

To Suppliers

Environment Related Chemical Substances Control Guideline

Sixth Edition

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Environment Promotion Section
Quality Assurance & Environment Department
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1. Purpose

The purpose of this guideline is to clarify the classification of environment related chemical substances contained in parts, materials, sub-materials or packing materials which constitute Mitsumi electrical products (hereinafter referred to as Mitsumi products) into substances whose use is to be prohibited, substances to be reduced, and substances to be controlled and their control standard values, to make them known to suppliers of parts, materials, sub-materials or packing materials to ask for their positive efforts to meet the standard values, and to promote the corporate activities without placing load to the environment.

2. Scope

This guideline shall apply to the following items which constitute Mitsumi products:

- Parts (electrical parts, mechanical parts, ICs, printed boards, plated parts, molded parts, etc.)
- Materials (steel materials, plastics, solder, electric cables, etc.)
- Sub-materials (adhesives, ink, etc.)
- Packing materials (corrugated cardboard, plastic trays, poly bags, etc.)

However, packing materials for which the Mitsumi Electric Group (hereinafter referred to as the Mitsumi Group) notified in advance of exceptions of application shall be excluded.

3. Operation

This guideline is based on the regulations of various countries. Suppliers shall be requested to abide by this guideline. If any change is made to national laws or regulations, industry standards or other requirements of related countries, we may ask you to deal with the change on an individual basis. If any supplier disagree with this guideline, we will decide what to do after due consultations.

4. Requests to suppliers

To promote prohibition, reduction and control of environment related chemical substances to prevent load to the environment, we need your understanding and cooperation. We ask you to fulfill the following requirements to confirm that the purchased goods used for our product conforms to this guideline.

4.1 Selection and inspection of parts, materials, sub-materials and packing materials to be newly purchased by Mitsumi Group

We ask suppliers to submit the materials listed below when selection and inspection of parts, materials, sub-materials and packing materials to be newly purchased by the related Business Division or Overseas Factory of the Mitsumi Group are made.

(1) Materials to be submitted

1) Certificate of non-use of environment related chemical substances

We ask to use and submit F-0045 of MITSUMI format specification.

2) Investigation Sheet for Chemical Substances Contained in Products

Please use the form of chemSHERPA as a standard. However, JAMP AIS can also be used until the end of December 2017. Please use chemSHERPA-AI after January 2018. The chemical substances specified in the "Environment Related Chemical Substances List" in Section 6 of this guideline is the object to information disclosure.

Please write all the contained compositions as a chemical material information.

3) Analysis data

Submit analysis data of all regions of all parts for the 6 banned substances by the RoHS Directive.

In addition, from July 22, 2019, 4 types of phthalates (DEHP,DBP,BBP,DIBP) are added to the prohibited substances of RoHS directive. As a result, please submit analysis data for 4 types of phthalates from January 2018.

Depending on our customers, analysis data may be required earlier than the above date.

If we requested, please submit analysis data for 4 types of phthalates even before January 2018.

4) Collating table for analysis data

This is the table used for correlating Investigation Sheet with the analysis data.

We ask to use and submit F-0054 of MITSUMI format specification.

5) Constituent Contents Table

This is the table which shows the composition of every constituent material of the supplied goods.

Please use and submit F-0071 of MITSUMI format specification when MITSUMI required.

6) Others materials

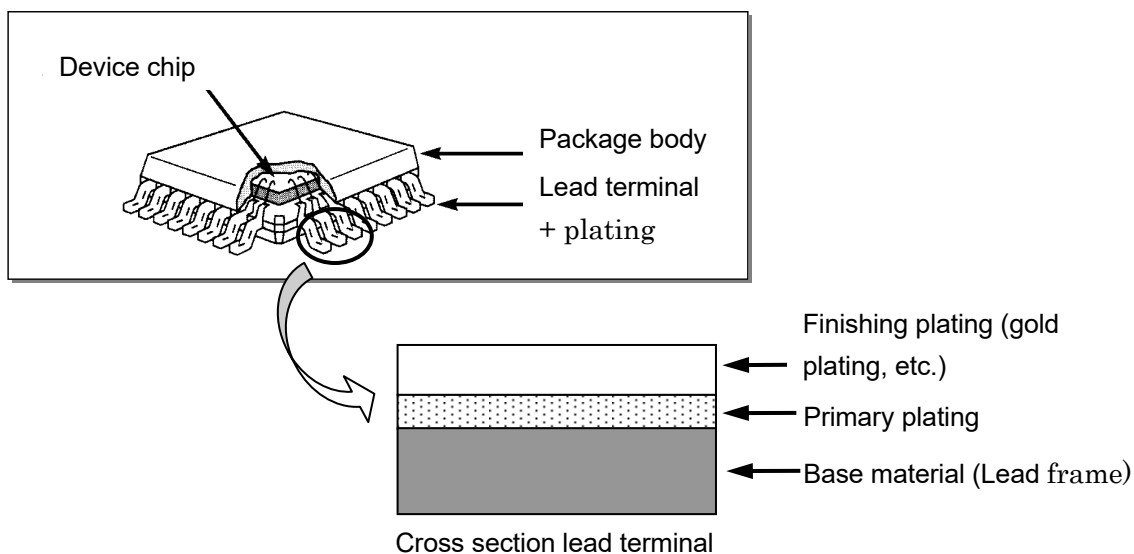
We may ask for the submission of the materials except for the above for the correspondence to our customer requirements and so on.

