodifluoropropane (HBFC-232 B4)	–	148875-98-3
49)	Tribromotrifluoropropane (HBFC-233 B3)	–	431-48-1
		–	421-90-9
50)	Dibromotetrafluoropropane (HBFC-234 B2)	–	460-86-6
51)	C3H2F5Br; 2-bromo-1,1,1,3,3-pentafluoro-propane	–	22692-16-6
	C3H2F5Br; 2-bromo-1,1,2,3,3-pentafluoro-propane	–	26391-11-7
	C3H2F5Br; Propane, 3-bromo-1,1,1,2,3-pentafluoro-, (R*,S*)- (9CI)	–	53692-43-6
	C3H2F5Br; Propane, 3-bromo-1,1,1,2,3-pentafluoro-, (R*,R*)- (9CI)	–	53692-44-7
	C3H2F5Br; 2-bromo-1,1,1,2,3-pentafluoro-propane	–	677-52-1
	C3H2F5Br; 1-bromo-1,1,2,2,2-pentafluoro-propane	–	422-01-5
	Bromopentafluoropropane; C3H2F5Br; 1-bromo-1,1,3,3,3-pentafluoro-propane	–	460-88-8
	C3H2F5Br; 1-bromo-1,1,2,2,3-pentafluoro-propane	–	677-53-2
C3H2F5Br; 1-bromo-1,2,2,3,3-pentafluoro-propane	–	679-94-7	
52)	Tetrabromofluoropropane (HBFC-241 B4)	–	–
	C3H3FBr4	–	148875-95-0
53)	1,2,3-Tribromo-3,3-difluoropropane	–	666-25-1
	C3H3F4Br; 1-bromo-1,1,2,2-tetrafluoropropane	–	70192-80-2
54)	Dibromotrifluoropropane (HBFC-243 B2)	–	–
	Dibromotrifluoropropane; 2,3-Dibromo-1,1,1-trifluoropropane	–	431-21-0
55)	C3H3F4Br; 2-bromo-1,1,3,3-tetrafluoro-propane	–	19041-01-1
	C3H3F4Br; 2-bromo-1,3,3,3-tetrafluoropropane	–	70192-71-1
	C3H3F4Br; 2-bromo-1,3,3,3-tetrafluoropropane	–	29151-25-5
	C3H3F4Br; 3-bromo-1,1,1,3-tetrafluoropropane	–	460-60-6
	Bromotetrafluoropropane; C3H3F4Br; 3-Bromo-1,1,2,2-tetrafluoropropane	–	679-84-5
56)	C3H3F4Br; 1-bromo-1,1,2,2-tetrafluoropropane	–	70192-84-6
	Tribromofluoropropane (HBFC-251 B1)	–	–
57)	Tribromofluoropropane	–	75372-14-4
	Dibromodifluoropropane;(HBFC-252)	–	–
58)	Dibromodifluoropropane; 1,3-Dibromo-1,1-difluoropropane	–	460-25-3
	Bromotrifluoropropane (HBFC-253 B1)	–	–
59)	3-Bromo-1,1,1-trifluoropropane	–	460-32-2
	Bromotrifluoropropane	–	421-46-5
59)	Dibromofluoropropane (HBFC-261 B2)	–	–
	C3H5FBr2; 1,3-Dibromo-2-fluoropropane	–	1786-38-5
	C3H5FBr2; 1,2-Dibromo-3-fluoropropane	–	453-00-9
	Dibromofluoropropane; C3H5FBr2; 1,3-Dibromo-1-fluoropropane	–	51584-26-0
	C3H5FBr2; 1,2-Dibromo-1-fluoro-(R*,R*)-propane	–	62135-11-9
	C3H5FBr2; 1,2-Dibromo-1-fluoro-(R*,S*)-propane	–	62135-10-8

### 35. Ozone depleting substances (Groups)

Chlorofluorocarbons (CFC), Halons, Hydrobromo (HBFC), Hydrochlorofluorocarbons (HCFC) and others

No.	Substance Name	–	CAS No.
60)	C3H5F2Br; 1-bromo-1,1-difluoro-propane	–	420-89-3
	C3H5F2Br; 2-bromo-1,1-difluoro-propane	–	430-87-5
	C3H5F2Br; 1-bromo-2,3-difluoro-propane	–	111483-20-6
	C3H5F2Br; 2-bromo-1,3-difluoro-propane	–	2195-05-3
	C3H5F2Br; 1-bromo-2,2-difluoro-propane	–	420-98-4
	C3H5F2Br; 3-bromo-1,1-difluoro-propane	–	461-49-4
61)	Bromofluoropropane (HBFC-271 B1)	–	–
	Bromofluoropropane; Propane, 1-bromo-2-fluoro-	–	'1871-72-3
	1-Bromo-3-fluoropropane	–	352-91-0
62)	Dichlorofluoromethane (HCF-21)	–	75-43-4
63)	Chlorodifluoromethane (HCFC-22)	–	75-45-6
64)	Chlorofluoromethane (HCFC-31)	–	593-70-4
65)	Tetrachlorofluoroethane (HCFC-121)	–	134237-32-4
	1,1,2,2-tetrachloro-1-fluoroethane (HCFC-121)	–	354-14-3
	1,1,1,2-tetrachloro-2-fluoroethane (HCFC-121a)	–	354-11-0
66)	Trichlorodifluoroethane (HCFC-122)	–	41834-16-6
	1,2,2-trichloro-1,1-difluoroethane (HCFC-122)	–	354-21-2
	1,1,2-trichloro-1,1-difluoroethane (HCFC-122a)	–	354-15-4
	1,1,1-trichloro-1,1-difluoroethane (HCFC-122b)	–	354-12-1
67)	Dichlorotrifluoroethane (HCFC 123)	–	34077-87-7
	2,2-dichloro-1,1,1-trifluoroethane	–	306-83-2
	1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a)	–	354-23-4
	dichloro-1,1,2-trifluoroethane	–	90454-18-5
	1,1-dichloro-1,2,2-trifluoroethane (HCFC-123b)	–	812-04-4
68)	Chlorotetrafluoroethane (HCFC-124)	–	63938-10-3
	2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124)	–	2837-89-0
	1-chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)	–	354-25-6
69)	Trichlorofluoroethane (HCFC-131)	–	27154-33-2 (134237-34-6)
	1,1,2-Trichloro-2-fluoroethane (HCFC-131)	–	359-28-4
		–	2366-36-1
	1,1,1-Trichloro-2-fluoroethane (HCFC131b)	–	811-95-0
70)	Dichlorodifluoroethane (HCFC-132)	–	25915-78-0
	1,2-dichloro-1,2-difluoroethane (HCFC-132)	–	431-06-1
	1,1-dichloro-2,2-difluoroethane (HCFC-132a)	–	471-43-2
	1,2-dichloro-1,1-difluoroethane (HCFC-132b)	–	1649-08-7
	1,1-dichloro-1,2-difluoroethane (HCFC-132c)	–	1842-05-3
71)	Chlorotrifluoroethane (HCFC-133)	–	1330-45-6
	1-chloro-1,2,2-trifluoroethane (HCFC-133)	–	431-07-2
	2-chloro-1,1,1-trifluoroethane (HCFC-133a)	–	75-88-7
	1-chloro-1,1,2-trifluoroethane (HCFC-133b)	–	421-04-5
72)	Dichlorofluoroethane (HCFC-141)	–	25167-88-8 358-97-4
	1,2-dichloro-1-fluoroethane	–	430-57-9
	1,1-dichloro-2-fluoroethane (HCFC-141a)	–	430-53-5
	1,1-dichloro-1-fluoroethane (HCFC-141b)	–	1717-00-6

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### 35. Ozone depleting substances (Groups)

Chlorofluorocarbons (CFC), Halons, Hydrobromo (HBFC), Hydrochlorofluorocarbons (HCFC) and others

