

TAIYO, LTD.
Green Procurement Guideline
(Ver.4.0)



EQUIPMENT
FOR GREEN

Preface

Taiyo has aggressively addressed global environment-related issues based on the policy: “Global environmental protection is one of the top priority tasks given to mankind.”

We recognize it is indispensable to procure materials and components with less impact on the environment for the environmentally-friendly products. To this end, we have established “Taiyo Green Procurement Guidelines”.

In accordance with it, we intend to pursue the goal to manufacture environmentally-friendly products, which will lead to the global environmental protection.

Successful Green Procurement cannot be achieved without the active cooperation of our suppliers. We would like to ask for your support and cooperation.

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Environmental Policy

<Philosophy>

With acknowledgement that global environmental protection is the mission on the front given to mankind, we contribute to global environmental preservation and societies through all the business activities, products and services we provide.

<Policy>

We at Taiyo contribute to environmental preservation based on the following policy through our business of engineering, developing, manufacturing and supplying industrial machine and equipment.

1. Make endeavors to protect the natural environment and prevent environmental pollution by establishing environmental management system with sustained improvement.
2. Strive to protect the local community and the global environment by complying environmental laws.
3. Challenge to diminish the environmental impact through our business activities. Especially the following efforts are focused on:
 - 1) Consider the life cycle and minimize the environmental impact in production activities.
 - 2) Promote energy saving, recycling and resource saving.
 - 3) Prevent environmental pollution by strengthening chemical substance management.
4. Each business unit sets its own environmental objective and goal and work together to promote it as an environmental preservation activity.

We carry out and maintain the environmental policy and communicate it to the general public if required in addition to all the employees.

October 1, 2017
Takashi Ishikawa / TAIYO, LTD

2. Taiyo's Basic Approach to Green Procurement

1. Objective

We shall increase the purchase of materials less impact to the global environment, or shall carry out more "Green Procurement" to manufacture more environmentally-friendly products. We shall endeavor to move forward environmentally-responsible management in cooperation with highly environment-conscious suppliers.

2. Definition

We shall procure less-environmental burdened products, semi-finished products, parts, materials and services, etc. from suppliers who are active in environmental protection on the basis of recycling, resource saving and energy saving

3. Scope

1) Suppliers

Direct suppliers who supply the materials of the below 2) to Taiyo.

Indirect suppliers shall be given the instruction by the direct suppliers.

In case of a sales company, it should instruct its manufacturing suppliers.

2) Materials

All the materials which are consumed for product manufacturing by Taiyo.

a) Component, raw materials, auxiliary materials, and commercially available parts including purchased goods, subcontracted goods

b) Accessories of the products

c) Packing materials

d) Instruction manual

4. Implementation plan (supplier's commitment)

Taiyo requires suppliers to practice environmental protection activities and to supply less-environmental impact products as follows. For details, please see the appendix 1 and 2.

1) Environmental protection activities

a) ISO 14001 certification has been obtained or under preparation.

b) Green procurement has been practiced or under preparation.

c) The followings are done even ISO 14001 has not been obtained.

- The environmental policy of your company is set and the continuing effort to

improve the environment and comply with the law is pledged.

- The environmental goal is oriented and the organization with responsible person for it is set up.
- Emergency response system including assurance of traceability is established.
- ISO 9001 certification is obtained, or the quality of products can be guaranteed even ISO 9001 has not been obtained.

2) Materials with less environmental impact

a) Reduce the environmental burden

- Check if the material have decreased size and weight, longer product life, resource saving, energy saving.
- Check if the material is intended to be reduced, reused and recycled.

b) Reduce the environmental impact substance

- Check if the material doesn't contain prohibited substance settled by Taiyo
- Check if a chemical content data of managed substance settled by Taiyo is made.
- Check if the restriction substance stipulated by law is properly controlled.

3. Restriction Substances Management Rank Guidelines

1. Objective

The purpose of this guideline is to improve environmental quality of the products produced and sold by Taiyo by clarifying the hazardous chemical substances if contained in the components, materials, etc of Taiyo products, with intent to carry out the Taiyo environmental policy and reduce the environmental impact substance.

2. Definition of Management Rank

The terms used in the guidelines are based on the following definitions in 2 ranks:

1) Prohibited Substances

- Substances whose use is prohibited by existing regulations in Japan, or substance whose use will be prohibited by the set time limit.
- Substances whose use is independently prohibited by Taiyo (incl. regulations at home and overseas)
- Substances whose intentional use is prohibited by law must be promptly

abolished for use. In the case where unremovable substance is expected to be included as impurities without intention, an allowable value shall comply with its threshold.

