

# Fukuda Denshi Green Procurement Standards

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# Quality Policy

Our company lays the management principle: “devote to social mission and contribute to the progress of medical science through the development of medical engineering devices” as the basis, and aims to understand the customer needs appropriately, and provide products and servicing that would gain customer satisfaction and reliability.

1. Our company will ensure to comply with customer requirements and legally regulative requirements, and provide products and servicing with priority over safety.
2. Our company will manage chemical substances contained in products appropriately to provide products of responsibility to environment.
3. Our company will work aggressively to establish and operate the quality management system and to continuously improve its validity.
4. To achieve the quality policy, our company will establish quality objectives per each department every fiscal year, and put them into practice, and review the achievement status to ensure maintenance and improvement.
5. Our company will display the quality policy inside the company, and inform it to all employees through training.

16 March, 2015

Management, Quality Management System

Fukuda Denshi Co., Ltd.

# Green Procurement Standards

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## Explanation of Terms

Terms related to Fukuda Denshi Green Procurement Standards are as shown below.

No.	Term	Explanation
1	Joint Article Management Promotion-consortium (JAMP)	A council started in September 2006 mainly to promote cross-industrial activities. The purpose of JAMP is to appropriately manage information on the chemical substances in parts, articles, and the like. It also works to create and propagate specific systems for disclosing and conveying that information smoothly in the supply chain.
2	<u>Chemicals in products (CiP)</u>	<u>Chemical substances which are known to be contained in products</u> <u>Note: sometimes abbreviated as CiP (Chemicals in Products).</u>
3	Supplier	A company that provide goods
4	Guidelines for the Management of Chemical Substances in Products	Guidelines issued by JAMP in order to ensure the reliability of information on the chemical substances in products. The guidelines are a summary of specific action items and judgment criteria for the management of chemical substances in products.
5	<u>Check Sheet</u>	<u>Annex E of Guidelines for the management of chemicals in products</u>
6	Substances in products that affect the environment	Chemical substances in goods delivered to Fukuda Denshi that are noted in the “Substances in products that affect the environment List” (accompanying materials)
7	Prohibited substances	Chemical substances prohibited from inclusion in goods delivered to Fukuda Denshi
8	Controlled substances	Chemical substances for which inclusion, amount, location, usage, etc. in goods delivered to Fukuda Denshi must be identified.
9	chemSHERPA	A scheme for communicating and sharing information on the chemical substances in products. chemSHERPA-AI is information communicated on articles. Information on the chemical substances in articles consists of composition information on the controlled substances contained in articles and compliance information with laws. chemSHERPA-CI is information communicated on chemical products. Information on the chemical substances in chemical products consists of composition information on the controlled substances contained in chemical products.

## 1. Purpose

Fukuda Denshi's corporate philosophy is to "contribute to people's health through medical equipment." We are thus working on the green procurement as a part of a goal to provide society with environmentally responsible products. That work is done under the understanding that global environmental problems are perpetual issues for humankind. Fukuda Denshi works hand-in-hand with suppliers in order to protect the environment, and the requirements for that work are set down in these standards.

## 2. Scope

The standards apply to the following goods that make up Fukuda Denshi products.

- 1) Parts, units
- 2) Materials
- 3) Product accessories
- 4) Adhesives, lubricants, other ancillary materials included in products
- 5) Packaging and packing materials

## 3. Concepts of the green procurement standards and requirements for suppliers

### 3.1. Concepts of the green procurement standards

Fukuda Denshi believes that the following 2 systems need to effectively function in order to promote environmental conservation activities.

- 1) Environmental Management System (EMS) of goods (Supplier environmental assessment)  
A system for identifying and managing chemical substances in goods delivered to Fukuda Denshi needs to be established and operated.
- 2) Management of substances in products that affect the environment (Assessment of goods)  
As a rule, prohibited substances must not be used in goods delivered to Fukuda Denshi.

### 3.2. Requirements for suppliers

- 1) Fukuda Denshi set requirements (see "4. Requirements and Explanations" on pages 3 to 4 for more details)
- 2) Fukuda Denshi will confirm if actions taken by suppliers satisfy the requirements.
- 3) Suppliers are requested to submit "Check Sheet". Fukuda Denshi will conduct assessment based on the submitted "Check Sheet" to confirm if the suppliers fulfill our requirements.
- 4) Suppliers are requested to submit chemSHERPA-AI (composition information is required; compliance information must be listed to the greatest extent possible) for assessment.
- 5) Fukuda Denshi will conduct assessment based on the submitted chemSHERPA-AI to determine whether or not requirements are satisfied.
- 6) Response by chemSHERPA-CI, analysis data, or certificate of non-inclusion may be accepted depending on the situation of the supplier.

## 4. Requirements and Explanations

### 4.1. Requirements related to goods

Requirements for goods environmental management systems (management of chemical substances in products)

Suppliers must define in writing the responsibility and procedures for implementing actions in accordance with the list of action items in the “AnnexD of Guidelines for the Management of Chemical Substances in Products Ver. 4.0” as issued by the Joint Article Management.

Promotion-consortium (JAMP) in 2018, and must act in accordance with the defined items.

See the websites below for the “Guidelines for the Management of Chemical Substances in Products.” JAMP : <http://www.jamp-info.com/dl>

(Reference)

Action items and action details in the Action Item List of the “Guidelines for the Management of Chemical Substances in Products Ver. 4.0”.

(Note)

Refer to the implementation items (questions), the conformity judgment standard, the example of the reply, and the caution points of management on the “Check Sheet”.

No.	Action Items
<u>5.1</u>	<u>Context of the organization</u>
<u>5.1.1</u>	<u>Understanding the organization and its context</u>
<u>5.1.2</u>	<u>Understanding the needs and expectations of stakeholders</u>
<u>5.1.3</u>	<u>Determining the scope of the CiP management</u>
<u>5.1.4</u>	<u>Implementation of CiP management</u>
<u>5.2</u>	<u>Leadership</u>
<u>5.2.1</u>	<u>Leadership and commitment</u>
<u>5.2.2</u>	<u>Policy</u>
<u>5.3</u>	<u>Plan</u>
<u>5.3.1</u>	<u>Actions to address risks and opportunities</u>
<u>5.3.2</u>	<u>Objectives and planning to achieve them</u>
<u>5.4</u>	<u>Support</u>
<u>5.4.1</u>	<u>Resources</u>
<u>5.4.2</u>	<u>Competence</u>
<u>5.4.3</u>	<u>Awareness</u>
<u>5.4.4</u>	<u>Communication</u>
<u>5.4.4.1</u>	<u>Internal communication</u>
<u>5.4.4.2</u>	<u>External communication</u>
<u>5.4.5</u>	<u>Documented information</u>
<u>5.5</u>	<u>Operation</u>
<u>5.5.1</u>	<u>Operational planning and control</u>
<u>5.5.2</u>	<u>CiP management criteria formulation</u>
<u>5.5.2.1</u>	<u>Customer communication</u>
<u>5.5.2.2</u>	<u>Defining the CiP management criteria</u>
<u>5.5.3</u>	<u>CiP Management in design and development</u>
<u>5.5.4</u>	<u>Management of externally provided products</u>
<u>5.5.4.1</u>	<u>CiP information collection and verification</u>
<u>5.5.4.2</u>	<u>Verification of the CiP management status at suppliers</u>

No.	Action Items
<u>5.5.4.3</u>	<u>CiP management at receiving</u>
<u>5.5.4.4</u>	<u>Verification of the CiP management status at outsourcing organization</u>
<u>5.5.5</u>	<u>CiP management in manufacturing and storage</u>
<u>5.5.5.1</u>	<u>Management in manufacturing processes (Management of conversion process)</u>
<u>5.5.5.2</u>	<u>Prevention of incorrect use and contamination (Management of incorrect use and contamination for parallel production and prohibited substances)</u>
<u>5.5.5.3</u>	<u>Identification and traceability</u>
<u>5.5.6</u>	<u>Change management</u>
<u>5.5.7</u>	<u>Delivery of products</u>
<u>5.5.8</u>	<u>Response to occurrence of nonconformity</u>
<u>5.6</u>	<u>Performance evaluation and improvement</u>

#### Requirements regarding goods with substances in products that affect the environment

##### 1. Prohibition of use of prohibited substances

Goods delivered to Fukuda Denshi must not use “prohibited substances” (Accompanying materials “Substances in products that affect the environment List”).

##### 2. Identification of restricted substance

Inclusion, amount, location, and usage for “restricted substances” (accompanying materials “Substances in products that affect the environment List”) in goods delivered to Fukuda Denshi must be identified.

##### 3. Identification of controlled substances

Inclusion, amount, location, and usage for “controlled substances” (accompanying materials “Substances in products that affect the environment List”) in goods delivered to Fukuda Denshi must be identified.

#### 4.2. Interpretation of requirements

Requirements for the environmental management systems of goods (management of chemical substances in products)

1) “Environmental management systems of goods” refers to a system for identifying the chemical substances in goods delivered to Fukuda Denshi.

“Guidelines for the management of chemical substances in products Ver. 4.0” issued in 2018 by the Joint Article Management Promotion-consortium (JAMP) has been adopted as Fukuda Denshi requirements, so that the management of chemical substances in products by the suppliers can be performed more reliably.

2) Refer to the Annex D: Action Item List & Check Sheet, “Guidelines for the management of chemical substances in products” for action items in the chemical substances management system for products.

3) “Action Details” in the “Check Sheet” are common expressions for the supply chain as a whole. For the actual approach, please replace those items with specific details in accordance with the situation of each individual company.

4) The unit that builds the management system of chemical substances in products becomes the “organization.” An “organization” can be a company, division, office, etc. Please take care that action items are not overlooked in the organization as a whole.

## 5. Assessment

### 5.1. Supplier environmental assessment

#### 5.1.1. Supplier environmental assessment

The supplier assessment related to the “environmental management system of goods” is in the order shown below.

- 1) The supplier is asked to submit a check sheet as requested.
- 2) The supplier is asked to conduct self-assessment of the status of its activities on “action items.”
  - a) Check Sheet: Required
  - b) In addition to the above items, the supplier may be requested to submit documents to confirm creation and status of use of the “environmental management system of goods.” Fukuda Denshi will notify the supplier individually in such cases.
- 3) Fukuda Denshi will confirm whether or not the details of the submitted “Check Sheet” satisfy the requirements.