No.	Substance Name	–	CAS No.
73)	Chlorodifluoroethane (HCFC-142)	–	25497-29-4 55949-44-5
	2-chloro-1,1-difluoroethane (HCFC-142)	–	338-65-8
	1-chloro-1,1-difluoroethane (HCFC-142b)	–	75-68-3
	1-chloro-1,2-difluoroethane (HCFC-142a)	–	338-64-7
74)	Chlorofluoroethane (HCFC-151)	–	110587-14-9
	1-Chloro-2-fluoroethane (HCFC-151)	–	762-50-5
	1-Chloro-1-fluoroethane (HCFC-151a)	–	1615-75-4
75)	Hexachlorofluoropropane (HCFC-221)	–	134237-35-7 29470-94-8
	1,1,1,2,2,3-Hexachloro-3-fluoropropane (HCFC-221ab)	–	422-26-4
76)	Pentachlorodifluoropropane (HCFC-222)	–	134237-36-8 116867-32-4
	1,1,1,3,3-Pentachloro-2,2-difluoropropane (HCFC-222ca)	–	422-49-1
	1,2,2,3,3-Pentachloro-1,1-difluoropropane (HCFC-222aa)	–	422-30-0
77)	Tetrachlorotrifluoropropane (HCFC-223)	–	134237-37-9
	1,1,3,3-Tetrachloro-1,2,2-trifluoropropane	–	422-52-6
	1,1,1,3-Tetrachloro-2,2,3-trifluoropropane	–	422-50-4
78)	Trichlorotetrafluoropropane (HCFC-224)	–	134237-38-0
	1,3,3-Trichloro-1,1,2,2-tetrafluoropropane (HCFC-224ca)	–	422-54-8
	1,1,3-Trichloro-1,2,2,3-tetrafluoropropane (HCFC-224cb)	–	422-53-7
	1,1,1-Trichloro-2,2,3,3-tetrafluoropropane (HCFC-224cc)	–	522-54-8
79)	Dichloropentafluoropropane, (Ethyne, fluoro-) (HCFC-225)	–	127564-92-5
	2,2-Dichloro-1,1,1,3,3-pentafluoropropane (HCFC-225aa)	–	128903-21-9
	2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC-225ba)	–	422-48-0
	1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225bb)	–	422-44-6
	3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)	–	422-56-0
	1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)	–	507-55-1
	1,1-Dichloro-1,2,2,3,3-pentafluoropropane (HCFC-225cc)	–	13474-88-9
79)	1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC-225da)	–	431-86-7
	1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225ea)	–	136013-79-1
	1,1-Dichloro-1,2,3,3,3-pentafluoropropane (HCFC-225eb)	–	111512-56-2
80)	Chlorohexafluoropropane (HCFC-226)	–	134308-72-8
	2-Chloro-1,1,1,3,3,3-hexafluoro-propane (HCFC-226da)	–	431-87-8 51346-64-6
81)	Pentachlorofluoropropane (HCFC-231)	–	134190-48-0
	1,1,1,2,3-Pentachloro-2-fluoro-propane (HCFC-231bb)	–	421-94-3
82)	Tetrachlorodifluoropropane (HCFC-232)	–	134237-39-1
	1,1,1,3-Tetrachloro-3,3-difluoropropane	–	460-89-9
83)	Trichlorotrifluoropropane (HCFC-233)	–	134237-40-4
	1,1,1-Trichloro-3,3,3-trifluoropropane	–	7125-83-9
84)	Dichlorotetrafluoropropane (HCFC-234)	–	127564-83-4
	1,2-Dichloro-1,2,3,3-tetrafluoropropane(HCFC-234)	–	425-94-5
85)	Chloropentafluoropropane (HCFC-235)	–	108662-83-5 134237-41-5
	1-Chloro-1,1,3,3,3-pentafluoropropane	–	460-92-4

### 35. Ozone depleting substances (Groups)

Chlorofluorocarbons (CFC), Halons, Hydrobromo (HBFC), Hydrochlorofluorocarbons (HCFC) and others

No.	Substance Name	–	CAS No.
86)	Tetrachlorofluoropropane (HCFC-241)	–	134190-49-1
	1,1,2,3-Tetrachloro-1-fluoropropane (HCFC-241db)	–	666-27-3
87)	Trichlorodifluoropropane (HCFC-242)	–	127564-90-3
	1,3,3, trichloro-1,1-difluoropropane (HCFC-242fa)	–	134237-42-6
88)	Dichlorotrifluoropropane (HCFC-243)	–	116890-51-8
	1,1-dichloro-1,2,2-trifluoropropane	–	134237-43-7
	2,3-dichloro-1,1,1-trifluoropropane	–	7125-99-7
	3,3-Dichloro-1,1,1-trifluoropropane	–	338-75-0
89)	Chlorotetrafluoropropane (HCFC-244)	–	460-69-5
	3-chloro-1,1,2,2-tetrafluoropropane	–	134190-50-4
	3-chloro-1,1,2,2-tetrafluoropropaneH (CFC-251)	–	134190-50-4
90)	1,1,3-trichloro-1-fluoropropane(HCFC-251fb)	–	134190-51-5
	1,1,3-trichloro-1-fluoropropane	–	818-99-5
91)	Dichlorodifluoropropane (HCFC-252)	–	421-41-0
	1,3-Dichloro-1,1-difluoropropane (HCFC-225fb)	–	112-01-2
		–	134190-52-6
		–	112-36-3
92)	Chlorotrifluoropropane (HCFC-253)	–	819-00-1
	3-chloro-1,1,1-trifluoropropane (HCFC-253fb)	–	134237-44-8
		–	26588-23-8
		–	56758-54-4
93)	Dichlorofluoropropane (HCFC-261)	–	70192-76-6
	1,1-Dichloro-1-fluoropropane (HCFFC-261fc)	–	460-35-5
	1,2-Dichloro-2-fluoropropane (HCFC-261ba)	–	134237-45-9
94)	Chlorodifluoropropane (HCFC-262)	–	127404-11-9
	1-Chloro-2,2-difluoropropane (HCFC-C262ca)	–	7799-56-6
	2-Chloro-1,3-difluoropropane (HCFC-C262ca)	–	420-97-3
	2-chloro-1,3-difluoropropane	–	134190-53-7
95)	Chlorofluoropropane (HCFC-271)	–	420-99-5
	2-Chloro-2-fluoropropane (HCFC-271ba)	–	102738-79-4
	1-Chloro-1-fluoropropane (HCFC-271fb)	–	421-02-3

\* Note : These substances may contain further isomers that are not listed here. Isomers with CAS numbers have been included when available.

### 36. Perfluorooctane Sulfonates (PFOS) Groups

No.	Substance Name	–	CAS No.
1)	Perfluorooctane Sulfonates (PFOS)	–	1763-23-1
2)	Perfluoro-1-octane Sulfonylfluoride	–	307-35-7
3)	Perfluorooctane Sulfonates lithium salt	–	29457-72-5
4)	Perfluorooctane Sulfonates Potassium salt	–	2795-39-3

**39. Radioactive substances (Radioactive isotope) Groups**

No.	Substance Name	–	CAS No.
1)	Uranium	–	7440-61-1
2)	Radon	–	10043-92-2
3)	Americium	–	14596-10-2
4)	Thorium	–	7440-29-1
5)	CesiumCesium	–	10045-97-3
6)	Strontium	–	10098-97-2
7)	Other radioactive substances	–	–

Note : Excluding natural substances

**40. PAH (Groups)**

No.	Substance Name	–	CAS No.
1)	Benzo(a)pyrene	–	50-32-8
2)	Benzo(e)pyrene	–	192-97-2
3)	Benzo(a)anthracene	–	56-55-3
4)	Chrsene	–	218-01-9
5)	Benzo(b)acephenanthrylene	–	205-99-2
6)	Benzo(j)fluoranthene	–	205-82-3
7)	Benzo(k)fluoranthene	–	207-08-9
8)	Dibenz(a,h)anthracene	–	53-70-3

**41. PFOA (Groups)**

No.	Substance Name	–	CAS No.
1)	Perfluorooctanic acid(PFOA)	–	335-67-1
2)	Ammonium sait of PFOA	–	3825-26-1
3)	Perfluorooctanic acid sodium sait,sodium salt of PFOA	–	335-95-5
4)	Potassium salt of PFOA	–	2395-00-8
5)	Silver salt of PFOA	–	335-93-3
6)	Pentadecafluorooctanoy fluoride	–	335-66-0
7)	Methy Pentadecaflorooctanoate	–	376-27-2
8)	Ethyl Pentadecaflorooctanoate	–	3108-24-5

**42. Benzenamine,N-plenyl-,reaction Products with styrene and 2,4,4-trimetlylpenten(BNST) Groups**

No.	Substance Name	–	CAS No.
1)	Benzenamine,N-plenyl-,reaction Products with styrene and 2,4,4-trimetlylpenten	–	68921-45-9

