

Green Procurement Guidelines

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Resonac Corporation
Procurement & SCM Dept.

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- Appendix 1 (Level 1 Prohibited Substance Group List)
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This guideline accompanies the items related to environmental conservation described in "3. Activities that we would like our business partners to support and implement" of the "Resonac Group Sustainable Procurement Guidelines". It shows the Group's "Green Procurement Policy", "Environmental Conservation Initiatives", "Requests to Business Partners", and "Chemical Substance Management".

1. Resonac Group Green Procurement Policy

The Resonac Group's basic policy is to consider health, safety, and the environment throughout the product life cycle, and we are working to reduce the environmental impact of the entire product life cycle.

As a chemical company, we minimize the discharge of hazardous substances, waste, and pollutants, and of course we fulfill our responsibility as a discharger. We will contribute to solving social issues such as carbon neutrality while working to protect the environment based on.

We ask all of our business partners to actively promote environmental conservation activities.

2. Environmental Conservation Efforts of the Resonac Group

(1) Environmental management system

The Resonac Group has acquired environmental management system certification for each site, and appropriately reduces and manages environmental risks within its business sites.

In addition, by continuously improving our management system, we will establish a monitoring system and effective environmental risk management for the entire supply chain regarding various environmental risks such as waste, water pollution, air pollution, soil pollution, noise and vibration. We are working to improve the system and improve environmental management based on Responsible Care.

(2) Responding to climate change: Disclosure based on TCFD recommendations

The Resonac Group uses fossil fuels in the manufacturing process of various products, and while it emits greenhouse gases (GHG), it also has many products that contribute to energy conservation and carbon circulation. In May 2019, we endorsed the "Task Force on Climate-related Financial Disclosures" (TCFD).

We will assess the risks and opportunities that climate change poses to our company, strengthen our resilience through initiatives based on the content of scenario analysis, and promote dialogue with stakeholders.

(3) Responding to climate change: the challenge of carbon neutrality

Global climate change is occurring frequently and scientifically it is recognized that greenhouse gases (GHG) are the cause. The "Paris Agreement" set a "2°C target" to limit the increase in the global average temperature to less than 2°C compared to pre-industrial levels, and it is expected that further action will be accelerated in the future. What the Resonac Group aims to achieve in its long-term vision as a company that contributes to a sustainable global society, we will take on the challenge of carbon neutrality toward 2050.

- ① By 2030, promote thorough rationalization, high efficiency, energy conservation, and conversion to gas fuel (high efficiency cogeneration system).
- ② Promote the development of new GHG separation, recovery and utilization technologies and sustainable plastic chemical recycling technologies.
- ③ From 2030 onwards, toward 2050, we will actively promote fuel conversion and mixed combustion to ammonia and hydrogen, and the electrification of production processes.
- ④ In addition to utilizing our own hydroelectric power generation, we will shift to product manufacturing that utilizes renewable energy.
- ⑤ Aim to achieve carbon neutrality through innovative GHG separation/recovery technology, utilization of recovered GHG as raw materials for chemical products, and implementation of sustainable plastic chemical recycling technology.

(4) Reduction of environmental impact: water management, reduction of water quality

The importance of water resources is recognized as a social issue around the world, and it is required to reduce water consumption through appropriate and efficient use of water resources. In addition, efforts must be made to give consideration to water circulation in a state where human activities, water quality that contributes to environmental conservation, and functions are properly maintained. The Resonac Group recognizes water shortages as a global issue, and is working to make effective use of water and reduce its consumption. In addition, we treat the water used in our business activities to reduce the environmental impact and return it to the environment.

① Efficient use and reduction of water usage

The Resonac Group has set annual group targets for water resources in its Environmental Safety Action Plan. At each business site, we are actively promoting efficient use of water and reducing the amount of water we use while taking into consideration the characteristics of each site, and are also working to maintain and improve the quality of discharged water.

② Efforts to reduce environmental impact on water quality

The Resonac Group has established control values based on regulatory values stipulated by laws and ordinances, monitors COD (Chemical Oxygen Demand), nitrogen, phosphorus, and other water pollutants, and strives to reduce the impact. At our main production bases in Japan, we collect wastewater from each plant and carry out treatments such as neutralization and removal of solid matter. In addition, wastewater containing organic matter is treated with activated sludge, which decomposes organic matter using microorganisms. For wastewater that is difficult to treat with activated sludge, we carry out adsorption treatment, coagulation separation, combustion treatment, etc.