In some cases, Fukuda Denshi may make inquiries or visit the supplier in order to confirm the submitted items, or to improve the establishment and operation of items. Fukuda Denshi will notify the supplier individually in such cases.

- 4) The evaluation results with the submitted “Check Sheet” will be sent to the supplier.

### 5.1.2. Entities that will conduct “self assessment”

#### 1) If the supplier is a manufacturer

All establishments (factories) that manufacture goods that are delivered to Fukuda Denshi must conduct self assessment. However, establishments (factories) that do not manufacture goods that are delivered to Fukuda Denshi do not need to conduct self assessment.

Note that assessment of the “environmental management system of goods” must also be conducted for entities other than the manufacturing establishments (factories) if management of chemical substances in products is not performed completely at those establishments (factories).

Example: If an establishment (factory) has only a manufacturing department, and design work and selection of materials used are done at the head office (parent company), that head office (parent company) also must conduct self assessment.

#### 2) If the supplier is a trading company

The targets of self assessment are the establishments of suppliers (trading companies).

The supplier (trading company) must assess the establishments (factories) of the suppliers and contractors of the supplier (trading company) in accordance with action items.

The assessment results should be reported in “5.5.4.2 Verification of the CiP management status at suppliers” of the “Check Sheet.”

## 5.2. Assessment of goods

The “Assessment of goods” for individual goods is in the order shown below.

- 1) Fukuda Denshi requests the supplier to survey information on the substances in products that affect the environment related to the goods to be supplied.
- 2) Based on the request described above, suppliers must submit survey results to Fukuda Denshi in the form of a chemSHERPA-AI (composition information is required; compliance information must be listed to the greatest extent possible).
- 3) Fukuda Denshi will assess the chemSHERPA-AI to determine whether or not requirements are satisfied.

Fukuda Denshi will take individual response for goods which do not satisfy requirements.

- 4) If changes are made in the substances in products that affect the environment due to design change, process change, etc., suppliers must reconfirm inclusion of the restricted substances in goods. Please submit information to Fukuda Denshi Purchasing Department upon identification.
- 5) If a check is inserted for the item “Survey Results (chemSHERPA-AI) for RoHS Goods Assessment” in the estimate request from Fukuda Denshi, please prepare a survey results.
- 6) When proposing a substitute part, please submit survey results for information on the substances in products that affect the environment related to the goods to be supplied in the form of chemSHERPA-AI (composition information is required).

## 6. Other

### 1) Handling of submitted information

Information submitted will be conducted is shared within the Fukuda Denshi Group.

If a request is made by the supply chain for the submitted information on the substances in products that affect the environment, or if domestic or overseas government agencies etc. request disclosure of information, that information may be submitted to third parties (clients, etc.) as part of information related to Fukuda Denshi products.

### 2) Enquiry

Fukuda Denshi Co., Ltd. Green Procurement Department Production Purchasing Department

## Accompanying materials “Substances in products that affect the environment List” (1/26)

### Definition of terms

#### 1) Contain

This term means that chemical substances are naturally included in parts/materials that make up the product. It also covers cases when substances are added, filled, mixed, or attached to products, or when they are attributed to the manufacturing process.

#### 2) Impurity

Those are substances contained in natural materials that cannot be completely removed in the process of refining as commercial materials with the current industrial technology levels. They may also be substances such as byproducts and catalyst residues formed in chemical reactions of materials or chemicals that cannot be completely removed with the current industrial technology levels.

#### 3) Homogeneous material

Homogeneous materials are those that cannot be mechanically separated or “materials of completely uniform composition” such as plastic, ceramic, glass, metal, alloy, paper, resin, and coating. Specific examples are as follows.

- a) Plastic covers made of one type of material and not coated with other materials or having other materials attached. Maximum permissible concentration applies to this plastic.
- b) Electrical cable is separated by dynamic processes into insulation and heterogeneous materials such as metals, so electrical cable is not a homogeneous material. Maximum permissible concentration applies to the individual separated materials.
- c) Semiconductor packages include many homogeneous materials such as plastic molding materials, lead frame tin coating, lead frame alloy, and gold bonding wire. Maximum permissible concentration applies to the individual materials.

#### 4) Scope

This term indicates the concentration, application, use, etc. for prohibited substances, and controlled substances stipulated in these standards. Concentration is found with the following formula.

(Concentration)= (Mass of contained subject chemical substance) ÷ (Mass of homogeneous substance of component that contains the subject chemical substance)

Please apply the metal equivalent for scope of concentration for metallic compounds.

Homogeneous substances are of the same material properties as the component that contains the subject chemical substance. In other words, they cannot be broken down mechanically into other materials.

#### 5) Exemption

This term indicates items for which certain usages, substances, etc. are removed from the scope of prohibited substances stipulated in these standards. However, they need to be managed the same way as controlled substances.

#### 6) Synthetic resins

Synthetic resins are synthetic polymers such as commodity plastics, engineering plastics, synthetic fibers, synthetic rubbers, paints, and adhesives.

#### 7) ppm

“ppm” indicates parts per million (1 in 1,000,000), and is used to express weight ratios in these standards where 1 ppm=1 mg/kg.

#### 8) CAS No.

CAS No. (CAS Registry Numbers) are numbers assigned by the Chemical Abstracts Service (CAS) of the American Chemical Society for chemical substances noted in chemical literature, etc.

Accompanying materials “Substances in products that affect the environment List” (2/26)

Remarks

- 1) If content in the scope for prohibited substances is discovered, please contact Fukuda Denshi immediately.
- 2) Scopes are generally set according to laws and regulations.
- 3) Use of exempt items for application, etc. not in the prohibited or regulated scope is not prohibited, but information on that use (content, locations containing, etc.) must be identified.

Accompanying materials “Substances in products that affect the environment List” (3/26)

A Prohibited substances

### 1. Polybrominated biphenyls (PBBs)

Typical examples of chemical substances		Examples of application/use
Chemical substance	CAS No.	
Decabromobiphenyl	13654-09-6	Flame retardants
3,3',4,4'-Tetrabromobiphenyl	77102-82-0	
2,2',4,5,5'-Pentabromobiphenyl	67888-96-4	
<b>Scope:</b>		
a) Contained in excess of 1,000 ppm in homogeneous materials		
<b>Reference regulations, etc.:</b>		
REACH Regulation (EC) No 1907/2006 (Annex XVII), EU RoHS Directive(2011/65/EU)		

### 2. Polybrominated diphenyl ethers (PBDEs)

Typical examples of chemical substances		Examples of application/use
Chemical substance	CAS No.	
Pentabromodiphenyl ether	32534-81-9	Flame retardants
Octabromodiphenyl ether	32536-52-0	
Decabromodiphenyl ether	1163-19-5	
<b>Scope:</b>		
a) Contained in excess of 1,000 ppm in homogeneous materials		
<b>Reference regulations, etc.:</b>		
REACH Regulation (EC) No 1907/2006 (Annex XVII), EU RoHS Directive(2011/65/EU)		

### 3. Cadmium and its compounds

Typical examples of chemical substances		Examples of application/use
Chemical substance	CAS No.	
Cadmium	7440-43-9	Pigment, corrosion resistant surface processing, batteries, contact points, optical materials, PVC stabilizers
Cadmium oxide	1306-19-0	
Cadmium sulfide	1306-23-6	
Cadmium chloride	10108-64-2	
Cadmium sulfate	10124-36-4	
<b>Scope:</b> Items that correspond to any of the following		
a) Contained in excess of 100 ppm in homogeneous materials		
b) Use of cadmium in packaging materials where the sum concentration of cadmium, mercury, hexavalent chromium, and lead contained exceeds 100 ppm		
<b>&lt;Exemptions&gt;</b>		
1) Regarding note a), see appendix tables 1-1 and 1-2.		
<b>Reference regulations, etc.:</b>		
REACH Regulation (EC) No 1907/2006 (Annex XVII) , EU RoHS Directive (2011/65/EU), EU Package Directive (94/62/EEC), EU Battery Directive (2006/66/EC), Chemical Substances Act Cadmium Decree of the Netherlands, Statutory Order on the Prohibition of Sale, Import, and Manufacture of Cadmium-Containing Products of Denmark		

Accompanying materials “Substances in products that affect the environment List” (4/26)

A Prohibited substances (continued)

**4. Lead and its compounds**

Typical examples of chemical substances		Examples of application/use
Chemical substance	CAS No.	
Lead	7439-92-1	Pigments, paints, rubber stiffeners, plastic stabilizers, batteries, rubber curing agents, solders, glass, free cutting alloys, alloys components, various resin additives
Lead(II) carbonate	598-63-0	
Lead (IV) oxide	1309-60-0	
Lead tetraoxide	1314-41-6	
Lead(II) sulfide	1314-87-0	
Lead (II) oxide	1317-36-8	
Lead(II) carbonate basic	1319-46-6	
Lead(II) sulfate	7446-14-2	
Lead(II) chromate	7758-97-6	
Lead(II) titanate	12060-00-3	
Lead stearate	1072-35-1	
Lead stearate,dibasic	56189-09-4	
Lead hydrogen arsenate	7784-40-9	
Lead chromate molybdate sulphate red	12656-85-8	
Lead sulfochromate yellow	1344-37-2	
<p><b>Scope:</b> Items that correspond to any of the following</p> <p>a) Contained in excess of 1,000 ppm in homogeneous materials. However, contained in excess of 300 ppm in polyvinyl chloride resin coating of polyvinyl chloride wire.</p> <p>b) Use of lead in packaging materials where the sum concentration of cadmium, mercury, hexavalent chromium, and lead contained exceeds 100 ppm</p> <p>c) For batteries and rechargeable batteries, when the sum of the content of lead is 0.4% or more</p> <p><b>&lt;Exemptions&gt;</b></p> <p>1) Regarding note a), see appendix tables 1-1 and 1-2.</p>		
<p><b>Reference regulations, etc.:</b>                      REACH Regulation (EC) No 1907/2006(Annex XVII, SVHC), EU RoHS Directive (2011/65/EU), EU Package Directive (94/62/EEC), EU Battery Directive (2006/66/EC), Denmark Lead Ban, Proposition 65</p>		

