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RENESAS ELECTRONICS Green Procurement Standards

Ver 4

April 1, 2024
Renesas Electronics Corporation

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1. Introduction

In recent years, there has been increased importance placed in the role of corporations in environmental conservation with the trend towards creating a recycling-oriented society. As part of our top priority activities for environmental conservation, Renesas Electronics (hereinafter referred to as the "Renesas") is promoting a program of providing "products that reduce environmental impact". To succeed in this endeavor, it is essential to reduce environmental impact of the components and materials constituting such products.

Against this background, Renesas will give priority to procuring environmentally friendly parts and materials from companies that are proactive in environmental conservation.

2. Purpose

The purpose of this Standards is to clearly define our basic approach and standards for "Green Procurement" for all suppliers, and to prevent problems that may occur when environmentally hazardous substances are contained in products and manufacturing, including labeling for recycling and disposal for us and our customers.

3. Environmental Policy and Action Guidelines

Renesas is engaged in environmental preservation activities based on the following Environmental Policy and Action Guidelines as part of Responsible Business Alliance(RBA) Code of Conduct.

3.1 Environmental Policy

We will operate our business in a way that will allow us to both preserve the environment and support the healthy lives of people, with the goal of realizing a sustainable society.

3.2 Action Guidelines

At Renesas, we will strive to foster a sustainable society that can last decades, by providing environmentally-friendly semiconductor products and solutions throughout their entire life cycle, from research and development, design, procurement, production, sales, distribution, use, to disposal. We are committed to reducing our environmental impact and preventing environmental pollution in all areas of our business. At the same time, we will comply with environmental laws and regulations and continue to improve our global environmental management system.

(1) Response to Climate Change

We will strive to reduce energy consumption throughout the value chain, use energy efficiently and minimize greenhouse gas emissions, to support the goal of becoming carbon neutral.

(2) Effective Use of Resources

We will make efficient use of all resources required for our businesses. In particular, we will strive to use water resources appropriately, minimize waste, and promote recycling.

(3) Biodiversity Conservation

We will contribute to biodiversity conservation through our business activities and promote the concept of biodiversity that is critical in supporting a rich and healthy society.

We will help build a better society by proactively disclosing environmental information with our stakeholders to establish mutual understanding and by actively communicating with them.

4. Scope

This Standards apply to parts and materials that we procure from our suppliers and use as constituent materials of the products we deliver to our customers, as well as to parts and materials used in contracted manufacturing and packing of our products.

4.1 Scope of application to parts and materials used in production

- a) Procurement items (including electronic components) to make up our products
- b) Packing materials for shipping our products

The following items are excluded;

- Manufacturing equipment, jigs and tools (including trays, magazines, etc. used only in our processes), and software
- Packing materials used when delivering products to our company

4.2 Scope of provision for outsourced production products

Products that we outsource the design and manufacture of and sell under our trademarks, as well as packing materials for the products.

5. How to manage of Standards

This Standards establishes the minimum requirements relating to Renesas's green procurement. In certain cases, the scope may be more limited, which will be indicated through customer specific requirements.

Even for the threshold control substances shown in Table 1 of this Standard, if intentional inclusion is prescribed in the purchase specification as product specifications, the content of the purchase specification document will be given priority.

In case you get lost in your judgment, please contact us. green.procure@renesas.com

6. Definitions

(1) Suppliers

An entrepreneur who supplies parts / materials, packaging materials, etc. to the Our company, or is entrusted with production of part or all of the production process from the Our company, and is ultimately responsible as a manufacturer as to the quality thereof.

(2) Environmental quality

To understand environmental impacts of procured products and chemical substances contained in products, environmental impacts of manufacturing and use of products as quality items.

(3) Chemical substance control classification

In order to tackle the reduction of the environmental burden, we deal with chemical substances into four categories, "Prohibited Substances", "Reduced Substances", "Controlled Substances" and "Composed Substances".

These are collectively referred to as chemical substance control classification.