Table EC-810-05-05

## Investigation object substances of REACH regulation (SVHC)

Revised : 2018/4/1

No.	Substance Name	CAS NUMBER	Potential uses	Annex XIV (Substances subject to authorisation)
1 th SVHC October 28,2008				
1	Anthracene	120-12-7	Corrosion inhibitors:intermediates for the productions of anthraquinone, blackcarbon and dyes.	
2	4,4'- Diaminodiphenylmethane (MDA)	101-77-9	Processed to methylenediphenyl diisocyanate (MDI):hardener for epoxy resins, high-performance polymers, and polyurethane:Paints, laquers and varnishes:Adhesives, binding agents: Construction materials: Vulcanizing agents.	● (2014/8)
3	Dibutyl phthalate (DBP)	84-74-2	Softener(plasticizer in PVC): Softeners: Adhesives, binding agents: Paints, laquers and varnishes: Colouring agents: Construction materials: Solvents(Odour agents): Curing agents: Polishing agents.	● (2015/2)
			Uses as Plasticiser in polymers, mainly flexible PVC. (Re-listing in 17th SVHC)	
4	Cobalt dichloride	7646-79-9	Colouring agents: Surface treatment: Process regulators: chemical removing of oxygen. (metal industry, rubber manufacturing)	
5	Diarsenic pentaoxide	1303-28-2	Impregnation materials: Wood preservative coatings: Fillers: harden copper, lead or gold in alloys: special glass.	● (2015/5)
6	Diarsenic trioxide	1327-53-3	Intermediates(catalytic agents, Pigments, agricultural chemicals): Flame retardants and extinguishing agents: wood preservative.	● (2015/5)
7	Sodium dichromate	7789-12-0 10588-01-9	Surface treatment: Oxidizing agents: Electroplating agents: Metal surface coating agents: inorganic chromate pigments.	● (2017/9)
8	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	Cleaning/washing agents: Absorbents and Adsorbents: Surface treatment: Odour agents.	● (2014/8)
9	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	Plasticiser in polymers, mainly flexible PVC: Softeners: Construction materials: Fillers: Paints, laquers and varnishes: Colouring agents: Adhesives, binding agents.	● (2015/2)
			Uses as Plasticiser in polymers, mainly flexible PVC. (Re-listing in 12th SVHC)	
			Uses as Plasticiser in polymers, mainly flexible PVC. (Re-listing in 17th SVHC)	
10	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified:	25637-99-4 3194-55-6 134237-50-6 134237-51-7 134237-52-8	Flame retardant (electronic and electrical equipment, textiles): Stabilizer.	● (2015/8)
11	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	Cooling agents for metal processing: Sealants: Paints, laquers and varnishes: Fillers: Softeners: Fixing agents: Cutting fluids.	
12	Bis(tributyltin)oxide (TBTO)	56-35-9	Paints, laquers and varnishes: Impregnation materials: biocides (ship craft, cages, floats, fishing nets) : Non-agricultural pesticides and preservatives.	
13	Lead hydrogen arsenate	7784-40-9	Insecticide: Herbicide: Wood preservative.	
14	Benzyl butyl phthalate (BBP)	85-68-7	Motor vehicle painters: Paints, laquers and varnishes: Fillers: Adhesives, binding agents: Softeners: plasticizer (softener) of PVC: Construction materials: Sealants(polysulfide based, polyurethane based, acrylic-based)	● (2015/2)
			Uses as Adhesives, Sealant agent and Coating Products. (Re-listing in 17th SVHC)	
15	Triethyl arsenate	15606-95-8	Insecticide: Wood preservative.	
2 th SVHC January 13, 2013				
16	Anthracene oil	90640-80-5	The substances are mainly used in the manufacture of other substances such as anthracene and carbon black. They may also be used as reducing agents in blast furnaces, as components in bunker fuel, for impregnating, sealing and corrosion protection.	○ (2020/10)
17	Anthracene oil, anthracene paste, distn. Lights	91995-17-4		
18	Anthracene oil, anthracene paste, anthracene fraction	91995-15-2		
19	Anthracene oil, anthracene-low	90640-82-7		
20	Anthracene oil, anthracene paste	90640-81-6		
21	Pitch, coal tar, high temp.	65996-93-2	Pitch, coal tar, high temp. is mainly used in the production of electrodes for industrial applications. Smaller volumes are dedicated to specific uses such as heavy duty corrosion protection, special purpose paving, manufacture of other substances and the production of clay targets.	○ (2020/10)

[○:Before sunset / ●:After sunset ]:Annex XIV (Substances subject to authorisation)  
In ( ), the sunset date of the substance subject to authorisation / (Year / month)

No.	Substance Name	CAS NUMBER	Potential uses	Annex XIV (Substances subject to authorisation)
22	2,4-Dinitrotoluene	121-14-2	2,4-dinitrotoluene is used in the production of toluene diisocyanate, which is used for the manufacture of flexible polyurethane foams. The substance is also used as gelatinizing-plasticizing agent for the manufacture of explosives.	● (2015/8)
23	Diisobutyl phthalate	84-69-5	Diisobutyl phthalate is used as plasticiser for nitrocellulose, cellulose ether, polyacrylate and polyacetate dispersions, and as a gelling aid in combination with other plasticisers, which are widely used for plastics, lacquers, adhesives, explosive material and nail polish. Uses as Coating Products, Filling agent, Putty, Stucco molding clay and Polymers. (Re-listing in 17th SVHC)	● (2015/2)
24	Lead chromate	7758-97-6	Lead chromate is used for manufacturing pigments and dyes, and as a pigment or coating agent in industrial and maritime paint products or varnishes. Further potential uses may be associated with the formulation of detergents and bleaches, photosensitive materials, the manufacture of pyrotechnic powder or the embalming /restoring of art products.	● (2015/5)
25	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	12656-85-8	Lead chromate molybdate sulphate red (C.I. Pigment Red 104) is used as a colouring, painting and coating agent in sectors such as the rubber, plastic and paints, coatings and varnishes industries. Applications comprise the production of agricultural equipment, vehicles and aircraft as well as road and airstrip painting.	● (2015/5)
26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)	1344-37-2	Lead sulfochromate yellow (C.I. Pigment Yellow 34) is used as a colouring, painting and coating agent in sectors such as the rubber, plastic and paints, coatings and varnishes industries. Applications comprise the production of agricultural equipment, vehicles and aircraft as well as road and airstrip painting. The substance is further used for camouflage or ammunition marking in the defence area.	● (2015/5)
27	Tris(2-chloroethyl)phosphate	115-96-8	Tris(2-chloroethyl)phosphate is mainly used as an additive plasticiser and viscosity regulator with flame-retarding properties for acrylic resins, polyurethane, polyvinyl chloride and other polymers. Other fields of application are adhesives, coatings, flame resistant paints and varnishes. The main industrial branches to use TCEP are the furniture, the textile and the building industry.	● (2015/8)
2th SVHC March 18, 2010 (Add)			Potential uses	
28	Acrylamide	79-06-1	Acrylamide is almost exclusively used for the synthesis of polyacrylamides, which are used in various applications, in particular in waste water treatment and paper processing. Minor uses of acrylamide comprise the preparation of polyacrylamide gels for research purposes and as a grouting agent in civil engineering.	
3th SVHC June 20, 2011			Potential uses	
29	Trichloroethylene	79-01-6	Trichloroethylene is mainly used as intermediate in the manufacture of chlorinated and fluorinated organic compounds. Other uses are for cleaning and degreasing of metal parts or as solvent in adhesives.	● (2016/4)
30	Boric acid	10043-35-3 11113-50-1	Boric acid is widely used on account of its consistency-influencing, flame-retarding, antiseptic and preservative properties. It is a component of detergents and cleaners, adhesives, toys, industrial fluids, brake fluids, glass, ceramics, flame retardants, paints, disinfectants, cosmetics, food additives, fertilisers, insecticides and other products.	
31	Disodium tetraborate, anhydrous	1330-43-4 12179-04-3 1303-96-4	Uses include a multitude of applications, e.g. in detergents and cleaners, in glass and glass fibres, ceramics, industrial fluids, metallurgy, adhesives, flame retardants, personal care products, biocides, fertilisers.	
32	Tetraboron disodium heptaoxide, hydrate	12267-73-1	Disodium tetraborate and tetraboron disodium heptaoxide form the same compounds in aqueous solutions.	
33	Sodium chromate	7775-11-3	Sodium chromate is mainly used as an intermediate in the manufacture of other chromium compounds as well as a laboratory analytical agent, but this use is limited. Other potential uses are mentioned in the literature but whether they occur in the EU is not clear.	● (2017/9)
34	Potassium chromate	7789-00-6	Potassium chromate is used as a corrosion inhibitor for treatment and coating of metals, for manufacture of reagents, chemicals and textiles, as a colouring agent in ceramics, in the manufacture of pigments/inks and in the laboratory as analytical agent.	● (2017/9)
35	Ammonium dichromate	7789-09-5	Ammonium dichromate is mainly used as an oxidising agent. Other known uses are in the manufacture of photosensitive screens and as mordant in the manufacture of textiles. Minor uses seem to comprise metal treatment and laboratory analytical agent.	● (2017/9)
36	Potassium dichromate	7778-50-9	Potassium dichromate is used for chrome metal manufacturing and as corrosion inhibitor for treatment and coating of metals. It is further used as textile mordant, as laboratory analytical agent, for cleaning of laboratory glassware, in the manufacture of other reagents and as oxidising agent in photolithography.	● (2017/9)

Table EC-810-05-05

[○:Before sunset / ●:After sunset ]:Annex XIV (Substances subject to authorisation)  
In (), the sunset date of the substance subject to authorisation / (Year / month)