Accompanying materials “Substances in products that affect the environment List” (5/26)

A. Prohibited substances (continued)

**5. Hexavalent chromium compounds**

Typical examples of chemical substances		Examples of application/use
Chemical substance	CAS No.	
Sodium dichromate	10588-01-9	Pigments, paints, inks, catalysts, corrosion resistant surface processing, dyestuffs, anti-rust paints
Chromium trioxide	1333-82-0	
Calcium chromate	13765-19-0	
Lead chromate(II)	7758-97-6	
Potassium dichromate	7778-50-9	
Potassium chromate	7789-00-6	
Sodium dichromate, dihydrate	7789-12-0	
Ammonium dichromate	7778-50-9	
Sodium chromate	7789-09-5	
Chromium (VI) trioxide	7789-00-6	
Chromic acid	7775-11-3	
Oligomers of chromic acid and dichromic acid	1333-82-0	
Dichromic acid	7738-94-5	
Lead chromate molybdate sulphate red	-	
Lead sulfochromate yellow	13530-68-2	
Sodium dichromate	12656-85-8	
Chromium trioxide	1344-37-2	
<p><b>Scope:</b> Items that correspond to any of the following</p> <p>a) Contained in excess of 1,000 ppm in homogeneous materials</p> <p>b) Use of hexavalent cadmium in packaging materials where the sum concentration of cadmium, mercury, hexavalent chromium, and lead contained exceeds 100 ppm</p> <p><b>&lt;Exemptions&gt;</b></p> <p>1) Regarding note a), see appendix tables 1-1 and 1-2.</p>		
<p><b>Reference regulations:</b>                      REACH Regulation (EC) No 1907/2006 (Annex XVII, SVHC), EU RoHS Directive (2011/65/EU), EU Package Directive (94/62/EEC)</p>		

**6. Mercury and its compounds**

Typical examples of chemical substances		Examples of application/use
Chemical substance	CAS No.	
Mercury	7439-97-6	Batteries, fluorescent materials, contact points, thermometers, pigments
Mercury(II) chloride	7487-94-7	
Mercury (II) oxide	21908-53-2	
<p><b>Scope:</b> Items that correspond to any of the following</p> <p>a) Contained in excess of 1,000 ppm in homogeneous materials as an impurity</p> <p>b) Use of mercury in packaging materials where the sum concentration of cadmium, mercury, hexavalent chromium, and lead contained exceeds 100 ppm</p> <p>c) Use of mercury in excess of 5 ppm in batteries. However, use of mercury in excess of 2% in button batteries</p> <p><b>&lt;Exemptions&gt;</b></p> <p>1) Regarding note a), see appendix tables 1-1 and 1-2.</p>		
<p><b>Reference regulations:</b>                      REACH Regulation (EC) No 1907/2006 (Annex XVII), EU RoHS Directive (2011/65/EU), EU Package Directive (94/62/EEC), EU Battery Directive (2006/66/EC)</p>		

Accompanying materials “Substances in products that affect the environment List” (6/26)

A. Prohibited substances (continued)

**7. Benzyl butyl phthalate (BBP)**

Chemical substance	CAS No.	Examples of application/use
Benzyl butyl phthalate (BBP)	85-68-7	Plasticizers, dyestuffs, pigments, paints, inks, adhesives
<b>Scope:</b> a) Contained in excess of 1,000 ppm in homogeneous materials		
<b>Reference regulations, etc.:</b> REACH Regulation (EC) No 1907/2006 (Annex XVII, SVHC), EU RoHS Directive (2011/65/EU)		

**8. Bis (2-ethylhexyl) phthalate (DEHP)**

Chemical substance	CAS No.	Examples of application/use
Bis (2-ethylhexyl) phthalate (DEHP)	117-81-7	Plasticizers, dyestuffs, pigments, paints, inks, adhesives
<b>Scope:</b> a) Contained in excess of 1,000 ppm in homogeneous materials		
<b>Reference regulations, etc.:</b> REACH Regulation (EC) No 1907/2006 (Annex XVII, SVHC), EU RoHS Directive (2011/65/EU)		

**9. Dibutyl phthalate (DBP)**

Chemical substance	CAS No.	Examples of application/use
Dibutyl phthalate (DBP)	84-74-2	Plasticizers, dyestuffs, pigments, paints, inks, adhesives
<b>Scope:</b> a) Contained in excess of 1,000 ppm in homogeneous materials		
<b>Reference regulations, etc.:</b> REACH Regulation (EC) No 1907/2006 (Annex XVII, SVHC), EU RoHS Directive (2011/65/EU)		

**10. Diisobutyl Phthalate (DIBP)**

Chemical substance	CAS No.	Examples of application/use
Diisobutyl Phthalate (DIBP)	84-69-5	Plasticizers, dyestuffs, pigments, paints, inks, adhesives
<b>Scope:</b> a) Contained in excess of 1,000 ppm in homogeneous materials		
<b>Reference regulations, etc.:</b> REACH Regulation (EC) No 1907/2006 (Annex XVII, SVHC), EU RoHS Directive (2011/65/EU)		

note

1) The chemical substances listed here are controlled substances according to the EU-RoHS Directive (2011/65/EU).

See the original Official Journal of the European Union for the latest information.

Accompanying materials “Substances in products that affect the environment List” (7/26)

C. Controlled substances

No.	Substance	CAS No.	Date of inclusion	Related laws and regulations
1	Cadmium	7440-43-9	20/06/2013	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
2	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	20/06/2013	REACH(EC)No1907/2006 (SVHC)
3	Pentadecafluorooctanoic acid (PFOA)	335-67-1	20/06/2013	REACH(EC)No1907/2006 (SVHC)
4	Dipentyl phthalate (DPP)	131-18-0	20/06/2013	REACH(EC)No1907/2006 (SVHC)
5	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, ethoxylated covering UVCB- and well-defined substances, polymers and homologues, which include any of the individual isomers and/or combinations thereof]		20/06/2013	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
6	Cadmium oxide	1306-19-0	20/06/2013	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
7	Pyrochlore, antimony lead yellow	8012-00-8	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
8	6-methoxy-m-toluidine (p-cresidine)	120-71-8	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
9	Henicosafuoroundecanoic acid	2058-94-8	19/12/2012	REACH(EC)No1907/2006 (SVHC)
10	Hexahydromethylphthalic anhydride [1], Hexahydro-4-methylphthalic anhydride [2], Hexahydro-1-methylphthalic anhydride [3], Hexahydro-3-methylphthalic anhydride [4] <i>[The individual isomers [2], [3] and [4] (including their cis- and trans- stereo isomeric forms) and all possible combinations of the isomers [1] are covered by this entry]</i>	25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9	19/12/2012	REACH(EC)No1907/2006 (SVHC)
11	Cyclohexane-1,2-dicarboxylic anhydride [1], cis-cyclohexane-1,2-dicarboxylic anhydride [2], trans-cyclohexane-1,2-dicarboxylic anhydride [3] <i>[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]</i>	85-42-7, 13149-00-3, 14166-21-3	19/12/2012	REACH(EC)No1907/2006 (SVHC)

Accompanying materials “Substances in products that affect the environment List” (8/26)

C. Controlled substances (continued)

No.	Substance	CAS No.	Date of inclusion	Related laws and regulations
12	Dibutyltin dichloride (DBTC)	683-18-1	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
13	Lead bis(tetrafluoroborate)	13814-96-5	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
14	Lead dinitrate	10099-74-8	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
15	Silicic acid, lead salt	11120-22-2	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
16	4-Aminoazobenzene	60-09-3	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
17	Lead titanium zirconium oxide	12626-81-2	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
18	Lead monoxide (lead oxide)	1317-36-8	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
19	o-Toluidine	95-53-4	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
20	3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	19/12/2012	REACH(EC)No1907/2006 (SVHC)
21	Silicic acid (H <sub>2</sub> Si <sub>2</sub> O <sub>5</sub> ), barium salt (1:1), lead-doped <i>[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]</i>	68784-75-8	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
22	Trilead bis(carbonate)dihydroxide	1319-46-6	19/12/2012	REACH(EC)No1907/2006 (SVHC)
23	Furan	110-00-9	19/12/2012	REACH(EC)No1907/2006 (SVHC)
24	N,N-dimethylformamide	68-12-2	19/12/2012	REACH(EC)No1907/2006 (SVHC)
25	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated <i>[covering well-defined substances and UVCB substances, polymers and homologues]</i>	-	19/12/2012	REACH(EC)No1907/2006 (SVHC)
26	4-Nonylphenol, branched and linear <i>[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]</i>	-	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)

Accompanying materials “Substances in products that affect the environment List” (9/26)

C. Controlled substances (continued)

No.	Substance	CAS No.	Date of inclusion	Related laws and regulations
27	4,4'-methylenedi-o-toluidine	838-88-0	19/12/2012	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
28	Diethyl sulphate	64-67-5	19/12/2012	REACH(EC)No1907/2006 (SVHC)
29	Dimethyl sulphate	77-78-1	19/12/2012	REACH(EC)No1907/2006 (SVHC)
30	Lead oxide sulfate	12036-76-9	19/12/2012	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
31	Lead titanium trioxide	12060-00-3	19/12/2012	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
32	Acetic acid, lead salt, basic	51404-69-4	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
33	[Phthalato(2-)]dioxotrilead	69011-06-9	19/12/2012	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
34	Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)	1163-19-5	19/12/2012	REACH(EC)No1907/2006 (SVHC)
35	N-methylacetamide	79-16-3	19/12/2012	REACH(EC)No1907/2006 (SVHC)
36	Dinoseb (6-sec-butyl-2,4-dinitrophenol)	88-85-7	19/12/2012	REACH(EC)No1907/2006 (SVHC)
37	1,2-Diethoxyethane	629-14-1	19/12/2012	REACH(EC)No1907/2006 (SVHC)
38	Tetralead trioxide sulphate	12202-17-4	19/12/2012	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
39	N-pentyl-isopentylphthalate	776297-69-9	19/12/2012	REACH(EC)No1907/2006 (SVHC)
40	Dioxobis(stearato)trilead	12578-12-0	19/12/2012	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
41	Tetraethyllead	78-00-2	19/12/2012	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
42	Pentalead tetraoxide sulphate	12065-90-6	19/12/2012	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
43	Pentacosaflluorotridecanoic acid	72629-94-8	19/12/2012	REACH(EC)No1907/2006 (SVHC)
44	Tricosaflluorododecanoic acid	307-55-1	19/12/2012	REACH(EC)No1907/2006 (SVHC)
45	Heptacosaflluorotetradecanoic acid	376-06-7	19/12/2012	REACH(EC)No1907/2006 (SVHC)
46	1-bromopropane (n-propyl bromide)	106-94-5	19/12/2012	REACH(EC)No1907/2006 (SVHC)
47	Methoxyacetic acid	625-45-6	19/12/2012	REACH(EC)No1907/2006 (SVHC)