Please submit analysis data if we requested.

e.g. Other format investigation Sheet for Chemical Substances Contained. Composition Table of material. SDS. Analysis data except for substances of RoHS directive (Bromine, Choline, Beryllium, Antimony, HBCDD)etc.

- (2) We permit submitting chemSHERPA-CI or JAMP MSDSplus instead of chemSHERPA-AI or JAMP AIS when supplied goods are chemical product. However, the expiration date of JAMP MSDSplus will be until the end of December 2017.
- (3) We may ask for the submission of JAMA/JAPIA Standard Material Datasheet instead of 1), 2) for the use for the product.
- (4) When submission is difficult about the materials which our company requires, please discuss it with the request origin of our company.
- (5) Submit analysis data of all regions of all parts for the 6 banned substances by the RoHS Directive. For data of plating, refer to Section (9) in Definition of Terms and the drawing below as an example.

Example of decomposition of homogenous material (semiconductor lead terminal)



For a semiconductor lead terminal, the base material, primary plating and finishing plating are not regarded as homogenous material. Therefore, submit data for individual regions.

- 1) For cadmium and lead contained in plastic, submission of ICP-AES (Inductively Coupled Plasma Atomic Emission Spectrometry) data or AAS (Atomic Absorption Spectrometry) data is made compulsory.
- 2) Submit the following data in principle for the data other than those in the above 1). If agreement is reached between the supplier and the Division concerned, simple X-ray fluorescence analysis data is acceptable.

<Standard precise analysis>

- Cadmium, Lead and Mercury in plastics : ICP-AES, ICP-MS or AAS
 - Hexavalent chromium in plastics : UV-Vis (Ultraviolet-Visible Spectroscopy)
 - PBB and PBDE in plastics : GC/MS (Gas Chromatography-Mass Spectroscopy)
 - Cadmium, Lead and Mercury in metals : ICP-AES, ICP-MS or AAS
 - Hexavalent chromium in metals : UV-Vis (Ultraviolet-Visible Spectroscopy)
 - Phthalates in plastics : GC/MS (Gas Chromatography-Mass Spectroscopy)
- 3) The precise analysis data which analyzed by a third-party analysis institution or an internal laboratory of suppliers is valid. In addition, by Mitsumi Group's customer request, data from an ISO17025-accredited institution may be required. In that case, submit analysis data according to the requirement.
 - 4) Describe the pretreatment method for precise analysis data.
 - 5) Analysis data, Material composition information and SDS shall be valid till any change is made. If Mitsumi Group customer makes a specific request about the term of validity, submit data according to the request. If a term of validity is determined, the term of validity of the analysis data shall start on the analysis date (the first analysis day in the case where analysis was conducted over two or more days.), and the term of validity of the Material composition information and SDS shall start on the date of issue to Mitsumi Group (or the receiving date close to the issue date).

4.2 Entry to delivery specifications

When newly making arrangements about a delivery specification of a product, specify in the delivery specification that any of the prohibited substances (Class AA) and prohibited substances for certain products (Class A) specified in Section 6 of this guideline are not used in the product.

[Entry example of delivery specification]

None of the prohibited substances and the prohibited substances for certain products specified in the Annex "Environment Related Chemical Substances Control Guideline" of the Environment Related Chemical Substances Control Guideline (AE-01-0001) which is issued by Mitsumi Electric Co., Ltd. is contained nor used.

4.3 The update of Materials to be submitted

We ask suppliers to submit a update edition promptly on your own judgment when contents of report of the submission materials changed at the time of the change point occurrence, the acquisition of the new information, the addition of the declarable substances or the change of exceptions from application.

5. Definition of Terms

(1) Environment related chemical substances

Substances, among chemical substances contained in parts, materials, sub-materials or packing materials, which have effects on human body or global environment and which are specified by Mitsumi Group.

(2) Prohibited substances (Class AA)

Substances, among the environment related chemical substances, which are not be contained in any part and material used for Mitsumi products, intentionally or beyond threshold values, according to legal regulations, customer request for limit of use or guidance of industrial organizations. (Excluding exceptions from application)

(3) Substances whose use is be prohibited for certain products (Class A)

Substances, among the environment related chemical substances, which are not to be contained in any part and material used for certain products of Mitsumi products, intentionally or beyond threshold values, according to customer request for limit of use. (Excluding exceptions from application)

(4) Substances which are to be totally eliminated as soon as possible (Class B)

Substances, among the environment related chemical substances, whose total elimination from parts and materials is to be promoted according to laws or regulations or customer request.