No.	Substance Name	CAS NUMBER	Potential uses	Annex XIV (Substances subject to authorisation)
4 th SVHC December15,2010			Potential uses	
37	Cobalt(II) sulphate	10124-43-3	Cobalt(II) sulphate is mainly used in the manufacture of other chemicals including pigments and possibly catalysts, driers. Further applications comprise surface treatments (such as electroplating), corrosion prevention, decolourisation (in glass, pottery), in batteries, animal food supplements and soil fertilisers.	
38	Cobalt(II) dinitrate	10141-05-6	Cobalt(II) dinitrate is mainly used in the manufacture of other chemicals including catalysts. Further applications may include surface treatment and in batteries.	
39	Cobalt(II) carbonate	513-79-1	Cobalt(II) carbonate is mainly used in the manufacture of catalysts. Minor uses may include as a feed additive, in the manufacture of other chemicals including pigments, and as an adhesive in ground coat frit.	
40	Cobalt(II) diacetate	71-48-7	Cobalt(II) diacetate is mainly used in the manufacture of catalysts or as a catalyst. Minor uses may include the manufacture of other chemicals including pigments, surface treatments, in alloys, dyes, rubber adhesion, and as a feed additive.	
41	2-Methoxyethanol	109-86-4	2-methoxyethanol is mainly used as a chemical intermediate. Further minor uses are as a solvent or a laboratory chemical.	
42	2-Ethoxyethanol	110-80-5	2-ethoxyethanol is mainly used as a chemical intermediate. Further minor uses are as a solvent or a laboratory chemical.	
43	Chromium trioxide	1333-82-0	Chromium trioxide is mainly used in metal finishing, such as electroplating (e.g. hard chrome and decorative plating), conversion coatings and brightening. It is also used as a fixing agent in waterborne wood preservatives. Minor uses are e.g. in the manufacture of pigments and paints, in catalyst and detergent manufacture, and as an oxidising agent.	● (2017/9)
44	Acids generated from chromium trioxide and their oligomers	-	Acids generated from chromium trioxide and their oligomers are mainly used in metal finishing, such as electroplating (e.g. hard chrome and decorative plating), conversion coatings and brightening. It is also used as a fixing agent in waterborne wood preservatives. Minor uses are e.g. in the manufacture of pigments and paints, in catalyst and detergent manufacture, and as an oxidising agent.	● (2017/9)
	Chromic acid	7738-94-5		
	Dichromic acid	13530-68-2		
	Oligomers of chromic acid and dichromic acid	-		
5 th SVHC 2011.20.June			Potential uses	
45	2-Ethoxyethyl acetate	111-15-9	No registration for 2-ethoxyethylacetate has been submitted to ECHA. Hence the substance seems not to be manufactured in or imported to the EU in quantities above 1 t/y. Main uses in the past were as solvent in coatings and in the chemical industry, but also as intermediate in the manufacture of cyanoacrylate adhesives.	
46	Strontium chromate (C.I.Pigment Yellow 32)	7789-06-2	Strontium chromate is mainly used as corrosion inhibitor in coating mixtures used in the aeronautic/aerospace sector, in the coil coating sector of steel and aluminium and in the vehicle coating sector.	○ (2019/1)
47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	No registration for DHNUP has been submitted to ECHA. Hence the substance seems not to be manufactured in or imported to the EU in quantities above 1 t/y. Main uses in the past were as plasticiser in PVC, foam, adhesives and coatings.	○ (2020/7)
48	Hydrazine	7803-57-8	Hydrazine is mainly used as intermediate in the manufacture of hydrazine derivatives, as a monomer in polymerisations, as a corrosion inhibitor in water treatment and for metal reduction and refining of chemicals. It is also used as a propellant for aerospace vehicles and as fuel in military (emergency) power units.	
		302-01-2		
49	1-methyl-2-pyrrolidone	872-50-4	1-methyl-2-pyrrolidone is mainly used as solvent in coatings, cleaning products, for electronic equipment manufacture, as well as in semiconductor industry, petrochemical processing, pharmaceuticals and agrochemicals.	
50	1,2,3-Trichloropropane	96-18-4	1,2,3-trichloropropane is mainly used as intermediate in the manufacture of chlorinated solvents and agricultural products. It is also used as monomer. In the past 1,2,3-trichloropropane was used as solvent, paint and varnish remover and as degreasing agent.	
51	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	No registration for DIHP has been submitted to ECHA. Hence the substance seems not to be manufactured in or imported to the EU in quantities above 1 t/y. Main uses in the past were as plasticiser in PVC and in sealants, coatings and potentially printing inks.	○ (2020/7)

No.	Substance Name	CAS NUMBER	Potential uses	Annex XIV (Substances subject to authorisation)
6 tn .December 19,2011			Potential uses	
52	Lead styphnate	15245-44-0	Lead styphnate is mainly used as a primer for small calibre and rifle ammunition. Other common uses are in ammunition pyrotechnics, powder actuated devices and detonators for civilian use.	
53	Lead diazide, Lead azide	13424-46-9	Lead diazide is mainly used as initiator or booster in detonators for both civilian and military uses and as initiator in pyrotechnic devices.	
54	Lead dipicrate	6477-64-1	No registration for lead dipicrate has been submitted to ECHA. The substance is an explosive like lead diazide and lead styphnate. It may be used in low amounts in detonator mixtures together with the two other mentioned lead compounds.	
55	Phenolphthalein	77-09-8	Phenolphthalein is mainly used as laboratory agent (pH indicator solutions). Minor uses are in pharmaceutical preparations and in some special applications (e.g. pH-indicator paper, disappearing inks).	
56	2,2'-Dichloro-4,4'-methylenedianiline	101-14-4	2,2'-Dichloro-4,4'-methylenedianiline is mainly used as curing agent in resins and in the production of polymer articles and also for manufacture of other substances. The substance may further be used in construction and arts.	● (2017/11)
57	N,N-dimethylacetamide	127-19-5	N,N-dimethylacetamide is used as solvent, mainly in the manufacture of various substances and in the production of fibres for clothing and other applications. Also used as reagent, and in products such as industrial coatings, insulation paper, polyimide films, paint strippers and ink removers.	
58	Trilead diarsenate	3687-31-8	Trilead diarsenate is present in complex raw materials for manufacture of copper, lead and a range of precious metals. The trilead diarsenate contained in the raw materials is in the metallurgical refinement process transformed to calcium arsenate and diarsenic trioxide. Whereas most of the calcium arsenate appears to be disposed of as waste the diarsenic trioxide is used further.	
59	Calcium arsenate	7778-44-1	Calcium arsenate is present in complex raw materials (which themselves are by-products from metallurgical processes) that are used mainly for copper and lead refining. The substance is used to precipitate nickel from the molten metal and to manufacture diarsenic trioxide. However, most of the substance seems to be disposed of as waste.	
60	Arsenic acid	7778-39-4	Arsenic acid is mainly used to remove gas bubbles from ceramic glass melt (fining agent) and in the production of laminated printed circuit boards. To lesser extent the substance is also used in the manufacture of semiconductors and as laboratory agent.	● (2017/8)
61	Bis(2-methoxyethyl) ether	111-96-6	Bis(2-methoxyethyl) ether is used primarily as a reaction solvent or process chemical in a wide variety of applications. It is also used as solvent for battery electrolytes, and possibly in other products such as sealants, adhesives, fuels and automotive care products.	● (2017/8)
62	1,2-Dichloroethane	107-06-2	1,2-Dichloroethane is mainly used for manufacture of other substances. Minor uses as solvent in the chemical and pharmaceutical industry, as well as in laboratories.	● (2017/11)
63	4-(1,1,3,3-Tetramethylbutyl)phenol; 4-tert-octyl phenol	140-66-9	4-(1,1,3,3-Tetramethylbutyl)phenol is mainly used in the manufacture of polymer preparations and of ethoxylate surfactants. It is further used as a component in adhesives, coatings, inks and rubber articles.	
64	2-Methoxyaniline; o-Anisidine	90-04-0	2-Methoxyaniline is mainly used in the manufacture of dyes for tattooing and coloration of paper, polymers and aluminium foil.	
65	Bis(2-methoxyethyl) phthalate	117-82-8	No registration for bis(2-methoxyethyl) phthalate has been submitted to ECHA. Hence, the substance seems not to be manufactured in or imported to the EU in quantities above 1 t/y. Main uses in the past were as plasticiser in polymeric materials and paints, lacquers and varnishes, including printing inks.	○ (2020/7)
66	Formaldehyde, oligomeric reaction products with aniline (technical MDA)	25214-70-4	Technical MDA is mainly used for manufacture of other substances. Minor uses are as ion exchange resins in nuclear power plants, as hardener for epoxy resins, e.g. for the production of rolls, pipes and moulds, and as well for adhesives.	● (2017/8/)