2) Managed Substances

- Intentional use of these substances is not restricted, but appropriate recycling or disposal methods must be considered.
- Actual intentional use of substance whose the content exceeds the regulated value must be recorded.(parts and q'ty)
- The managed substance in this guideline is substance provided in the laws and regulations of the following in the country and outside the country.
 - Japan Chemical Substances Control Law (Class I specified substance)
 - Japan Industrial Safety and Health Law (Substances that are prohibited from manufacture)
 - Japan Poisonous and Deleterious Substances Control Law (Specified toxic substances)
 - EU REACH

3. Reference

The followings are main domestic and foreign laws we used when selecting prohibited substances.

(Laws in Japan)

- Industrial Safety and Health Law
- Chemical Substances Control Law
- Poisonous and Deleterious Substances Control Law
- Water Pollution Control Law
- Law Concerning Special Measures against Dioxins
- Law Concerning the Protection of the Ozone Layer through the Control of Specified Substances and Other Measures
- Law Concerning Promotion of Effective Use of Resources
- Law Concerning the Promotion of the Measures to Cope with Global Warming
- Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management
- Endocrine Disruptor

(Laws in foreign countries)

- Directive of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EU RoHS)
- The Regulation of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (EU REACH)
- The Regulation of the European Parliament and of the Council on persistent organic pollutants (EU POPs)
- European Parliament and Council Directive on packaging and packaging waste (EU Packaging Directive)
- Regulation of the European Parliament and of the Council on substances that deplete the ozone layer (EU ODS)
- Germany Chemicals prohibition ordinance
- Denmark Formaldehyde Regulations
- The Montreal Protocol on Substances that Deplete the Ozone Layer
- US Toxic Substances Control Act (TSCA)

4. Restriction substance

Attachment 4 shows the regulated substances specified by Taiyo.

5. Changes of restriction substance

Restriction substances may be revised according to legal revision at home and overseas.

4. Supplementary Clause

This guideline shall be revised when required due to changes in social situations.

Revision record

Version	Date	Details
Ver. 1.0	Aug 20, 2005	Enacted
Ver. 2.0	Dec 25, 2008	Environmental Policy ,Contact
Ver. 2.1	Jan 20, 2010	Contact
Ver. 3.0	Aug 20, 2012	Management rank and attachment 4
Ver. 3.1	Sep 26, 2014	Environmental Policy
Ver. 4.0	Jul 22, 2019	Environmental Policy and attachment 4

**<Attachment 1>
Guideline for Environmental Quality**

Category	Item	Requirement
1 Environmental Policy	1 Objective and target	Acknowledge Taiyo's restriction substances and set a definite objective and target. (Ex. Abolition or reduction)
	2 Responsibility and authority	Make clear the responsibility, authority and role of environmental quality.
	3 Organization	Implement abolition or reduction of Taiyo's restriction substance and maintain the environmental quality of product.
2 Information System	- Information Control	Establish the system which can widely and promptly distribute the latest information on the Taiyo's restriction substance to all the employees in a company.
	- Standard Conformity	Maintain and conform to the Taiyo's standard and specification.
4 New Product, Modified Product	1 Analyzing data or ingredients list	Get the approval to use component/part Taiyo regulates with analysis data or ingredients list. - Product, semi-finished product, assembly: Ingredient Sheet by pai (ex) Metal products, polymer products(resin, rubber etc) - Surface treatment: Analysis Sheet of Content (ex) Metal coating, painting - Raw material: Mill Sheet (ex) Materials for metal, nonferrous metal and polymer - Others: SDS etc
	1 Outsourcing	- Check if an outsourced supplier fully controls Taiyo's instruction.
	2 Supplier selection	- Select a supplier who has control system and can fully control Taiyo's restriction substance.
	3 Periodic survey	- Monitor suppliers once or more a year if they maintain the control system.
6 Nonconforming Products	1 Notice to Taiyo	- In the case of doubtful delivery of nonconforming products to Taiyo, provide Taiyo with the notice at once. (Environmental failure report)
	2 Prevention measure	- Take steps to prevent the contamination by nonconforming products in all the processes (ex. warehouse, manufacturing process, facilities) - Establish the system which can confirm the Taiyo regulated substance is not included in the delivery..
7 Supplier Selection (Supplier ↔→ Your company)	1 New supplier	- Select a new supplier who has control system and can fully control Taiyo's restriction substance.
	2 Specification	- Specify Taiyo's restriction substance in drawings and specification when ordering.
		- Confirm that Taiyo's restriction substances are not included in material and parts by analysis data and ingredient sheet.
8 Incoming Inspection (Supplier ↔→ Your company)	1 Standard	- Establish a clear inspection standards to prove the delivered products don't include Taiyo's regulated substance (incl. recycled product inspection)
	2 Inspection	- Inspect the delivered products by lot. (with clear definition of "lot")
	3 Record	- Check if the delivered products from suppliers are conforming products. - Maintain an inspection record for three years.
9 Prevention	Prevention system of contamination, leakage, anti-pollution	- Establish the system to prevent Taiyo regulated substances contaminated through inspection to delivery (also check facility, die casting and jig)
	10 Inspection before Delivery	- Establish the system to confirm Taiyo restriction substances are not included in the product. - If nonconforming product is found before delivery, report the details to a person in charge of quality control and take a proper step for it.
11 Inventory Control	3 Delivery record	- Maintain a delivery inspection record for three years.
	4 Label	- Put a label on the package by lot to indicate that the products are conformed to Taiyo's requirement.
	Sort-out of nonconforming product	- Sort out nonconforming product which contain Taiyo restriction substances. Establish the system not to deliver nonconforming product.
	1 Lot number	- Use Taiyo order number as a lot number for the easier traceability by lot.
12 Traceability by lot	2 Lot number label	- Label with Taiyo's order number on the product (if impossible, on the packing/lot is OK)
	3 Lot number control	- Record raw material, process and lot of a product by Taiyo order number. (for prompt traceability)
	4 Shipping record	- Record the type, delivery date, quantity and order number when shipping a product. - Give a clear indication of the used raw material by lot.
	13 Maintaining of data and record	- Maintain the above required record for three years. (Analysis data for 3 yrs after the old edition) - Submit the analysis data or record to Taiyo without delay if required.
13 Maintaining of data and record	1 Period	- Maintain the above required record for three years. (Analysis data for 3 yrs after the old edition)
	2 Record control	- Submit the analysis data or record to Taiyo without delay if required.