Accompanying materials “Substances in products that affect the environment List” (10/26)

C. Controlled substances (continued)

No.	Substance	CAS No.	Date of inclusion	Related laws and regulations
48	4-methyl-m-phenylenediamine (toluene-2,4-diamine)	95-80-7	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
49	Methyloxirane (Propylene oxide)	75-56-9	19/12/2012	REACH(EC)No1907/2006 (SVHC)
50	Trilead dioxide phosphonate	12141-20-7	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
51	o-aminoazotoluene	97-56-3	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
52	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	19/12/2012	REACH(EC)No1907/2006 (SVHC)
53	4,4'-oxydianiline and its salts	101-80-4	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
54	Orange lead (lead tetroxide)	1314-41-6	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
55	Biphenyl-4-ylamine	92-67-1	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
56	Diisopentylphthalate	605-50-5	19/12/2012	REACH(EC)No1907/2006 (SVHC)
57	Fatty acids, C16-18, lead salts	91031-62-8	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
58	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	19/12/2012	REACH(EC)No1907/2006 (SVHC)
59	Sulfurous acid, lead salt, dibasic	62229-08-7	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
60	Lead cyanamidate	20837-86-9	19/12/2012	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
61	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	548-62-9	18/06/2012	REACH(EC)No1907/2006 (SVHC)
62	1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (β-TGIC)	59653-74-6	18/06/2012	REACH(EC)No1907/2006 (SVHC)

Accompanying materials “Substances in products that affect the environment List” (11/26)

C. Controlled substances (continued)

No.	Substance	CAS No.	Date of inclusion	Related laws and regulations
63	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	18/06/2012	REACH(EC)No1907/2006 (SVHC)
64	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	561-41-1	18/06/2012	REACH(EC)No1907/2006 (SVHC)
65	Lead(II) bis(methanesulfonate)	17570-76-2	18/06/2012	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
66	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	18/06/2012	REACH(EC)No1907/2006 (SVHC)
67	Diboron trioxide	1303-86-2	18/06/2012	REACH(EC)No1907/2006 (SVHC)
68	α,α-Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	6786-83-0	18/06/2012	REACH(EC)No1907/2006 (SVHC)
69	1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC)	2451-62-9	18/06/2012	REACH(EC)No1907/2006 (SVHC)
70	4,4'-bis(dimethylamino)benzophenone (Michler's ketone)	90-94-8	18/06/2012	REACH(EC)No1907/2006 (SVHC)
71	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	18/06/2012	REACH(EC)No1907/2006 (SVHC)
72	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl] methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	2580-56-5	18/06/2012	REACH(EC)No1907/2006 (SVHC)
73	Formamide	75-12-7	18/06/2012	REACH(EC)No1907/2006 (SVHC)

Accompanying materials “Substances in products that affect the environment List” (12/26)

C. Controlled substances (continued)

No.	Substance	CAS No.	Date of inclusion	Related laws and regulations
74	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	19/12/2011	REACH(EC)No1907/2006 (SVHC)
75	N,N-dimethylacetamide	127-19-5	19/12/2011	REACH(EC)No1907/2006 (SVHC)
76	Phenolphthalein	77-09-8	19/12/2011	REACH(EC)No1907/2006 (SVHC)
77	Lead diazide, Lead azide	13424-46-9	19/12/2011	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
78	Lead dipicrate	6477-64-1	19/12/2011	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
79	Calcium arsenate	7778-44-1	19/12/2011	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
80	1,2-dichloroethane	107-06-2	19/12/2011	REACH(EC)No1907/2006 (SVHC)
81	Dichromium tris(chromate)	24613-89-6	19/12/2011	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
82	2-Methoxyaniline; o-Anisidine	90-04-0	19/12/2011	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
83	Pentazinc chromate octahydroxide	49663-84-5	19/12/2011	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
84	Arsenic acid	7778-39-4	19/12/2011	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
85	Potassium hydroxyoctaoxidizincatedichromate	11103-86-9	19/12/2011	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
86	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	19/12/2011	REACH(EC)No1907/2006 (SVHC)
87	Lead styphnate	15245-44-0	19/12/2011	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
88	Trilead diarsenate	3687-31-8	19/12/2011	REACH(EC)No1907/2006 (AnnexXVII,SVHC)

Accompanying materials “Substances in products that affect the environment List” (13/26)

C. Controlled substances (continued)

No.	Substance	CAS No.	Date of inclusion	Related laws and regulations
89	<p>Zirconia Aluminosilicate Refractory Ceramic Fibres</p> <p>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,</p> <p>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</p> <p>b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (micro m). 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</p>		19/12/2011	REACH(EC)No1907/2006 (SVHC)
90	<p>Aluminosilicate Refractory Ceramic Fibres</p> <p>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</p> <p>b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (micro m) 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</p>		19/12/2011	REACH(EC)No1907/2006 (SVHC)

Accompanying materials “Substances in products that affect the environment List” (14/26)

C. Controlled substances (continued)

No.	Substance	CAS No.	Date of inclusion	Related laws and regulations
91	Bis(2-methoxyethyl) phthalate	117-82-8	19/12/2011	REACH(EC)No1907/2006 (SVHC)
92	Bis(2-methoxyethyl) ether	111-96-6	19/12/2011	REACH(EC)No1907/2006 (SVHC)
93	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	19/12/2011	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
94	Cobalt dichloride	7646-79-9	28/10/2008	REACH(EC)No1907/2006 (SVHC)
95	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	20/06/2011	REACH(EC)No1907/2006 (SVHC)
96	Strontium chromate	7789-06-2	20/06/2011	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
97	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	20/06/2011	REACH(EC)No1907/2006 (SVHC)
98	1-Methyl-2-pyrrolidone	872-50-4	20/06/2011	REACH(EC)No1907/2006 (SVHC)
99	1,2,3-Trichloropropane	96-18-4	20/06/2011	REACH(EC)No1907/2006 (SVHC)
100	2-Ethoxyethyl acetate	111-15-9	20/06/2011	REACH(EC)No1907/2006 (SVHC)
101	Hydrazine	302-01-2, 7803-57-8	20/06/2011	REACH(EC)No1907/2006 (SVHC)
102	Cobalt(II) diacetate	71-48-7	15/12/2010	REACH(EC)No1907/2006 (SVHC)
103	Cobalt(II) sulphate	10124-43-3	15/12/2010	REACH(EC)No1907/2006 (SVHC)
104	2-Ethoxyethanol	110-80-5	15/12/2010	REACH(EC)No1907/2006 (SVHC)
105	2-Methoxyethanol	109-86-4	15/12/2010	REACH(EC)No1907/2006 (SVHC)
106	Chromium trioxide	1333-82-0	15/12/2010	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
107	Acids generated from chromium trioxide and their oligomers. Group containing: Chromic acid, Dichromic acid, Dichromic acid, Oligomers of chromic acid and dichromic acid	7738-94-5, 13530-68-2	15/12/2010	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
108	Cobalt(II) carbonate	513-79-1	15/12/2010	REACH(EC)No1907/2006 (SVHC)
109	Cobalt(II) dinitrate	10141-05-6	15/12/2010	REACH(EC)No1907/2006 (SVHC)
110	Trichloroethylene	79-01-6	18/06/2010	REACH(EC)No1907/2006 (SVHC)
111	Potassium dichromate	7778-50-9	18/06/2010	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
112	Tetraboron disodium heptaoxide, hydrate	12267-73-1	18/06/2010	REACH(EC)No1907/2006 (SVHC)
113	Ammonium dichromate	7789-09-5	18/06/2010	REACH(EC)No1907/2006 (AnnexXVI,SVHC)

Accompanying materials “Substances in products that affect the environment List” (15/26)

C. Controlled substances (continued)

No.	Substance	CAS No.	Date of inclusion	Related laws and regulations
114	Boric acid	10043-35-3, 11113-50-1	18/06/2010	REACH(EC)No1907/2006 (SVHC)
115	Sodium chromate	7775-11-3	18/06/2010	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
116	Disodium tetraborate, anhydrous	1303-96-4, 1330-43-4, 12179-04-3	18/06/2010	REACH(EC)No1907/2006 (SVHC)
117	Potassium chromate	7789-00-6	18/06/2010	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
118	Acrylamide	79-06-1	30/03/2010	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
119	Lead sulfochromate yellow (C.I. Pigment Yellow 34)	1344-37-2	2010/01/13	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
120	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	12656-85-8	13/01/2010	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
121	Anthracene oil	90640-80-5	13/01/2010	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
122	2,4-Dinitrotoluene	121-14-2	13/01/2010	REACH(EC)No1907/2006 (SVHC)
123	Anthracene oil, anthracene paste, anthracene fraction	91995-15-2	13/01/2010	REACH(EC)No1907/2006 (SVHC)
124	Anthracene oil, anthracene-low	90640-82-7	13/01/2010	REACH(EC)No1907/2006 (SVHC)
125	Tris(2-chloroethyl)phosphate	115-96-8	13/01/2010	REACH(EC)No1907/2006 (SVHC)
126	Diisobutyl phthalate	84-69-5	13/01/2010	REACH(EC)No1907/2006 (SVHC)
127	Lead chromate	7758-97-6	13/01/2010	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
128	Anthracene oil, anthracene paste	90640-81-6	13/01/2010	REACH(EC)No1907/2006 (SVHC)
129	Pitch, coal tar, high temp.	65996-93-2	13/01/2010	REACH(EC)No1907/2006 (SVHC)
130	Anthracene oil, anthracene paste, distn. lights	91995-17-4	13/01/2010	REACH(EC)No1907/2006 (SVHC)
131	Lead hydrogen arsenate	7784-40-9	28/10/2008	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
132	Benzyl butyl phthalate (BBP)	85-68-7	28/10/2008	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
133	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	28/10/2008	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
134	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	28/10/2008	REACH(EC)No1907/2006 (SVHC)

