

THE NEW VALUE FRONTIER



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KYOCERA ELCO Corporation Green Procurement Standards

13th Edition

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1	Aug. 1, 2005	Initial release			Hata		Amano
2	July 20, 2006	Full-fledged revision due to "Control Procedures for Environmental Hazardous Substances" revised on July 1st, 2006.			Matsuoka		Amano
3	Sep. 20, 2006	Added the limitation of hazardous substances in Item 3-1.			Matsuoka		Amano
4	Apr. 20, 2007	Added cautions and management method for molding and assembly processes to Item 4.3.2.			Matsuoka		Amano
5	July 1, 2007	Attached Notification of acknowledgement as Attachment 6.			Matsuoka		Amano
6	Aug. 1, 2008	Changed the document name from Guidelines for KYOCERA ELCO Green Procurement to KYOCERA ELCO Green Procurement Standards. Added "shall be identified and indicated." in 2) Material/Sub-materials of 3. Terminology and 1.Management of production process of 4.3.2 Production process.			Matsuoka		Amano
7	Sept. 1, 2009	Changed values specified for materials prohibited by RoHS regulations			Matsuoka		Amano
8	Dec. 15, 2008	Changed "Substances prohibited being used in production processes" to "Substances to be controlled" in d) of 3. Terminology. Changed the classification for the specified values to inorganic and organic substances.			Matsuoka		Amano
9	Feb. 20, 2009	Changed the specified values for prohibited substances in 3. Terminology.			Matsuoka		Amano
10	Mar. 10, 2009	Added quantitative analysis to 3. Terminology. Added "Chlorinated cobalt" to substances of which inclusion is prohibited, and etc.			Matsuoka		Amano
11	Nov.12,2009	Changed values specified for materials prohibited			Matsuoka		Amano
12	Feb.1,2010	Added "G-44 to G-50" to substances of which inclusion is prohibited. Reviewed the due dates of abolishment for substances to be abolished.			Matsuoka	Amano	Sato

13	June.1,2010	<p>Added "G-32(Ozone depleting substance(excluding HCFC)) are not use in the production process."of 3.</p> <p>Added "G-51 to G-54" to substances of which inclusion is prohibited.</p> <p>Added "G-51", Delete "G-5 and G-6", since "G-5 and G-6"are a part of G-51.</p> <p>Attached "Azo dye and pigment list"as Attachment 1.</p> <p>Attached "Ozone depleting substances (Substances targeted in Montreal Protocol) list "as Attachment 1.</p> <p>Attached "Specific organic tin compound list"as Attachment 1.</p> <p>Attached "DBT and DOT(organostannic)"as Attachment 1.</p>	Matsuoka	Amano	Sato
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Attachment 1: Environmentally Hazardous Substances

Attachment 2: Certificate of non-use of environmentally hazardous substances

Attachment 3: List of parts, materials, and sub-materials to be purchased

Attachment 4: Procedure for Production Condition Change

Attachment 5: Control of RoHS-Restricted Substances Contained in the Plating Solution

(For only plating subcontractors)

Attachment 6: Voucher for Delivery and Receipt for KYOCERA ELCO Corporation Green Procurement Standards

Introduction

Under the company creed “Respecting universe and loving people” and with the managerial creed “Contributing to progress and development of human society as well as pursuing happiness in physical and spiritual worlds for employees”, Kyocera practices business activity keeping its mind in harmony with “the will of universe” that intends to call everything into play.

Based on this managerial policy, we, Kyocera Elco, is promoting activities for conservation of natures to strive for ecological management aiming at reduction in influencing destruction of environment, echo-system and so on.

Here we, Kyocera Elco, has established “Green Procurement Standards” in accord with the situation in which legal restrictions or social requirements regarding ecological activities have been advocated these days commencing with European countries.

Based on the standards, for suppliers and there products that are supplied to us, we will advance the green procurement system to conduct the investigation and evaluation for impact on the environment.

This activity will never proceed without cooperation of supplier companies. Please understand our conception and give your cooperation toward the “Green Procurement” of us, Kyocera Elco.

Environment Charter of Kyocera Corporation (Excerpt)

<Environmental policy>

1. To comply with the in-company standards for global environment
2. To make the best use of resources and to innovate the processing technology
3. To actively develop products that contribute to environmental conservation and that reduce the impact on environment
4. To cooperate with environmental policies and to participate in and support social actions

<Environmental intention>

1. To establish and comply with in-company voluntary standards that are stricter than international pacts, laws and rules of countries, local regulations established in the place where the company is located or so, in order to reduce the impact on destruction of nature or ecosystem.
2. To evaluate and study the impact on environment in all phases of business activities to take necessary measures.
3. To develop the processing technology and production facility that has the method to make the best use of resources and superior energy efficiency in production activity, and to try and use raw materials in smaller amount in each process.
4. To deploy energy-saving activities thoroughly; such as improving the consumption efficiency of electric energy and fossil fuel, introducing high efficiency devices for them, recovering and reusing the waste heat or so.
5. To reduce the consumption of resources and to emit harmless waste by establishing the recycle system of waste water and waste materials and to promote more effect use of resources as well as striving for saving resources and procuring materials for productions that are superior in reproducibility.
6. To research and develop “Products contributing to environment protection” that could contribute to improvement of the global environment proactively.
7. To research and develop “Products to reduce the environmental impact” that could reduce the impact on environment as much as possible in each phase of production, sales, distribution, use and discard of products.
8. To implement creation of a pleasant and comfortable environment of lush greenery with greening the working place and environmental considerations promoted vigorously.

“Green Procurement” activities in Kyocera Elco

Kyocera Elco (hereinafter referred to as “KEC”) is promoting to procure materials and sub-materials that are environment-friendly and ask suppliers for their cooperation based on “Green Procurement Standards”.

The following three points are specified in “Green Procurement Standards” to promote the activities.

1. Basic concept of Green Procurement

KEC is promoting to purchase and use materials according to the concept of “To determine the specification for materials in purchasing, and to select and procure materials so that environmental impact could be reduced in every phase such as production, distribution, use and discard.”

2. Investigation of the situation of environment conservation activities in suppliers and environmental audit for them

Suppliers’ situation of obtaining ISO14001, environmental controlling, or so are regularly subjected to our investigation. As a result of the investigation, requirements will be distributed to customers who are regarded as ones that require improvement in their environmental control, and their environment will be audited as needed.