<Attachment 2>
Survey of Chemical Substance Contained in Parts/Materials

Parts/Material	Item	Target parts(material)/process	Possibility of substance contained	Tools	Point	Remarks
Metal	Metal material/cutting, press work, screw, spring, die casting, lost wax, forging etc	Metal material (by material)	Lead (A2011, BC6 etc.) Cd (copper alloy etc.)	<ul style="list-style-type: none"> MIL by material (not needed if provided material) Nonuse Certification Not use/purchase uncertain materials 	<ul style="list-style-type: none"> Use a MIL seat. 	<ul style="list-style-type: none"> Design change to be done.
		Surface treatment (Plating, painting, etc)	Sexivalent chrome(Zn chrome plating etc.) Bis(2-ethylhexyl) phthalate (DEHP) (plasticizer etc.)	<ul style="list-style-type: none"> Content analysis Nonuse Certification 		
Resin	Resin material Resin molding Resin finishing	Resin material (by grade and color)	Cd (colorant, stabilizer, pigments etc.) Lead (stabilizer, pigments, dyestuff, etc.)	<ul style="list-style-type: none"> Ingredients label by material (incl. recycling material) Nonuse Certification 	<ul style="list-style-type: none"> Main ingredients label by material Main ingredient name in remarks Careful survey with parts mfgd at uncertain site, ex. recycling goods) 	"Main ingredients label of Resin": Same manufacturer, grade, color, outsource coloring will be included in the same ingredient.
		Contamination in process	Cd (colorant, stabilizer, pigments etc.)			
		Insert parts	Lead (A2011, BC6 etc.)	<ul style="list-style-type: none"> MIL seat by material Nonuse Certification 	<ul style="list-style-type: none"> Same as metal section 	
Rubber	Rubber material Rubber molding Rubber processing	Contamination in process	Sexivalent chrome(Zn chrome plating etc.)	<ul style="list-style-type: none"> Content analysis Nonuse Certification 		
		Rubber material (by compound No)	Cd (colorant, stabilizer, pigments, etc.) Lead (stabilizer, pigments, dyestuff, etc.) Others Bis(2-ethylhexyl) phthalate (DEHP) (plasticizer etc.)	<ul style="list-style-type: none"> Ingredients label by material (incl. recycling material) Nonuse Certification 	<ul style="list-style-type: none"> Main ingredients label by material Main ingredient name in remarks Careful survey with parts mfgd at uncertain site, ex. recycling goods) 	<ul style="list-style-type: none"> Taiyo's consent is needed beforehand if compound % etc is changed.
		Contamination in process	Cd (colorant, stabilizer, pigments, etc.)			
		Insert parts	Lead (A2011, BC6, etc.)	<ul style="list-style-type: none"> MIL seat by material Nonuse Certification 	<ul style="list-style-type: none"> Same as metal section 	
Product Semi-product Assembly	Assembly, electric parts, electrical equipment, pressure gauge, guide, switch, etc	(whole parts) substrate, solder, lead wire, brazing, surface treatment, cable, paints, grease, ink, label, adhesive, screw etc.	Cd (colorant, stabilizer, pigments, etc.) Lead (alu, copper, solder, and stabilizer, etc.) Sexivalent chrome(Zn chrome plating etc.) PVC (electric wire coating, rubber, etc.) Bis(2-ethylhexyl) phthalate (DEHP) (plasticizer etc.)	<ul style="list-style-type: none"> Nonuse Certification 	<ul style="list-style-type: none"> Each part and sub-material to be surveyed and proved with nonuse certification as an assembly. Apply the same requirement for metal, resin, rubber, sub material. 	
		Material and product	Cd (colorant, stabilizer, pigments, etc.) Lead (alu, copper, solder, stabilizer, etc.) Sexivalent chrome(Zn chrome plating etc.) PVC (electric wire coating, rubber, etc.)	<ul style="list-style-type: none"> MSDS Ingredients lable Nonuse Certification Others 	<ul style="list-style-type: none"> if unconfirmed by MSDS, the substance may be asked for another survey. 	
Sub material	(Indirect component) Label, cardboard, ink for stamp, wrapping bag, protection tape, grease, oil, cushion, twist tie, tape, adhesive.	Material and product				