Drainage channels to public water areas are monitored, and in the event that high-load wastewater is generated due to a malfunction in wastewater treatment, etc., a system is in place to prevent leakage to the outside by blocking equipment installed at the drain outlet.

(5) Reduction of environmental impact: waste management

The Resonac Group contributes to the realization of a sustainable society by minimizing the discharge of waste, working to continuously reduce it, and actively promoting the effective use of waste plastics.

① Aiming for zero emissions

The Resonac Group defines zero emissions as "final landfill disposal rate of 0.5% or less", and promotes reduction, effective use, and recycling of waste generated. In addition, we continue to inspect intermediate treatment and final disposal contractors to ensure that the waste from our company is properly treated and disposed of.

From 2020, businesses that generate 50 tons or more of specially controlled industrial waste each year will be obliged to use electronic manifests in order to strengthen their response to improper disposal of waste. Completed and reporting by electronic manifest.

② Effective utilization of waste plastics

In order to contribute to new global issues such as the problem of marine plastic litter and the realization of a low-carbon society, the Resonac Group promotes the sorting and sorting of waste plastics and makes effective use of waste plastics through material, chemical, and thermal recycling (simple recycling, or use other than incineration or landfill disposal).

(6) Reduction of environmental impact: Reduction of atmospheric environmental load

As a chemical company, the Resonac Group is committed to complying with air pollutants such as NO_x, SO_x, dust emissions and volatile organic compounds (VOC), substances subject to voluntary surveys by the Japan Chemical Industry Association, and the Chemical Substance Emission Control Promotion Law (PRTR Law). We are working to reduce chemical substance emissions, including designated substances. We are contributing to the realization of a sustainable society by minimizing and continuously reducing emissions of hazardous substances and pollutants by setting voluntary control values for exhaust gas, switching fuels, and improving manufacturing processes.

- ① Efforts and emissions to reduce atmospheric environmental impact
In order to reduce SOx, NOx, dust, etc., the Resonac Group will take measures such as switching fuel from heavy oil to LNG, improving combustion methods, appropriately managing the operation of desulfurization and denitrification equipment, and reducing fuel consumption through waste heat recovery. are continuing to be implemented.
- ② Substances subject to the PRTR Law and JCIA
The Resonac Group aims to reduce emissions by improving processes and equipment and installing exhaust gas combustion equipment. Each business site draws up a reduction plan for PRTR-designated substances and substances with large annual emissions, and works to reduce emissions intensively.

(7) Biodiversity conservation

The Resonac Group will work on biodiversity conservation based on the following basic concepts in order to pass on the beautiful scenery and rich natural resources woven by ecosystems to the next generation.

- ① Evaluate the impact of business activities on biodiversity and strive to reduce that impact.
- ② Restore biodiversity that is in danger of being lost.
- ③ Improve initiatives through dialogue and cooperation with stakeholders.

The Resonac Group endorses the Keidanren Biodiversity Declaration Initiative and also participates in the Biodiversity Private Sector Participation Partnership*, working in collaboration with governments, regulatory authorities, and other stakeholders. In addition, as a chemical manufacturer, we recognize the issue of marine plastics as an issue that we should take the lead in addressing. Participating in the JaIME, which was launched in 2018, and working with other business groups to discuss countermeasures, organize and disseminate information, and carry out awareness-raising activities for emerging countries in Asia.

*Private Partnership for Biodiversity Engagement

Businesses who agree with the purpose of the "Private Partnership for Biodiversity Participation Action Guidelines" and are willing to carry out activities in line with the action guidelines (at least one item), and economies willing to support the efforts of such business operators A multi-stakeholder initiative consisting of organizations, NGOs, researchers, local governments, governments, etc.

3. Requests to Business Partners

With the support of our business partners, the Resonac Group will strengthen our efforts to deliver environmentally friendly products to society. Regarding the Resonac Group's green procurement policy and environmental conservation efforts, we ask for the understanding and support of all of our business partners, and for their cooperation in the following.

- (1) Encourage all business partners to actively engage in environmental conservation activities. Please formulate an action plan for the environmental management system (EMS), and implement and operate it. In addition, the Resonac Group may conduct an audit regarding green procurement, so please make efforts to satisfy the following items regarding environmental conservation activities.
 - ① Corporate Philosophy and Policy
Establish a corporate philosophy and environmental policy regarding environmental conservation, and implement ongoing efforts to prevent global warming, use resources in a cyclical manner, and conserve ecosystems.
 - ② Plan/Organization

Set goals and targets for environmental conservation, and formulate an action plan to achieve them.