3. Control of chemical substances included in purchased items

Products, components, materials, packaging materials and other sub-materials shall be subjected to our confirmation for inclusion of prohibited substances by making arrangements such as obtaining MSDS, ICP and/or Certificate of non-use of environmentally hazardous substances. And then only items that do not contain prohibited substances will be purchased by us.

1. Purpose

“To procure products and services that have lesser impact on environment from suppliers who are aggressively striving for activities of environment conservation” is regarded as the green procurement by us, KEC. In order to achieve the concept, suppliers and their products to be purchased by us will be investigated for their activities of environment conservation and environmental considerations on products, and suppliers who are striving and vigorously adopting ecological system for global environment will be made an engagement with us preferentially.

With putting the standards into effect, we would like to supply products that contribute to improve the global environment and that can reduce environmental impact in every phase such as production, sales, distribution, use and discard.

We would ask for your vigorous cooperation based on the standards.

2. Scope

The following are intended to be controlled by this document:

Materials, components, and assemblies that are ordered by KEC for connector production, and materials/sub-materials that are used in manufacturing processes for aforementioned objects.

As for materials/sub-materials, however, those that can be removed by cleaning or so in the process are not the target, while only those that have a possibility of being residual substances in materials, components, and assemblies that will be delivered to KEC are the target.

3. Terminology

1) Environmentally hazardous substances (See Attachment 1.)

a) Prohibited substances: G-1 to G-54

Substances that should not be included in components/products.

Also G-32(Ozone depleting substance (excluding HCFC)) are not use in the production process.

b) Abolished substances: Z-1 to Z-4

Substances that should not be included in components/products after the due date defined in the abolishing plan.

Only if it is found that an alternative substance to be used is determined technologically, it shall be banned using the abolished substance before the due date.

If there is no alternative and use of the abolished substance is approved as an exemption by laws or regulations, the due date shall be reviewed.

c) Substances to be controlled: K-1 to K-4

Substances of which content shall be comprehended and controlled.

The followings are the limitation of each substance that is prohibited to be included in the products by RoHS Directive.

If any customer specifies the value other than those mentioned below, the customer`s one shall prevail.

Substances	Specified value	
	Plastic, Paint, Ink	Metals, Others
1. Cadmium & its compounds	Less than 5 ppm	Below the measurable limit
2. Hexavalent chromium compounds	Less than 100 ppm	Below the measurable limit
3. Mercury & its compounds	Below the measurable limit	Below the measurable limit
4. Leads	Below the measurable limit	Below the measurable limit
5. PBBs	Below the measurable limit	Below the measurable limit
6. PBDEs	Below the measurable limit	Below the measurable limit

The followings are limitation of each substance that is prohibited to be included in the products by Halogen Free Directive.

If any customer specifies the value other than those mentioned below, the customer`s one shall prevail.

Substance	Specified value
Bromine(Br)	900ppm
Chlorine(Cl)	900ppm
Bromine(Br)+Chlorine(Cl)	1500ppm

2) Material/Sub-materials

The following materials/sub-materials shall be identified if they are compliant to the control for environmentally hazardous substance or not, and be indicated accordingly.

- a) Liquid used in the plating process (Corrosion inhibitor included)
- b) Chemical agents, oils and etc used for cleaning and/or maintenance of equipment
- c) Cleaners for equipment
- d) Inks and etc. for marking
- e) Adhesive agent and etc.
- f) Packing materials
- g) Components procured by suppliers themselves (Nuts, screws and etc.)

3) Quantitative analysis

This is a method that aims the accurate quantitative determination in order to prove the content of substances marked with “*” in Environmentally hazardous substances in Attachment 1. Please refer to Table 1 for analysis method.

Table 1

Substance	Pre-treatment	Method to detect
Cadmium Lead, mercury	IEC62321:2008, EN13346:2000/ EPA3052:1996, EPA3050B Rev.2:1996	Inductively coupled plasma atomic emission spectroscopy (ICP-AES) Atomic Absorption Spectrometry (AAS) Inductively Coupled Plasma – Mass Spectrometry (ICP-MS)
*Total chromium	IEC:62321:2008	Diphenylcarbazide spectrophotometric method (UV-VIS)
PBB/PBDB	IEC:62321:2008	GC-MS chemical analysis

*: Although this aims to measure the content of hexavalent chromium, it is assured that the content of hexavalent chromium is not beyond the specified value by verifying that the measured value of total chromium is not beyond the specified value of the hexavalent chromium.

4. Requests to suppliers

Understanding and cooperation from suppliers are vital to promote our green procurement project. What mentioned in 4.1 through 4.5 in this document are the concrete request.

4.1 Certificate of containing none of environmentally hazardous substances

It shall be verified with the following procedures that environmentally hazardous substances are not contained in materials/sub-materials used in materials, components that are delivered to KEC and their manufacturing processes.

ICP and MSDS data shall be reviewed every six months. If it is impossible to do so, it shall be notified

to us provided the data shall be checked by obtaining them once a year by you.

1. Cadmium, lead, mercury and hexavalent chromium

For materials, components and assemblies procured by yourself and materials/sub-materials used in processes for their manufacture, it shall be verified through the quantitative analysis that less than the specified value of cadmium, lead, mercury, and hexavalent chromium were contained.

As cautions for ICP data, the following shall be confirmed: 1) Methods of pretreatment and measurement are described, 2) "Complete dissolution" is mentioned, 3) Analysis flow chart is shown, and 4) Term of validity of the data is within a year.

2. PBB and PBDE

Certificate of non-use of environmentally hazardous substances shall be obtained by using Attachment 5 from makers of product materials or materials/sub-materials that are targets of the verification. The Certificate of non-use of environmentally hazardous substances obtained from makers shall be an evidence of none of PBB and/or PBDE being contained.

Although typically the Certificate of non-use of environmentally hazardous substances obtained from makers of product materials or materials/sub-materials shall be an evidence of none of PBB and/or PBDE being contained as described above, the appropriate action shall be taken by you if the measurement through GC-MS is required by us due to the request made by a KEC's customer.