(Note) 1) Components, such as cutting oil, cleaning liquid, mold lubricants, which are assumed to be impurities in the process should be reduced.
2) Packaging materials etc. used for delivery to Taiyo are excluded.
3) Materials which are not specified in a drawing should be prohibited to use. If there are, apply for the design change and get the approval.

<Attachment 4>
Restriction Substances

Prohibited substance: Intentional use is prohibited and an allowable value for non-intentional use shall comply with its threshold

Managed substance: Actual use should be recorded for the contents exceeds the regulated value and intentional use.
There is managed substance provided in the laws and regulations in and outside the country etc. which are indicated to 3.2.2) (managed substance) of this guideline in addition to the following.

No.	Substance	Application	Taiyo's criteria	Reference laws and regulations
			Prohibited substance	
			To be banned at once	
1	Cadmium and its compounds	Pigments, battery, electric material	Packing(*1), Concentration must be less than 100ppm(*2)	Japan Law for Promotion of Effective Utilization of Resources, EU RoHS, EU REACH
2	Hexavalent chromium compounds	Zn, Chromatin, plate, excl. metallic chrome	Packing(*1), Concentration must be less than 1000ppm(*2)	Japan Law for Promotion of Effective Utilization of Resources, EU RoHS, EU REACH
3	Lead and its compounds	Solder, paints, metallic additive	Packing(*1), Concentration must be less than 1000ppm(*2)	Japan Law for Promotion of Effective Utilization of Resources, EU RoHS, EU REACH
4	Mercury and its compounds	Fluorescent material, electric contact material, coloring pigments	Packing(*1), Concentration must be less than 1000ppm(*2)	Japan Law for Promotion of Effective Utilization of Resources, EU RoHS
5	Tri-substituted organostannic compounds - Bis(tributyltin) oxide (TBTO) - Tributyltin (TBT) series - Triphenyltin (TPT) series	Preservative, fungicidal paint, ship bottom paint	Intentional use prohibited and Tin concentration must be less than 1000ppm	Japan Chemical Substances Control Law, EU REACH
6	Dibutyltin (DBT) series	Resin stabilizers, Hardening catalysts for polyurethane or silicone, rubber modifier	Concentration must be less than 1000ppm	EU REACH
7	Diocetyl (DOT) series	Stabilizer for PVC, Curing catalysts for silicone and urethane resins	Concentration must be less than 1000ppm	EU REACH
8	Polybrominated biphenyl (PBB) series	Fire retardant for plastic for plastic and PWB etc.	Concentration must be less than 1000ppm	Japan Chemical Substances Control Law, EU RoHS, EU REACH, EU POPs
9	Polybrominated diphenyl ether (PBDE) series	Fire retardant for plastic for plastic and PWB etc.	Concentration must be less than 1000ppm	Japan Chemical Substances Control Law, EU RoHS, EU REACH, EU POPs
10	Polychlorinated biphenyls (PCBs) series	Condenser, transformer oil, fire retardant	Intentional use prohibited	Japan Chemical Substances Control Law, POPs, EU POPs
11	Polychlorinated terphenyls (PCTs) series	Condenser, transformer oil, fire retardant	Intentional use prohibited	EU REACH
12	Polychlorinated naphthalenes (PCNs: 1 or more chlorines)	Lubricant, paints, resin stabilizer	Intentional use prohibited	Japan Chemical Substances Control Law, POPs, EU POPs
13	Short-chain chlorinated paraffins	Fire retardant, plasticizer	Intentional use prohibited	POPs, EU POPs
14	Asbestos	Electric insulation, gasket	Intentional use prohibited	EU REACH