No.	Substance Name	CAS NUMBER	Potential uses	Annex XIV (Substances subject to authorisation)
67	Zirconia Aluminosilicate Refractory Ceramic Fibres. are fibres covered by index number 650-017-00-8 in Annex VI, part 3 table 3.1 of Regulation (EC) No.1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, and fulfil the three following conditions: a) oxides of aluminium, silicon and zirconium are the main components present (in the fibres) within variable concentration ranges. b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (1m). c) alkaline oxide and alkali earth oxide (Na <sub>2</sub> O+K <sub>2</sub> O+CaO+MgO+BaO) content less or equal to 18% by weight.	JAMP-SN0055 (JAMP-SN)	Refractory ceramic fibres are used for high-temperature insulation, almost exclusively in industrial applications (insulation of industrial furnaces and equipment, equipment for the automotive and aircraft/aerospace industry) and in fire protection (buildings and industrial process equipment).	
68	Aluminosilicate Refractory Ceramic Fibres. are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.1 of Regulation. (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, and fulfil the three following conditions: a) oxides of aluminium and silicon are the main components present (in the fibres) within variable concentration ranges. b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm). c) alkaline oxide and alkali earth oxide (Na <sub>2</sub> O+K <sub>2</sub> O+CaO+MgO+BaO) content less or equal to 18% by weight.	JAMP-SN0007 (JAMP-SN)	Refractory ceramic fibres are used for high-temperature insulation, almost exclusively in industrial applications (insulation of industrial furnaces and equipment, equipment for the automotive and aircraft/aerospace industry) and in fire protection (buildings and industrial process equipment).	
69	Pentazinc chromate octahydroxide	49663-84-5	Pentazinc chromate octahydroxide is mainly used in coatings in the vehicle coating and aeronautic / aerospace sectors.	○ (2019/1)
70	Potassium hydroxyoctaoxidizincatedichromate	11103-86-9	Potassium hydroxyoctaoxidizincatedichromate is mainly used in coatings in the aeronautic/ aerospace, steel and aluminium coil coating and vehicle coating sectors.	○ (2019/1)
71	Dichromium tris(chromate)	24613-89-6	Dichromium tris(chromate) is mainly used in mixtures for metal surface treatment in the aeronautic/aerospace, steel and aluminium coating sectors.	○ (2019/1)
7 th SVHC June 18,2012				
Potential uses				
72	1,2-bis(2-methoxyethoxy)ethane (Synonym :Triethylene Glycol Dimethyl Ether, TEGDME; triglyme)	112-49-2	Mainly used as a solvent or as a processing aid in the manufacture and formulation of industrial chemicals. Minor use in brake fluids and repair of motor vehicles.	
73	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	Mainly used as a solvent or as a processing aid in the manufacture and formulation of industrial chemicals, including use as an electrolyte solvent in lithium batteries.	
74	Diboron trioxide	1303-86-2	Used in a multitude of applications, e.g., in glass and glass fibres, frits, ceramics, flame retardants, catalysts, industrial fluids, metallurgy, adhesives, inks/paints, film developers solutions, detergents and cleaners, biocides and insecticides.	
75	Formamide	75-12-7	Mainly used as an intermediate. Minor uses as solvent, as reagent chemical (in the pharmaceutical industry) and as laboratory chemical. The substance seems further to be used in the agrochemical industry and as a plasticiser.	
76	Lead(II) bis(methanesulfonate)	17570-76-2	Mainly used in plating (both electrolytic and electroless) processes for electronic components (such as printed circuit boards).	
77	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	2451-62-9	Mainly used as a hardener in resins and coatings; also used in inks for the printed circuit board industry, electrical insulation material, resin moulding systems, laminated sheeting, silk screen printing coatings, tools, adhesives, lining materials and stabilisers for plastics.	
78	β-TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	Mainly used as a hardener in resins and coatings; also used in inks for the printed circuit board industry, electrical insulation material, resin moulding systems, laminated sheeting, silk screen printing coatings, tools, adhesives, lining materials and stabilisers for plastics.	
79	4,4'-bis(dimethylamino)benzophenone (Michler's ketone)	90-94-8	Intermediate in the manufacture of triphenylmethane dyes and other substances. Further potential uses include as additive (photosensitiser) in dyes and pigments, in dry film products, as a process chemical in the production of electronic circuit boards, in research and development applications.	

[○:Before sunset / ●:After sunset ]:Annex XIV (Substances subject to authorisation)  
In ( ), the sunsetdate of the substance subject to authorisationI / (Year / month)

No.	Substance Name	CAS NUMBER	Potential uses	Annex XIV (Substances subject to authorisation)
80	N,N,N',N'-tetramethyl-4,4'-methylene dianiline (Michler's base)	101-61-1	Intermediate in the manufacture of dyes and other substances. Used also as chemical reagent in research and development.	
81	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Blue 26)	2580-56-5	Used in the production of inks, cleaners, and coatings, as well as for dyeing of paper, packaging, textiles, plastic products, and other types of articles. It is also used in diagnostic and analytical applications.	
82	[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3)	548-62-9	Used mainly for paper colouring and inks supplied in printer cartridges and ball pens. Further uses include staining of dried plants, marker for increasing the visibility of liquids, staining in microbial and clinical laboratories.	
83	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol	561-41-1	Used in the production of writing inks and potentially in the production of other inks, as well as for dyeing of a variety of materials.	
84	$\alpha, \alpha$ -Bis[4-(dimethylamino)phenyl]-4(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4)	6786-83-0	Mainly used in the production of printing and writing inks, for dyeing of paper and in mixtures such as windscreen washing agents.	
8 th December 19,2012			Potential uses	
85	Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)	1163-19-5	Flame retardant plastic and textile products.	○ (2019/3)
86	Pentacosafuorotridecanoic acid	72629-94-8	Fluorine resin additives, surfactant.	
87	Tricosafuorododecanoic acid	307-55-1	Fluorine resin additives, surfactant.	
88	Henicosafuoroundecanoic acid	2058-94-8	Fluorine resin additives, surfactant.	
89	Heptacosafuorotetradecanoic acid	376-06-7	Fluorine resin additives, surfactant.	
90	Diazeno-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	Rubber, synthetic resin of the foaming agent.	
91	Cyclohexane-1,2-dicarboxylic anhydride [1]	85-42-7	Plasticizer of the thermoplastic resin, Insect repellent, rust preventives.	
	cis-cyclohexane-1,2-dicarboxylic anhydride [2]	13149-00-3		
	trans-cyclohexane-1,2-dicarboxylic anhydride [3]	14166-21-3		
	[The individual cis- [2] and trans- [3] isomer substances and all possible combinations of the cis- and trans- isomers [1] are covered by this entry].	-		
92	Hexahydromethylphthalic anhydride [1],	25550-51-0	Plasticizer of the thermoplastic resin, Insect repellent, rust preventives.	
	Hexahydro-4-methylphthalic anhydride [2],	19438-60-9		
	Hexahydro-1-methylphthalic anhydride [3],	48122-14-1		
	Hexahydro-3-methylphthalic anhydride [4]	57110-29-9		
93	4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]	- JAMP-SN0082	Surfactant, modifiers material, Adhesives, paints, inks and rubber additive.	○ (2021/1)
	4-Nonylphenol, branched	84852-15-3		
	p-isononylphenol	26543-97-5		
	p-nonylphenol; 4-Nonylphenol	104-40-5		
	p-(1-methyloctyl)phenol; 4-(1-Methyloctyl)phenol	17404-66-9		
	p-(1,1-dimethylheptyl)phenol; 4-(1,1-dimethylheptyl)phenol	30784-30-6		
	4-(1-ethyl-1-methylhexyl)phenol	52427-13-1		
	4-(1-ethyl-1,3-dimethylpentyl)phenol	186825-36-5		
4-(1-ethyl-1,4-dimethylpentyl)phenol	142731-63-3			
94	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]	- JAMP-SN0081	emulsifier, intermediate.	○ (2021/1)
	2-[4-(1,1,3,3-tetramethylbutyl)phenoxy]ethanol	2315-67-5		
	2-[2-[4-(1,1,3,3-tetramethylbutyl)phenoxy]ethoxy]ethanol	2315-61-9		
	Polyethyleneglycol p-(1,1,3,3-tetramethylbutyl)phenylether	9002-93-1		
	20-[4-(1,1,3,3-tetramethylbutyl)phenoxy]-3,6,9,12,15,18-hexaoxaicosan-1-ol	2497-59-8		

[○:Before sunset / ●:After sunset ]:Annex XIV (Substances subject to authorisation)  
In ( ), the sunset date of the substance subject to authorisation / (Year / month)