3. Environmentally hazardous substances other than cadmium, lead, mercury, hexavalent chromium, PBB, and PBDE

As for all other environmentally hazardous substances specified in Attachment 1 that cadmium, lead, mercury, hexavalent chromium, PBB, and PBDE, non-use of them shall be proven on MSDS.

4.2 Documents to be submitted

4.2.1 Documents to be submitted

1. List of materials/sub-materials in use

Suppliers who manufacture components or assembled products shall fill "List of purchasing parts, materials, and sub-materials" with materials/sub-materials used in your production process for items to be delivered to KEC and submit it to us. Materials/sub-materials described in the list shall be target materials/sub-materials to be validated in 4.1.

2. Certificate of non-use of environmentally hazardous substances

Based on the result proven in 4.1, Certificate of non-use of environmentally hazardous substances shall be submitted by using the format of Attachment 2. The certificate will be used as grounds of your proof of none of environmentally hazardous substances being contained in product materials delivered to KEC or a destination specified by KEC or product materials and/or material/sub-materials of your procurement.

3. Result of the quantitative analysis

The result of cadmium, lead, mercury, and hexavalent chromium measured in 4.1 shall be submitted. Normally the result of measurement through ICP-AES is required for cadmium, lead and mercury, the one through UV-VIS for hexavalent chromium.

4.2.2 Time to submit

1. New suppliers

Prior to starting actual dealings, suppliers who enters into business relations shall submit documents mentioned in 4.2.1.

2. Existing suppliers

Documents required in 4.2.1 that are already submitted are checked by Main control section in KEC. If there is any deficiency, submission shall be conducted according to KEC's request to submit.

3. Periodically submission

Documents submitted according to 4.2.1 will be valid for one year basically. Once documents are submitted, they shall be updated based on the re-verification before the due date.

4. When any change is caused in materials/sub-materials used in the supplier's manufacturing process
If any change is caused in the submitted "List of materials/sub-materials in use", "Application form for production condition change (Attachment 4)" shall be submitted to be acknowledged by KEC prior to implementing the change.

Since it is required in the course of acknowledgement of the change that none of environmentally hazardous substances is included in materials/sub-materials to be changed, documents required in 4.2.1 based on the verification mentioned in 4.1 shall be submitted newly again.

5. When KYOCERA ELCO Corporation Green Procurement Standards is revised

The standards (KYOCERA ELCO Corporation Green Procurement Standards) may be revised according to changes in law, social surroundings, and/or requirements made by customers and such. When it is revised, the revised version will be delivered and at the same time requests to fulfill newly derived requirements for applicable product materials and/or materials/sub-materials will be made by KEC, then please take necessary actions to meet it. If any requirement that is not compliant with the standards is needed to be required, it will be negotiated separately.

4.3 Control in the manufacture process

4.3.1 Acceptance inspection for raw materials and materials/sub-materials, and consumption of them

1. Procedures of the acceptance inspection

- At the acceptance inspection for raw materials, it shall be made sure that the actual material and the material specified in the drawing(s) are identical.

In order to assure the compliance with RoHS Directive, ICP data or data attached to materials delivered shall be checked to see if the data satisfy the specifications of RoHS Directive. As for ICP data or MSDS, the validity shall be made sure by checking the part number, impress of approval, date of analysis (requires the duration of half a year or more before the expiry date), and figures shown on them.

When it is assured that the raw material is compliant with RoHS, the stamp or label showing "RoHS compliant" shall be put on the material for identification purpose.

- At the acceptance inspection for materials/sub-materials, it shall be made sure that the actual materials/sub-materials are identical with the ones in the "List of materials/sub-materials in use" that has already been submitted after noninclusion of environmentally hazardous substances is proven.
- At the accepting scene, raw materials before and after the acceptance inspection shall be separated clearly by using signs or indications for the location such as "For goods before the inspection" and "For compliant goods".
- Materials and their results of the inspection shall be listed so that the situation would be comprehensible any time.

2. Handling nonconforming goods detected at the acceptance inspection

- At the acceptance inspection for product materials, any of them that is not identical with the ones in the drawings shall be determined as nonconforming goods and be rejected. Production control department in KEC shall be notified it at the same time.
- At the acceptance inspection for materials/sub-materials, if any of materials/sub-materials that is not identical with ones described in the "List of materials/sub-materials in use" is detected, they shall be rejected or distinguished clearly so that they could not be used for manufacture of KEC's products.

3. Consuming raw materials and materials/sub-materials

Raw materials and materials/sub-materials shall be handled as follows to assure the first-in first-out rule.

- Materials shall be stored and managed by lot number.

- When materials of the same lot number are delivered on two days or more, store them by date in the lot number bracket.
- The lot stored earlier shall be taken out first.
- In order to show FIFO is conducting properly, incoming and outgoing shall be recorded in a form in which lot number and the date of incoming/outgoing shall be shown.
- Materials shall be identified with the date of incoming and lot number by indication or stamp to be put on them.

4. Storage of raw materials and materials/sub-materials

- Raw materials and materials/sub-materials shall be stored with clear indication showing that it is RoHS compliant. Materials for leaded plating shall be labeled as RoHS noncompliant (leaded) and stored.
- If a material is taken out partly, be sure to put the indication “RoHS compliant” or “RoHS noncompliant” on the rest of it.

4.3.2 Manufacture process

1. Control of the manufacture process

- Materials/sub-materials for which it was already proven that no environmentally hazardous substance was contained shall only be used in the manufacture process.
- If materials compliant with the control of environmentally hazardous substances and noncompliant ones are stored in a construct, they shall be clearly separated by location, indication, and etc. so that they would never be mixed in.
- When other items than ones for KEC are manufactured in the same facility, those of other items shall be located apart and indicated clearly differently from items for KEC, and they shall never contact with each other. Items for KEC shall not be contaminated with any of environmentally hazardous substances through materials/sub-materials.
- For the molding and plating processes, the following shall be considered and followed.

Process	Item to be considered	Issue of concern	Controlling
Molding	When molding products for KEC after material for other products than KEC has been used.	Prohibited substance(s) left in the path from the hopper to the die may be contained in the product for KEC.	In the beginning of molding product for KEC, works shall be discarded when impact of the material previously used for other company’s product is eliminated after shifting.
Assembling	Lead-free product is assembled after the leaded product assembly.	Lead in the leaded product left on the assembly machine may be attached to lead-free product.	When assembly is changed from leaded product to lead-free one, clean parts where lead-free contact may touch to prevent the impact as much as possible.