Accompanying materials “Substances in products that affect the environment List” (16/26)

C. Controlled substances (continued)

No.	Substance	CAS No.	Date of inclusion	Related laws and regulations
135	Bis(tributyltin)oxide (TBTO)	56-35-9	28/10/2008	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
136	Diarsenic trioxide	1327-53-3	28/10/2008	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
137	Sodium dichromate	7789-12-0, 10588-01-9	28/10/2008	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
138	Triethyl arsenate	15606-95-8	28/10/2008	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
139	Diarsenic pentaoxide	1303-28-2	28/10/2008	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
140	Dibutyl phthalate (DBP)	84-74-2	28/10/2008	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
141	4,4'- Diaminodiphenylmethane (MDA)	101-77-9	28/10/2008	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
142	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	28/10/2008	REACH(EC)No1907/2006 (SVHC)
143	Anthracene	120-12-7	28/10/2008	REACH(EC)No1907/2006 (SVHC)
144	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified: Alpha-hexabromocyclododecane Beta-hexabromocyclododecane Gamma-hexabromocyclododecane	25637-99-4, 3194-55-6 (134237-50-6) (134237-51-7) (134237-52-8)	28/10/2008	REACH(EC)No1907/2006 (SVHC)
145	Cadmium sulphide	1306-23-6	16/12/2013	REACH(EC)No1907/2006 (AnnexXVII,SVHC)
146	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo] -5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	16/12/2013	REACH(EC)No1907/2006 (AnnexXVII,SVHC)

Accompanying materials “Substances in products that affect the environment List” (17/26)

C. Controlled substances (continued)

No.	Substance	CAS No.	Date of inclusion	Related laws and regulations
147	Dihexyl phthalate	84-75-3	16/12/2013	REACH(EC)No1907/2006 (SVHC)
148	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	16/12/2013	REACH(EC)No1907/2006 (SVHC)
149	Trixylyl phosphate	25155-23-1	16/12/2013	REACH(EC)No1907/2006 (SVHC)
150	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	16/12/2013	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
151	Lead di(acetate)	301-04-2	16/12/2013	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
152	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	16/06/2014	REACH(EC)No1907/2006 (SVHC)
153	Sodium perborate; perboric acid, sodium salt	-	16/06/2014	REACH(EC)No1907/2006 (SVHC)
154	Sodium peroxometaborate	7632-04-4	16/06/2014	REACH(EC)No1907/2006 (SVHC)
155	Cadmium chloride	10108-64-2	16/06/2014	REACH(EC)No1907/2006 (AnnexXVI,SVHC)
156	Cadmium fluoride	7790-79-6 (232-222-0)	17/12/2014	REACH(EC)No1907/2006 (SVHC)
157	Cadmium sulphate	10124-36-4; 31119-53-6 (233-331-6)	17/12/2014	REACH(EC)No1907/2006 (SVHC)
158	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7 (223-346-6)	17/12/2014	REACH(EC)No1907/2006 (SVHC)
159	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1 (247-384-8)	17/12/2014	REACH(EC)No1907/2006 (SVHC)
160	2-ethylhexyl 10-ethyl-4,4'-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	15571-58-1 (239-622-4)	17/12/2014	REACH(EC)No1907/2006 (SVHC)

Accompanying materials “Substances in products that affect the environment List” (18/26)

C. Controlled substances (continued)

No.	Substance	CAS No.	Date of inclusion	Related laws and regulations
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-ethylhexyloxy)-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)	- (-)	17/12/2014	REACH(EC)No1907/2006 (SVHC)
162	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]	- (-)	15/06/2015	REACH(EC)No1907/2006 (SVHC)
163	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate (EC No. 201-559-5)	68515-51-5 68648-93-1 (271-094-0) (272-013-1)	15/06/2015	REACH(EC)No1907/2006 (SVHC)
164	1,3-propanesultone	1120-71-4	17/12/2015	REACH(EC)No1907/2006 (SVHC)
165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	17/12/2015	REACH(EC)No1907/2006 (SVHC)
166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	17/12/2015	REACH(EC)No1907/2006 (SVHC)
167	Nitrobenzene	98-95-3	17/12/2015	REACH(EC)No1907/2006 (SVHC)
168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1 21049-39-8 4149-60-4	17/12/2015	REACH(EC)No1907/2006 (SVHC)
169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	20/06/2016	REACH(EC)No1907/2006 (SVHC)

Accompanying materials “Substances in products that affect the environment List” (19/26)

C. Controlled substances (continued)

No.	Substance	CAS No.	Date of inclusion	Related laws and regulations
170	p-(1,1-dimethylpropyl)phenol	80-46-6	12/01/2017	REACH(EC)No1907/2006 (SVHC)
171	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts Ammonium nonadecafluorodecanoate Decanoic acid, nonadecafluoro-, sodium salt Nonadecafluorodecanoic acid	3108-42-7 3830-45-3 335-76-2	12/01/2017	REACH(EC)No1907/2006 (SVHC)
172	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]		12/01/2017	REACH(EC)No1907/2006 (SVHC)
173	4,4'-isopropylidenediphenol	80-05-7	12/01/2017	REACH(EC)No1907/2006 (SVHC)
<u>174</u>	<u>Perfluorohexane-1-sulphonic acid and its salts</u>	<u>-</u>	<u>2017/7/7</u>	<u>REACH(EC)No1907/2006 (SVHC)</u>
<u>175</u>	<u>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”™)</u>	<u>-</u>	<u>2018/1/15</u>	<u>REACH(EC)No1907/2006 (SVHC)</u>
<u>176</u>	<u>Benz[<i>a</i>]anthracene</u>	<u>56-55-3, 1718-53-2</u>	<u>2018/1/15</u>	<u>REACH(EC)No1907/2006 (SVHC)</u>
<u>177</u>	<u>Cadmium carbonate</u>	<u>513-78-0</u>	<u>2018/1/15</u>	<u>REACH(EC)No1907/2006 (SVHC)</u>
<u>178</u>	<u>Cadmium hydroxide</u>	<u>21041-95-2</u>	<u>2018/1/15</u>	<u>REACH(EC)No1907/2006 (SVHC)</u>
<u>179</u>	<u>Cadmium nitrate</u>	<u>10022-68-1, 10325-94-7</u>	<u>2018/1/15</u>	<u>REACH(EC)No1907/2006 (SVHC)</u>
<u>180</u>	<u>Chrysene</u>	<u>218-01-9, 1719-03-5</u>	<u>2018/1/15</u>	<u>REACH(EC)No1907/2006 (SVHC)</u>

Accompanying materials “Substances in products that affect the environment List” (20/26)

C. Controlled substances (continued)

No.	Substance	CAS No.	Date of inclusion	Related laws and regulations
181	<u>Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP)</u>	-	<u>2018/1/15</u>	<u>REACH(EC)No1907/2006 (SVHC)</u>
182	<u>Benzene-1,2,4-tricarboxylic acid 1,2 anhydride</u>	<u>552-30-7</u>	<u>2018/6/28</u>	<u>REACH(EC)No1907/2006 (SVHC)</u>
183	<u>Benzol[ghi]perylene</u>	<u>191-24-2</u>	<u>2018/6/28</u>	<u>REACH(EC)No1907/2006 (SVHC)</u>
184	<u>Decamethylcyclopentasiloxane</u>	<u>541-02-6</u>	<u>2018/6/28</u>	<u>REACH(EC)No1907/2006 (SVHC)</u>
185	<u>Dicyclohexyl phthalate</u>	<u>84-61-7</u>	<u>2018/6/28</u>	<u>REACH(EC)No1907/2006 (SVHC)</u>
186	<u>Disodium octaborate</u>	<u>12008-41-2</u>	<u>2018/6/28</u>	<u>REACH(EC)No1907/2006 (SVHC)</u>
187	<u>Dodecamethylcyclohexasiloxane</u>	<u>540-97-6</u>	<u>2018/6/28</u>	<u>REACH(EC)No1907/2006 (SVHC)</u>
188	<u>Ethylenediamine</u>	<u>107-15-3</u>	<u>2018/6/28</u>	<u>REACH(EC)No1907/2006 (SVHC)</u>
189	<u>Lead</u>	<u>7439-92-1</u>	<u>2018/6/28</u>	<u>REACH(EC)No1907/2006 (SVHC)</u>
190	<u>Octamethylcyclotetrasiloxane</u>	<u>556-67-2</u>	<u>2018/6/28</u>	<u>REACH(EC)No1907/2006 (SVHC)</u>
191	<u>Terphenyl, hydrogenated</u>	<u>61788-32-7</u>	<u>2018/6/28</u>	<u>REACH(EC)No1907/2006 (SVHC)</u>

note

1) The chemical substances listed here are classified as candidate substances (up until release of EU REACH 19th SVHC by ECHA).

For the latest information, please refer to the original SVHC list by ECHA.

