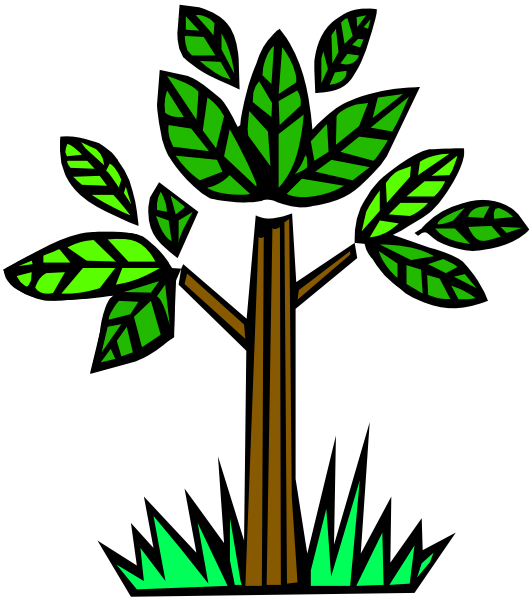
JCM Group

GREEN PROCUREMENT GUIDELINE

(Information for Our Customers – JCM Guideline for Management of Chemical Substances)



June. 26, 2018　9th Edition
Japan Cash Machine Co., Ltd. Quality Department

Revision History

Revision No.		Date and year of revision	Reason for revision
First Ed.	Rev. 01	Oct. 23, 2009	
	Rev. 02	Jan. 25, 2010	Addition of document ID (front cover) [JQE04-332] • Change of “banned substance level C” to “controlled substance” • Clarification of applicability of the document to JCM brand (money handling machines) • In the non-use statement, change of “To: JCM Group” to “To: JCM”
	Rev. 03	Mar. 3, 2010	Revision for posting the green procurement guideline on the JCM’s website
	Rev. 04	Jan. 20, 2011	• Addition of substances of very high concern (SVHC) under REACH regulation (15 substances → 38 substances) • Withdrawal of statement of compliance of reportable substances contained • Change of drafting department
	Rev. 05	Mar. 21, 2012	• Abolishment of statement for non-use of banned substances in supplies • Change of the term “components/parts survey table” to “report/statement of chemical substances contained” and “report/statement of inclusion of substance of very high concern” • Alteration to where to submit data and person in charge of inquiries • Addition of substances of very high concern (SVHC) under REACH regulation (38 substances → 73 substances)
	Rev. 06	Nov. 4, 2014	• Change of the department in charge of preparation of the Guideline from Production Department to Quality Control Department. • Addition of the following contents to 3.2 Scope of application: Scope of application to equipment and tools [1] Equipment and tools that come in direct contact with products during the processes from assembly to final examination for prevention of contamination. • Submission procedure Change of the persons to whom the documents are submitted, from Miyamoto and Tabuchi (Standard Promotion Group, Production Department) to Miyamoto and Tsuka (Information Management Group, Quality Control Department). • Addition of survey item “information about the outcome of the green procurement initiatives” to Vendor/supplier environmental survey report. • Addition of substances of very high concern (SVHC) under REACH regulation (73 substances → 155 substances)
	Rev. 07	Jul. 15, 2015	• Compliance with RoHS2 (Revised RoHS) • Table 2-3 Change of exceptions table (RoHS) • Addition of substances of very high concern (SVHC) under REACH regulations (155 substances → 163 substances)

Revision History

Revision No.	Date and year of revision	Reason for revision
Rev. 08	Aug. 9, 2017	• Change of Environmental policy
Rev. 09	June. 26, 2018	• Change of the description of “Environmental Protection Efforts of JCM Group” (Page 2) to “Refer to JCM’s website” • Addition of information on “chemSHERPA” (Page 10) • Addition of “Substances of Very High Concern” (SVHC) under REACH regulation (163 substances → 181 substances)

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Chapter 1　General

1. Introduction

In accordance with our established environmental philosophy and environmental policy, JCM Group has been committed to business activities aiming at conservation of the global environment and formation of a recycling-oriented society. We are currently promoting “realization of eco-friendly products” as a part of the most urgent challenges in our environmental conservation activities. However, to realize this, we have to mitigate environmental impacts from parts and materials that constitute our products. To this end, we need to achieve mitigation of environmental impacts during the following three processes:

(1) During production of the components of our products and equipment,
(2) During selection of packaging materials for our products, and
(3) During use and operation of our products at our customers’ sites.

Recently, much stricter laws and regulations (RoHS Directive, REACH regulation, and other relevant regulations) intended to control hazardous chemical substances possibly contained in products have been increasingly introduced in nations around the world. To be able to realize green products that have the least impact on the environment, we must remain in close cooperation with our vendors and suppliers. We reorganized and developed this “JCM Group Green Procurement Guideline” with the desire of retaining the cooperation of our vendors and suppliers.

Our vendors and suppliers are requested to become familiar with the principle described in this guideline and remain cooperative so that both they and JCM remain committed to business management aimed at conservation of the global environment.

2. Environmental Protection Efforts of JCM Group 9

Refer to the following URL for the Quality/Environmental Concept and Policies of JCM Group.
http://www.jcm-hq.co.jp/corporate/csr/index.html

3. Green Procurement Guideline

3.1 Objective

This guideline is intended to clearly convey our green procurement standard (our guideline for management of hazardous substances possibly contained in our products) to our customers and to help mitigate environmental impacts possibly caused by our products in general.

Stricter laws and regulations have been introduced around the world recently, to regulate the use of chemical substances in products. Examples of such laws and regulations include RoHS Directive, REACH regulation, and PFOS regulation of the EU. In response, JCM Group intends to strictly observe the applicable laws and regulations, including domestic and foreign laws and regulations that regulate substances contained in raw materials, parts and units that constitute the product. In this context, we will clarify the status of chemical substances contained in our products – total ban or statement of use – and will disclose the relevant information to our customers. We will thus realize eco-friendly products.

3.2 Scope 2

Even when a particular substance or application is not defined in this guideline, if the use of that substance is banned under a law or regulation in any country or region, the readers are requested to comply with the currently effective law or regulation.

1) Scope of application to products
   This guideline shall apply to all the JCM brand products (money handling machines).
2) Scope applicable to components and parts, raw materials and units, etc.
   (1) Product main body and components, as well as raw materials used therefor
   (2) Packaging materials and parts for JCM products
   (3) Instruction manuals
   (4) Service parts
   (5) Consumables including grease, adhesives, double-sided adhesive tape, and packing adhesive tape
3) Scope of application to production processes
   (1) Ban on use of ozone-depleting substances and organic chlorine-based solvents
4) Scope of application to equipment and tools 6
   (1) Equipment and tools that come in direct contact with products during the processes from assembly to final examination for prevention of contamination.

3.3 Definitions 4

3.3.1 Inclusion

A state where a substance is added to, mixed into or attached to, either intentionally or unintentionally, a component, part or unit that constitutes the product or a raw material used therefor. This concept includes a case where a substance is unintentionally mixed into or attached to the product in the manufacturing process. Also, this concept means the situation where such a substance finally remains on the product.

3.3.2 Content

The concentration of a chemical substance, which is represented by the unit of [ppm] (mass ratio 1 ppm: one millionth), or [wt%] (mass ratio, 1 wt%: one millionth), etc.

3.3.3 Impurities

Impurities are substances contained in natural raw materials, which cannot be removed from natural raw materials as industrial materials owing to a technical reason in the purification process; or substances that occur in the purification process or synthesizing process and cannot be removed owing to a technical reason.
The permissible concentration of a chemical substance specified in this Green Procurement Guideline must not be exceeded even when the chemical substance is an impurity.

3.3.4 Permissible concentration (threshold level)

Permissible concentration means the maximum permissible concentration of a banned chemical substance contained in a component or part.
A case where the permissible concentration is exceeded is regarded as “inclusion”.

3.3.5 Articles

Objects to which specific shapes, appearance or designs that determine the functions of their final uses are given, during production, to a degree greater than that given by the chemical composition.
Ex., Screws, resin articles, resistors, capacitors, power source units, PCs, etc.

3.3.6 Preparations

Mixtures or solutions composed of two or more substances
Ex., Coating compositions, inks, unused solder, adhesives, metal alloys, etc.

3.3.7 Substances

Simple substances and compounds that occur naturally or are obtained by manufacturing steps.
Ex., Lead oxide, nickel chloride, benzene, etc.