No.	Substance Name	CAS NUMBER	Potential uses	Annex XIV (Substances subject to authorisation)
95	Methoxyacetic acid	625-45-6	Intermediates of agricultural chemicals and insecticides, disinfectants, Rust preventive products.	
96	N,N-dimethylformamide	68-12-2	Solvent (for urethane-based synthetic leather, dye intermediate, for agricultural chemicals, pharmaceutical synthesis, for various polymers, for special ink, textile printing).	
97	Dibutyltin dichloride (DBTC)	683-18-1	PVC stabilizer intermediate, catalyst, rubber additive.	
98	Lead monoxide (Lead oxide)	1317-36-8	Inorganic pigments, PVC stabilizers material, solid lubricant, synthetic rubber accelerators, glass raw materials, batteries,	
99	Orange lead (Lead tetroxide)	1314-41-6	Paints and glass raw materials, battery.	
100	Lead bis(tetrafluoroborate)	13814-96-5	Tin plating drugs, solder plating drugs.	
101	Trilead bis(carbonate)dihydroxide	1319-46-6	Ceramics, paint pigments, such as electronic materials raw materials.	
102	Lead titanium trioxide	12060-00-3	Semiconductor raw materials.	
103	Lead titanium zirconium oxide	12626-81-2	Semiconductor raw materials.	
104	Silicic acid, lead salt	11120-22-2	Pigment, paint drying agent, glass raw materials.	
105	Silicic acid (H <sub>2</sub> SiO <sub>5</sub> ), barium salt (1:1), lead-doped	68784-75-8	Valve lamp coating	
106	1-bromopropane (n-propyl bromide)	106-94-5	Cleaning and degreasing.	○ (2020/7)
107	Methyloxirane (Propylene oxide)	75-56-9	Polyester resins, urethane resin raw material, Surfactant.	
108	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	Plasticizer.	○ (2020/7)
109	Diisopentylphthalate (DIPP)	605-50-5	Plasticizer.	○ (2020/7)
110	N-pentyl-isopentylphthalate	776297-69-9	Plasticizer.	○ (2020/7)
111	1,2-diethoxyethane	629-14-1	A solvent such as nitrocellulose, rubber, resin.	
112	Acetic acid, lead salt, basic	51404-69-4	Dyes, coating agents, fillers.	
113	Lead oxide sulfate	12036-76-9	PVC additive.	
114	Lead dioxide phthalate; Lead, [1,2-benzenedicarboxylato(2-)]dioxotri-	69011-06-9	PVC additive.	
115	Dioxobis(stearato)trilead	12578-12-0	PVC additive.	
116	Fatty acids, C16-18, lead salts	91031-62-8	PVC additive.	
117	Lead cyanamate	20837-86-9	Rust preventive, pigment.	
118	Lead dinitrate	10099-74-8	Lead compounds, dyes, pigments.	
119	Pentalead tetraoxide sulphate	12065-90-6	PVC additive, Battery.	
120	Pyrochlore, antimony lead yellow	8012-00-8	Coatings, paints,	
121	Sulfurous acid, lead salt, dibasic	62229-08-7	PVC additives, resin.	
122	Tetraethyllead	78-00-2	Antiknock agent, Fuel additives.	
123	Tetralead trioxide sulphate	12202-17-4	PVC additive, Battery.	
124	Trilead dioxide phosphonate	12141-20-7	PVC additive.	
125	Furan	110-00-9	Synthetic resin raw materials, organic synthesis raw materials, solvents, cleaning agents.	
126	Diethyl sulphate	64-67-5	Ethyl agent, intermediate, Mitigation of dehydrating agent,	
127	Dimethyl sulphate	77-78-1	Pharmaceuticals (raw materials), Organic synthesis of methylating agent,	
128	3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	-	
129	Dinoseb (6-sec-butyl-2,4-dinitrophenol)	88-85-7	Agrochemical intermediate,	
130	4,4'-methylenedi-o-toluidine	838-88-0	Epoxy resin, Urethane resin hardener,	
131	4,4'-oxydianiline and its salts	101-80-4	Organic synthesis of methylating agent, Polyimide resin raw material,	
132	4-aminoazobenzene	60-09-3	dye, Pigment.	
133	4-methyl-m-phenylenediamine (toluene-2,4-diamine)	95-80-7	Polyurethane resin raw material, dye,	
134	6-methoxy-m-toluidine (p-cresidine)	120-71-8	Dye raw materials, Intermediate,	
135	Biphenyl-4-ylamine	92-67-1	-	
136	o-aminoazotoluene [(4-o-tolylazo-o-toluidine)]	97-56-3	Dye,	
137	o-toluidine	95-53-4	Intermediate raw material of dyes and pigments, Curing agent for epoxy resin raw materials, Azo-based and sulfide-based dye intermediate,	
138	N-methylacetamide; Acetamide, N-methyl-	79-16-3	Pharmaceutical intermediates.	

[○:Before sunset / ●:After sunset ]:Annex XIV (Substances subject to authorisation)  
In ( ), the sunset date of the substance subject to authorisation / (Year / month)

No.	Substance Name	CAS NUMBER	Potential uses	Annex XIV (Substances subject to authorisation)
9th SVHC June 20,2013			Potential uses	
139	Cadmium	7440-43-9	Ni-Cd battery, pigment, stabilizer, plating.	
140	Cadmium oxide	1306-19-0	Ni-Cd battery, plating, alloy.	
141	Dipentyl phthalate	131-18-0	Plasticizer.	○ (2020/7)
142	4-Nonylphenol, branched and linear, ethoxylated [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxyd covering also UVCB- and well-defined substances, polymers and homologues, which include any of the individual isomers and/or combinations	JAMP-SN0083	Industrial and consumer paint, Ethoxylate at the time of emulsion polymerization (emulsifier).	
	Poly(oxy-1,2-ethanediyl), α-(4-nonylphenyl)-ω-hydroxy-	26027-38-3		
	2-[2-[2-[2-(4-Nonylphenoxy)ethoxy]ethoxy]ethanol	7311-27-5		
	2-[2-(4-Nonylphenoxy)ethoxy]ethanol	20427-84-3		
	17-(4-Nonylphenoxy)-3,6,9,12,15-pentaoxaheptadecan-1-ol	34166-38-6		
	20-(4-Nonylphenoxy)-3,6,9,12,15,18-hexaoxaicosan-1-ol	27942-27-4		
	26-(4-Nonylphenoxy)-3,6,9,12,15,18,21,24-octaoxaicosan-1-ol	14409-72-4		
	Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched, 4-Nonylphenol, branched,	127087-87-0		
Poly(oxy-1,2-ethanediyl), alpha-(isononylphenyl)-omega-hydroxy-, isononylphenol ethoxylate	37205-87-1			
143	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	Fluororesin, Reaction aid for fluorine rubber.	
144	perfluorooctanoic acid (PFOA)	335-67-1	Reaction aid for fluororesin (PTFE, Ethylene tetrafluoride, PVDF).	○ (2020/7)
10th SVHC December 26, 2013			Potential uses	
145	Cadmium sulphide	1306-23-6	For production of cadmium compounds.	
146		1937-37-7	Dye.	
147	Dihexyl phthalate	84-75-3	Plasticizer.	
148	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	* a vulcanisation agent.	
149	Trixylyl phosphate	25155-23-1	* as functional fluid (fire resistant fluids, hydraulic fluids, lubricants, lubricant additives, grease products, metal working fluid) and as flame retardant in the production of plastics.	
150	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (CI Direct Red 28)	573-58-0	Dye.	
151	Lead di(acetate)	301-04-2	Coatings and paints, thinners, paint removers. Fillers,	
11th SVHC June 16, 2014			Potential uses.	
152	Cadmium sulphide	68515-50-4	* sealant/jointing agents * engine oil stabiliser * medical devices * general purpose PVC * adhesives and inks.	
153	Cadmium chloride	10108-64-2	* Raw material for electrogalvanizing. * Raw material for electroplating.	
154	Dihexyl phthalate	15120-21-5	* bleaching agent in laundry detergents. * machine dishwashing products.	
	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	11138-47-9		
	Perboric acid (HBO(O <sub>2</sub> )), sodium salt, monohydrate	10332-33-9		
	Perboric acid (HBO(O <sub>2</sub> )), sodium salt, tetrahydrate	10486-00-7		
155	Trixylyl phosphate	7632-04-4	* bleaching agent in laundry detergents and machine dishwashing products.	