① Prohibited Substances

Substances that prohibit the inclusion in products and their use in manufacturing processes due to considerable environmental burden and safety concerns.

② Reduced Substances

Substances that promote reduction by establishing voluntary goals of product content, usage in manufacturing process, and releases to the environment for reducing environmental burden and safety measures.

③ Controlled Substances

Materials that should be managed for the amount of use, inventory, discharge, and transfer taking environmental load into consideration.

④ Composed Substances

From the viewpoint of prevention of resource depletion, substances that need to grasp the handled amount for the purpose of promoting reuse and recycling.

(4) Packing material

Containers that come into contact with direct products such as trays, magazines, embossed carrier tapes, chip trays and the like, stoppers, cover tapes, reels, reel bands, chip tray covers and the like attached thereto, drying agents, humidity indicators, binding bands, moisture proof bags, Labels, interior boxes, cushioning materials, cardboards, etc.

All parts used for shipping our products.

(5) Homogeneous material

It is a material that can not be separated into materials of different composition in the mechanical method.

Homogeneous means that the entire object is of uniform composition, and mechanical separation means to separate by mechanical action such as removing, disconnecting, grinding, grinding, or stripping.

(6) RoHS

2011/65 / EU: Directive on the restriction of the use of certain Hazardous Substances in electrical equipment. EU Directive on restriction on the use of specified hazardous substances in electrical and electronic equipment.

(7) REACH

REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) is a system for comprehensive registration, evaluation, approval and restriction of chemical substances in Europe. When highly concerned substances (SVHC) are contained in the article at concentrations exceeding 0.1% by weight, information is transmitted.

(8) Halogen-free products

It intentionally does not contain halogen compounds such as halogen type flame retardants in the members constituting the product. Also, even if it is unintentionally contained, it shall conform to the definition of halogen free for each member.

Halogen-free controlled chemical substances shall be bromine-based compounds and chlorine-based compounds as flame retardant components.

These definitions shall conform to the International Electrotechnical Commission: IEC 61249 standard and conform to customer requirements. Regarding antimony trioxide, it is not a halogen substance, but intentional inclusion in a member of halogen free specification is prohibited.

7. Requirements

Our company requirements for suppliers are shown in 7.1 through 7.4.

7.1 Creation of an environmental management system

Renesas Group major consideration when purchasing procurement products is the degree to which the product in question reduces environmental impact, and whether the companies engaged in the manufacturing and marketing of the procurement products are taking an active stance toward environmental conservation. You are requested to ensure the following:

It is required that you acquire a third party certification based on any of the standards and regulations that meet these requirements, including ISO14001, EMAS (EU Council Regulation "Eco-Management and Audit Scheme"), KES (Kyoto Environmental Management System Standard) Step 2, and Eco Action 21 (Ministry of the Environment).

7.2 Execution of chemical substance management

In order to ensure the management system of environmentally harmful substances, manage chemical substances for procurement items to be delivered, and the following items shall be observed.

(1) Prohibited substances in the Renesas Management of Chemical Substances List are defined based on the following laws and regulations. Other laws and regulations and substances are also defined as prohibited substances when deemed necessary by our company.

- Montreal Protocol on Substances that Deplete the Ozone Layer(Annex A,B,C,E)
- Stockholm Convention on the Persistent Organic Pollutants (Annex A)
- "Class I specified chemical substance" under the Act on the Regulation of Manufacture and Evaluation of Chemical Substances
- "Article 55 Prohibition on Manufacturing and Other Activities" under the Industrial Safety and Health Act
- EU REACH (Prohibited substances in articles listed in Annex XVII)
- EU RoHS restricted substances
- US TSCA PBT substances

- (2) "No inclusion" of a prohibited substance means that there is no intentional inclusion (0ppm) and unintentional inclusion is less than 1000ppm.

In addition, with respect to the chemical substances listed in Table 1, for each constituent unit (homogeneous material) of the measurement site (for example, each member capable of mechanical separation such as a frame base material and a plating layer in a lead frame), there should be no content above the Renesas threshold shown in Table 2.