3.3.8 Homogeneous materials

Materials which cannot be disassembled mechanically into different materials (whose composition shall be homogeneous throughout).
Ex., Plastics, ceramics, glass, metals, plating
Disassembled mechanically: The ability of a material to be basically separated by mechanical operations such as the following:
Unscrewing, grinding, cutting, breaking, pulverization, etc.

3.4 Selection criteria

To qualify a new vendor or supplier, we use environmental factors in addition to the conventional selection criteria that include quality, lead time and price, as evaluation indexes for a qualified vendor or supplier.

(1) Active commitment to environmental protection activities
A prospective vendor or supplier is requested to submit the completed vendor/supplier environmental survey report so that we can investigate the basic environmental protection efforts of the prospective vendor or supplier.

(2) Status of use of chemical substances in supplies to JCM, and chemical substances reduction policy 5
A prospective vendor or supplier is required to submit to JCM a completed report/statement of chemical substances contained and a report/statement of inclusion of substances of very high concern in order for the prospective vendor or supplier to guarantee strict compliance with JCM’s green procurement standard.

The statement to be submitted must be approved in advance by the representative of the prospective vendor or supplier.
However, non-submission of this statement will not indemnify the prospective vendor or supplier against warranty against defectiveness of its supplies.

3.5 Documents to be submitted, and data updating

(1) Vendor/supplier environmental survey report (material number: QA04-39)
The prospective vendor or supplier is required to describe its efforts to obtain ISO14001 certification and promote green procurement.
Each time any change occurs in the details submitted at the initiation of investigation, please submit the vendor/supplier environmental survey report.

(2) Receipt of the JCM Group Green Procurement Guideline (material number: QA04-40A) 5
When the prospective vendor/supplier receives the JCM Group Green Procurement Guideline, the vendor/supplier is required to submit a receipt note for the guideline.
When the green procurement guideline is revised and entered on the JCM website, the prospective vendor/supplier is also required to submit the receipt note.

3.6 Submission procedure 7
Please submit the documents via e-mail.
Submit to: Miyamoto or Tsuka (Standard Management Group, Quality Department),
email addresses: y-miyamoto@jcm-hq.co.jp, tsuka@jcm-hq.co.jp

3.7 For more information 7
Please contact the following persons for more information regarding the documents being submitted:
Miyamoto/Tsuka, Standard Management Group, Quality Department
TEL.: 06-6703-8402

3.8 JCM’s website 5
The Green Procurement Guideline is posted on JCM’s website.
URL: http://www.jcm-hq.co.jp/

Vendor/supplier environmental survey report

Material number: QA04-39

- Company name:
- Address:
- Telephone:
- Person entering the data:
- Name of responsible person:
- Information about ISO 14001 certification (check the appropriate box.)

  ☐ We have already acquired ISO 14001 certification.
  Year and date of acquisition:
  Name of certifying organization:
  Certification No.:

  ☐ We have a plan for acquiring ISO 14001 certification.
  Scheduled year and date of acquisition:
  Name of certifying organization:

  ☐ We have not acquired ISO 14001 certification and do not have a plan for acquiring it.

- Information about green procurement initiatives (check the appropriate box.)

  ☐ We are executing green procurement.

  ☐ We have a plan for green procurement.

  ☐ We are not executing green procurement and do not have a plan for green procurement.

- Information about the outcome of the green procurement initiatives (check the appropriate box) 6

  ☐ We comply with all the requirements of the latest version of Green Procurement Guideline.

  ☐ We do not comply with some of the requirements of the latest version of Green Procurement Guideline.

  ☐ We do not know whether we comply with the latest version of Green Procurement Guideline or not.

To: JCM Group Material number: QA04-40A

Receipt of JCM Group Green Procurement Guideline

We acknowledge the receipt of the document described below and submit a receipt note for the document.

We agree to responsibly dispose of the old version of the document to prevent it from being erroneously used.

1. Name of document

   JCM Group Green Procurement Guideline

2. Version number of document

   Version No.

3. Date of receipt

   Month Day, Year

4. Company name

   _____

5. Department

   _____

6. Name of person in charge

   _____ Seal

End of document

Chapter 2 Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances; Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof; RoHS Directive and PFOS

1. Definitions

1.1 Banned substances

[1] Banned substances Level A 4

These comprise the nine chemical substances listed in Table 2-1, whose use in the components and constituents of our products is banned. Major laws and regulations relevant to chemical substances are listed in Table 2-4.

[2] Banned substances Level B 7

These comprise the eleven chemical substances listed in Table 2-1, whose use in the components and constituents of our products in excess of the maximum permissible amount is banned. (Use of these substances is banned by RoHS Directive and PFOS regulation.) Major laws and regulations relevant to chemical substances are listed in Table 2-4.

RoHS2 (Revised RoHS: RoHS Directive (2011/65/EU)

Changes from RoHS Directive (2002/95/EC):

(1) Addition of Category 8 (Medical devices), Category 9 (Monitoring and control instruments) and Category 11 (All other electrical and electronic equipment that does not fall under Categories 1-10 is subject to the regulation)

(2) Effective date:
Categories 8 and 9: July 22, 2017
Category 11: July 22, 2019

(3) Affixation of CE marking as Declaration of Conformity

(4) Addition of four phthalic acid-based substances to banned substances (Shown in Table 2-1)

[3] Controlled substances 5

These comprise the nine chemical substances listed in Table 2-2, whose use in the components and constituents of our products in excess of 1000 ppm in the total mass of the delivered product needs to be investigated and monitored.

1.2 Exceptions 7

If used for applications and at concentrations allowed under RoHS Directive, such chemical substances shall be exempted even if their permissible concentrations (threshold value) are specified. (Examples of exempt applications are shown in Table 2-3.)
For examples of uses for chemical substances and major relevant laws and regulations, please refer to Tables 2-4 and 2-5. Please feel free to contact one of the manufacturing representatives.

2. Execution of Green Procurement (Law Concerning Examination and Regulation of Manufacture, etc. of Chemical Substances; Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof; RoHS Directive and PFOS regulation)

2.1 In conducting our green procurement activities, we will strictly observe the JCM Group Green Procurement Guideline to manage chemical substances possibly contained in our products.

2.2 Documents to be submitted, and updating of data 7

(1) Report/statement of chemical substances contained (material number: QA04-42A)
Please conduct parts investigation of raw materials, parts, units, etc. which are currently being supplied to JCM Group, and submit a report/statement of the chemical substances contained.
Please fill out the report/statement of chemical substances contained as follows:

[1] The reference number on the title column on the upper right hand will be filled out by JCM Group.
Please write the company name, date of filling out, name of department, name of the person entering the data, name of the person in charge, email address of the person in charge, name of the responsible person, email address of the responsible person, telephone number and fax number.

[2] The item numbers and model numbers in the tables will be filled out by JCM Group.
As for other items, please conduct components investigation on their raw materials, parts, units, etc., and enter the results. (symbols used—acceptable: ○, exception: ⊙, within the inclusion threshold: ●, unacceptable: ×)
If other than acceptable, please write inside the column the numerical value of the amount contained. (unit: ppm)
If there is any inclusion of substances used in the exempt applications under the RoHS Directive, register it in the remarks column along with the exemption number described in the official journal of the RoHS Directive.

[3] Please put the company seal in the company seal column in the “title” column on the upper right hand, and submit to JCM Group.
The scale for evaluation of the parts investigation shall be based on the latest version of the JCM Group Green Procurement Scale (described in Tables 2-1 to 2-5).
In case of any revision in the Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances, Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof, or RoHS Directive, or application of equivalent product, please submit the report/statement of the chemical substances contained.

(2) chemSHERPA 9

The “Chemical Information Sharing and Exchange under Reporting Partnership in Supply Chain” (chemSHERPA) is a communication scheme developed by the Ministry of Economy, Trade and Industry; it is being considered for adoption on behalf of the “Report/Statement of Chemical Substances Contained.”

2.3 How to submit 5

Please refer to Paragraph 3.6 in Chapter 1-General.

2.4 For more information 5

Please refer to Paragraph 3.7 in Chapter 1-General.

