Green Procurement Guidelines

Ver. 9.00

February 2020

JRC Japan Radio Co., Ltd.

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Environmental Policy

Basic Philosophy

JRC (hereinafter referred to as "the Company") recognises environmental conservation as one of the most important common concerns for all mankind, and will act with full consideration for environmental conservation in all aspects of its business activity.

Basic Policy

The Company fulfills its responsibility as a corporation for development of sustainable society by establishing the following environmental policies led by **ISO14001.** The Company helps society alleviate and mitigate the problem of climate changes, form a sustainable and circulating society and conserve biodiversity and ecosystems ('hereinafter referred to as the "Key Challenges") to fulfill its social responsibility and help the Company grow.

1. The Company provides society with solutions that help solve the Key Challenges by developing new products and technologies and rolling out wireless communication and information processing technologies.

2. The Company is committed to preventing global warming and reducing the environmental burden by promoting 3R (reduce, reuse and recycle) activities for waste.

3. Comply with the laws and regulations related to the environment and other social requirements to which the Company subscribes.

4. The Company continues to facilitate improvement of the environmental management system, thereby reducing environmental loads from its business activities, products and services and preventing environmental pollution.

5. The Company establishes targets for environmental conservation activities, which it strives all-out to achieve and reviews periodically.

6. The Company familiarizes all employees and those working for it with the environmental policy to obtain their full understanding and cooperation. The Company also discloses the environmental policy externally via its website.

Introduction

The Japan Radio Co., Ltd. (referred to as “the Company”) which has its Management Philosophy that “We, JRC Group shall deliver excellent value and contribute to a bright future for people, society and the world through wisdom and creativity”, has been making efforts to reduce environmental impacts since 2005, the year in which the Environmental Policy was established, describing it as one of the key issues to harmonise its business activity with global environmental conservation.

In procurement, the Company has been actively promoting initiatives for building a recycling-based society (green procurement) together with client companies.

The Company reviewed the "**green procurement guidelines**" in response to social regulations and recent industry trends, and issued the 9th edition.

We would like you to understand the spirit of these guidelines and cooperate in this regard. Your cooperation is highly appreciated.

Japan Radio Co., Ltd.
Procurement Department
Quality Assurance Department
CSR Promotion Department

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1. Object

Our object is, via the Guidelines, to inform business connections of the requirements based on the Basic Environmental Policy of the Company and to ensure that the products, materials used for production (including sub-materials), electric parts, mechanical parts, and other things (referred to as "the Parts") purchased are environmentally friendly, so that our products will be well considered in terms of conservation of the earth environment.

2. Scope

Apply to all the parts that the Company procures. However, if there are requirements for green procurement from customers, the Company implements procurement meeting the requirements.

3. Requirements for business connections

3.1 Establish and maintain the Environmental Management System

a) To obtain **ISO14001**, **Eco-action 21**, **Ecostage** or **KES** Authorization, or to establish own "**Environmental Management System (EMS)**" as conditioned below and maintain the same.

1. The management sets out an Environmental Policy and notifies all employees.
2. To have an environmental conservation plan and have the force to drive it forward
3. To identify relevant laws with which you are sure of your compliance

b) To establish a management system of chemical substances with a certain environ- mental impact (identification system to prevent contamination, etc.), including the following conditions:

4. To appoint a manager for the management system
5. To have a system to confirm its compliance with customer requirements
6. To have a system to inform customers of any nonconformity and take corrective action for the same
7. To file data and record concerning the products to deliver

3.2 Specify the chemical substances with a certain environmental impact

The Company designated substances whose use is prohibited and controlled substances according to laws and regulations in and outside of Japan, and summarized this as an overview of environmental load substances in this booklet. Note that the **environmental load substances provided** in this booklet are defined with reference to the list of target substances for IEC62474.

Chemical substances with a CAS number/EC number are shown as examples. Not all substances are covered. For more information on chemical substances, please refer to the separate sheet "**List of chemical substances with a certain environmental impact Ver. 5.01.**"

3.2.1 Chemical substances of which the use is prohibited

Substances whose use is prohibited and corresponding laws and regulations are indicated in **Overview of environmental load substances group, Table 1.** Delivery to the Company of goods containing banned substances is prohibited. Note that uses for some purposes are exempt from the application.