Also, clarify the organization and responsible person so that it can be practiced appropriately.

③ Environmental assessment system

In the manufacturing process, manage, evaluate, and improve water pollution, air pollution, noise/vibration, waste disposal, energy consumption, impact on the ecosystem, use and discharge of chemical substances, etc. Also, establish a system for product assessment, emergency response, environmental internal audit, etc.

④ Education and training

Conduct environment-related education. Also, when engaging in work that may have a significant impact on the environment, implement education and training, and create and manage a worker list.

⑤ Acquisition of environmental certification

We believe that obtaining international environmental certifications such as ISO14001 and EMAS, as well as domestic environmental certifications such as KES, Eco-Stage, and Eco-Action 21, is an effective means of operating an EMS efficiently. Therefore, we recommend that you actively acquire and maintain these environmental certifications.

* EMS: Environmental Management System Systematic consideration of environmental conservation in the promotion of business

*ISO14001: An internationally recognized environmental certification system composed of an ISO certification body (International Organization for Standardization)

*EMAS: Eco-Management Audit Scheme An environmental management system that came into effect in April 1995

*KES: The most popular environmental certification system for small and medium-sized enterprises in Japan promoted by KES Environment Organization, a non-profit organization

*Eco-Stage: An environmental certification system for small and medium-sized enterprises promoted by the Eco-Stage Association, a limited liability intermediate corporation.

*Eco Action 21: Japan's unique environmental management system formulated by the Ministry of Economy, Trade and Industry

(2) Consideration should be given to reducing the environmental impact of the products

To reduce the environmental impact of delivered products, please work according to the following items for reducing the environmental impact of delivered products.

① Resource saving

Please consider reducing the weight, miniaturization, and longevity of the product, and use recycled parts or recycled resources depending on the material and application. However, depending on the material and application, recycled materials are more likely to contain impurities than new ones, so there are cases where it is a condition of purchase that recycled materials are not used.

② Energy saving

Consider energy saving during standby and use.

③ Recycling

Pay attention to the ease of disassembly and sorting of products, and collect and recycle them.

④ Packing material

Please reduce the amount of packaging materials and pay attention to collection, reuse, and recycling.

⑤ Information provision

Please provide environmental information about your products.

4. Management of chemical substances contained in delivered products

In accordance with the concept of "Resonac Group Voluntarily Controlled Chemical Substances", the Resonac Group divides the information into two categories: "Prohibited Substances Group" and "Controlled Substances Group" as shown below, and grasp the chemical substances contained in the delivered products. Please manage the chemical substances and report the content information in order to use it for the obligations such as information disclosure in the supply chain.

(1) Concept of Resonac Group Voluntarily Controlled Chemical Substances

Classification	Regulated substances	Regulations
Level 1 Prohibited substances Group	Chemical substances that the Hitachi Chemical Group prohibits from being included in procured products. Chemical substances banned or limited for use in products (including packing materials) by domestic or foreign legal regulations and potentially used for procured products for the Resonac Group. According to Separate table 1 "Level 1: Prohibited substances group list".	Appendix 1
Level 2 Controlled substances Group	Substances for which usage monitoring and control are required by domestic or foreign legal regulations, and controlled substances that require special consideration for recycling or proper treatment. These substances are not restricted for inclusion in procured products. According to Separate table 2 "Level 2: Controlled substances group list".	Appendix 2

Due to customer requirements, industry trends, etc., the content of management (substance groups, management levels, thresholds, etc.) may differ depending on the business division of the Resonac Group. We would like to ask for your cooperation.

In addition, we may ask you to investigate chemical substances used in the manufacturing, storage, transportation, etc. stages up to delivery, even if they are not finally contained in the delivered product, for the purpose of supply maintenance. We would like to ask for your cooperation.

(2) Guarantee of non-inclusion of chemical substances contained in delivered products

At Resonac Group, we ask all of our business partners to consider the environment in the basic contract concluded in material transactions. Regarding chemical substances contained in products, if necessary, from the viewpoint of quality control, we ask that you guarantee non-inclusion of chemical substances.

In our business, when non-inclusion of chemical substances in products is presented as a purchase specification condition, please present a document such as "non-inclusion guarantee regarding chemical substances contained in delivery procured items" (non-inclusion guarantee).