- For the plating process, cautions and requests for control are shown on the separate sheet.

2. Handling nonconformity detected in the manufacture process

When any nonconformity regarding environmentally hazardous substances is detected in the manufacture process, the supplier shall perform the procedure in accordance with “Regulations for Supplier’s Quality Control (EBQ9)”. Person responsible in KEC’s Production control department or Procurement section will deliver Regulations for Supplier’s Quality Control (EBQ9) as required by suppliers whom it has not yet delivered.

4.4 Identifying management

In addition to RoHS compliant and noncompliant raw materials, sub-materials, components, products and packaged products in all processes shall be identified by location and its indication, raw materials, sub-materials, components, and products shall be shown as RoHS compliant goods by affixing a label or stamping a mark on them for more definite identification.

4.5 Shipping inspection

Inspection items of specification for RoHS shall be included in the shipping inspection record (Final inspection record), and the determination of its compliance with RoHS Directive shall be entered.

If the goods are not compliant with RoHS, "RoHS-noncompliant" shall be indicated.

4.6 Records retention

1. The following shall be retained for 3 years or more as a quality record.

- 1) Documents submitted in accordance with 4.2.1
- 2) Record of handling nonconformity detected in the acceptance inspection and/or manufacture process
- 3) Other records of which retention is requested by KEC
eg) Records regarding the plating process control (By using Attachment 5)

2. Records shall be handled as follows.

- 1) Records shall be accessed easily when needed through index or something like that.
- 2) If records are kept in the form of electronic file, back up copy of the file shall be made in case of file damage.

4.7 Others

1. Notification of the responsible person for environment management

The person in charge of management of environment-related substances shall be designated and be notified to person responsible in Production control department or Procurement department in KEC.

2. Management of second tier suppliers

The same level of requirements as required by KEC shall be demanded for vendors or secondary suppliers in order for them to conduct the same quality and definition of the control.

5. Where to call about what mentioned in this document, KYOCERA ELCO Corporation Green

Procurement Standards

Please ask any question about what mentioned in the standards of the following.

Contact: Hikaru Satoh in Environmental Quality Section, Quality Assurance Department
Phone number: (8)-045-943-2915 (ext. 3236)
Fax number: (8)-045-943-2917
E-mail: hikaru_sato@kyocera-elco.co.jp

Environmentally Hazardous Substances

Ref. No.	Substance Group	Remarks
Substance not to be contained		
G-1	Lead and its compounds	
G-2	Cadmium and its compounds	
G-3	Hexavalent chromium compounds	
G-4	Mercury and its compounds	
G-7	Polybrominated biphenyls (PBBs)	
G-8	Polybrominated diphenylethers (PBDEs)	
G-9	Polychlorinated biphenyls (PCBs)	
G-10	Polychlorinated naphthalenes (3 or more chlorine atoms)	
G-11	Short-/middle-/long-chain chlorinated paraffins	
G-12	Aldrin	
G-13	Endrin	
G-14	Red phosphor	
G-15	Yellow phosphor	
G-16	Chlordanes	
G-17	Dioxins	
G-18	DDT	
G-19	Dieldrin	
G-20	Toxaphene	
G-21	2,4,6-tri-t-butylphenol	
G-22	4-nitrodiphenyl and its salt	
G-23	bis(Chloromethyl) ethers	
G-24	Hexachlorobenzen	
G-25	Benzen	
G-26	Mirex	
G-27	Carcinogenic substances (Group 1 &2A specified by IARC)	(IARC: International Agency for Research on Cancer)
G-28	2-(3,5-Di-tert-butyl-2-hydroxyphenyl)-2H-benzotriazole	
G-29	N,N'-ditolyl-p-phenylenediamine, N-tolyl-N'-xylyl-p-phenylenediamine or N,N'-dixylyl-p-phenylenediamine	
G-30	Asbestos	
G-31	Azo dyes, pigments	Attachment1-3
G-32	Ozone depleting substances (Substances targeted in Montreal Protocol)	Attachment1-4
G-33	Radioactive substances	
G-34	Polychlorinated terphenyls (PCTs)	
G-35	Phthalate esters (DEHP/DBP/BBP/DINP/DIDP/DNOP)	
G-36	Arsenic and its compounds	
G-37	Tetrabromobisphenol A (TBBP-A)	
G-38	Perfluorooctane sulfonates (PFOS)	
G-39	Formaldehyde	
G-40	Natural rubber	
G-41	Cobalt dichloride	
G-42	Dimethyl fumarate (DMF)	
G-43	Chlorine and its compounds	
G-44	Kelthane	
G-45	Hexachlorobutadiene	
G-46	Pentachlorobenzene	
G-47	α -Hexachlorocyclohexane	
G-48	β -Hexachlorocyclohexane	
G-49	γ -Hexachlorocyclohexane	
G-50	Chlordecone	
G-51	Specified organic tin compounds	Attachment1-5
G-52	Dimethylfumarate	
G-53	Dibutyltin compounds	Attachment1-6
G-54	Diocyltin compounds	Attachment1-6

Ref. No	Substances to be abolished	
Z-1	Bromine and its compounds (Excluding PBBs and PBDEs)	Will be abolished by March 30, 2011
Z-2	Chlorine and its compounds	
Z-3	Antimony and its compounds	
Z-4	Polyvinyl chloride (PVC)	
Substances to be controlled		
K-1	Beryllium and its compounds	
K-2	Bismuth and its compounds	
K-3	Nickel and its compounds	
K-4	Selenium and its compounds	

Disclaimer: Descriptions of substances here are illustrative only, not all descriptions and its alias are listed.