Material number： ＱＡ０４－４２B

Report/statement of chemical substances contained

Reference number		Company name			Company seal
Date of filling out		Name of department		Name of person entering the data	
Telephone number		Name of person in charge		Email address of person in charge	
FAX number		Name of responsible person		Email address of responsible person	

Item number		Model number	Name of product	Supplier	Name of manufacturer	Material/ category	Investigated products																						Remarks	Date of update
							Banned substance level A (9 groups) Details of substance: Refer to the comments	Banned substance level B RoHS Directive and PFOS (11 groups)											Controlled substances (9 groups)											
								Cadmium and cadmium compounds	Hexavalent chromium compounds	Lead and lead compounds	Mercury and mercury compounds	Polybrominated biphenyls (PBBs)	Polybrominated diphenyl ethers (PBDEs), including Deca-BDE	Di-2-ethylhexyl phthalate (DEHP)	Butyl benzyl phthalate (BBP)	Di-n-butyl phthalate (DBP)	Diisobutyl phthalate (DIBP)	PFOS and PFOS analogous compounds	Antimony and antimony compounds	Arsenic and arsenic compounds	Beryllium and beryllium compounds	Bismuth and bismuth compounds	Brominated flame retardants (other than PBBs and PBDEs)	Nickel and nickel compounds	Certain phthalate esters	Selenium and selenium compounds	Polyvinyl chloride (PVC)	Judgment		

Table 2-1 Banned substances (Level A and Level B) 7

Category	Chemical substance	Threshold level	Deadline of total ban	Example legal regulation
Banned substances Level A (9 groups)	• Tributyltin oxide (TBTO)	Intentional addition 0 ppm	Immediately	JIG-101
	• Tributyltin (TBT), triphenyltin (TPT)	Intentional addition 0 ppm		JIG-101
	• Polychlorinated biphenyls (PCBs)	Intentional addition 0 ppm		JIG-101
	• Polychloronaphthalene (having two or more chlorine atoms)	Intentional addition 0 ppm		JIG-101
	• Certain short-chain chlorinated paraffin	Intentional addition 0 ppm		JIG-101
	• Asbestos	Intentional addition 0 ppm		JIG-101
	• Certain azo dyes, pigments	Intentional addition 0 ppm		JIG-101
	• Ozone-depleting substances (CFCs, HCFCs, HBFCs, carbon tetrachlorides)	Intentional addition 0 ppm		JIG-101
	• Radioactive substances	1 MBq		JIG-101
Banned substances Level B (11 groups)	• Cadmium and cadmium compounds	100 ppm Intentional addition 0 ppm	RoHS applicable models: March 1, 2006 Other models: July 1, 2006 All other electrical and electronic equipment than those stated above, such as jigs July 22, 2019	JIG-101 RoHS Directive
	• Hexavalent chromium and hexavalent chromium compounds	1000 ppm Intentional addition 0 ppm		JIG-101 RoHS Directive
	• Lead and lead compounds	1000 ppm Vinyl chloride cable only 300 ppm Intentional addition 0 ppm		JIG-101 RoHS Directive
	• Mercury and mercury compounds	1000 ppm Intentional addition 0 ppm		JIG-101 RoHS Directive
	• Polybrominated biphenyls (PBBs)	1000 ppm Intentional addition 0 ppm		JIG-101 RoHS Directive
	• Polybrominated diphenyl ethers (PBDEs) Containing Deca-BDE for polymer application	1000 ppm Intentional addition 0 ppm		JIG-101 RoHS Directive
	• Di-2-ethylhexyl phthalate (DEHP)	1000 ppm Intentional addition 0 ppm	July 22, 2019	JIG-101 RoHS Directive
	• Butyl benzyl phthalate (BBP)	1000 ppm Intentional addition 0 ppm		JIG-101 RoHS Directive
	• Di-n-butyl phthalate (DBP)	1000 ppm Intentional addition 0 ppm		JIG-101 RoHS Directive
	• Diisobutyl phthalate (DIBP)	1000 ppm Intentional addition 0 ppm		JIG-101 RoHS Directive
	• PFOS and PFOS analogous compounds	Intentional / unintentional addition. 50 ppm: Preparation only 1000 ppm: Material only 1 μg/m^2: Coated material	EU Directive Those marketed from June 27, 2008	EU Directive

Note about Table 2-1

1) About Level A and Level B banned substances

The supply needs to satisfy all the inclusion threshold levels described above.

The content of a substance having a threshold level with a numerical value established thereto is calculated as follows:

- In this item, the denominator used in calculation of the content of non-HCFCs shall be the mass of the homogeneous material.
- The denominator of HCFCs shall be the total mass of the supply.
- In the case of a complex substance or material, any of the following substances shall be used as a homogeneous material.
  - » Compounds, polymer alloys, metal alloys, etc.
  - » As for raw materials such as coating compositions, adhesives, ink, paste, resin polymers, glass powder and ceramic powder, forms which are finally formed depending on expected usage of the substance.
    Ex.) Coating compositions and adhesives: the state after being dried and cured. Resin polymers: the state after being formed.
    The formed state of glass and ceramics.
  - » A single-layer of painting, printing, plating, etc. In the case of a multi-layer structure, the state of each single-layer.
- The numerator for calculating the content shall be the mass of the target chemical substance of calculation. However, in the case of a metal compound, only the mass of the target metal component is used as the numerator.

Table 2-2 Controlled substances contained 4

Category	Chemical substance	Target conditions	Example legal regulation
Controlled substances (9 groups)	• Antimony and antimony compounds	The content in the total mass of the delivered product exceeds 1000 ppm	JIG-101
	• Arsenic and arsenic compounds	The content in the total mass of the delivered product exceeds 1000 ppm	JIG-101
	• Beryllium and beryllium compounds	The content in the total mass of the delivered product exceeds 1000 ppm	JIG-101
	• Bismuth and bismuth compounds	The content in the total mass of the delivered product exceeds 1000 ppm	JIG-101
	• Bromine-based flame retardants (other than PBBs and PBDEs)	The content in the total mass of the delivered product exceeds 1000 ppm	JIG-101
	• Nickel (external use only)	The content in the total mass of the delivered product exceeds 1000 ppm *1	JIG-101
	• Certain phthalate esters	The content in the total mass of the delivered product exceeds 1000 ppm	JIG-101
	• Selenium and selenium compounds	The content in the total mass of the delivered product exceeds 1000 ppm	JIG-101
	• Polyvinyl chloride (PVC)	The content in the total mass of the delivered product exceeds 1000 ppm	JIG-101

*1: Only nickel used at a site which may come into direct contact with the human skin for a long period of time is to be the target of control.

[Note about Table 2-2]
When any of the chemical substances listed in Table 3 is contained in a delivered product, it is necessary to know if such containment is applicable to the “Target conditions”, and record and manage the mass, application, site contained and other conditions of the target substance when applicable.
The threshold levels of the controlled substances shall be the content (ppm) relative to the mass of the applicable item (product/parts).
In calculating the content, the denominator for calculating the content shall be the total mass of the delivered product.
The numerator for calculating the content shall be that of the target chemical substance of calculation. However, in the case of a metal compound, only the mass of the target metal component is used as the numerator.

Table 2-3 Substance-Specific Exceptions Table (typical) 7

Substance	Exemption number	Exempt application
Lead and lead compounds	5(b)	Lead in glass of fluorescent tubes not exceeding 0.2% by weight
	6(a)	Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0.35% lead by weight
	6(b)	Lead as an alloying element in aluminium containing up to 0.4% lead by weight
	6(c)	Copper alloy containing up to 4% lead by weight as an alloying element
	7(a)	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85% by weight or more lead)
	7(b)	Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission, and network management for telecommunications
	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
	7(c)-II	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher
	13(a)	Lead in white glasses used for optical applications
	13(b)	Lead in filter glasses and glasses used for reflectance standards
	15	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages
Cadmium and cadmium compounds	8(b)	Cadmium and its compounds in electrical contacts
Mercury and mercury compounds	3(a)	Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp): Short length (≤ 500 mm)
	3(b)	Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp): Medium length (> 500 mm and ≤ 1,500 mm)
	3(c)	Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp): Long length (> 1,500 mm)
PFOS/PFOS analogous compounds	-	• Photoresist for photolithography process or antireflection coating agent • Photographic coating agent used for film, paper, printing plates

* Exceptional applications will be reviewed at any time depending on future trends in legal regulations.