Accompanying materials “Substances in products that affect the environment List” (21/26)

Appendix table 1-1 (Items corresponding to exemptions for substance regulated in RoHS Directive)

No.	Exemption	Scope and dates of applicability
1(a)	Mercury in single capped (compact) fluorescent lamps for general lighting purposes < 30 W: not exceeding (per burner) 2.5 mg	21/07/2021
1(b)	Mercury in single capped (compact) fluorescent lamps for general lighting purposes ≥ 30 W and < 50 W: not exceeding (per burner) 3.5 mg	21/07/2021
1(c)	Mercury in single capped (compact) fluorescent lamps for general lighting purposes ≥ 50 W and < 150 W: not exceeding (per burner) 5 mg	21/07/2021
1(d)	Mercury in single capped (compact) fluorescent lamps for general lighting purposes ≥ 150 W: not exceeding (per burner) 15 mg	21/07/2021
1(e)	Mercury in single capped (compact) fluorescent lamps for general lighting purposes with circular or square structural shape and tube diameter ≤ 17 mm: not exceeding (per burner) 7 mg	21/07/2021
1(f)	Mercury in single capped (compact) fluorescent lamps for special purposes: not exceeding (per burner) 5 mg	21/07/2021
2(a)(1)	Mercury in double-capped linear fluorescent lamps Tri-band phosphor with normal lifetime and a tube diameter < 9 mm (e.g. T2) for general lighting purposes not exceeding (per lamp): 4 mg	21/07/2021
2(a)(2)	Mercury in double-capped linear fluorescent lamps Tri-band phosphor with normal lifetime and a tube diameter ≥ 9 mm and ≤ 17 mm (e.g. T5) for general lighting purposes not exceeding (per lamp): 3 mg	21/07/2021
2(a)(3)	Mercury in double-capped linear fluorescent lamps Tri-band phosphor with normal lifetime and a tube diameter > 17 mm and ≤ 28 mm (e.g. T8) for general lighting purposes not exceeding (per lamp): 3.5 mg	21/07/2021
2(a)(4)	Mercury in double-capped linear fluorescent lamps Tri-band phosphor with normal lifetime and a tube diameter > 28 mm (e.g. T12) for general lighting purposes not exceeding (per lamp): 3.5 mg	21/07/2021
2(a)(5)	Mercury in double-capped linear fluorescent lamps Tri-band phosphor with long lifetime (≥ 25 000 h) for general lighting purposes not exceeding (per lamp): 5 mg	21/07/2021
2(b)(3)	Mercury in other fluorescent lamps Non-linear tri-band phosphor lamps with tube diameter > 17 mm (e.g. T9) not exceeding (per lamp): 15 mg	21/07/2021
2(b)(4)	Mercury in other fluorescent lamps for other general lighting and special purposes (e.g. induction lamps) not exceeding (per lamp): 15 mg	21/07/2021
3(a)	Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes Short length (≤ 500 mm) not exceeding (per lamp): 3.5 mg	21/07/2021
3(b)	Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes Medium length (> 500 mm and ≤ 1 500 mm) not exceeding (per lamp): 5 mg	21/07/2021
3(c)	Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes Long length (> 1 500 mm) not exceeding (per lamp): 13 mg	21/07/2021
4(a)	Mercury in other low pressure discharge lamps not exceeding (per lamp): 15 mg	21/07/2021
4(b)-I	Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index Ra > 60, P ≤ 155 W: 30 mg	21/07/2021
4(b)-II	Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes with improved colour rendering index Ra > 60, 155 W < P ≤ 405 W: 40 mg	21/07/2021
4(b)-III	Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes with improved colour rendering index Ra > 60, P > 405 W: 40 mg	21/07/2021
4(c)-I	Mercury in other High Pressure Sodium (vapour) lamps for general lighting purposes P ≤ 155 W not exceeding (per burner): 25 mg	21/07/2021
4(c)-II	Mercury in other High Pressure Sodium (vapour) lamps for general lighting purposes 155 W < P ≤ 405 W not exceeding (per burner): 30 mg	21/07/2021
4(c)-III	Mercury in other High Pressure Sodium (vapour) lamps for general lighting purposes P > 405 W not exceeding (per burner): 40 mg	21/07/2021
4(e)	Mercury in metal halide lamps (MH)	21/07/2021
4(f)	Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex	21/07/2021

Accompanying materials “Substances in products that affect the environment List” (22/26)

Appendix table 1-1 (Items corresponding to exemptions for substance regulated in RoHS Directive) (continued)

No.	Exemption	Scope and dates of applicability
4(g)	Mercury in hand crafted luminous discharge tubes used for signs, decorative or architectural and specialist lighting and light-artwork, where the mercury content shall be limited as follows: (a) 20 mg per electrode pair + 0.3 mg per tube length in cm, but not more than 80 mg, for outdoor applications and indoor applications exposed to temperatures below 20 length in cm, but not more than 80 mg, for all other indoor applications.	31/12/2018
5(a)	Lead in glass of cathode ray tubes	21/07/2021
5(b)	Lead in glass of fluorescent tubes not exceeding 0,2 % by weight	21/07/2021
6(a)	Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0,35 % lead by weight	21/07/2021
6(b)	Lead as an alloying element in aluminium containing up to 0,4 % lead by weight	21/07/2021
6(c)	Copper alloy containing up to 4 % lead by weight	21/07/2021
7(a)	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead)	21/07/2021
7(b)	Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission, and network management for telecommunications	21/07/2021
7(c)-I	Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound	21/07/2021
7(c)-II	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	21/07/2021
7(c)-III	Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC may be used in spare parts for EEE placed on the market before 1 January 2013	21/07/2021
7(c)-IV	Lead in PZT based dielectric ceramic materials for capacitors being part of integrated circuits or discrete semiconductors	21/07/2021
8(a)	Cadmium and its compounds in one shot pellet type thermal cut-offs may be used in spare parts for EEE placed on the market before 1 January 2012	<u>It may be used in spare parts for EEE placed on the market before 1 January 2012</u>
8(b)	Cadmium and its compounds in electrical contacts	21/07/2021
9	Hexavalent chromium as an anticorrosion agent of the carbon steel cooling system in absorption refrigerators up to 0,75 % by weight in the cooling solution	21/07/2021
9(b)	Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVACR) applications	21/07/2021
11(a)	Lead used in C-press compliant pin connector systems. May be used in spare parts for EEE placed on the market before 24 September 2010	<u>It may be used in spare parts for EEE placed on the market before 24 September 2010</u>
11(b)	Lead used in other than C-press compliant pin connector systems may be used in spare parts for EEE placed on the market before 1 January 2013	<u>It may be used in spare parts for EEE placed on the market before 1 January 2013</u>
12	Lead as a coating material for the thermal conduction module C-ring. May be used in spare parts for EEE placed on the market before 24 September 2010	<u>It may be used in spare parts for EEE placed on the market before 24 September 2010</u>
13(a)	Lead in white glasses used for optical applications	21/07/2021
13(b)	Cadmium and lead in filter glasses and glasses used for reflectance standards	21/07/2021
14	Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80 % and less than 85 % by weight may be used in spare parts for EEE placed on the market before 1 January 2011	<u>It may be used in spare parts for EEE placed on the market before 1 January 2011</u>
15	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages	21/07/2021

Accompanying materials “Substances in products that affect the environment List” (23/26)

Appendix table 1-1 (Items corresponding to exemptions for substance regulated in RoHS Directive) (continued)

No.	Exemption	Scope and dates of applicability
17	Lead halide as radiant agent in high intensity discharge (HID) lamps used for professional reprography applications	21/07/2021
18(b)	Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps when used as sun tanning lamps containing phosphors such as BSP (BaSi 2 O 5 :Pb)	21/07/2021
21	Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses	21/07/2021
23	Lead in finishes of fine pitch components other than connectors with a pitch of 0,65 mm and less. May be used in spare parts for EEE placed on the market before 24 September 2010	<u>It may be used in spare parts for EEE placed on the market before 24 September 2010</u>
24	Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors	21/07/2021
25	Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring	21/07/2021
29	Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC ( 1 )	21/07/2021
30	Cadmium alloys as electrical/mechanical solder joints to electrical conductors located directly on the voice coil in transducers used in high-powered loudspeakers with sound pressure levels of 100 dB (A) and more	21/07/2021
31	Lead in soldering materials in mercury free flat fluorescent lamps (which e.g. are used for liquid crystal displays, design or industrial lighting)	21/07/2021
32	Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes	21/07/2021
33	Lead in solders for the soldering of thin copper wires of 100 µm diameter and less in power transformers	21/07/2021
34	Lead in cermet-based trimmer potentiometer elements	21/07/2021
37	Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body	21/07/2021
38	Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide	21/07/2021
41	Lead in solders and termination finishes of electrical and electronic components and finishes of printed circuit boards used in ignition modules and other electrical and electronic engine control systems, which for technical reasons must be mounted directly on or in the crankcase or cylinder of hand-held combustion engines (classes SH:1, SH:2, SH:3 of Directive 97/68/EC of the European Parliament and of the Council.	31/12/2018

注記

1) This list is not a guarantee of legal items. See the original Official Journal of the European Union for the latest information.

Accompanying materials “Substances in products that affect the environment List” (24/26)

Appendix table 1-2 (Items exclude newly applicable medical devices and monitoring/control devices due to the revision of the RoHS Directive)