Environmentally Hazardous Substances

Azo dye and pigment list	
CAS No.	Substance Name
60-90-3	4-aminoazobenzene
90-04-0	o-anisidine
91-59-8	2-naphthylamine
91-94-1	3,3-dichlorobenzidine
92-67-1	4-aminodiphenyl
92-87-5	Benzidine
95-53-4	ortho- toluidine
95-69-2	4-chloro-o-toluidine
95-80-7	2,4-toluenediamine
97-56-3	ortho-Aminoazotoluene
99-55-8	5-nitro-o-toluidine
101-14-4	4,4-methylene-bis-(2-chloroaniline)
101-77-9	4,4-diaminodiphenylmethane
101-80-4	4,4-oxydianiline
106-47-8	p-chloroaniline
119-90-4	3,3-dimethoxybenzidine
119-93-7	3,3-dimethylbenzidine
120-71-8	p-cresidine
137-17-7	2,4,5-trimethylaniline
139-65-1	4,4-thiodianiline
615-05-4	2,4-diaminoanisole
838-88-0	3,3-dimethyl-4,4-diaminodiphenylmethane

Environmentally Hazardous Substances

Ozone depleting substances (Substances targeted in Montreal Protocol) list	
Cas No.	Substance Name
75-71-8	CFC-12:Dichloromaphthalene
354-58-5	CFC-113:Trichlorotrifluoroethane
76-13-1	
75-69-4	CFC-11:Trichlorofluoromethane
28605-74-5	CFC-112:tetrachlorodifluoroethane
76-12-0	
1320-37-2	CFC-114:dichlorotetrafluoroethane
76-14-2	
76-15-3	CFC-115:Chloropentafluoromethane
75-72-9	CFC-13:Chlorotrifluoromethane
354-56-3	CFC-111:Pentachlorofluoroethane
135401-87-5	CFC-211:Heptachlorofluoropropane
3182-26-1	CFC-212:Hexachlorodifluoropropane
2354-06-5	CFC-213:Pentachlorotrifluoropropane
29255-31-0	CFC-214:Tetrachlorotetrafluoropropane
2268-46-4	
1599-41-3	CFC-215:Trichloropentafluoropropane
1652-81-9	
661-97-2	CFC-216:Dichlorohexafluoropropane
422-86-6	CFC-217:Heptafluoropropyl chloride
1511-62-2	HBFC-2281:Bromodifluoromethane
1868-53-7	Dibromo fluoromethane
373-52-4	Bromofluoromethane
306-80-9	Tetrabromofluoroethane
-	Tribromodifluoroethane
354-04-1	Dibromotrifluoroethane
124-72-1	Bromotetrafluoroethane
-	Tribromofluoroethane
75-82-1	Dibromodifluoroethane
421-06-7	1,1,1-Trifluoro-2-bromoethane
358-97-4	Dibromo fluoroethane
-	Bromodifluoroethane
762-49-2	Bromofluoroethane
-	Hexabromofluoropropane
-	Tribromotetrafluoropropane
-	Tribromotrifluoropropane
431-78-7	Dibromopentafluoropropane
2252-79-1	Bromohexafluoropropane
-	Pentabromodifluoropropane
-	Tetrabromotrifluoropropane
-	Pentabromofluoropropane
-	Tertabromodifluoropropane
-	Dibromotetrafluoropropane
460-88-8	Bromopentafluoropropane
-	Tetrabromofluoropropane
70192-80-2	Tribromodifluoropropane
70192-83-5	Dibromotrifluoropropane
679-84-5	Bromotetrafluoropropane
75372-14-4	Tribromofluoropropane
460-25-3	Dibromodifluoropropane
51584-26-0	Dibromofluoropropane
421-46-5	Bromotrifluoropropane
353-59-3	halon-1211:Bromochlorodifluoromethane
74-97-5	Bromochloromethane
75-63-8	Halon-1301:Bromotrifluoromethane
-	Bromodifluoropropane
352-91-0	Bromofluoropropane
124-73-2	1,2-Dibromotetrafluoroethane

56-23-5	Carbontetrachloride
71-55-6	1,1,1-trichloroethane

Environmentally Hazardous Substances

Specific organic tin compound list	
CAS No.	Substance Name
56-35-9	Bis(tin-n-butyltin)oxide
1066-44-0	Bromotrimethylstannane
1066-45-1	Trimethyltin chloride
1067-52-3	Tributyltin methoxide
1067-97-6	Tributyltin hydroxide
1118-03-2	Trimethyltin azide
1118-14-5	Trimethyltin acetate
13302-06-2	Tributyltin metanesulphonate
13331-52-7	Tributyltin Acrylate
14275-57-1	(Z)-5,5,12,12-tetrabutyl-7,10-dioxo-6,11-dioxa-5,12-distannagexadec-8-ene
1461-22-9	Tributyltin chloride;tributylchlorostannane
1461-23-0	Tributyltin bromide
1529-30-2	Triethyltin phenoxide
1803-12-9	Triphenyltin dimethyldithiocarbamate
18380-71-7	Stannane,triphenyl[(2,2,4,4-tetramethyl-oxopentyl)oxy]
18380-72-8	Stannane,[[2,3-dimethyl-2-(1-methylethyl)-oxobutyl]oxy]triphenyl
1907-13-7	Triethyltin acetate
1983-10-4	Tributyltin fluoride
20369-63-5	Tributyltin dimethyl dithiocarbamate
2155-70-6	Tributyltin methacrylate
2179-92-2	Tributyltin cyanide
2279-76-7	Tripropyltin chloride
24124-25-2	Tributyltin linoleate
25711-26-6	Butanedioic acid,2-methylene-,1,4-bis(tributylstannyl)ester,bis(tributyltin)itacocnate)
26239-64-5	Tributan-1-ylstannyl (1R,4aR,4bR,10aR)-7-isopropyl-1,4a-dimethyl-1,2,3,4,4a,4b,5,6,10,10a-decahydrophenanthrene-1-carboxylate
27147-18-8	Tributyltin cinnamate
2767-61-5	Tripropyltin bromide
2943-86-4	Triethyltin iodide
3090-35-5	Tributyl(oleoyloxy)stannane
3090-36-6	Tributyltinlauate
31732-71-5	(R*,S*)-8,9-dibromo-5,5,12,12-tetrabutyl-7,10-dioxo-6,11-dioxa-5,12-distanna-hexadecane
3267-78-5	Tripropyltin acetate
33550-22-0	Tributyltin gamma-naphthenate
3644-32-4	P-nitrophenoxytributyltin
3644-37-9	(2-biphenyloxy)tributyltin
36631-23-9	Tributyltin naphthenate
379-52-2	Triphenyltin fluoride
4027-14-9	Tributyltin nonanoate
4027-17-2	Tributyltin cyanate
4027-18-3	2-Butenoic acid,4-oxo-4-[(tributylstannyl)oxy]but-2-enoic acid
4154-35-2	Tripropyltin methacrylate
4342-30-7	Tri-n-butyltin salicylate
4342-36-3	Tributyltin benzoate
4638-25-9	Trimethyltin thiocyanate
47672-31-1	Stannane,[(1-oxodecyl)oxy]triphenyl
4782-29-0	Bis(tributyltin)phthalate
5035-67-6	Tributyltin 2-ethylhexanoate
53404-82-3	Tributyltin isopropylsuccinate
53466-85-6	Tributyltin monopropylene glycolmaleate
56-24-6	Trimethyltin hydroxide
56-36-0	Tributyltin acetate
56573-85-4	Tributyltin