Table 2-4 Major laws and regulations relevant to chemical substances 7

Chemical substance *1	Major relevant laws and regulations
Tributyltin oxide (TBTO)	Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances (Class I Specified Chemical Substances)
Tributyltin (TBT), triphenyltin (TPT)	Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances (Class II Specified Chemical Substances)
Polychlorinated biphenyls (PCBs)	Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances (Class I Specified Chemical Substances), 76/769/EEC
Polychloronaphthalene (having two or more chlorine atoms)	Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances (Class I Specified Chemical Substances)
Certain short-chain chlorinated paraffin	76/769/EEC (+2002/45/EC)
Asbestos	76/769/EEC (+91/659/EEC)
Certain azo dyes and pigments	76/769/EEC (+2002/61/EC, +2003/3/EC)
Ozone-depleting substances	Law concerning the Protection of the Ozone Layer through the Control of Specified Substances and Other Measures Montreal Protocol on Substances that Deplete the Ozone Layer United States 1990 Clean Air Act, Article 611 76/769/EEC (+94/60/EEC, +97/64/EEC)
Radioactive substances	Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors
Cadmium and cadmium compounds	Denmark Statutory Order No. 1169 of December 23, 1992 on the Prohibition of Sale, Import, and Manufacture of Cadmium-Containing Products 76/769/EEC (+91/338/EEC) 91/157/EEC, 93/86/EEC 2000/53/EC (EU/ELV), 2011/65/EU (RoHS) 94/62/EC United States Regulations on Heavy Metals in Packaging
Hexavalent chromium and hexavalent chromium compounds	2000/53/EC (EU/ELV), 2011/65/EU (RoHS) 94/62/EC United States Regulations on Heavy Metals in Packaging
Lead and lead compounds	76/769/EEC (+86/677/EEC) 91/157/EEC, 93/86/EEC 2000/53/EC (EU/ELV), 2011/65/EU (RoHS) 94/62/EC United States Regulations on Heavy Metals in Packaging
Mercury and mercury compounds	76/769/EEC 91/157/EEC (+98/101/EC) 2000/53/EC (EU/ELV), 2011/65/EU (RoHS) 94/62/EC United States Regulations on Heavy Metals in Packaging
Polybrominated biphenyls (PBBs)	2011/65/EU (RoHS) (Germany Dioxin Legislation)
Polybrominated diphenyl ethers (PBDEs)	2011/65/EU (RoHS) 76/769/EEC (+2003/11/EC) (Germany Dioxin Legislation)
Di-2-ethylhexyl phthalate (DEHP) Butyl benzyl phthalate (BBP) Di-n-butyl phthalate (DBP)	REACH Regulations (EC) No 1907/2006 2005/84/EC 2011/65/EU (RoHS)
Diisobutyl phthalate (DIBP)	2011/65/EU (RoHS)
Lapse of Deca-BDE exemption	European RoHS Directive Lapse of PBDE exception “Deca-BDE for polymer application”
PFOS and PFOS analogous compounds	2008/76/769/EEC

Table 2-5 Chemical substance control list 7

Note: Any other substances which are designated under treaties, laws, ordinances and industrial guidelines must be controlled according to these regulations even though they are not listed here.

Category		JGPSSI groups *1	Chemical substance	Basis
Banned substance	Banned substances Level A (9 groups)	A17	Tributyltin oxide (TBTO)	[1]
		A18	Tributyltin (TBT), triphenyltin (TPT)	[1]
		B05	Polychlorinated biphenyls (PCBs)	[1]
		B06	Polychloronaphthalene (having two or more chlorine atoms)	[1]
		B09	Certain short-chain chlorinated paraffin *2	[1]
		C01	Asbestos	[1]
		C02	Certain azo dyes, pigments *3	[1]
		C04	Ozone-depleting substances *4	[1]
		C06	Radioactive substances	[1]
	Banned substances Level B (11 groups)	A05	Cadmium and cadmium compounds	[2]
		A07	Hexavalent chromium and hexavalent chromium compounds	[2]
		A09	Lead and lead compounds	[2]
		A10	Mercury and mercury compounds	[2]
		B02	Polybrominated biphenyls (PBBs)	[2]
		B03	Polybrominated diphenyl ethers (PBDEs)	[2]
		C12	Di-2-ethylhexyl phthalate (DEHP)	[2]
		C14	Butyl benzyl phthalate (BBP)	[2]
		C13	Di-n-butyl phthalate (DBP)	[2]
		C15	Diisobutyl phthalate (DIBP)	[2]
		—	PFOS and PFOS analogous compounds	[2]
Controlled substances (9 groups)		A01	Antimony and antimony compounds	[3], [4]
		A02	Arsenic and arsenic compounds	[3]
		A03	Beryllium and beryllium compounds	[3], [4]
		A04	Bismuth and bismuth compounds	[5]
		B08	Bromine-based flame retardants (other than PBBs and PBDEs)	[5]
		A11	Nickel (externally used only)	[3]
		C05	Certain phthalate esters	[3]
		A13	Selenium and selenium compounds	[3], [4]
		B07	Polyvinyl chloride (PVC)	[3], [4]

*1 JGPSSI group Nos. are denoted by those defined in Japan Green Procurement Survey Standardization Initiative for reference.

*2 Carbon chain length: applicable to C10–C13 short-chain chlorine paraffin

*3 Azo dyes and pigments which form specified amines, whose targets of application are limited to sites which come into direct contact with the skin for a long period of time.
(specified amines denote the amine compounds referenced in 76/769/EEC, the 19th amendment directive)

*4 These shall be substances applicable to Montreal Protocol on Substances that Deplete the Ozone Layer. Class II substances are included in the targets of investigation.

● Basis for selecting the substances

(1) Substances whose usage and sale are prohibited by legal regulation.
(2) Substances whose usage and sale are limited by legal regulation.
(3) Substances which impact the environment, health, safety and hygiene.
(4) Substances which are applicable to requirements of legal regulation relevant to harmful waste.
(5) Substances which may have negative impact in controlling the environment.

● References

1. Independent Administrative Institution National Institute of Technology and Evaluation Chemical Risk Information Platform http://www.safe.nite.go.jp/japan/db.html
2. Japan Green Procurement Survey Standardization Initiative (JGPSSI) Joint Industry Guideline (JIG) http://210.254.215.73/jeita_eps/green/greendata/JIG2008/080110Japanese.pdf
3. Ministry of the Environment Chemical Substance Fact Sheet 2007 http://www.env.go.jp/chemi/commun

Chapter 3 REACH Regulation

1. Definitions

1.1 Reportable substance 7

As listed in Table 3-1, these are 163 substances of very high concern (SVHCs) declared according to REACH regulation by European Chemicals Agency (ECHA) (announced in June 2015).

Registration with and submission of report to ECHA are needed if any of these substances is present in our product in excess of its maximum allowable amount (0.1 wt% or higher of a formed article).

Substances of very high concern are added as necessary according to revision of REACH regulation.

2. Execution of Green Procurement (REACH regulation)

2.1 In conducting our green procurement activities, we will strictly follow the JCM Group Green Procurement Guideline to manage chemical substances possibly contained in our products.

2.2 Documents to be submitted, and updating of data 5

(1) Report/statement of inclusion of substances of very high concern (material number: QA04-44A)

We request parts investigation for each of the raw materials, parts, units, etc. supplied to JCM group, and submission of a report/statement of inclusion of substances of very high concern.

The instruction for filling out the report/statement of inclusion of substances of very high concern is as follows:

[1] The reference number on the title column on the upper right hand will be filled out by JCM Group.

Please write the date of filling out, company name, address, telephone number, job title/position, and the signature of the head of the department in charge.

[2] Table 3-1 When REACH substances of very high concern (SVHC) are contained in amounts higher than 0.1 wt% relative to the weight of the supplied part or material as a parameter, please write and report the information of inclusion of substances of very high concern in the table and according to the sample writing provided.

When the content is 0.1 wt% or lower, or 0, please write and report “no inclusion”.

[3] Please put the company seal in the company seal space in the title space on the upper right hand, put a seal on the space for the signature of the head of the department in charge, and submit the document to JCM Group.

When any revision to REACH regulations has occurred or an equivalent product application has been made, please submit the document.

2.3 Submission procedure 5

Please refer to Paragraph 3.6 in Chapter 1-General.

2.4 For more information 5

Please refer to Paragraph 3.7 in Chapter 1-General.