- (3) When new products are delivered or when the Renesas Management of Chemical Substances List is revised, please submit [Appendix (A) "Non-Inclusion Guarantee"] that certifies that the "Prohibited Substances" on this list are not contained.

The Renesas Management of Chemical Substances List is checked minimum twice a year for the target chemical substances, control classifications, etc. and revised if necessary.

Always check the latest version from the following URL.

<https://www.renesas.com/jp/en/about/company/sustainability/supply-chain#green-procurement>

Table 1. Threshold controlled substance and its regulation value

	Chemical substance name	Applications	Renesas threshold *3	Regulatory value	
				Allowable value	Corresponding regulation
1	Cadmium and its compound *1	Except below.	100 ppm	100 ppm	RoHS directive, ELV directive
		Solder Packing material	100 ppm *2	100 ppm *2	Europe, US packaging material regulation
2	Hexavalent chromium compound *1	Except below.	1,000 ppm	1,000 ppm	RoHS directive, ELV directive
		Packing material	100 ppm *2	100 ppm *2	Europe, US packaging material regulation
3	Lead and its compounds *1	Except below	1,000 ppm	1,000 ppm	RoHS directive, ELV directive
		Packing material	100 ppm *2	100 ppm *2	Europe, US packaging material regulation
4	Mercury and its compounds *1	Except below	1,000 ppm	1,000 ppm	RoHS directive, ELV directive
		Packing material	100 ppm *2	100 ppm *2	Europe, US packaging material regulation
5	Polybrominated biphenyl (PBBs)	All applications	1,000 ppm	1,000 ppm	RoHS directive
6	Polybrominated biphenyls (PBDEs)	All applications	1,000 ppm	1,000 ppm	RoHS directive
7	Dibutyl phthalate (DBP)	All applications	1,000 ppm	1,000 ppm	RoHS directive
8	Di (2-ethylhexyl) phthalate (DEHP)	All applications	1,000 ppm	1,000 ppm	RoHS directive
9	Butyl benzyl phthalate (BBP)	All applications	1,000 ppm	1,000 ppm	RoHS directive
10	Diisobutyl phthalate (DIBP)	All applications	1,000 ppm	1,000 ppm	RoHS directive
11	Chlorine(Cl) *4 Bromine(Br)	Mold resin Organic substrate Liquid resin Organic die-bonding material	Cl ≤ 900ppm Br ≤ 900ppm And Cl + Br ≤ 1500ppm	Cl ≤ 900ppm Br ≤ 900ppm And Cl + Br ≤ 1500ppm	IEC61249-2-21
12	Antimony trioxide *4	Mold resin Organic substrate Liquid resin Organic die-bonding material	Intentional inclusion is prohibited.	-	-
13	SVHC controlled substances	All applications	Report when inclusion rate is above 0.1%.	Report when inclusion rate is above 0.1%.	EU REACH regulation

*1 : Metal contains its alloy

*2 : The content of 4 substances in packaging materials is less than 100 ppm

*3 : Excluded uses in the RoHS Directive are excluded

*4 : For halogen-free products only

7.3 Submission of product information

(1) The documents to be submitted

If we have specified a form, please submit it accordingly.

- a) Survey sheet of contained chemical substances (Material Contents Declaration)
- b) Purchase unit information sheet (when we request)
- c) Analysis data (SGS report, ICP report), chemical substances specified in this standard and per product separately.
- d) SDS (Safety Data Sheet)

The chemical substances for which we request submission of analysis data are regulated by laws and legislations.

If we are required by our customer to obtain analysis data on other chemical substances, we will ask you to submit the data.

Even if it is not a new product, please submit an analysis data if requested by us.

If Annual ICP reporting is required by our customer, analytical data shall be routinely submitted on an annual basis.

Analysis data to be submitted to us shall be measured by the method shown in Table 2 or by a method that guarantees measurement accuracy equivalent to or better than the method shown in Table 2.

Submit your analysis data in English.