57808-37-4	Tripropyltin laurate
5847-52-9	Tributyltin chloroacetate
63869-87-4	Trimethyltin sulphate
639-58-7	Triphenyltin chloride
6454-35-9	(E)-5,5,12,12-tetrabutyl-7,10-dioxo-6,11-dioxa-5,12-distannahexadec-8-ene
6517-25-5	Tributyltin sulfamate
67772-01-4	Copolymer of alky(C=8)acrylate,methyl methacrylate and tributyltin methacrylate
681-99-2	Tributyltin isothio cyanate
688-73-3	Tributyltin(and salts and esters)
69226-47-7	Tributyltin undercylenate
7094-94-2	Triphenyltinchloroacetate
7342-38-3	Trisobutyltin chloride;chloro(trisobutyl)stannane
7342-45-2	Tripropyltin iodide
7342-47-4	Tributyltin iodide
73927-91-0	Tributyltin iodoacetate
73927-92-1	Tripropyltin iodoacetate
73927-93-2	Tributyltin o-iodobenzoate
73927-95-4	Tributyltin,beta,-iodopropionate
73927-97-6	Tributyltin isooctylthioacetate
73940-88-2	Tributyltin p-iodobenzoate
73940-89-3	Tributyltin alpha,-(2,4,5-trichlorophenoxy)propionate
752-58-9	1,3,5-tris(tributyltin)-S-triazine-2,4,6-trione
76-87-9	Triphenyltin hydroxide
811-73-4	Trimethyltin iodide
85409-17-2	Tributyltin naphthenate
892-20-6	Triphenyltin hydride
894-09-7	Triphenyltin iodide
900-95-8	Triethyltin acetate
94850-90-5	Stannane,[(1-oxoundecy)oxy]triphenyl
994-31-0	Triethyltin chloride
994-32-1	Triethyl hydroxide
1262-21-1	Bis(triphenyltin)oxide
13435-05-7	Tris(tributyltin)phosphate;5,5,9,9-Tetrabutyl-7-[(tributyltannyloxy)-6,8-dioxa-7-phospha-5,9-distannatridecane-7-oxide
15082-85-6	Tribenzyltin hydroxide;Tribenzylhydroxystannane
1954-36-5	Phthalic acid bis[triphenyltin(IV)]salt:[1,2-phenylene bis(carboxyloxy)]bistriphenyl stannane
3644-29-9	Triphenyltin laurate;[(1-oxododecyl)oxy]triphenylstannane
3644-38-0	Tributyltin pentachlorophenolate
4756-53-0	Tributyltin terephthalate
5847-51-8	Tri-n-butyl tin formate
668-34-8	Triphenyltin
682-00-8	Tributyltin ethoxide
68725-14-4	Tri-n-butyltin trifluoromethanesulfonic acid
910-06-5	Triphenyltin benzoate;triphenylstannyl benzoate

Environmentally Hazardous Substances

DBT and DOT(organostannic)	
CAS No.	Substance Name
1002-53-5	Dibutyltin
10192-92-4	Dibutyltin dimaleate
1067-33-0	Dibutyltin diacetate
1185-81-5	Dibutyltin dilauryl mercaptide
13173-04-1	3,8,10-Trioxa-9-stannatetradeca-5,12-dien-14-oic,acid,9,9-dibutyl-4,7,11-trioxo-,ethyl ester,(Z,Z)
13323-62-1	Dibutyltin dioleate
13323-63-2	Dibutyltin dipalmitate
14214-24-5	Dibutyltin disalicylate
15546-11-9	Di-n-butyltin bis(methyl maleate)
15546-12-0	Dibutyltin di(2-ethyl maleate)
15546-16-4	Di-n-butyltin di(monobutyl)maleate
15571-58-1	Diocetyl tin bis(2-ethylhexyl thioglycolate)
16091-18-2	Diocetyl tin maleate
163206-28-8	Tin,dibutyl(1,2-ethanediamine-N,N)bis(monoisooctyl-2-butemedioato-O)
17523-06-7	Bis(acetate)dibutyltin
18253-54-8	Tin,dichloro[29H,31H-phthalocyaninato(2-)-N29,N30,N31,N32]-,(OC-6-12)
19704-60-0	Dibutyltin dihexanoate
22535-42-8	3,8,10-Trioxa-9-stannatetradeca-5,12-dien-14-oic,acid,9,9-dibutyl-2-methyl-4,7,11-trioxo,1-methylethylester,(Z,Z)
22673-19-4	Tin,dibutylbis(2,4-pentanedionato-O,O")-,(OC-6-11)
25168-24-5	Dibutyltin bis(isooctyl mercaptoacetate)
26401-97-8	Diocetyl tin
26636-01-1	Disbutyltin S,S"-bis(isooctyl mercaptopropionate)
26761-46-6	Dibutyltin di(isooctyl 3-mercaptopropionate)
2781-09-1	Dibutyltin bi(octylthioglycolate)
2781-10-4	Di-n-butyltin di-2-ethylhexanonate
29881-72-9	Dibutyltin bis(oleyl maleate)
32011-18-0	Acetate,S,S'-bisctylmercapto-,dibutyltin
32011-19-1	Tin,dibutylbis(methyl3-mercaptopropanoato-O,S)
33466-31-8	5,7,12-Trioxa-6-stannatetracos-2,9-sienoic acid,6,6-dibutyl-4,8,11-trioxo,dodecyle ester,(Z,Z)
3349-36-8	Dibutyltin dibutoxide
33568-99-9	Diocetyl tin bis(isooctyl maleate)
3542-36-7	Diocetyl tin dichloride
4731-77-5	Dibutyltin dioctanoate
51287-83-3	Dibutyltin bis(lauryl beta-mercaptopropionate)
53202-61-2	Dibutyltin bis(2-ethylhexyl-3-mercaptopropionate)
54581-65-6	Dibutylbis(ethyl 3-oxobutyrate-01',03tin)tin
5847-54-1	Dibutyltin dibenzate
5847-55-2	Dibutyltin distearate
61947-30-6	Diisobutyltin oxide
67924-24-7	Tin,dibutylbis(N,N-diethylethanamine)difluoro-
68239-46-3	Tin,dibutyl[N-(craboxymethyl)-N-(2-hydroxyethyl)glycinato(2-)]
683-18-1	Dibutyltin dichloride
7324-74-5	Dibutyltin bis(benzyl maleate)
75113-37-0	Dibutyltin hydrogen borate
77-58-7	Dibutyltin dilaurate
78-04-6	Dibutyltin maleate
78-06-8	Dibutyltin mercaptopropionate
78-20-6	Dibutyltin oxide
818-08-6	Dibutyltin linoleate
85391-79-3	Dibutyltin linoleate
85702-74-5	Dibutyltin isooctanoate
95873-60-2	Dibutyltin linoleate