No.	Substance Name	CAS NUMBER	Potential uses	Annex XIV (Substances subject to authorisation)
12th December 17,2014			Potential uses	
156	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol(UV-328)	25973-55-1	<ul style="list-style-type: none"> <li>•UV-stabilisers since they can absorb the full spectrum of UV light:UV-A(320-400nm)and UV-B(280-320nm)</li> <li>•Light stabilizing in coatings,ABS resin,epoxy resin,fiber resin,propylene and polyvinyl chloride.</li> </ul>	
157	2-benzotrazol-2-yl-4,6-di-tert-butylphenol(UV-320)	3846-71-7	<ul style="list-style-type: none"> <li>•UV-stabilisers since they can absorb the full spectrum of UV light:UV-A(320-400nm)and UV-B(280-320nm)</li> <li>•The most important UV-absorbers,especially for transparent plastic materials.</li> <li>•Uvstabiliser for plastics,polyuretanes and rubber.</li> </ul>	
158	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate(DOTE)	15571-58-1	<ul style="list-style-type: none"> <li>•Heat stabiliser in the production of rigid and to a minor extent of plasticised PVC.</li> <li>•processing of polymers containing DOTE.</li> </ul>	
159	Cadmium fluoride	7790-79-6	<ul style="list-style-type: none"> <li>•For manufacturing of glass,in nuclear reactor control,for electric brusher,high-temperature dry-film lubricant,optical applications,and as starting material for crystals for laser.</li> <li>•Active component in fluxes for soldering of aluminium and its alloys.</li> </ul>	
160	Cadmium sulphate	10124-36-4	<ul style="list-style-type: none"> <li>•Raw material for metal surface coating and for restoring of lead acid batteries</li> <li>•Raw material for production of inorganic cadmium compounds. •Laboratory reagent</li> <li>•Battery restoring •Metal electroplating</li> </ul>	
		31119-53-6		
161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-Octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)	JAMP-SN0084	<ul style="list-style-type: none"> <li>•The production of PVC as heat stabiliser •Heat stabiliser in the production of rigid and to a minor extent of plasticised PVC.</li> </ul>	
-	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	(No.9 Previous : Uses as Plasticiser in polymers, mainly flexible PVC.) (1st SVHC)	
13th SVHC June 15,2015			Potential uses	
162	1,2-benzenedicarboxylic acid,di-C6-10-alkyl esters;1,2-benzenedicarboxylic acid,mixed decyl and hexyl and octyl diesters with $\geq$ 0.3% of dihexyl phthalate(CasNo.201-559-5)	68515-51-5	adhesives,lubricants,coatings,building material,cable compounding,polymer foils,PVC compounds and artist supply.	
		68648-93-1		
163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane[1],5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane[2][covering any of the individual stereoisomers of [1] and [2] or any combination thereof]	JAMP-SN0085	Information on uses is confidential and therefore it cannot be provided.	
	Reaction mass of 5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5methyl-1,3-dioxane;5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5methyl-1,3-dioxane	JAMP-SN0085		
	Reaction mass of 5-[(2R)-butan-2-yl]-2-[(1R,2R)-2,4-dimethylcyclohex3-en-1-yl]-5-methyl-1,3-dioxane;	JAMP-SN0085		
	5-[(2R)-butan-2-yl]-2-[(1R,6R)-4,6-dimethylcyclohex3-en-1-yl]-5-methyl-1,3-dioxane;5-[(2S)-butan-2-yl]-2-[(1R,2R)-2,4-dimethylcyclohex3-en-1-yl]-5-methyl-1,3-dioxane;	-		
	5-[(2S)-butan-2-yl]-2-[(1S,2R)-2,4-dimethylcyclohex3-en-1-yl]-5-methyl-1,3-dioxane;5-[(2S)-butan-2-yl]-2-[(1S,6R)-4,6-dimethylcyclohex3-en-1-yl]-5-methyl-1,3-dioxane	-		
	1,3-Dioxane, 2-(2,4-dimethyl-3-cyclohexen-1-yl)-5-methyl-5-(1-methylpropyl)-	117933-89-8		

No.	Substance Name	CAS NUMBER	Potential uses	Annex XIV (Substances subject to authorisation)
163	1,3-Dioxane, 2-[(1R,2R)-2,4-dimethyl-3-cyclohexen-1-yl]-5-methyl-5-(1-methylpropyl)-, cis-rel-	343934-04-3	Information on uses is confidential and therefore it cannot be provided.	
	1,3-Dioxane, 2-[(1R,2R)-2,4-dimethyl-3-cyclohexen-1-yl]-5-methyl-5-(1-methylpropyl)-, trans-rel-	343934-05-4		
	1,3-Dioxane, 2-[(1S,2S)-2,4-dimethyl-3-cyclohexen-1-yl]-5-methyl-5-(1-methylpropyl)-, cis-	676367-02-5		
	1,3-Dioxane, 2-[(1S,2R)-2,4-dimethyl-3-cyclohexen-1-yl]-5-methyl-5-(1-methylpropyl)-, cis-	676367-03-6		
	1,3-Dioxane, 2-[(1R,2S)-2,4-dimethyl-3-cyclohexen-1-yl]-5-methyl-5-(1-methylpropyl)-, cis	676367-04-7		
	1,3-Dioxane, 2-[(1R,2R)-2,4-dimethyl-3-cyclohexen-1-yl]-5-methyl-5-(1-methylpropyl)-, cis-	676367-05-8		
	1,3-Dioxane, 2-[(1S,2S)-2,4-dimethyl-3-cyclohexen-1-yl]-5-methyl-5-(1-methylpropyl)-, trans	676367-06-9		
	1,3-Dioxane, 2-[(1S,2R)-2,4-dimethyl-3-cyclohexen-1-yl]-5-methyl-5-(1-methylpropyl)-, trans-	676367-07-0		
	1,3-Dioxane, 2-[(1R,2S)-2,4-dimethyl-3-cyclohexen-1-yl]-5-methyl-5-(1-methylpropyl)-, trans-	676367-08-1		
163	1,3-Dioxane, 2-[(1R,2R)-2,4-dimethyl-3-cyclohexen-1-yl]-5-methyl-5-(1-methylpropyl)-, trans-	676367-09-2	Information on uses is confidential and therefore it cannot be provided.	
	1,3-Dioxane, 2-(2,4-dimethyl-3-cyclohexen-1-yl)-5-methyl-5-(1-methylpropyl)-	186309-28-4		
14th SVHC December 17,2015			Potential uses	
164	1,3-propanesultone	1120-71-4	electrolyte fluid of lithium ion batteries.	
165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	UV-protection agents in coatings, plastics, rubber, polyurethanes and cosmetics.	
166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	production of chemicals and intermediate for further chemical processing.	
167	Nitrobenzene	98-95-3	production of chemicals and intermediate for further chemical processing.	
168	Perfluorononan-1-oic acid and its sodium and ammonium salts	375-95-1	a processing aid for fluoropolymer manufacture, and also as a lubricating oil additive, surfactant for fire extinguishers, cleaning agent, textile antifouling finishing agent, polishing surfactant, waterproofing agents and in liquid crystal display panels.	
		21049-39-8		
		4149-60-4		
15th SVHC June 20,2016			Potential uses	
169	Benzo[def]chrysene	50-32-8	Rubber, Plasticizer, Coloring pigments of plastic, adhesive, Paints,	
16th SVHC December 20,2016			Potential uses	
170	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	Uses as intermediate: use of bisphenol A in thermal paper- use of articles made of PVC Industrial use of bisphenol A as antioxidant for processing PVC.	○ (2020/1)
			Uses as manufacturing of polycarbonate, epoxy resin hardeners, antioxidant for processing PVC and manufacturing of thermal paper. (Re-listing in 17th SVHC)	
			Uses as endocrine disruptor that have influence for environment. (Re-listing in 18th SVHC)	
171	4-Heptylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 7 covalently bound predominantly in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]	-	industrial, professional and consumer uses in lubricants and greases in vehicles or machinery.	

No.	Substance Name	CAS NUMBER	Potential uses	Annex XIV (Substances subject to authorisation)
172	Ammonium nonadecafluorodecanoate	3108-42-7		
	Nonadecafluorodecanoic acid (PFDA)	335-76-2		
	Decanoic acid, nonadecafluoro, sodium salts	3830-45-3		
173	p-(1,1-dimethylpropyl)phenol	80-46-6	industrial use as intermediate in the production of perfumes and fragrances industrial formulation of adhesives formulation and application of coatings, printing inks, paints as monomer in production of polymers (phenolic resins) end use of adhesives industrial application of coatings or inks.	
17th SVHC July 7, 2017			Potential uses	
-	Dibutyl phthalate (DBP)	84-74-2	(No.3 Previous: Uses as Plasticiser in polymers, mainly flexible PVC.) (Re-listing in 1st SVHC)	
-	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	(No.9 Previous: Uses as Plasticiser in polymers, mainly flexible PVC.) (Re-listing in 1st and 12th SVHC)	
-	Benzyl butyl phthalate (BBP)	85-68-7	(No.14 Previous: Uses as Adhesives, Sealant agent and Coating Products.) (Re-listing in 1st SVHC)	
-	Diisobutyl phthalate (DIBP)	84-69-5	(No.23 Previous: Uses as Coating Products, Filling agent, Putty, Stucco molding clay and Polymers. (Re-listing in 2nd SVHC)	
-	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	(No.170 Previous: Uses as manufacturing of polycarbonate, epoxy resin hardeners, antioxidant for processing PVC and manufacturing of thermal paper. (Re-listing in 16th SVHC)	○ (2020/1)
174	Perfluorohexane-1- sulphonic acid and its salts	JAMP-SN0090	Uses as Manufacturing of etching Agent, Semiconductor Resist and picture's film for business.	
	Perfluorohexane-1- sulphonic acid	355-46-4		
18th SVHC January 15, 2018			Potential uses	
-	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	(No.170 Previous: Uses as endocrine disruptor that have influence for environment. (Re-listing in 16th and 17th SVHC)	○ (2020/1)
175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.0 2,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	-	Uses as a non-plasticising flame retardant, used in adhesives and sealants and in binding agents.	
176	Cadmium nitrate	10325-94-7	Uses in laboratory chemicals and for the manufacture of glass, porcelain and ceramic products.	
177	Cadmium carbonate	513-78-0	Uses as a pH regulator and in water treatment products, laboratory chemicals, cosmetics and personal care products.	
178	Cadmium hydroxide	21041-95-2	Uses in laboratory chemicals and for the manufacture of electrical, electronic and optical equipment.	
179	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥ 0.1% w/w 4-heptylphenol, branched and linear]	-	Uses as a lubricant additive in lubricants and greases.	
180	Benz[a]anthracene	56-55-3	Not registered under REACH. Normally not produced intentionally but rather occurs as a constituent or impurity in other substances.	
181	Chrysene	218-01-9	Not registered under REACH. Normally not produced intentionally but rather occurs as a constituent or impurity in other substances.	
Note: The Number of Table EC-810-05-05 are unique numbers for identification the quantity of chemical substances. When it is announced the chemical substances in public more than once, it would not be created the new Number again.				