To: JCM Group

Material number: QA04-44A

Report/statement of inclusion of substances of very high concern (REACH regulation) 5

Management number:

Date of filling out:

Company name:

Address: Company seal

Telephone: FAX:

Title/position:

Signature of the head of the department in charge: Seal

We disclose and report the information of inclusion of substances of very high concern in the raw materials, parts, units, etc. that we supply to JCM Group currently and also the raw materials, parts, units, etc. that we will supply in the future, since REACH substances of very high concern (SVHC) listed in Table 3-1 are contained in amounts higher than 0.1 wt% relative to the parameter of the weight of the supplied parts and materials. We write and report “no inclusion” when the content is 0 wt% to 0.1 wt%.

Information listing for inclusion of substances of very high concern related to supplied parts

No.	Applicable parts				The information of inclusion of substances of very high concern					
	Name	JCM item number	Manufacturer’s model number / manufacturer’s name	Unit weight [g] of supplied parts and materials	Substance of very high concern contained (*1)	CAS No. (*2)	Content [wt%] (*3)	Amount contained [mg] (*4)	Site where contained	Remarks (*5)

[Sample writing]

Example 1	Capacitor	000001	AAA-BB (xxx Corporation)		No inclusion					
Example 2	Cable	000002	CCC-DD (xxx Corporation)	150 g	Bis phthalate	117-81-7	2 wt%	3000 mg	Cable coating	Investigation unit is 1 m.
					Musk xylene	81-15-2	5 wt%	7500 mg	Cable coating	Investigation unit is 1 m.

(*1): When substances of very high concern [Table 3-1 REACH regulation List of substances of very high concern (SVHC)] are contained in amounts higher than 0.1 wt% relative to the parameter of the weights of supplied parts and materials, please specify the substances of very high concern contained. When no substance is contained, please write “no inclusion”.

(*2): Please specify the CAS No. (compound number used by American Chemical Society) listed in Table 3-1.

(*3): Please write the content (wt%) of a substance of very high concern using the weights of supplied parts and materials as the parameter.

(*4): Please write the amount (mg) of the substance of very high concern contained in the supplied parts and materials.

(*5): In the case of cables and similar materials, where the unit is length, please enter its investigation unit in the remarks space.

Table 3-1 REACH regulation substances of very high concern (SVHC)—181 substances 9

Published by European Chemicals Agency (ECHA) on Jan 15, 2018

Category	No.	Applicable substance *1	CAS No.	Reason	Example of products	Date approved
Reportable substances	1	Anthracene	120-12-7	Persistent, bioaccumulative, toxic	Black rubber or plastic product	2008.6.1
	2	4,4'-Diaminodiphenylmethane	101-77-9	Carcinogenicity category 2	Polyurethane	2008.6.1
	3	Dibutyl phthalate (DBP)	84-74-2	Genotoxicity category 2	Softening agent, solvent, PVC	2008.6.1
	4	Cobalt dichloride	7646-79-9	Carcinogenicity category 2	Desiccant for coating composition or ink	2008.6.1
	5	Diarsenic pentoxide	1303-28-2	Carcinogenicity category 1	Glass, dye	2008.6.1
	6	Diarsenic trioxide	1327-53-3	Carcinogenicity category 1	Glass, wood preservative	2008.6.1
	7	Sodium dichromate, dihydrate	7789-12-0 10588-01-9	Carcinogenicity, mutagenicity, genotoxicity category 2	Pigment, dye	2008.6.1
	8	5-t-Butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	Highly persistent, highly bioaccumulative	Perfume component	2008.6.1
	9	Bis phthalate 2-ethylhexyl (DEHP)	117-81-7	Genotoxicity category 2	Plasticizer, medical supplies	2008.6.1
	10	Hexabromocyclododecane (HBCDD) and all major diastereomers	25637-99-4 3194-55-6 134237-50-6 134237-51-7 134237-52-8	Persistent, bioaccumulative, toxic	Flame retardants	2008.6.1
	11	Short-chain chlorinated paraffin (carbon chain length: C10 to C13)	85535-84-8	Persistent, bioaccumulative, toxic, highly persistent, highly bio accumulative	Rubber, coating composition, gasket, adhesive, lubricating oils, flame retardants, plasticizers	2008.6.1
	12	Bis(tributyltin)oxide (TBTO)	56-35-9	Persistent, bioaccumulative, toxic	Anti-fungal agents, antifouling paints	2008.6.1
	13	Lead hydrogen arsenate	7784-40-9	Carcinogenicity category 1 Genotoxicity category 2	Insecticides, wood preservative	2008.6.1
	14	Butyl benzyl phthalate (BBP)	85-68-7	Genotoxicity category 2	Plasticizer for PVC	2008.6.1
	15	Triethyl arsenate	15606-95-8	Carcinogenicity category 1	Insecticides, wood preservative	2008.6.1
	16	2,4-Dinitrotoluene	121-14-2	Carcinogenicity	Raw material for organic synthesis (toluenediamine, powder intermediate, dye)	2010.1.13
	17	Acrylamide	79-06-1	Carcinogenicity, mutagenicity	Raw material monomer for polyacrylamides, polymers for water treatment agents, textile auxiliaries, etc	2010.3.3
	18	Aluminosilicates, fire resistant ceramic fibers	JAMP-SN00007	Carcinogenicity	High-temperature insulation materials for equipment, etc.	2010.1.13
	19	Ammonium dichromate	7789-9-5	Carcinogenic, mutagenic, and toxic for reproduction	Manufacture of photosensitive screen (CRT)	2010.6.18

(Continuation)

Category	No.	Applicable substance *1	CAS No.	Reason	Example of products	Date approved
Reportable substances	20	Anthracene oil	90640-80-5	Persistent, bioaccumulative and toxic, very persistent and very bioaccumulative (carcinogenic)	Manufacture of anthracene and carbon black, reducing agents for blast furnaces, barker oil parts, impregnating lubricants, sealants, preservatives	2010.1.13
	21	Anthracene oil (anthracene paste)	90640-81-6	Persistent, bioaccumulative and toxic, very persistent and very bioaccumulative (carcinogenic and mutagenic)		2010.1.13
	22	Anthracene oil (anthracene paste, anthracene fraction)	91995-15-2			2010.1.13
	23	Anthracene oil (anthracene paste, light fraction)	91995-17-4			2010.1.13
	24	Anthracene oil (low anthracene content)	90640-82-7			2010.1.13
	25	Boric acid	10043-35-3 11113-50-1	Genotoxicity	Flame retardant, coating composition, film developer	2010.6.18
	26	Diisobutyl phthalate	84-69-5	Genotoxicity	Plasticizer	2010.1.13
	27	Disodium tetraborate, anhydrous Disodium tetraborate pentahydrate Disodium tetraborate decahydrate (borax)	1330-43-4 12179-04-3 1303-96-4	Genotoxicity	Flame retardant, industrial fluid Stabilizers for aminoplastic resins, wood preservatives	2010.6.18
	28	Lead chromate	7758-97-6	Carcinogenicity, genotoxicity	Dye, pigment, coating composition, pigment of varnish Preservatives	2010.1.13
	29	Lead chromate molybdate sulfate (C.I. Pigment Red 104)	12656-85-8	Carcinogenicity, genotoxicity	Dye, pigment of coating, coloring agent of plastic, printing	2010.1.13
	30	Lead sulfochromate yellow (C.I. Pigment Yellow 34)	1344-37-2	Carcinogenicity, genotoxicity	Dye, pigment of coating, coloring agent of plastic, printing	2010.1.13
	31	High temperature coal tar pitch	65996-93-2	Persistent, bioaccumulative and toxic, very persistent and very bioaccumulative, and carcinogenic	Electrode, carbon, others Graphite product, dye and coating	2010.1.13
	32	Potassium chromate	7789-00-6	Carcinogenicity, mutagenicity	Pigment, production of ink	2010.6.18
	33	Potassium dichromate	7778-50-9	Carcinogenicity, mutagenicity, genotoxicity	Photolithography Corrosion inhibitor for cooling devices	2010.6.18
	34	Sodium chromate	7775-11-3	Carcinogenicity, mutagenicity, genotoxicity	Production of other chromium compounds	2010.6.18
	35	Disodium tetraborate hydrate	12267-73-1	Genotoxicity	Flame retardant, industrial fluids, stabilizers for aminoplastic resins, wood preservatives	2010.6.18
	36	Trichloroethylene	79-01-6	Carcinogenicity	Cleaning agent or degreasing agent, solvent for adhesives	2010.6.18
	37	Tris (2-chloroethyl)phosphate (TCEP)	115-96-8	Genotoxicity	Flame retardant, combustion improver	2010.1.13
	38	Zirconia aluminosilicate, refractory ceramic fiber	JAMP-SN00055	Carcinogenicity	High temperature insulation materials for equipment, etc.	2010.1.13