Table 2. Example of analyzing method

Material name	Analyzing method
Cadmium (Cd) Lead (Pb)	Inductively coupled plasma emission spectroscopy (ICP-AES) Inductively coupled plasma mass spectrometry (ICP-MS) Atomic absorption spectrometry (AAS)
Mercury (Hg)	Heated vapor atomic absorption spectrometry (AAS) Reduction vaporization atomic absorption spectrometry (CV-AAS) Inductively coupled plasma emission spectroscopy (ICP-AES) Inductively coupled plasma mass spectrometry (ICP-MS)
Hexavalent chrome (Cr ⁶⁺)	Diphenylcarbazide absorption spectrophotometry Ion chromatography analysis method (IC)
PBB、PBDE、 DBP、DEHP、 BBP、DIBP	Gas chromatograph mass spectrometry (GC-MS)
Bromine (Br), Chlorine (Cl)	Ion chromatography analysis method (IC)
Antimony (Sb)	Inductively coupled plasma emission spectroscopy (ICP-AES)

For each procured item a list of materials (see table 3) must be submitted.

Table 3. Examples of materials to be submitted

	Product name	Contained chemical materials investigation sheet	Purchased unit information sheet	Environmental load material analysis data	
Wafer process	Wafer	○	○	—Remarks4	
	Chemical, gas	○	○	—Remarks4	
	Application type film	○	○	—Remarks4	
	Evaporation metal, target	○	○	○ Cd, Cr ⁶⁺ , Pb, Hg, PBB, PBDE, DBP, DEHP, BBP, DIBP	
	Entrusted production • OEM products	○	○	○ Cd, Cr ⁶⁺ , Pb, Hg, PBB, PBDE, DBP, DEHP, BBP, DIBP	
Assembly process	Sealing resin	○	○	○ Cd, Cr ⁶⁺ , Pb, Hg, PBB, PBDE, DBP, DEHP, BBP, DIBP Halogen free product (Br, Cl, Sb) Remarks5	
	Die-bond material	○	○	○ Cd, Cr ⁶⁺ , Pb, Hg, (PBB, PBDE, DBP, DEHP, BBP, DIBP) Remarks1 Halogen free product (Br, Cl, Sb) Remarks5	
	Leadframe	○	○	○ Cd, Cr ⁶⁺ , Pb, Hg, PBB, PBDE, DBP, DEHP, BBP, DIBP	
	Wire	○	○	○ Cd, Cr ⁶⁺ , Pb, Hg, PBB, PBDE, DBP, DEHP, BBP, DIBP	
	Solder ball	○	○	○ Cd, Cr ⁶⁺ , Pb, Hg, PBB, PBDE, DBP, DEHP, BBP, DIBP	
	Motherboard	○	○	○ Cd, Cr ⁶⁺ , Pb, Hg, (PBB, PBDE, DBP, DEHP, BBP, DIBP) Remarks1 Halogen free product (Br, Cl, Sb) Remarks5	
	TAB tape	○	○	○ Cd, Cr ⁶⁺ , Pb, Hg, PBB, PBDE, DBP, DEHP, BBP, DIBP	
	Plating liquid, plating electrode	○	○	○ Cd, Cr ⁶⁺ , Pb, Hg	
	Solder paste, flux	○	○	○ Cd, Cr ⁶⁺ , Pb, Hg	
	Packaging material	○	○	△Remarks2 Cd, Cr ⁶⁺ , Pb, Hg	
	Electric part	○	○	○Remarks3 Cd, Cr ⁶⁺ , Pb, Hg, (PBB, PBDE, DBP, DEHP, BBP, DIBP) Remarks1 Halogen free product (Br, Cl, Sb) Remarks6	
	Entrusted production, OEM products	product	○	—	○Remarks3 Cd, Cr ⁶⁺ , Pb, Hg, (PBB, PBDE, DBP, DEHP, BBP, DIBP) Remarks4 Halogen free product (Br, Cl, Sb) Remarks5
		Packaging material	—	—	△Remarks2 Cd, Cr ⁶⁺ , Pb, Hg

○ : Submission Required △ : Necessity determination for each target member — : Unnecessary

Remarks1: For substances in parentheses, analysis data should be submitted in the case of members containing resin.