3.2.2 Chemical substances of which the use is controlled

A group of controlled substances and corresponding laws and regulations are indicated in **Overview of environmental load substances group, Table 2.** Delivery to the Company of goods containing controlled substances is not necessarily prohibited, but proper management and disclosure of information on the substances contained is required.

3.3 Survey on the chemical substances with a certain environmental impact

The Company conducts surveys of environmental load substances contained for the parts it procures to promote green procurement. Since the Company asks the client companies to conduct all or some of the following research from time to time, your cooperation is highly appreciated.

a) Types of research

1) Research to verify that the substances as targeted for the RoHS Directive are not contained.
2) Research based on the chemSHERPA information transmission format (Compliance information and information on components requiring reporting)
3) Research based on JAMA/JAPIA Standard Material Datasheet
4) Research on analysis and measurement data
5) Research on the laws and regulations in and outside of Japan, and other research at our customers' request

b) Response procedures

1) Client companies are kindly asked to collect in advance information on environmental load substances contained in the parts the Company procures so that your response to the survey can be submitted before the due date.
2) To fill in chemSHERPA information transfer format (https://chemsherpa.net/chemSHERPA/tool/) and JAMA/JAPIA Standard Material Datasheet (http://www.japia.or.jp/datasheet/), please refer to the manuals and other documentation issued by the respective associations.

c) Handling of the responses

Response information on environmental load substances is shared by the Company as well as its subsidiaries and associated companies. The Company also may disclose the information to its customers as part of its product-related information.

3.4 Matters other than environmental load substances

a) Energy saving

Reduce the consumption of necessary energies, such as electric power and fossil fuels.

b) Materials efficiency

Reduce the kinds of materials.

c) Ease of disassembly

The products should be manufactured in such a way that the parts can be re-used or recycled after the disassembly of the products.

d) Indication of materials

Information required for recycling and optimum waste disposal should be indicated in a not easily erasable way, by clearly writing down the names of materials as much as possible.

e) Resource saving

Use renewable materials as much as possible. Also, try to reduce the volume of industrial products used.

f) Packaging materials

Packaging materials should meet the following requirements to mitigate environmental impact.

1) Structure: The packaging materials should be reusable repeatedly.
2) Materials: Use recyclable materials and minimize the amount of materials in use.

3) Indication: Indicate materials used in packaging materials in a way that is not easily erasable.

4) Separation of recyclable materials is easy.

5) Take into consideration Directive 94/62/EC (on Packaging Waste).

g) Materials efficiency

Take into consideration relevant laws and regulations, such as for recycling, energy saving and product disposal.

h) Usable for a long period

Extended periods of use should be taken into consideration.

i) Providing of information

Take care to inform the capability, such as energy saving and resources saving, and how to effectively utilise the capability by a catalogue of the products and the website.

3.5 Matters concerning delivery

a) Transportation: Consideration should be given to transportation in order to reduce its environmental impact.

b) Reduction in waste: Packaging materials used to deliver products to the Company should be reduced by avoiding excessive packaging, employing reusable containers, and recovery.

3.6 Change of 4M・D (material, method, machine, man and delivery)

When there are any changes associated with environmental load substances for the delivered goods, please inform us of the changes by our specification document (4 MB / D notification form for change) each time in advance.

4. Definition

a) **Environmental Management Systems (EMS)**: systems to manage the environment. MS either refers to a standard, such as the international standard **ISO 14001**, or indicates the environmental management system for individual organizations (corporations). For organizations, **EMS**'s are said to be essential systems required to overcome managerial challenges in a business properly.

b) **ISO 14001, Eco-action 21, Eco-stage, and KES**: **ISO 14001** are international standards concerning the environment, and have been introduced mainly by larger companies. **Eco-action 21**: The following is an environmental management system for small- and medium-sized enterprises with due consideration of implementation and operational costs.

c) **Environmental load substances**: Defined as substances prohibited from use in 1) and controlled substances in 2). In **Table 1** and **Table 2** attached to the Separate sheets "**Green Procurement Guidelines List of chemical substances with a certain environmental impact Ver.7.00**," **substances prohibited from use and controlled substances** are shown, respectively. Note that environmental load substances are defined with reference to a list of target substances for IEC62474.