No.	Exemption	Scope and dates of applicability
<b>Equipment utilizing or detecting ionizing radiation</b>		
1	Lead, cadmium and mercury in detectors for ionising radiation	21/07/2021
2	Lead bearings in X-ray tubes	21/07/2021
3	Lead in electromagnetic radiation amplification devices: micro-channel plate and capillary plate	21/07/2021
4	Lead in glass frit of X-ray tubes and image intensifiers and lead in glass frit binder for assembly of gas lasers and for vacuum tubes that convert electromagnetic radiation into electrons	21/07/2021
5	Lead in shielding for ionising radiation	21/07/2021
6	Lead in X-ray test objects	21/07/2021
7	Lead stearate X-ray diffraction crystals	21/07/2021
8	Radioactive cadmium isotope source for portable X-ray fluorescence spectrometers	21/07/2021
<b>Sensors, detectors and electrodes</b>		
1a	Lead and cadmium in ion selective electrodes including glass of pH electrodes	21/07/2021
1b	Lead anodes in electrochemical oxygen sensors	21/07/2021
1c	Lead, cadmium and mercury in infra-red light detectors	21/07/2021
1d	Mercury in reference electrodes: low chloride mercury chloride, mercury sulphate and mercury oxide	21/07/2021
<b>Others</b>		
9	Cadmium in helium-cadmium lasers	21/07/2021
10	Lead and cadmium in atomic adsorption spectroscopy lamps	21/07/2021
11	Lead in alloys as a superconductor and thermal conductor in MRI	21/07/2021
12	Lead and cadmium in metallic bonds creating superconducting magnetic circuits in MRI, SQUID, NMR (Nuclear Magnetic Resonance) or FTMS (Fourier Transform Mass Spectrometer) detectors.	30/06/2021
13	Lead in counterweights	21/07/2021
14	Lead in single crystal piezoelectric materials for ultrasonic transducers	21/07/2021
15	Lead in solders for bonding to ultrasonic transducers	21/07/2021
16	Mercury in very high accuracy capacitance and loss measurement bridges and in high frequency RF switches and relays in monitoring and control instruments not exceeding 20 mg of mercury per switch or relay	21/07/2021
17	Lead in solders in portable emergency defibrillators	21/07/2021
18	Lead in solders of high performance infrared imaging modules to detect in the range 8–14 µm	21/07/2021
19	Lead in Liquid crystal on silicon (LCoS) displays	21/07/2021
20	Cadmium in X-ray measurement filters	21/07/2021
21	Cadmium in phosphor coatings in spare parts for X-ray systems placed on the EU market before 1 January 2020.	31/12/2019
22	Lead acetate marker for use in stereotactic head frames for use with CT and MRI and in positioning systems for gamma beam and particle therapy equipment.	21/07/2021
23	Lead as an alloying element for bearings and wear surfaces in medical equipment exposed to ionising radiation.	30/06/2021
24	Lead enabling vacuum tight connections between aluminium and steel in X-ray image intensifiers.	31/12/2019
25	Lead in the surface coatings of pin connector systems requiring nonmagnetic connectors which are used durably at a temperature below - 20 °C under normal operating and storage conditions.	30/06/2021
26	Lead in the following applications that are used durably at a temperature below - 20 °C under normal operating and storage conditions:	30/06/2021
	-(a)solders on printed circuit boards;	
	-(b)termination coatings of electrical and electronic components and coatings of printed circuit boards;	
	-(c)solders for connecting wires and cables;	
	-(d)solders connecting transducers and sensors	

Accompanying materials “Substances in products that affect the environment List” (25/26)

Appendix table 1-2 (Items exclude newly applicable medical devices and monitoring/control devices due to the revision of the RoHS Directive)(continued)

No.	Exemption	Scope and dates of applicability
27	Lead in:	30/06/2020
	-solders	
	-termination coatings of electrical and electronic components and printed circuit boards	
	-connections of electrical wires, shields and enclosed connectors	
	(a) magnetic fields within the sphere of 1 m radius around the isocentre of the magnet in medical magnetic resonance imaging equipment, including patient monitors designed to be used within this sphere, or (b) magnetic fields within 1 m distance from the external surfaces of cyclotron magnets, magnets for beam transport and beam direction control applied for particle therapy.	
29	Lead in alloys, as a superconductor or thermal conductor, used in cryo-cooler cold heads and/or in cryo-cooled cold probes and/or in cryo-cooled equipotential bonding systems, in medical devices (category 8) and/or in industrial monitoring and control instruments.	30/06/2021
30	Hexavalent chromium in alkali dispensers used to create photocathodes in X-ray image intensifiers. Hexavalent chromium in alkali dispensers used to create photocathodes in spare parts for X-ray systems placed on the EU market before 1 January 2020.	31/12/2019
31	medical devices placed on the market before 22 July 2014 and used in category 8 equipment placed on the market before 22 July 2021, provided that reuse takes place in auditable closed-loop business-to-business return systems, and that the reuse of parts is notified to the consumer.	21/07/2021
32	Lead in solders on printed circuit boards of detectors and data acquisition units for Positron Emission Tomographs which are integrated into Magnetic Resonance Imaging equipment.	31/12/2019
33	Lead in solders on populated printed circuit boards used in Directive 93/42/EEC class IIa and IIb mobile medical devices other than portable emergency defibrillators.	30/06/2016 : class II a 31/12/2020 : class II b
34	Lead as an activator in the fluorescent powder of discharge lamps when used for extracorporeal photopheresis lamps containing BSP (BaSi2O5 :Pb) phosphors.	22/07/2021
35	Mercury in cold cathode fluorescent lamps for back-lighting liquid crystal displays, not exceeding 5 mg per lamp, used in industrial monitoring and control instruments placed on the market before 22 July 2017.	21/07/2024
36	Lead used in other than C-press compliant pin connector systems for industrial monitoring and control instruments.	31/12/2020 It may be used after that date in spare parts for industrial monitoring and control instruments placed on the market before 1 January 2021.
37	Lead in platinized platinum electrodes used for conductivity measurements where at least one of the following conditions applies: (a) wide-range measurements with a conductivity range covering more than 1 order of magnitude (e.g. range between 0.1 mS/m and 5 mS/m) in laboratory applications for unknown concentrations; (b) measurements of solutions where an accuracy of +/- 1% of the sample range and where high corrosion resistance of the electrode are required for any of the following: (i) solutions with an acidity < pH 1; (ii) solutions with an alkalinity > pH 13; (iii) corrosive solutions containing halogen gas; (c) measurements of conductivities above 100 mS/m that must be performed with portable instruments.	31/12/2018
38	Lead in solder in one interface of large area stacked die elements with more than 500 interconnects per interface which are used in X-ray detectors of CT (computed tomography) and X-ray systems.	31/12/2019 It may be used after that date in spare parts for CT and X-ray systems placed on the market before 1 January 2020.

Accompanying materials “Substances in products that affect the environment List” (26/26)

Appendix table 1-2 (Items exclude newly applicable medical devices and monitoring/control devices due to the revision of the RoHS Directive)(continued)

No.	Exemption	Scope and dates of applicability
39	Lead in micro-channel plates (MCPs) used in equipment where at least one of the following properties is present: (a) a compact size of the detector for electrons or ions, where the space for the detector is limited to a maximum of 3mm/MCP (detector thickness + space for installation of the MCP), a maximum of 6 mm in total, and an alternative design yielding more space for the detector is scientifically and technically impracticable; (b) a two-dimensional spatial resolution for detecting electrons or ions, where at least one of the following applies: (i) a response time shorter than 25 ns; (ii) a sample detection area larger than 149 mm <sup>2</sup> ; (iii) a multiplication factor larger than $1,3 \times 10^3$ . (c) a response time shorter than 5 ns for detecting electrons or ions; (d) a sample detection area larger than 314 mm <sup>2</sup> for detecting electrons or ions; (e) a multiplication factor larger than $4,0 \times 10^7$ .	The exemption expires on the following dates: (a) 21 July 2021 for medical devices and monitoring and control instruments; (b) 21 July 2023 for in-vitro diagnostic medical devices; (c) 21 July 2024 for industrial monitoring and control instruments.
40	Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC for industrial monitoring and control instruments.	31/12/2020 It may be used after that date in spare parts for industrial monitoring and control instruments placed on the market before 1 January 2021.
41	Lead as a thermal stabiliser in polyvinyl chloride (PVC) used as base material in amperometric, potentiometric and conductometric electrochemical sensors which are used in in-vitro diagnostic medical devices for the analysis of blood and other body fluids and body gases.	31/12/2018
42	Mercury in electric rotating connectors used in intravascular ultrasound imaging systems capable of high operating frequency (> 50 MHz) modes of operation.	30/06/2019

注記

1) This list is not a guarantee of legal items. See the original Official Journal of the European Union for the latest information.

## Revision history

No.	Revision date	Details of revision
Ver.1	Nov. 2007	Established
Ver.2	June 2008	<p>2. Scope Revision in line with change in scope</p> <ul style="list-style-type: none"> <li>• Packaging and packing materials added.</li> </ul> <p>3. Concepts of the green procurement standards and requirements for suppliers Revision in line with change in conditions for transactions</p> <ul style="list-style-type: none"> <li>• Framework regarding goods changed to prohibition of use of prohibited substances.</li> <li>• Conditions for transactions changed to judgment based on assessment by Fukuda Denshi of “Survey Form for Management System of Chemical Substances in Products” and “Survey Form for Chemical Substances Included”</li> </ul> <p>4. Requirements and Explanations Revision in line with requirements</p> <ul style="list-style-type: none"> <li>• Environmental management system requirements changed to all items of Guidelines for the Management of Chemical Substances in Products.</li> <li>• Requirements for goods changed to prohibition of use of prohibited substances.</li> </ul> <p>5. Assessment Revision regarding operation</p> <ul style="list-style-type: none"> <li>• Flow chart for assessing management system of chemical substances in products changed.</li> <li>• Flow chart for assessing chemical substances included changed.</li> </ul> <p>Accompanying materials “Substances in products that affect the environment List” Revision in line with requirements</p> <ul style="list-style-type: none"> <li>• Six restricted substances changed to prohibited substances.</li> <li>• Threshold for cadmium content changed to 100 ppm.</li> <li>• Notation regarding cadmium in definition of terms deleted.</li> </ul> <p>Annex Revision in line with requirements</p> <ul style="list-style-type: none"> <li>• “Survey Form for Management System of Chemical Substances in Products” and “Survey Form for Chemical Substances Included” completely revised.</li> </ul> <p>Correction of errors</p>