In addition, "non-contained" means that there is no content of the relevant chemical substance, or that the chemical substance is less than the specified threshold, regardless of "intentional add" or "unintentional contamination of impurities". It refers to the case where it is made clear by.

(3) Management and concept of chemical substance content information (prohibition and management)

When collecting information on chemical substances contained in products, suppliers should select the best means within a reasonable range from an economic and industrial-technical point of view.

Use of level 1 prohibited substances is basically prohibited by laws and regulations in Japan and overseas, so it is necessary to guarantee "non-inclusion" from the viewpoint of legal compliance.

For level 2 controlled substance groups, appropriate management and reporting of content information are required regardless of whether the product contains the relevant chemical substances.

- (4) When there is a change in materials, manufacturing methods, information on chemical substances contained, etc.

In the event of any change in the materials used, manufacturing method, manufacturing location, main production equipment, person in charge of manufacturing, etc. regarding delivered products, please promptly notify us of the details of the change and the scope of impact each time. Also, regarding the content information of chemical substances, if new content is found, or if there is a change in the content that has already been reported, please respond in the same way.

5. Request for cooperation in research on green procurement

The Resonac Group will continue to strengthen our efforts to deliver environmentally friendly products to society with the support of our business partners. We may conduct surveys regarding the status of our suppliers in the upstream of the supply chain regarding the "status of environmental conservation activities," "status of reducing the environmental impact of delivered products," and "information on chemical substances contained in delivered products." We would like to ask for your cooperation.

In addition, regarding the implementation guidelines, the content of management differs depending on the business division of the Resonac Group, so please take note of the individual requests and respond accordingly.

Appendix 1 (Level 1 Prohibited Substance Group List)

No.	Chemical Substances	Limit	Reference laws
1	Cadmium and its Compounds *1	100ppm or less 100ppm or less (packing materials) *5	RoHS directive (EU) Packaging directive (EU)
2	Hexavalent chromium Compounds *1	1000ppm or less 100ppm or less (packing materials) *5	RoHS directive (EU) Packaging directive (EU)
3	Lead and its compounds *1	1000ppm or less 100ppm or less (packing materials) *5	RoHS directive (EU) Packaging directive (EU)
4	Mercury and its compounds *1	1000ppm or less 100ppm or less (packing materials) *5	RoHS directive (EU) Packaging directive (EU)
5	Polybromobiphenyl group (PBB group)	1,000ppm or less	RoHS directive (EU)
6	Polybromodiphenyl ether group (PBDE group)	1,000ppm or less	RoHS directive (EU)
7	Tri-substituted organostannic compounds *2 Tributyltin compounds(TBT) Triphenyltin compounds(TPT) Bis (tributyltin) oxide (TBTO), etc.	Intentional use is prohibited, however, 1000ppm or less as tin	Japan Chemical Examination Law/Type 1 specified chemical substances REACH regulation (EU)
8	Polychlorinated biphenyl (PCBs)	Intentional use is prohibited	Japan Chemical Examination Law/Type 1 specified chemical substances POPs
9	Polychlorinated terphenyls (PCTs) *2	Intentional use is prohibited	REACH regulation (EU)
10	Polychlorinated naphthalene (with 1 or more chlorines)	Intentional use prohibited	Japan Chemical Examination Law/Type 1 specified chemical substances
11	Short-chain paraffin chloride *2*3	Intentional use is prohibited	REACH regulation (EU) POPs
12	Asbestos group*2	Intentional use is prohibited, however, 1000ppm or less	REACH regulation (EU)
13	Ozone layer depleting substances *4(Class 1)	Intentional use is prohibited	Montreal Protocol on substances that Deplete the Ozone Layer
14	PFOS and its analogous compounds	Intentional use is prohibited	Japan Chemical Examination Law/Type 1 specified chemical substances POPs
15	Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA	Intentional use is prohibited	Japan Chemical Examination Law/Type 1 specified chemical substances POPs
16	2-(2H-1,2,3-Benzotriazole-2-YL)-4,6-di-tert-Butylphenol	Intentional use is prohibited	Japan Chemical Examination Law/Type 1 specified chemical substances REACH regulation (EU)
17	Hexachlorobenzene	Intentional use is prohibited	Japan Chemical Examination Law/Type 1 specified chemical substances REACH regulation (EU) Regulation on Classification, Labelling and Packaging of substances and mixtures POPs
18	Dimethyl fulmarate(DMF) *2	0.1ppm or less	REACH regulation (EU)
19	Hexabromocyclododecane (HBCD or HBCDD)	Intentional use is prohibited	Japan Chemical Examination Law/Type 1 specified chemical substances POPs
20	Bis(2-ethylhexyl)phthalate (DEHP)	1000ppm or less	RoHS directive(EU) Products or parts correspond to Cat8&9 are changed to Level I in 18th January, 2021
21	Benzyl butyl phthalate (BBP)	1000ppm or less	
22	Dibutylphthalate(DBP)	1000ppm or less	
23	DiiSobutyl phthalate (DIBP)	1000ppm or less	