22205-30-7	Bis(dodecylthio)dioctyl stannane;Dioctyltin bis(dodecylmercaptide)
25168-21-2	Dibutyltin bis(isooctylmercaptide)
3648-18-8	Dibutyltin dilaurate;dioctylbis[(1-oxododecyl)oxy]stannane
10584-98-2	Dibutyltinbis(2-ethylhexyl mercaptoacetate);2-Ethylhexyl-4,4-dibutyl-101ethyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate
28660-63-1	Dibutyltin dibutylate;Bis(butanoyloxy)dibutylstannane
59963-28-9	Dibutyltin diisostearate;Dibutylbis[(1-oxoisooctadecyl)oxy]stannate
870-08-6	Dioctyltin oxide;Dioctylloxostannane

<Attachment 2>

To: Environment Quality Section,
Quality Assurance Department,
KYOCERA ELCO Corporation

Date:

Company name: _____ (Company stamp)

Person responsible: _____ (Signature)

Certificate of Non-use of Environmentally Hazardous Substances

We hereby certify that any of the substances from G-1 to G-54 specified in "*Attachment 1: Environmentally Hazardous Substances*" of your *Green Procurement Standards* are not used in parts and products that are delivered to your company, packing materials and any of our manufacturing processes.

Contact for environmental management issues:

Name: _____

Tel: _____

Fax: _____

E-mail: _____

To: Environment Quality Section,
Quality Assurance Department,
KYOCERA ELCO Corporation

Date:

Company name: _____ (Company stamp)

Person responsible: _____ (Signature)

List of parts, materials, and sub-materials to be purchased

No.	Description	Distinction	Application	Product name	Manufacture	MSDS	ICP data
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Contact for environmental management issues:

Name: _____

Tel: _____

Fax: _____

E-mail: _____

Procedure for Production Condition Change

Receipt number

Application	Applicant (Company name or KEC section name)		Approved by	Prepared by	Received by	SCM	
	Part name	Drawing number or Part number					
			Process name				
	Classification 1. Tooling die (Expansion, Update, Change) 2. Machine for assembling, molding, or stamping (Expansion, Change, Repair/Modification) 3. Manufacture method (Processing method, Process route, Process standard, Process condition, Packaging method, Transportation) 4. Inspection method 5. Others (Supplier, Sub-material)	Present					
		New					
Reason for the change							
Date of issue:		Expected date for implementation:		Expected date for acknowledgement:			

Preliminary review	Tooling die	Examining: Influence on assembling machine, jig/tool, inspection device, manufacture method, tooling die and its periphery Conditions required for acknowledgement: (Testing item, performer, sample size if requiring any samples)	Judge	Acknowledgement
			Approved Disapproved	
	Assembling	Examining: Influence on assembling machine, jig/tool, inspection device, manufacture method, tooling die and its periphery Conditions required for acknowledgement: (Testing item, performer, sample size if requiring any samples)	Judge	Acknowledgement
			Approved Disapproved	
	Design Eng.	Examining: Influence on a) performance, function, reliability, or etc. b) quality of plating Conditions required for acknowledgement: (Testing item, performer, sample size if requiring any samples)	Judge	Acknowledgement
			Approved Disapproved	
QA	Examining: Influence on quality, necessity of early warning system, application to KEC's customer, and verification Conditions required for acknowledgement: (Testing item, performer, sample size if requiring any samples)	Judge	Acknowledgement	
		Approved Disapproved		
Result of PR (QA Dept.)		Instruction to the applicant		
Judge Approved / Disapproved		* If this change is done in a design change, the application shall be closed after the DCR number is inscribed.		

Delivery to Design engineering, Production control, Production engineering, Sales management, and the applicant section:
 Or affiliate assembling factory:
 When it is judged as approved, *conditions required for acknowledgement* shall be done in respective sections. If samples are required, Production Control Dept. shall prepare them.

Confirming the completion	1) Prod. cont.	Confirming the completion of necessary information - Sample arrangement - Others ()	Judge	Acknowledgement	2) Prod. eng.	Tool Eng.	Confirming the completion of necessary information	Judge	Acknowledgement	
			Completed					Completed		
	3) Prod. Eng. Assy Eng.	Confirming the completion of necessary information	Judge	Acknowledgement	4) Design eng.		Confirming the completion of necessary information	Judge	Acknowledgement	
			Completed					Completed		
5) Sales management	Customer's acknowledgement (The record of customer's acknowledgement shall be kept.)	Judge	Acknowledgement	6) QA		1) Revising QC process chart, inspection standards: Completed / No need 2) Verification Part (No.) Assembling (No.)	Judge	Acknowledgement		
		Approved Disapproved					Completed			
Judge	Judge (QA Dept.)		Instruction to the applicant						Acknowledgement	
	Judge Approved / Disapproved		Instruction as follows (eg. About switching, special indication, or etc.) / No instruction Content:							

Delivery to Design engineering, Production control, Production engineering, and Production factory (Attach this form to the first lot to be shipped).
 Or Sales management (when customer's requirement is required)

Lot from which applicable or effective date	Production control	➔	QA receipt

Control of RoHS–Restricted Substances Contained in the Plating Solution

We would like our suppliers who are conducting the plating process for our products to do the control as follows.