No.	Revision date	Details of revision
Ver.3	April 2011	<p>Explanation of terms</p> <ul style="list-style-type: none"> <li>• Explanation of terms added</li> <li>• “7. Explanation of Terms” deleted in line with addition of explanations.</li> </ul> <hr/> <p>3. Concepts of the green procurement standards and requirements for suppliers</p> <p>Revision in line with change in conditions for transactions</p> <ul style="list-style-type: none"> <li>• “Identification of restricted substances and controlled substances” added as “management of substances in products that affect the environment.”</li> <li>• “Action Item List &amp; Check Sheet” added to survey form for “supplier environmental assessment.”</li> <li>• Survey form for conducting “assessment of goods” changed to AIS.</li> </ul> <hr/> <p>4. Requirements and Explanations</p> <p>Revision in line with requirements</p> <ul style="list-style-type: none"> <li>• Requirements for environmental management systems changed to “Guidelines for the Management of Chemical Substances in Products Ver. 2”</li> <li>• Identification of restricted substances and controlled substances added for requirements for goods.</li> </ul> <hr/> <p>5. Assessment</p> <p>Revision regarding operation</p> <ul style="list-style-type: none"> <li>• Action Item List &amp; Check Sheet added to materials to submit.</li> <li>• Flow chart for assessing management system of chemical substances in products changed.</li> <li>• Materials to submit changed from survey form to AIS.</li> <li>• Flow chart for assessing chemical substances included changed.</li> </ul> <hr/> <p>6. Other</p> <p>Revision regarding operation</p> <ul style="list-style-type: none"> <li>• Handling of information on substances in products that affect the environment changed.</li> </ul> <hr/> <p>Accompanying materials “Substances in products that affect the environment List”</p> <p>Revision in line with requirements</p> <ul style="list-style-type: none"> <li>• Prohibited substances list changed.</li> <li>• Substances added to restricted substances list.</li> <li>• Substances added to controlled substances list.</li> <li>• Exempt items list added.</li> </ul> <hr/> <p>Annex</p> <p>Revision in line with requirements</p> <ul style="list-style-type: none"> <li>• “Survey Form for Chemical Substances Included” deleted.</li> <li>• “Survey Form for Management System of Chemical Substances in Products” revised</li> </ul> <hr/> <p>Correction of errors</p>
Ver.3.1	May 2011	<p>5. Assessment</p> <p>Revision of flow names</p> <ul style="list-style-type: none"> <li>• “Flow of assessing management system of chemical substances in products” revised to “Flow of supplier environmental assessment”</li> <li>• “Flow of assessment for chemical substances included” revised to “Flow of assessment of goods”.</li> </ul> <hr/> <p>Accompanying materials “Substances in products that affect the environment List”</p> <ul style="list-style-type: none"> <li>• Substances added to controlled substances list (No.31).</li> </ul> <hr/> <p>Annex</p> <p>Revision regarding operation</p> <ul style="list-style-type: none"> <li>• “Survey Form for Management System of Chemical Substances in Products” revised</li> </ul>

No.	Revision date	Details of revision
Ver.4.0	Sep. 2013	<p>Explanation of terms</p> <ul style="list-style-type: none"> <li>• Added an explanation of “Guidelines for the Management of Chemical Substances in Products.”</li> <li>• Changed the explanation for the “Japan Green Procurement Survey Standardization Initiative (JGPSSI)” and “restricted substances.”</li> </ul> <p>3.2. Flow until the start of transactions</p> <ol style="list-style-type: none"> <li>1) Changed the reference page.</li> <li>7) Changed the listed order of the answer format.</li> </ol> <p>4.1. Requirement related to goods</p> <p>Corrections in conjunction with changes to requirement</p> <ul style="list-style-type: none"> <li>• Requirement for environmental management systems were changed to action items of the “Guidelines for the Management of Chemical Substances in Products (Ver. 3).”</li> <li>• For requirements related to substances in products that affect the environment, the listings for numbers of substances in items 1) to 3) were deleted.</li> </ul> <p>4.2. Interpretation of requirements</p> <p>Corrections in conjunction with changes to items</p> <ul style="list-style-type: none"> <li>• Changed to an explanation of “Guidelines for the Management of Chemical Substances in Products.”</li> </ul> <p>5. Assessment</p> <p>Corrections related to operation</p> <ul style="list-style-type: none"> <li>• Deleted the “Supplier Environment Assessment Flow” and “Goods Assessment Flow.”</li> <li>• Edited the text in conjunction with deletion of the flows.</li> <li>• Edited the text in conjunction with the deletion of the “Management System Questionnaire for Chemical Substances in Products.”</li> </ul> <p>Accompanying materials “Substances in products that affect the environment List”</p> <p>Corrections in conjunction with amendment of the RoHS Directive and updating of the SVHC list of REACH regulations</p> <ul style="list-style-type: none"> <li>• Updated the EU-RoHS directive numbers in the list of prohibited substance.</li> <li>• Listed the candidate substances at the time of the next amendment of the RoHS Directive in the list of restricted substances.</li> <li>• Added substance SVHC 113 to the list of controlled substances. Also organized the list.</li> <li>• Added notes to each list of substances.</li> <li>• Updated the list of items corresponding to exemptions for substance regulated in RoHS Directive (Appendix table 1-1 and 1-2).</li> </ul> <p>Deleted the “Server form For chemical substance in products.”</p>
Ver.4.1	April 2014	<p>Accompanying materials “Substances in products that affect the environment List”</p> <p>Corrections in conjunction with updating of the SVHC list of REACH regulations</p> <ul style="list-style-type: none"> <li>• Added substance SVHC 7 to the list of controlled substances.</li> </ul> <p>Corrections in conjunction with the addition of items corresponding to exemptions for substance regulated in RoHS Directive</p> <ul style="list-style-type: none"> <li>• Updated the list of items corresponding to exemptions for substance regulated in RoHS Directive (Appendix table 1-1).</li> <li>• Updated the list of items corresponding to exemptions for substance regulated in RoHS Directive (Appendix table 1-2).</li> </ul>

No.	Revision date	Details of revision
Ver.4.2	Oct. 2014	<p>5.2. Assessment of goods Edited text related to survey results.</p> <p>Accompanying materials “Substances in products that affect the environment List” Corrected the configuration of accompanying materials.</p> <ul style="list-style-type: none"> <li>• Corrected the “Definition of term”</li> <li>• Added “Remarks”</li> <li>• Deleted “Notes”</li> </ul> <p>Corrections related requirements</p> <ul style="list-style-type: none"> <li>• Deleted intentional addition from the scope of the list of prohibited substances.</li> </ul> <p>Corrections in conjunction with updating of the SVHC list of REACH regulations Added substance SVHC 4 to the list of controlled substances.</p> <p>Correction of errors</p>
Ver.5.0	April. 2015	<p>Applied as FQ Guide</p> <p>Quality Policy</p> <p>6. Other</p> <ul style="list-style-type: none"> <li>• Changed information on inquiry</li> </ul>
Ver.5.1	Dec. 2015	<p>Explanation of terms Changed the explanation for “restricted substances.”</p> <p>Quality Policy</p> <ul style="list-style-type: none"> <li>• Clearly listed the date of change</li> </ul> <p>3.2 Flow until the start of transactions</p> <p>5.1.1 Supplier environmental assessment</p> <ul style="list-style-type: none"> <li>• Deleted the “Management System Questionnaire for Chemical Substances in Products”</li> </ul> <p>6. Other</p> <ul style="list-style-type: none"> <li>• Deleted the email address for inquiries</li> </ul> <p>Accompanying materials “Substances in products that affect the environment List” Corrections in accordance with updating of the Annex II for the RoHS Directive</p> <ul style="list-style-type: none"> <li>• Changed HBCDD to DIBP in the list of controlled substances.</li> </ul> <p>Corrections in conjunction with updating of the SVHC list of REACH regulations</p> <ul style="list-style-type: none"> <li>• Added substances SVHC 156 to 168 to the list of controlled substances.</li> </ul> <p>Corrections in conjunction with the updating of items corresponding to exemptions for substance regulated in RoHS Directive</p> <ul style="list-style-type: none"> <li>• Added 4(g) and 41 to the list of items corresponding to exemptions for substance regulated in RoHS Directive (Appendix table 1-1).</li> <li>• Added items 35 to 42 to the list of items corresponding to exemptions for substance regulated in RoHS Directive (Appendix table 1-2).</li> </ul> <p>Deleted the reference URL.</p>
Ver.6.0	July 2017	<p>Explanation of terms</p> <ul style="list-style-type: none"> <li>• Deleted the “Japan Green Procurement Survey Standardization Initiative (JGPSSI)” JGP file</li> <li>• Deleted the restricted substances</li> <li>• Added chemSHERPA</li> </ul> <p>2. Deleted “3) Instruction manuals, etc.”</p> <p>3.1 Added “1) (Supplier environment assessment),” “2) (Goods assessment)” and “As a rule” to item</p> <p>3.2</p> <ul style="list-style-type: none"> <li>• Added text to clarify the explanation with requirements</li> <li>• Made corrections for conformity with actual operation and added chemSHERPA</li> </ul> <p>4.1 Correction of errors</p> <p>5.1 Made corrections for conformity with actual operation</p> <p>5.2</p> <ul style="list-style-type: none"> <li>• Added a supplementary explanation for the check section of the RoHS goods assessment of the estimate request</li> <li>• Added a supplementary explanation for the attachment of survey results when proposing a substitute product</li> </ul>

No.	Revision date	Details of revision
Ver.6.0	July 2017	<p>6. Deleted the telephone number from the inquiry section</p> <p>Accompanying materials Definition of terms Deleted 4) and 5) controlled substances</p> <ul style="list-style-type: none"> <li>• Moved the phthalic esters listed in “B. restricted substance” to “A. prohibition substances”</li> <li>• Deleted “B. restricted substances”</li> <li>• Revised “Scope and dates of applicability” in Appendix table 1-1 Deleted the item for end of dates of applicability</li> <li>• Added substances SVHC 169 to 173 to the list of controlled substances.</li> </ul>
Ver.7.0	Sep. 2018	<p>Explanation of terms</p> <ul style="list-style-type: none"> <li>• Added Explanation of “Chemicals in products (CiP)”</li> <li>• Added Explanation of “Check Sheet”</li> <li>• Deleted the “AIS”</li> </ul> <p>3.2 Deleted 4) and 5) “AIS”</p> <p>4.1 Requirements related to goods had changed to meet “Guidelines for the Management of Chemical Substances in Products “ Ver. 4.0.</p> <p>4.2 Interpretation of requirements had changed to meet “Guidelines for the Management of Chemical Substances in Products “ Ver. 4.0.</p> <p>5.1 Supplier environmental assessment had changed to meet “Guidelines for the Management of Chemical Substances in Products “ Ver. 4.0.</p> <p>5.2 Deleted 2), 3), 5) and 6) “AIS”</p> <p>6. Other The enquiry section has changed to the Production Purchasing Department</p> <p>Accompanying materials “Substances in products that affect the environment List” C. Controlled substances</p> <ul style="list-style-type: none"> <li>• Added substances SVHC 174 to 191</li> </ul> <p>Accompanying materials “Substances in products that affect the environment List” Appendix table 1-1 Deleted items expired Revised “Scope and dates of applicability” of spare-parts Appendix table 1-2 Deleted items expired</p>