*1 : For metals, alloys are included.

*2 : REACH /restriction substances whose utility and treatment is judged to satisfy all regulations.

*3 : Applies to short-chain chlorinated paraffins of carbon chain length 10 through 13.

*4 :Class I substances according to the Montreal Protocol on substances that Deplete the Ozone Layer (ozone-depleting chemicals excluding HCFC)

*5 : For packaging materials, the total of four substances must be 100ppm or less.

Appendix 2 (Level 2 Controlled Substance Group List)

No.	Chemical Substance or Substance group name
1	Antimony and its compounds *6
2	Arsenic and its compounds *6
3	Beryllium and its compounds *6
4	Nickel and its compounds *6
5	Selenium and its compounds *6
6	Un-specific brominated flame retardants *7
7	Polyvinyl chlorides (PVCs) and its mixture, its copolymer
8	Phthalate esters other than No.19-No.22 of Separate table 1 List
9	Ozone-layer-depleting substances (Class II : HCFC) *8
10	Radioactive substances
11	Di-substituted organostannic compounds (DBT, DOT, etc.)
12	Cobalt and its compounds
13	Azodyes and azocolourants which form specific amines
14	Formaldehyde
15	Benzene
16	Fluorine-based greenhouse gases
17	Polycyclic-aromatic hydrocarbons (PAHs) corresponding to REACH/restriction substance
18	REACH/authorization substances
19	REACH/SVHC

*6 : For metals, alloys are included.

*7 : Those other than PBBs and PBDEs listed in Separate table 1 (Prohibited)

*8 : Class II substances according to the Montreal Protocol on Substances that Deplete the Ozone Layer.

Appendix 3 (Survey of contained chemical substances)

■ Investigation of chemical substances contained in chemical products, molded products, parts, finished products, etc.

Please refer to the table below for the survey chemicals and content rates of contained chemical substances. Even if the content rate is below the threshold, please report according to the concept of content rate reporting.

Classification	Survey chemicals (*)	Content rate	Reported value of content data	Policy of reporting content rate	
				Substance added intentionally	Substance added unintentionally
Level 1 Prohibited substances Group	[For chemical products and molded products] Survey for each chemical product and molded product	Rate of the mass of chemical substances contained in the survey chemicals. However, if the chemical substance contained is a metal compound, it shall be the mass ratio of the metal element.	Maximum content (theoretical or measured value)	Report regardless of the value	If content is confirmed by analysis, or if there is a theoretical possibility of content, the value is reported.
Level 2 Controlled substances Group	[For parts and finished products] Survey each part and each part that makes up the finished product.		Average or Maximum content (theoretical or measured value)		If content is confirmed by analysis, report regardless of the value.

(*) In the case of zinc-plated chromate treatment, the zinc-plated layer and the chromate-treated layer are each regarded as constituent parts and surveyed.

However, if it is difficult to separate multiple layers and survey each single layer, conduct the survey in the smallest separable unit.

*However, regarding substance groups other than the above, individual management may be requested depending on the surveyed product group.

*Some prohibited substances have been used in various applications in the past as additives to obtain product performance characteristics. These may still be present in our products.

*Misuse or misuse of prohibited substances, such as substances that are normally contained in raw materials in nature, substances that are by-products in the manufacturing process, substances that are used as secondary materials and remain, substances that are mixed in with shared production lines, diversion of inventory, etc. Cases of contamination and contamination have been reported frequently.

We ask all of our business partners to understand the characteristics and provenance of the raw materials and parts they handle, including those subject to legal exemptions, and to manage them appropriately so that prohibited substances do not exceed threshold levels.

■ Methods for measuring the mass of chemical substances contained

Follow the instructions of the Quality Assurance Department of our each site.