1) **Substances prohibited from use**: Chemical substances (groups) prohibited from being contained according to national laws, the Chemical Substances Control Law, health and safety laws, ozone layer protection laws, RoHS Directive and REACH regulation.

2) **Controlled substances**: Not substances prohibited from use, subject to content control legislation, but the substances are defined as substances the use of which should be restrained or reduced from

the viewpoint of environment, health and safety as well as risk management in the process of waste disposal, applying mutatis mutandis stance on substances prohibited from use.

d) **RoHS Directive (European Parliament and Council Directive 2011 / 65 / EU dated June 8, 2011, Commission Delegation Directive (EU) 2015 / 863 dated March 31, 2015)**

1) **2011/65/EU**

Restriction on hazardous substances enforced by the EU (European Union). It is intended to prohibit designated substances, by specifying content of certain hazardous substances contained in electrical and electronic equipment and exemptions available. The following 6 substances are targeted for regulation: lead, cadmium, chromium hexavalent, mercury, polybrominated biphenyls (PBB) and polybrominated diphenyl ether (PBDE).

2) **(EU) 2015 / 863**

The Commission Delegation Directive has added the following four substances (threshold: 1000 ppm) to the list of controlled substances, which takes effect as of July 22, 2019. Di-2-ethylhexyl phthalate (DEHP), benzyl butyl phthalate (BBP), acid di-n-butyl phthalate (DBP), diisobutyl phthalate (DIBP).

e) **REACH Regulation**: A comprehensive system of chemicals regarding “Registration, Evaluation, Authorisation and Restriction, which was enacted as EC Regulation No 1907 / 2006 in December 13, 2006. Highly suspicious substances called **SVHC**, which are contained in products, need to be managed when used or marketed. In case the concentration exceeds 0.1 wt %, you would be obliged to provide information to consumers free of charge within 45 days at their request.

f) **IEC62474**: standards established by IEC (International Electrotechnical Commission) for prescribed items, list of targeted substances and information transfer tools in the information transmission of chemical substances contained in products in the supply chain, which entered into force in March 2012.

g) **JAMP (Joint Article Management Promotion-consortium)**: A cross-industry organization for activity promotion that manages information on chemical substances contained in an article (another name of a part or molded product) appropriately and aims to establish and disseminate the concrete system to disclose and transmit the information through companies on supply chain smoothly.
http://www.jamp-info.com/

h) **chemSHERPA (Chemical information Sharing and Exchange under Reporting Partnership in supply chain）**

A common scheme developed mainly by the Ministry of Economy, Trade and Industry for information transfer concerning chemical substances contained in products, which is available to the entire supply chain. The scheme began operations in October 2015.
Composed of a moldings data creation support tool and a chemical data support tool.
chemSHERPA: https://chemsherpa.net/
chemSHERPA documentation: https://chemsherpa.net/chemSHERPA/doc/
https://chemsherpa.net/chemSHERPA/aboutchemsherpa/dl/aboutchemSHERPA_160215.pdf

i) **JAMA (Japan Automobile Manufacturers Association, Inc.)**: JAMA aims to promote the healthy development of the automobile industry in Japan, thereby contributing to its economic development and to improvement of people's lives. http://www.jama.or.jp/

j) **JAPIA (Japan Auto Parts Industries Association)**: JAPIA aims to address social issues related to the auto parts industry and promote international cooperation among the auto parts manufacturing industries, thereby contributing to industrial and economic development in Japan.
http://www.japia.or.jp/

k) **Ship Recycling Convention**

He Convention was adopted in May 2009 to address issues concerning the dismantling of old ships. It is recognized as most important to prohibit and restrict the embarkation and use of hazardous substances laid down by the “Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009” (commonly known as the Ship Recycling Convention), to create, keep and update an Inventory of Hazardous Materials describing the location and the amount of hazardous substances contained in the ship and eventually pass them to ship recycling facilities.

Since the URLs in the text are not managed by the Company, their contents and others may be changed without any prior notice.