(Continuation)

Category	No.	Applicable substance *1	CAS No.	Reason	Example of products	Date approved
Reportable substances	39	Cobalt sulfate (II)	10124-43-3	Carcinogenicity, genotoxicity	Surface treatment (electroplating), battery, chemical fertilizer	2010.12.15
	40	Cobalt nitrate (II)	10141-05-6	Carcinogenicity, genotoxicity	Manufacture of chemicals and catalysts, surface treatment, battery	2010.12.15
	41	Cobalt carbonate (II)	513-79-1	Carcinogenicity, genotoxicity	Production of catalyst, adhesive	2010.12.15
	42	Cobalt acetate (II)	71-48-7	Carcinogenicity, genotoxicity	Surface treatment, alloy, pigment, rubber adhesive	2010.12.15
	43	2-Methoxy ethanol, Methyl Cellosolve	109-86-4	Genotoxicity	Solvent, intermediate chemical agent	2010.12.15
	44	2-Ethoxy ethanol, Cellosolve	110-80-5	Genotoxicity	Solvent, intermediate chemical agent	2010.12.15
	45	Chromium trioxide, Chromic anhydride	1333-82-0	Carcinogenicity, mutagenicity	Metal finishing	2010.12.15
	46	Chromium trioxide and acid produced from oligomers of chromium trioxide	7738-94-5 13530-68-2 JAMP-SN00071	Carcinogenicity	Dissolution of chromium trioxide	2010.12.15
	47	2-Ethoxyethyl acetate	111-15-9	Genotoxicity	Solvent for ink for electronic parts	2011.6.20
	48	Strontium chromate	7789-06-2	Carcinogenicity	Coating composition, varnish, antirust agent	2011.6.20
	49	1,2-Benzenedicarboxylic acid, C7–C11 branched and straight-chain alkyl esters	68515-42-4	Genotoxicity	Plasticizer, dye, pigment, coating composition, ink, adhesive, lubricant	2011.6.20
	50	Hydrazine, anhydrous Hydrazine hydrate	302-01-2 7803-57-8	Carcinogenicity	Boiler compound, reducing agent, polymerization catalyst, purifying agent	2011.6.20
	51	N-Methyl-2-pyrrolidone	872-50-4	Genotoxicity	Resin solvent, acetylene solvent, electric appliance cleaning	2011.6.20
	52	1,2,3-Trichloropropane	96-18-4	Carcinogenicity, genotoxicity	Insecticide, solvent	2011.6.20
	53	1,2-Benzenedicarboxylic acid, C6 –C8 phthalic acid esters mainly composed of C7 side-chain hydrocarbons	71888-89-6	Genotoxicity	Plasticizer, dye, pigment, coating composition, ink, adhesive, lubricant	2011.6.20
	54	Lead (II) 2,4,6-trinitrobenzene-1,3-diolate	15245-44-0	Genotoxicity	Triggering explosive, detonator	2011.12.19
	55	Lead azide (II)	13424-46-9	Genotoxicity	Triggering explosive	2011.12.19
	56	Lead dipicrate	6477-64-1	Genotoxicity	Triggering explosive	2011.12.19
	57	Phenolphthalein	77-09-8	Carcinogenicity	Indicator, pH indicator	2011.12.19

(Continuation)

Category	No.	Applicable substance *1	CAS No.	Reason	Example of products	Date approved
Reportable substances	58	2,2'-Dichloro-4,4'-methylene bis aniline (MOCA)	101-14-4	Carcinogenicity	Hardening accelerator, high melting point hard segment extender	2011.12.19
	59	N,N-Dimethylacetamide (DMAC)	127-19-5	Genotoxicity	Cleaning agent, release agent, reagent	2011.12.19
	60	Lead arsenate (II)	3687-31-8	Carcinogenicity, genotoxicity	Refining product	2011.12.19
	61	Calcium arsenate	7778-44-1	Carcinogenicity	Refining product	2011.12.19
	62	Arsenic acid	7778-39-4	Carcinogenicity	Reagent	2011.12.19
	63	Bis(2-methoxyethyl)ether	111-96-6	Genotoxicity	Solvent, adhesive, fuel	2011.12.19
	64	1,2-dichloroethane	107-06-2	Carcinogenicity	Solvent, synthetic intermediate	2011.12.19
	65	4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-octylphenol)	140-66-9	The same level of the risk of seriously impacting the environment	Polymerization regulator for synthetic resin	2011.12.19
	66	2-Methoxyaniline (o-anisidine)	90-04-0	Carcinogenicity	Dye	2011.12.19
	67	Bis-(2-methoxyethyl) phthalate	117-82-8	Genotoxicity	Plasticizer	2011.12.19
	68	Formaldehyde, oligomer reaction product with aniline	25214-70-4	Carcinogenicity	Intermediate, curing agent, adhesive	2011.12.19
	69	Pentazinc chromate octahydroxide	49663-84-5	Carcinogenicity	Painting of vehicles, coloring agent	2011.12.19
	70	Potassium hydroxyoctaoxodizincate dichromate	11103-86-9	Carcinogenicity	Anti-rust coating composition	2011.12.19
	71	Dichromium tris(chromate)	24613-89-6	Carcinogenicity	Steel, metal surface treatment with aluminum coating	2011.12.19
	72	1,2-Bis(2-methoxyethoxy) ethane	112-49-2	Genotoxicity	Solvents, manufacture and preparation of industrial chemicals	2012.6.18
	73	Ethylene glycol dimethyl ether	110-71-4	Genotoxicity	Solvents, manufacture and preparation of industrial chemicals	2012.6.18

(Continuation)

Category	No.	Applicable substance *1	CAS No.	Reason	Example of products	Date approved
Reportable substances	74	Boron oxide	1303-86-2	Genotoxicity	Glass, glass fibers, flame retardants, adhesives	2012.6.18
	75	Formamide	75-12-7	Genotoxicity	Agricultural chemicals, pharmaceuticals, solvents, plasticizers	2012.6.18
	76	Lead (II) methanesulfonate	17570-76-2	Genotoxicity	Surface coating for printed circuit boards, batteries	2012.6.18
	77	(TGIC) 1,3,5-tris(2,3-epoxypropyl)-1,3,5-triazine-2,4,6(1*H*, 3*H*, 5*H*)-trione and 1,3-bis[2,3-bis(propanoyloxy)propyl]-5-(2,3-epoxypropyl)-1,3,5-triazine-2,4,6(1*H*,3*H*,5*H*)-trione	2451-62-9	Mutagenicity	Hardeners for resins and coating, ink for printed circuit boards, plastic sheets, silk screen printing sheets	2012.6.18
	78	β-(TGIC) 1,3,5-tris[2S and 2R] (2,3-epoxypropyl)-1,3,5-triazine-2,4,6(1*H*, 3*H*, 5*H*)-trione	59653-74-6	Mutagenicity	Solder mask/ink, electric insulation materials, laminated sheets, adhesives	2012.6.18
	79	4,4'-Bis(dimethylamino) benzophenone	90-94-8	Carcinogenicity	Triphenylmethane dye, additives for manufacture of electronic circuit boards	2012.6.18
	80	Bis(4-dimethylaminophenyl) methane	101-61-1	Carcinogenicity	Dyes, intermediate for manufacture of other substances	2012.6.18
	81	C.I. Basic Violet 3	548-62-9	Carcinogenicity	Paper dyeing, inks for printer cartridges and ball-point pens	2012.6.18
	82	C.I. Basic Blue 26	2580-56-5	Carcinogenicity	Inks, cleaners, coatings, dyes	2012.6.18
	83	C.I. Solvent Blue 4	6786-83-0	Carcinogenicity	Ink preparations, dyes, detergents	2012.6.18
	84	4-Methylamino-4',4"-bis(dimethylamino)triphenylmethanol	561-41-1	Carcinogenicity	Ink preparations, dyes	2012.12.19
	85	Decabromodiphenyl ether	1163-19-5	Persistent, bioaccumulative and toxic, very persistent and very bioaccumulative	Plastic fibers, flame retardants for products	2012.12.19
	86	Perfluorotridecanoic acid	72629-94-8	Very persistent and very bioaccumulative	Manufacture of fluorocarbon polymers, additives	2012.12.19
	87	Perfluorododecanoic acid	307-55-1	Very persistent and very bioaccumulative	Manufacture of fluorocarbon polymers, additives	2012.12.19
	88	Perfluoroundecanoic acid	2058-94-8	Very persistent and very bioaccumulative	Manufacture of fluorocarbon polymers, additives	2012.12.19
	89	Perfluorotetradecanoic acid	376-06-7	Very persistent and very bioaccumulative	Manufacture of fluorocarbon polymers, additives	2012.12.19