Remarks2: Magazine, stopper, tray, emboss carrier tape, cover tape, chip, tray, chip tray cover, wafer case, reel, reel band, moisture proof bag, desiccant, binding band, storage bag, air cap, urethane foam, Adhesive tape, Interlayer paper, Humidity indicator, Cardboard, Ink, Label, Ink ribbon shall be submitted with analysis data at the time of introduction and change.

Remarks3: In the case of semiconductor products, obtain and submit data for each component.

Remarks4: Analytical data is not required if high purity product is required by the purchase specification and impurity concentration is guaranteed to be below our threshold value. However, if we deem it necessary and request it, analytical data shall be submitted.

Remarks5: In the case of halogen-free products, analysis data on substances in parentheses shall also be submitted.

7.4 Other requirements

- (1) Ensure compliance with customer specific requirements and local requirements.
- (2) Substances defined in customer specific requirements are monitored in addition to legally binding regulations.
- (3) Green product design
If you design products and processes you provide, make efforts to reduce the environmental impact of the products and processes at the design and subsequent stages.
- (4) Commitment to global environmental conservation
Make a commitment to global environmental conservation.
- (5) Implementation of Green procurement
Establish your own standards for green procurement, and apply this Standards to your procurement of components and materials.
In addition, please manage your suppliers and subcontractors to meet the requirements for procurement products delivered to Renesas through this Standard.
- (6) Public disclosure of environmental information
Make regular public releases of environmental information on the products and processes you provide to us, as well as information on your commitment and achievements concerning environmental conservation.
- (7) Consideration for biodiversity
Engage in activities that take biodiversity conservation into consideration, such as reduction of chemical substances that affect ecosystems and reduction of water consumption.
Also, consider biodiversity when using raw materials of biological origin.
- (8) Establishment of a system to contact us in the event of process changes or abnormalities
Suppliers are requested to establish a system to promptly notify us of any change or abnormality in parts, materials, processes, etc. that may affect environmental quality.

7.5 Handling of product information

We may disclose to our customers as evidence of conformity to customer's standards, such as RoHS directive, domestic and foreign law regulations.

We will not disclose any trade secrets.

8. Confirmation of management system

We will confirm the status of our suppliers' environmental quality management and chemical substance management systems and operations through checklist-based audits etc.

Our procurement department will contact suppliers in advance to confirm their management systems. The main items to be checked are as follows:

8.1 Quality and environmental management system

We will confirm the establishment of measures for quality and environment at suppliers, a mechanism to guarantee the environmental quality of products, and a system for managing them.

8.2. Management status of contained chemical substances

The status of management of chemical substances from procured materials at (sub)-suppliers to manufacturing process and shipment of products not contain chemical substances prohibited by laws and regulations of our company. We will confirm management details and verification method.

【Contact Information】

If you have any questions regarding this Standard, please contact below.

Renesas Electronics Corporation

Contact for Green Procurement

E-mail: green.procure@renesas.com

Appendix (A)

To Renesas Electronics Corporation

Non-inclusion Guarantee for Chemical Substances Contained in Products and Materials

Date:

Company:

Department:

Contact Person:

Email:

We hereby certify that all products or parts we deliver to Renesas Electronics Corporation do not contain any of the prohibited substances on the Renesas Management of Chemical Substances List.

Version of Renesas Management of Chemical Substances List:

NOTE:

Revision history

Ver. No	Issuing date/Revised date	Contents
1.0	2015.3.18	Established
2.0	2017.12.8	Japanese Version (2.0) translate to English Version (2.0) release date : 2018.4.25
3.0	2021.6.25	- Change public URL (5.1.(1)) - Deletion of confidential description (Cover page)
4.0	2024.4.1	- Integration with Green Procurement Guidelines - Review of Section 7 (Requirements, thresholds, etc. for suppliers) - Deleted items such as conducting audits, change management, and anomaly management