Outline of chemical substances with a certain environmental impact Ver.9.00

Table 1. Chemical substances prohibited from use

IEC62474 Basic disclosure *1	Name of chemical substances	Relevant laws or equivalent <threshold value>
R	Asbestos	Industrial Safety and Health Law, REACH Regulation
R	Aromatic Amines	Domestic laws in Germany, REACH Regulation
R	Cadmium/Cadmium Compounds	RoHS Directive <1000ppm>
R	Chromium VI Compounds	RoHS Directive <1000ppm>
R	Dibutyltin Compounds	REACH Regulation
R	Dimethyl fumarate	REACH Regulation
R	Dioctyltin (DOT) compounds	REACH Regulation
R	Lead/lead Compounds	RoHS Directive <1000ppm>
R	Mercury/Mercury Compounds	RoHS Directive <1000ppm>
R	Ozone Depleting Substances	Ozone Layer Protection Law, Montreal Protocol
R	PFOS Compounds	Chemical Substance Control Law Class I Specified Chemical, Convention on POPs
R	PFOA compounds *2	REACH Regulation
R	Phenol,2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl)	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.,(Class 1 specified)
R	Polybrominated Biphenyls (PBBs)	RoHS Directive <1000ppm> Ship Recycling Convention < 50 mg / kg] (Controlled substances)
R	Polybrominated Diphenyl Ethers (PBDEs)	RoHS Directive <1000ppm>
R	Polychlorinated Biphenyls (PCBs)	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (Class 1 specified), REACH Regulation
R	Polychlorinated Naphthalenes (One or more chlorine atoms)	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (Class 1 specified), REACH Regulation

R	Polychlorinated Terphenyls (PCTs)	REACH Regulation
R	Radioactive Substances	Law concerning the Prevention from Radiation Hazards due to Radioisotopes and Others
R	Short Chain Chlorinated Paraffins (C10-C13)	Domestic laws in Germany, REACH Regulation
R	Tri-substituted Organnostannic Compounds	REACH Regulation
R	Tributyl tin oxide (TBTO)	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (Class 1 specified), REACH Regulation
R	Bis (2-ethylhexyl)phthalate (DEHP) *2, *4, *5	REACH Regulation, RoHS Directive <1000 ppm: Applied from July 22, 2019 onward>
R	Butyl benzyl phthalate (BBP) *2, *4, *5	REACH Regulation, RoHS Directive<1000 ppm: Applied from July 22, 2019 onward>
R	Dibutyl phthalate (DBP) *2, *4, *5	REACH Regulation, RoHS Directive<1000 ppm: Applied from July 22, 2019 onward>
R	Diisobutyl Phthalate (DIBP) *2, *4, *5	REACH Regulation, RoHS Directive<1000 ppm: Applied from July 22, 2019 onward>
R	HBCDD and all major diastereo isomers*2	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (Class 1 specified), REACH Regulation

Table 2. Controlled chemical substances

EIC62474 Basic disclosure *1	Name of chemical substances	Relevant laws or equivalent <threshold value>
R	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	REACH Regulation
R	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkylesters (DHNUP)	REACH Regulation
A	4-[4,4'-bis(dimethylamino) benzhydrylidene] cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Violet 3)	REACH Regulation
I	Beryllium oxide (BeO)	Industrial Safety and Health Law
R	Bis (2-methoxyethyl) ether	REACH Regulation
R	Bis (2-methoxyethyl) phthalate	REACH Regulation
R	Boric acid	REACH Regulation

I	Brominated Flame Retardants (other than PBBs,PBDEs or HBCDD)	JS709, IPC-4101, IEC61249-2-21 (reporting requirements exist)
I / R	Chlorinated Flame Retardants	JS709, IPC-4101, IEC61249-2-21 (reporting requirements exist)
R	Cobalt dichloride (CoCl2)	REACH Regulation
R	Diarsenic pentoxide	REACH Regulation
R	Diarsenic trioxide	REACH Regulation
R	2,2'-dichloro-4,4'-methylenedianiline (MOCA)	REACH Regulation
R	N,N-dimethylacetamide (DMAC)	REACH Regulation
R	Disodium tetraborate, anhydrous	REACH Regulation
R	Tetraboron disodium heptaoxide, hydrate	REACH Regulation
R	Fluorinated Greenhouse Gases	United Nations Framework Convention on Climate Change
R	Formaldehyde	Industrial Safety and Health Law (EU insecticide, fungicide and rodenticide act)
R	Nickel / nickel compounds	Pollutant Release and Transfer Register Law (class 1 designated chemical substance)
R	Perchlorates Compounds	U.S. California State Law
R	Selected Phthalates Group 2 (DIDP, DINP, DNOP)	REACH Regulation
R	1,2-benzenedicarboxylic acid, dipentylester,branched and linear	REACH Regulation
R	Diisopentylphthalate (DIPP)	REACH Regulation
R	N-pentyl-isopentylphtalate	REACH Regulation
R	Di-n-pentyl phthalate; Dipentylphthalate (DPP)	REACH Regulation
R	Di-n-hexyl Phthalate (DnHP)	REACH Regulation
I	Polyvinyl Chloride	JS709 (there are reporting requirements)
R	Refractory Ceramic Fibers, Aluminosilicate	REACH Regulation
R	Refractory Ceramic Fibers, Aluminosilicate	REACH Regulation
R	4-(1,1,3,3-tetramethylbutyl)phenol; 4-tert-Octylphenol	REACH Regulation