(Continuation)

Category	No.	Applicable substance *1	CAS No.	Reason	Example of products	Date approved
Reportable substances	90	4-(1,1,3,3-Tetramethylbutyl)phenol	JAMP-SN0081	Equivalent level of concern having probable serious effects to the environment	Emulsifier for emulsion polymerization, water paints, intermediate for manufacture of octylphenol ether nitrate	2012.12.19
	91	4-Nonylphenol	JAMP-SN0082	Equivalent level of concern having probable serious effects to the environment	Paints, printing inks, metal lubricants, antioxidants for plastics, plasticizers	2012.12.19
	92	Azodicarbonamide	123-77-3	Equivalent level of concern having probable serious effects to human health	Rubber, blowing agents for synthetic resins, bleaching agents, catalysts	2012.12.19
	93	Hexahydrophthalic anhydride Hexahydrophthalic anhydride	85-42-7 13149-00-3 14166-21-3	Equivalent level of concern having probable serious effects to human health	Manufacture of polyester alkyd resins, plasticizers for thermoplastic resins, hardeners for epoxy resins, corrosion inhibitors	2012.12.19
	94	Methyl hexahydrophthalic anhydride	19438-60-9 25550-51-0 48122-14-1 57110-29-9	Equivalent level of concern having probable serious effects to human health	Manufacture of polyester alkyd resins, plasticizers for thermoplastic resins, hardeners for epoxy resins, corrosion inhibitors	2012.12.19
	95	Methoxyacetic acid	625-45-6	Toxic for reproduction and equivalent level of concern having probable serious effects to human health and to the environment	Intermediate for agricultural and other pesticides, disinfectants	2012.12.19
	96	1,2-Benzenedicarboxylic acid dipentyl ester	84777-06-0	Genotoxicity	Less that 1 ton/year is on the market. Small amounts are used for analysis.	2012.12.19
	97	Diisopentyl phthalate (DIPP)	605-50-5	Genotoxicity	Manufacture of insecticides, plasticizers for PVC and other resins	2012.12.19
	98	N-Pentyl-isopentyl phthalate	776297-69-9	Genotoxicity	Plasticizers for plastics	2012.12.19
	99	Ethylene glycol diethyl ether	629-14-1	Genotoxicity	Solvents for organic synthesis of ester gum, shellac, resins, and oils	2012.12.19
	100	Dimethylformamide	68-12-2	Genotoxicity	Cleaning solvent for electric machines and integrated circuits	2012.12.19
	101	Dibutyltin dichloride (DBTC)	683-18-1	Genotoxicity	Additive for rubber, PVC stabilizer, insulation materials, coating materials	2012.12.19
	102	Lead acetate basic	51404-69-4	Genotoxicity	–	2012.12.19
	103	Lead carbonate; lead(II) carbonate hydroxide	1319-46-6	Genotoxicity	Ceramics, paints, PVC stabilizer, pigments, rubber	2012.12.19
	104	Lead oxide sulfate (basic lead sulfate)	12036-76-9	Genotoxicity	–	2012.12.19

(Continuation)

Category	No.	Applicable substance *1	CAS No.	Reason	Example of products	Date approved
Reportable substances	105	Lead, 1,2-benzenedicaraboxylato(2-)dioxolate; [phthalato(2-)dioxotrilead	69011-06-9	Genotoxicity	–	2012.12.19
	106	Dioxobis(stearate)trilead	12578-12-0	Genotoxicity	–	2012.12.19
	107	Fatty acids, C16-18, lead salts	91031-62-8	Genotoxicity	–	2012.12.19
	108	Lead boron fluoride; lead(II) tetrafluoroborate	13814-96-5	Genotoxicity	Solder plating, alloy plating, electrolyte for electrolytic plating	2012.12.19
	109	Lead cyanamide	20837-86-9	Genotoxicity	Anticorrosive pigments	2012.12.19
	110	Lead nitrate; lead(II) nitrate	10099-74-8	Genotoxicity	–	2012.12.19
	111	Lead monoxide; lead(II) oxide	1317-36-8	Genotoxicity	Raw material for PVC stabilizer, radiation protective agent for fluorescent lamps, vacuum tubes, etc., storage battery electrode plates, general glass, electronic materials	2012.12.19
	112	Lead(II, IV) oxide	1314-41-6	Genotoxicity	Paints, radiation protective agent for fluorescent lamps, vacuum tubes, etc., optical glass, storage batteries, synthetic resins, electronic materials	2012.12.19
	113	Lead titanate	12060-00-3	Genotoxicity	–	2012.12.19
	114	Lead titanate zirconate; lead titanium zirconium oxide	12626-81-2	Genotoxicity	–	2012.12.19
	115	Basic lead sulfate	12065-90-6	Genotoxicity	–	2012.12.19
	116	Pigment Yellow-41; C.I. Pigment Yellow-41	8012-00-8	Genotoxicity	–	2012.12.19
	117	Silicic acid, barium salt(1:1) (lead-doped)	68784-75-8	Genotoxicity	–	2012.12.19
	118	Lead silicate	11120-22-2	Genotoxicity	–	2012.12.19
	119	Basic lead sulfite	62229-08-7	Genotoxicity	–	2012.12.19
	120	Tetraethyllead	78-00-2	Genotoxicity	Octane booster	2012.12.19

(Continuation)

Category	No.	Applicable substance *1	CAS No.	Reason	Example of products	Date approved
Reportable substances	121	Basic lead sulfate; tribasic lead sulfate; tribasic lead sulfate(Pb4O3(SO4))	12202-17-4	Genotoxicity	–	2012.12.19
	122	Dibasic lead phosphate	12141-20-7	Genotoxicity	–	2012.12.19
	123	Furan	110-00-9	Carcinogenicity	–	2012.12.19
	124	Propylene oxide	75-56-9	Carcinogenicity Mutagenicity	Pigments, intermediate for pharmaceuticals, fungicides	2012.12.19
	125	Diethyl sulfate	64-67-5	Carcinogenicity Mutagenicity	Dyes, pharmaceuticals, agricultural chemicals, fine chemicals, synthesis of quaternary ammonium salt compounds	2012.12.19
	126	Dimethyl sulfate	77-78-1	Carcinogenicity	Methylating agent for organic synthesis, stabilizer for synthesis of pharmaceuticals	2012.12.19
	127	3-Ethyl-2-isopentyl-2-methyl-1,3-oxazolidine	143860-04-2	Genotoxicity	–	2012.12.19
	128	Dinoseb; 2-sec-butyl-4.6-dinitrophenol	88-85-7	Genotoxicity	–	2012.12.19
	129	4,4'-Methylenebis(o-toluidine) 4,4'-Methylenebis(2-methylaniline)	838-88-0	Carcinogenicity	Hardeners for epoxy resins and urethane resins	2012.12.19
	130	4,4'-Diaminodipehnyl ether; 4,4'-oxidianiline and its salts	101-80-4	Carcinogenicity Mutagenicity	Raw material for polyimides and polyamides	2012.12.19
	131	p-Aminoazobenzene; 4-aminoazobenzene; 4-phenylazoaniline	60-09-3	Carcinogenicity	–	2012.12.19
	132	2,4-Diaminotoluene	95-80-7	Carcinogenicity	Raw material for polyurethane resins, intermediate for dyes	2012.12.19
	133	6-Methoxy-m-toluidine	120-71-8	Carcinogenicity	Intermediate for different azo dyes	2012.12.19
	134	4-Aminobiphenyl; biphenyl-4-ylamine	92-67-1	Carcinogenicity	–	2012.12.19
	135	2-Amino-5-azotoluene; o-aminoazotoluene	97-56-3	Carcinogenicity	–	2012.12.19
	136	o-Toluidine	95-53-4	Carcinogenicity	ortho-Toluidine azo dyes and sulfur dyes, organic synthesis, solvents	2012.12.19
	137	N-Methylacetamide	79-16-3	Genotoxicity	–	2012.12.19