Table EC-810-05-08 The list of definition of terms

Prepared : 2018/4/1

	Terms	Definition
1	chemical substance	"Chemical substance" refers to an element and chemical compound existing naturally or obtained during any manufacturing process.
2	mixture	"Mixture" refers to a substance that is made up of a mixture of two or more chemical substances Examples: paint, ink, alloy ingot, solder, resin pellet, etc.
3	chemical product	"Chemical product" refers to a chemical substance or compound.
4	controlled substances	"Controlled substances" refer to chemical substances of (1) controlled substance among chemical substances contained in a procured item that are specified by Japanese and foreign regulations and requirements of customers and that are also controlled by the chemical product (hereinafter referred to as "substance") standard 4-1 by NITTO KOHKI that are judged to be harmful to the environment and human body by NITTO KOHKI.
5	article	"Article" refers to an item with a certain shape, appearance or design that substantially determines the function of final use more than the function of the chemical composition. Examples: Parts delivered to NITTO KOHKI, component parts purchased by a supplier to manufacture each part, metal plate, gear wheel, integrated circuit, transportation equipment, etc.
6	contracted out	Stipulated by RoHS Directive, etc. and an approval of exclusion of prohibition on product content when it is difficult to change to an alternative material or alternative part in terms of performance and function of the product. This exclusion is reviewed periodically or when necessary in light of the advancement in scientific technology in which items for exclusion will be removed or added accordingly.
7	contained	"Contained" refers to a condition in which a chemical substance has been added, filled, mixed in, or adhered to and remaining on a procured item intentionally or unintentionally. (including the case where such chemical substance is unintentionally adhered to and remaining on the products in manufacturing processes).
8	intentional addition	"Intentional addition" refers to a condition in which a chemical substance has been added to provide a certain performance to a product. (Intentional use also applies when it is obvious during the manufacturing processes that the relevant substances remain in the final product.)
9	homogeneous material	The RoHS Directive and WEEE Directive FAQ issued by the European Commission are adopted for the definition. "Homogenous material" refers to a material that cannot be mechanically separated into different materials. The term "homogenous" signifies "a component that is completely homogeneous." Examples of "homogenous material" are individual types of plastic, ceramic, glass, metal, alloy, paper, unmounted substrate, resin, and coating. (Homogenous material property = Homogenous material)
10	material	"Material" refers to a raw material or component that can be used without changing the original property to create an article.
11	part	Original part converted from a chemical product to an article for the first time until reaching the completed product Examples: One key of a keyboard of a computer or a piece of steel material for a motor. Part manufactured by assembling parts Examples: Keyboard of a computer, motor for electric drill, etc.
12	threshold level	"Threshold level" are the permitted concentration levels of homogeneous materials in procured items.
13	timing of prohibition	"Timing of prohibition" refers to the time when the delivery of parts or materials to NITTO KOHKI is prohibited. (Applies to Control level B: Substances to be banned. It is "Level C: Containment controlled substances" up to the timing of prohibition but turns to "Level A: Banned substances" when the timing is exceeded.) Please cooperate to correspond to the alternative part or material by obeying the timing to prohibition.
14	JAMP (Joint Article Management Promotion- consortium)	JAMP stands for Joint Article Management Promotion-consortium. JAMP manages information on chemical substances contained in an article appropriately and aims to establish and disseminate the concrete system to disclose and transmit the information through companies on supply chain smoothly.
15	JGPSSI (Stands for Japan Green Procurement Survey Standardization Initiative)	JGP file is electronic data with items in the scope of the survey and information on contained chemical substances created using a survey response tool of the former Japan Green Procurement Survey Standardization Initiative.

Table EC-810-05-08 The list of definition of terms

Prepared : 2018/4/1

	Terms	Definition
16	JIG (Joint Industry Guide)	JIG stands for Joint Industry Guide.'JIG refers to common guidelines for standardization of Green Procurement Surveys in collaboration with the former JGPSSI, EIA, and EICTA. EIA stands for Electronic Industries Alliance.JIG-101 has not been revised since Ver. 4.2 but was succeeded by international standard IEC 62474/domestic VT62474 (Material Declaration for Products of and for the Electrotechnical Industry DB) Ver. 4.31.
17	RoHS (Restriction of the use of Hazardous Substances in electrical and electronic equipment)	RoHS stands for Restriction of Hazardous Substances. Directive of the European Parliament on the restriction of the use of certain hazardous substances in electrical and electronic equipment. (2011/65/EU)
18	REACH (Registration, Evaluation, Authorization and Restriction of Chemicals)	REACH stands for Registration, Evaluation, Authorization and Restriction of Chemicals.'REACH is a European law for management of chemical substances. REACH was established by EC regulation No.1907/2006.'REACH is law and regulation on the total Registration, Evaluation, Authorization and Restriction of chemical substances.Check the original text of Annex XVII (Restrictions on placing on the market and use) for details of restricted use of each substance. <a href="http://echa.europa.eu/enterprise/sectors/chemicals/reach/restrictions/index_en.htm">http://echa.europa.eu/enterprise/sectors/chemicals/reach/restrictions/index_en.htm</a> .Check the original text of Annex XIV (List of substances subject to authorisation to regulate use contained in articles in the EU). <a href="http://echa.europa.eu/web/guest/addressing-chemicals-of-concern/authorisation/recommendation-for-inclusion-in-the-authorisation-list/authorisation-list">http://echa.europa.eu/web/guest/addressing-chemicals-of-concern/authorisation/recommendation-for-inclusion-in-the-authorisation-list/authorisation-list</a>
19	REACH SVHC (Substances of Very High Concern)	Substances of very high concern determined and publicized by the ECHA (European Chemical Agency) as a list of candidate authorized substances (= List of candidate substances subject to authorisation) described in Annex XIV of EU REACH Regulation. Refer to the attached Table EC-810-05-05 and the original text in URL described below for the latest list. <a href="http://echa.europa.eu/web/guest/candidate-list-table">http://echa.europa.eu/web/guest/candidate-list-table</a>
20	GADSL (global Automotive Declarable Substance List)	List of substances for exchanging information of environmentally hazardous substances prepared by consensus of the group established by automobile related manufactures of various countries (GASG: Global Automotive Stakeholders Group).
21	JAMP AIS	AIS is an acronym of "Article Information Sheet". It is an information description format to disclose and inform people of chemical substances included in articles (such as products and parts) created by JAMP.
22	JAMP MSDSplus	MSDSplus is an information description format to disclose and inform people of chemical substances included in chemical substances and mixtures, and it complements the SDS created by JAMP.
23	Toxic Substances Control Act	The Toxic Substances Control Act (TSCA) of the U.S. is the law controlled by the Environment Protection Agency (EPA) to regulate chemical substances, mixtures and articles manufactured, fabricated or imported in the U.S. for commercial purpose in order to prevent risks from chemical substances harmful to health and the environment. There is a law regulated by the Occupational Safety and Health Administration (OSHA).
24	California Air Resource Board	Environment regulation of California in the U.S. It is a law to legalize Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products (ATCM) to regulate use, etc. of formaldehyde in the state and to limit the use to wood products such as plywood.
25	chemSHERPA (chemSHERPA-AI, chemSHERPA-CI)	A scheme that facilitates sharing information on chemical substances in products.It consists of JGPSI and AIS. IN the end of 2017 , chemical substances information was not renewed and we need to use chemSHERPA from this time.
26	JAMP-SN	When managing all substances with computers, it becomes difficult to identify substances that do not have a CAS No. or that are not identifiable with a CAS No. (substances categorized under a complement group) when distributing information if they do not have an ID No. JAMP Substance Numbers have been introduced as a measure to resolve this issue.