R	**Tris (2-chloroethyl) phosphate (TCEP)**	**REACH Regulation**
R	**1,2-bis(2-methoxyethoxy)ethane; TEGDME;triethylene glycol dimethyl ether; triglyme**	**REACH Regulation**
R	**1,2-dimethoxyethane; ethylene glycol dimethyl ether; EGDME**	**REACH Regulation**
R	**Hexahydromethylphthalic anhydride**	**REACH Regulation**
R	**1,2-diethoxyethane**	**REACH Regulation**
R	**C.I. Direct red 28**	**REACH Regulation**
R	**Ethylene thiourea; imidazolidine-2-thione; 2-imidazoline-2-thiol**	**REACH Regulation**
R	**trixylyl phosphate; Phenol, dimethyl-; phophate (3:1)**	**REACH Regulation**
R	**Dimethylformamide;N,N-Dimethylformamide**	**REACH Regulation**
R	**4-Nonylphenol, branched and linear, ethoxylated**	**REACH Regulation**
R	**4,4'-isopropylidenediphenol; Bisphenol A (BPA) [*3]**	**REACH Regulation**
R	**1,3-Propanesultone [*3]**	**REACH Regulation**
R	**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) [*3]**	**REACH Regulation**
R	**Polycyclic aromatic hydrocarbon (PAH)[*3]**	**REACH Regulation**
R	**2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) [*3]**	**REACH Regulation**
R	**2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350) [*3]**	**REACH Regulation**
R	**2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327) [*3]**	**REACH Regulation**
R	**1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear ; Diisohexyl phthalate (DiHP) [*3]**	**REACH Regulation**
R	**1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesterswith ≥ 0.3% of dihexyl**	**REACH Regulation**

	phthalate (EC No. 201-559-5) *3	
R	**Benzenamine, N-phenyl-, reaction products with styrene and 2,4,4-trimethylpentene (BNST) *3**	**REACH Regulation**
R	**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)*3**	**REACH Regulation**
R	**Perfluorononan-1-oic-acid and its sodium and ammonium salts*3**	**REACH Regulation**
R	**Nonadecafluorodecanoic acid (PFDA) and its sodium andammonium salts *3**	**REACH Regulation**
R	**Perfluorohexane-1-sulphonic acid and its salts *3**	**REACH Regulation**
R	**Octamethylcyclotetrasiloxane *3**	
R	**Decamethylcyclopentasiloxane *3**	
R	**Dodecamethylcyclohexasiloxane *3**	
R	**Disodium octaborate *3**	
R	**Terphenyl, hydrogenated*3**	**REACH Regulation**
R	**Dicyclohexyl phthalate*3**	**REACH Regulation**
R	**2,2-bis(4'-hydroxyphenyl)-4-methylpentane*3**	**REACH Regulation**
R	**Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with ≥ 0.1% w/w of 4-nonylphenol, branched and linear (4-NP)*3**	**REACH Regulation**
R	**Diboron trioxide*3**	**REACH Regulation**

* 1: R indicates substances regulated by law.

I Information Only

A Metallic compounds

* 2: Substances newly added to the list of substances prohibited from use in the recent revision.

* 3: Substances newly added to the list of controlled substances in this amendment.

* 4: Packaging materials are also subject to regulations to prevent unintended inclusions.

* 5: The substance will be prohibited from use from July 2018 onwards.