(Continuation)

Category	No.	Applicable substance *1	CAS No.	Reason	Example of products	Date approved
Reportable substances	138	1-Bromopropane, n-propyl bromide	106—94-5	Genotoxicity	Intermediate for pharmaceuticals and agricultural chemicals	2012.12.19
	139	Cadmium	7440-43-9	Carcinogenicity Equivalent level of concern having probable serious effects to human health	Pigments, batteries	2013.6.20
	140	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	Genotoxicity, persistent, bioaccumulative, toxic	Intermediates, additives (for resins), catalysts for other products	2013.6.20
	141	Pentadecafluorooctanoic acid (PFOA)	335-67-1	Genotoxicity, persistent, bioaccumulative, toxic	Additives, leveling agent for paints, surfactants	2013.6.20
	142	Dipentyl phthalate (DPP)	131-18-0	Genotoxicity	Plasticizers	2013.6.20
	143	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]	JAMP-SN0082	Equivalent level of concern having probable serious effects to the environment	Raw material for surfactants, paints, inks, industrial detergents	2013.6.20
	144	Cadmium oxide	1306-19-0	Carcinogenicity Equivalent level of concern having probable serious effects to human health	Stabilizers, oxidizing agents, materials for electronic industry (semiconductor), electroplating	2013.6.20
	145	Lead(II) acetate	301-04-2	Toxic	Dyes, pigments, paints, dyeing auxiliaries	2013.12.16
	146	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	Carcinogenicity	Dyes	2013.12.16
	147	Tris-(dimethylphenyl)phosphate	25155-23-1	Toxic	Flame retardants, plasticizers	2013.12.16
	148	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	Toxic	Vulcanization accelerator (chloroprene rubber, chlorinated polyethylene, etc.)	2013.12.16
	149	Phthalic acid	84-75-3	Toxic	Flooring materials, tool grip, automotive parts	2013.12.16

(Continuation)

Category	No.	Applicable substance *1	CAS No.	Reason	Example of products	Date approved
Reportable substances	150	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	Carcinogenicity	Dyes	2013.12.16
	151	Cadmium sulfide	1306-23-6	Carcinogenicity Equivalent level of concern having probable serious effects to human health	Colorants	2013.12.16
	152	Dichlorocadmium	10108-64-2	Carcinogenicity Equivalent level of concern having probable serious effects to human health	Raw material for cadmium compounds for electroplating, solar cells, etc.	2014.6.16
	153	1,2-Benzendicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	Carcinogenicity	Sealants, lubricants, plasticizers	2014.6.16
	154	Sodium peroxoborate, sodium perborate	7632-04-4	Carcinogenicity	Laundry detergents, bleaching agent for dishwashers	2014.6.16
	155	Sodium perborate, perboric acid, sodium salt	–	Carcinogenicity	Laundry detergents, bleaching agent for dishwashers	2014.6.16
	156	Cadmium fluoride, Cadmium difluoride	7790-79-6	Carcinogenicity Equivalent level of concern having probable serious effects to human health	Reagents, synthetic intermediates, batteries, plating, pigments, contact materials	2014.12.17
	157	Cadmium (II) sulfate, cadmium (II) sulfate anhydrous and hydrate	10124-36-4; 31119-53-6	Carcinogenicity Equivalent level of concern having probable serious effects to human health	Reagents, catalysts, plating (printed circuit boards), pigments, batteries	2014.12.17
	158	2-Benzotriazole-2-yl 4,6-di-tert-butylphenol (UV-320)	3846-71-7	Toxic	Ultraviolet absorbers, adhesives, paints, printing inks	2014.12.17
	159	2-(2H-benzotriazole-2-yl)-4,6-Di-tert-pentylphenol (UV-328)	25973-55-1	Toxic	Ultraviolet absorbers	2014.12.17
	160	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5 dithia-4-stannatetradecanoate (DOTE)	15571-58-1	Genotoxicity	Additives for resins, adhesives for joining rigid PVC pipes	2014.12.17
	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)*	–	Genotoxicity	PVC (Thermal stabilizer for PVC)	2014.12.17

(Continuation)

Category	No.	Applicable substance *1	CAS No.	Reason	Example of products	Date approved
Reportable substances	162	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	Genotoxicity	–	2015.6.15
	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]	–	Very persistent and very bioaccumulative	–	2015.6.15
	164	Nitrobenzene	98-95-3	Genotoxic	–	2015.12.17
	165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	Highly persistent and highly bioaccumulative	–	2015.12.17
	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	Highly persistent and highly bioaccumulative	–	2015.12.17
	167	1,3-propanesultone	1120-71-4	Carcinogenicity	Synthetic resins, fibers, coating materials	2015.12.17
	168	Perfluorononan-1-oic acid (2,2,3,3,4,4,5,5,6,6,7,7, 8,8,9,9,9-heptadecafluorononanoic acid and its sodium and ammonium salts	375-95-1、21049-39-8、4149-60-4	Genotoxic, persistent, bioaccumulative, toxic	–	2015.12.17
	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	Carcinogenicity, mutagenicity, Genotoxic, persistent, bioaccumulative, toxic, Highly persistent and highly bioaccumulative	–	2016.6.20

(Continuation)

Category	No.	Applicable substance *1	CAS No.	Reason	Example of products	Date approved
Reportable substances	170	4,4'-isopropylidenediphenol (bisphenol A; BPA)	80-05-7	Genotoxic, endocrine disruption for humans and the environment	Antioxidants for PVC, epoxy resin hardeners, heat-sensitive paper	2017.1.12
	171	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	335-76-2、3830-45-3、3108-42-7	Genotoxic, persistent, bioaccumulative, toxic	Reversible agents, lubricants, surfactants, wetting agents, preservatives	2017.1.12
	172	p-(1,1-dimethylpropyl)phenol	80-46-6	Equivalent level of concern having probable serious effects to the environment	Additives for polymers and synthesis of other substances	2017.1.12
	173	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]	—	Equivalent level of concern having probable serious effects to the environment	Lubricant additives	2017.1.12
	174	Perfluorohexane-1-sulphonic acid and its salts	355-46-4	Highly persistent and highly bioaccumulative	Plasticizers, lubricants, surfactants, wetting agents	2017.7.10
	175	Chrysene	218-01-9 （1719-03-5）	Carcinogenicity, persistent, bioaccumulative, toxic, Highly persistent and highly bioaccumulative	—	2018.1.15

(Continuation)

Category	No.	Applicable substance *1	CAS No.	Reason	Example of products	Date approved
Reportable substances	176	Benz[a]anthracene	56-55-3 （1718-53-2）	Carcinogenicity, persistent, bioaccumulative, toxic, Highly persistent and highly bioaccumulative	—	2018.1.15
	177	Cadmium nitrate	10325-94-7 （10022-68-1 ）	Carcinogenicity, mutagenicity, specific target organ toxicity (repeated exposure) - human health	Batteries, cadmium salts	2018.1.15
	178	Cadmium hydroxide	21041-95-2	Carcinogenicity, mutagenicity, specific target organ toxicity (repeated exposure) - human health	Nickel-cadmium anodes	2018.1.15
	179	Cadmium carbonate	513-78-0	Carcinogenicity, mutagenicity, specific target organ toxicity (repeated exposure) - human health	Optical glass materials	2018.1.15
	180	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo [12.2.1.16,9.02,13.05,10] octadeca-7,15-diene (“Dechlorane Plus”TM) [covering any of its individual anti- and syn-isomers or any combination thereof]	—	Highly persistent and highly bioaccumulative	—	2018.1.15
	181	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	—	Endocrine disruption for the environment	—	2018.1.15

Notes about Table 3-1

1) Reportable substances (REACH regulation)
   - When substances of very high concern are contained in an article in amounts of 0.1 wt% (weight ratio) or more, the manufacturer is obliged to provide safe handling information to customers and consumers. (When requested by customers and consumers, such information should be provided within 45 days.)
   - The substance information on chemical substances and preparations sold is provided to customers in the form of the MSDS. The MSDS provides information on the risks by usage.
   - Constituents of the article using chemical substances or preparations sold to EU countries cannot be sold without registration with the European Chemicals Agency (ECHA).
     Conditions: Applicable constituents are those handled in amounts of 1 ton or more per year by product unit sold.
2) Major laws and regulations relevant to REACH regulation (EC) No. 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)