1. Measuring content of “Four metals that are restricted from being contained by RoHS” that are contained in the plating film

The content of “Four metals that are restricted from being contained by RoHS” that are contained in respective plating films at base and surface shall be measured by following procedures shown below.

- 1) Target metals: Cadmium (Cd), Lead (Pb), Chrome (Cr), Mercury (Hg)
- 2) Target plating: Base plating and surface plating
- 3) Measuring method: ICP or atomic absorption
- 4) Frequency: Once a year
- 5) Tolerance limit: Tolerance limit for each target metal shall be as follows.
Cd: 75ppm or less
Pb: 750ppm or less
Cr: 750ppm or less
Hg: 1000ppm or less
- 6) Record, report: The result of the measurement including the following shall be reported to QA Department in KEC.
 - Result of the measurement
 - Applicable products
 - Plating process to have been used (e.g. Process number)
 - Result of analysis conducted nearest and latest (The result of measurement of “Four metals that are restricted from being contained by RoHS” shall be included.)

7) Handling of content in excess of the tolerance limit:

When a measured figure is larger than the tolerance limit, confine the lot in problem immediately, report it to KEC’s QA Department, and follow the instructions.

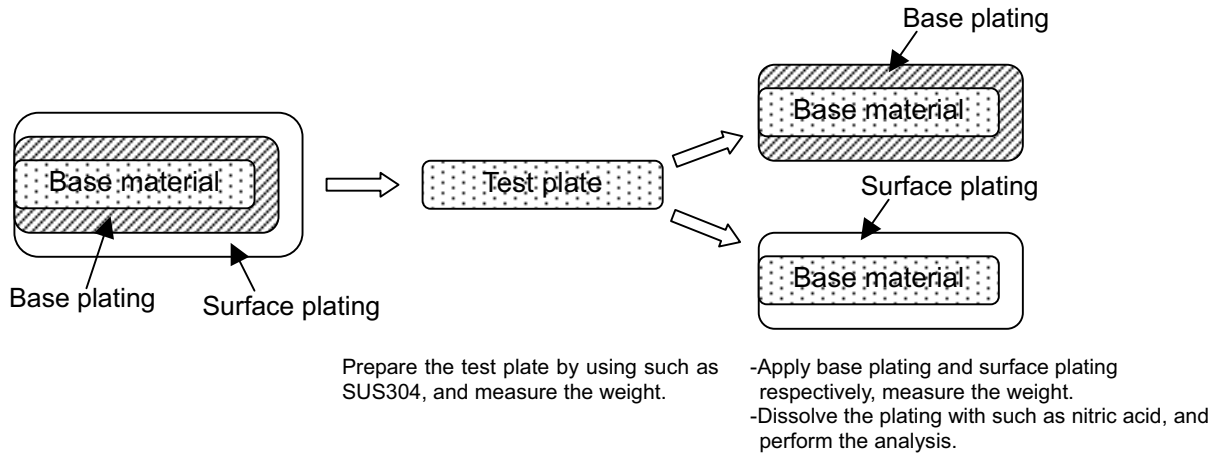
8) Measuring method

For measuring content of “Four metals that are restricted from being contained by RoHS” that are contained in the plating film, it is necessary to measure the concentration contained in the plating.

In order to free from influence of the base material, the following steps shall be taken by you.

- a) Prepare such as the plate SUS304 to measure the solo weight.
- b) Plate the base plating and measure the weight.
- c) Dissolve the base plating with nitric acid or etc. and analyze it.
 - In consideration of mixing base material into the plating specimen, the solo base material shall be also analyzed.
 - Perform ICP or atomic absorption method for the analysis.
 - Calculate the weight of plating film from the difference between the solo base material and the plated one.

d) Plate the surface plating on the base material and take steps described in c) to analyze it.



There are many other methods to analyze plated layer than the one shown above, and the method would vary according to institute to conduct the analysis. Arrangements shall be made carefully between you and the institute.

2. Control of the plating solution

The measurement described in 1 above shall be conducted annually to verify that no restricted substance is contained in your products beyond the specified values. If it is detected in the verification that any restricted substance beyond the specified values is contained, it would be a critical issue. In order to avoid the risk as much as possible, control the plating solution as shown below.

1) Analyzing the plating solution periodically

When the plating solution is subjected to the regular analysis, also the content of four metals that are restricted from being contained by RoHS shall be measured.

- a) Target metals: Cadmium (Cd), lead (Pb), Chrome (Cr), Mercury (Hg)
- b) Target plating bath: All of plating baths that are used for your products delivered to KEC
- c) Measuring method: ICP or atomic absorption
- d) Frequency: Once a month or more

Although it is recommended to measure the target metals when analyzing the plating solution, if it is impossible to conduct the measurement simultaneously, conduct the measurement separately once a month or more.

2) Tolerance limit

The tolerance limit of the target metals in a plating solution shall be specified by you because it varies by other components contained in the solution, production conditions, or etc.

The tolerance limit specified by you shall be reviewed every time when the target metals contained in the plated film of products are measured.

3) Handling when the tolerance limit is exceeded:

For products (contacts) having a possibility to have been plated in the bath of which plating solution containing target metals beyond the tolerance limit specified by you, please make sure that they have no problem as products by measuring the target metals contained in the plated products through the method in "2. Control of the plating solution".

When it is proved that they have no problem as products, keep records of measurement results of the plating solution and the plating film, and any action if taken for the succeeding production. When shipping the products of such lots, the card of changing point shall be attached.

If it is found in the result of measurement on the plated film that the tolerance limit shown in 1. is violated, immediately notify KEC's Quality Assurance Department of it with the result of the measurement and follow instructions issued from the department.

Voucher for Delivery and Receipt for KYOCERA ELCO Corporation Green Procurement Standards

Date:

Production Management Department
KYOCERA ELCO Corporation

Please receive KYOCERA ELCO Corporation Green Procurement Standards (Rev. 12, February 1, 2010), read it thoroughly and carefully, and comply with it for quality maintenance and improvement of products.

We have received KYOCERA ELCO Corporation Green Procurement Standards mentioned above.

Company name:

Date of receipt:

Name of responsible person (Recipient)

Section & Title