15	Four phthalates - Bis (2-ethylhexyl) phthalate (DEHP) - Benzyl butyl phthalate (BBP) - Dibutylphthalate (DBP) - Diisobutyl phthalate (DIBP)	Plasticizer	Concentration must be less than 1000ppm	EU RoHS
16	Azo dye and pigment	Dyestuff	Concentration must be less than 30ppm	EU REACH
17	Ozone depleting substances (excluding HCFC)	Solvent, detergent, refrigerant agent	Intentional use prohibited	Japan Ozone Layer Protection Law, Montreal Protocol
18	2-(2H-1,2,3-benzotriazole-2-yl)-4,6-di-tert-butylphenol	UV absorption agent for plastic resin	Intentional use prohibited	Japan Chemical Substances Control Law
19	Perfluorooctane sulfonate (PFOS) and its salts	Mist suppressant of plating, leveling agent of dyestuff	Intentional use prohibited and Concentration must be less than 1000ppm	Japan Chemical Substances Control Law, POPs, EU POPs
20	Dimethylfumarate (DMF)	Moisture-proof agent, mildew-proof agent	Concentration must be less than 0.1ppm	EU REACH
21	Hexabromocyclododecane (HBCD or HBCDD)	Flame retardant	Intentional use prohibited and Concentration must be less than 100ppm	Japan Chemical Substances Control Law, POPs, EU POPs
22	Perfluorooctanoic acid (PFOA) and individual salts esters of PFOA	Fluororesin/Fluororubber, Fluororesin coating	Concentration must be less than 25 ppb (0.025ppm) of PFOA including its salts or Concentration must be less than 1000 ppb (1ppm) of PFOA -related substance in article	EU REACH
23	Polycyclic aromatic hydrocarbons (PAHs)	Rubber or plastic parts that come into contact with human skin or the oral cavity	Concentration must be less than 1ppm	EU REACH

Note *1) Packing : Included less than 100pp of total amount of Pb, Cd, Hg, hexavalent Cr.

*2) Applied as an exception of the RoHS.

Main exception of the RoHS

	Item	
Parts and material including lead	Solder in device at high melting point	
	Electronic ceramic parts etc.	
	Steel material	Less than 0.35wt%
	Aluminum base alloy	Less than 0.4wt%
	Copper alloy	Less than 4wt%

0.1wt% = 1000ppm

No.	Substance	Application	Taiyo's criteria	Reference laws and regulations
			Managed substance	
			Actual use & Q'ty should be recorded	
1	Antimony and its compounds	Pigments, paints, catalyst, solder,	Concentration must be less than 1000ppm	EU Safety of toys Directive
2	Arsenic and its compounds	Paints, coating,, dyestuff, fire retardant	Concentration must be less than 1000ppm	Japan Industrial Safety and Health Law, EU Safety of toys Directive, EU REACH
3	Beryllium and its compounds	Ceramics, catalyst	Concentration must be less than 1000ppm	Japan Industrial Safety and Health Law
4	Nickel and its compounds	Pigments, paints, plating, electrode	Concentration must be less than 1000ppm (Excluding alloys)	Japan Industrial Safety and Health Law, EU Safety of toys Directive, EU REACH
5	Selenium and its compounds	Pigments, paints, semiconductor material	Concentration must be less than 1000ppm	EU Safety of toys Directive
6	Other bromine flame-retardant agents (excl. PBB, PBDE)	Fire retardant for plastic etc.	Concentration must be less than 1000ppm	JEDEC Standard
7	PVC and its compounds	Resin, packing material, wire covering, insulation	Concentration must be less than 1000ppm	TAIYO Voluntary Restriction
8	Hydrochlorofluorocarbons (HCFC)	Refrigerant, foaming agent, mounted substrate cleaner	Intentional use prohibited	EU ODS
9	Formaldehyde	Particle boards, wood products	Content report	Germany Prohibition of Chemicals Ordinance - ChemVerbotsV, Denmark Formaldehyde Regulation, US TSCA