(5) Substances which are to be controlled (Class C)

Substances, among the environment related chemical substances, whose content is to be checked and controlled by Mitsumi Group.

(Including the Substances of Very High Concern under REACH)

(6) Intentional use

To intentionally use a substance regardless of its content to make a product or part for the purpose of providing certain characteristics, appearance or quality.

(7) Impurities

Matters contained in natural materials which cannot be removed completely by the existing technologies in the refining process or matters which generate in the process of chemical synthetic reaction and which cannot be removed completely by the existing technologies. This is not "Intentional use"

(8) Region

In a part, unit which is composed of homogeneous material.

(9) Homogeneous material

Unit which cannot be mechanically decomposed into materials

(Note 1) Plating and basis material are not homogeneous. Therefore, they are regarded as individual regions.

(Note 2) When plating is composed of primary plating and finishing plating, the primary plating and the finishing plating are not homogeneous. Therefore, they are regarded as individual regions.

(10) Plastic

In this guideline, plastics refer to high molecular compounds which are chemically synthesized and materials that can be molded easily by heating or applying pressure. Plastics are also called synthetic resins. Thermoplastic elastomer (a group of materials having plastic structures and rubber elasticity, synthetic rubber), rubber, fiber, leather, paint, ink, adhesive and composite materials are also included.

(11) Chemical product

Chemical substance and its mixture. Examples are paints, inks, alloy ingot, solder, resin, pellets, etc

(12) JAMP AIS

A Data sheet recommended by JAMP (Joint Article Management Promotion-consortium) to communicate and disclose information on chemical substances contained in articles.

(13) JAMP MSDSPlus

A Data sheet recommended by JAMP (Joint Article Management Promotion-consortium) to communicate and disclose information on chemical substances contained in Chemical product.

(14) chemSHERPA-AI

A Data tool to communicate and disclose information on chemical substances contained in articles. It has been put in place by the initiative of Ministry of Economy, Trade and Industry of Japan with the aim of standardizing chemical substances contained in products investigation. It is provided by JAMP (Joint Article Management Promotion-consortium).

(15) chemSHERPA-CI

A Data tool sheet to communicate and disclose information on chemical substances contained in Chemical product.

(16) SDS

Safety Data Sheet. It was called MSDS before.

(17) Contents Table

The table written constituent component and its contents (ratio) for each region by format of supplier.

(18) JAMP/JAPIA Standard Material Datasheet

The data sheet which was agreed by both JAMA (Japan Automobile Manufacturers Association, Inc.) and JAPIA (Japan Auto Parts Industries Association) and was normalized.

6. Environment Related Chemical Substances List

(1) Prohibited substances (Class AA)

This is the substances whose use is prohibited by related regulations or judged as improper by the Mitsumi Group. For materials, parts, etc. delivered to Mitsumi Group, ensure that the regulation values are met.

Mitsumi Group control values (precise analysis) are also indicated in the list. Immediately inform Mitsumi Group of any substance that is contained or may be contained in an amount beyond the Mitsumi Group control value and conduct consultation with Mitsumi Group.

No	Chemical substance (group) name	Object to be controlled	Regulation value (*1)	Mitsumi Group control value	Remarks Major reference regulations
1	Cadmium and its compounds (*3)	All uses other than uses specified as exceptions from application	Prohibition of intentional use, 100 ppm	In metal; 50 ppm In plastic; 5 ppm In solder; 20 ppm	RoHS Directive (2011/65/EU) EU REACH Regulation Annex X VII <Exception from application> Products to which RoHS does not apply
		Packing materials/paint, ink etc. used for packing materials	Prohibition of intentional use (*2)	Prohibition of intentional use (*2)	EU Directive (94/62/EC)
2	Lead and its compounds (*3)	All uses other than uses specified as exceptions from application	Prohibition of intentional use, 1,000 ppm	In metal; 500 ppm In solder; 800 ppm In plastic; 100 ppm	RoHS Directive (2011/65/EU) <Exception from application> Products to which RoHS does not apply
		Packing materials/paint, ink etc. used for packing materials	Prohibition of intentional use (*2)	Prohibition of intentional use (*2)	EU Directive (94/62/EC)
3	Hexavalent chromium compounds (*4)	All uses other than uses specified as exceptions from application	Prohibition of intentional use, 1,000 ppm	In metal; 100 ppm In plastic; 100 ppm	RoHS Directive (2011/65/EU) <Exception from application> Products to which RoHS does not apply
		Packing materials/paint, ink etc. used for packing materials	Prohibition of intentional use (*2)	Prohibition of intentional use (*2)	EU Directive (94/62/EC)
4	Mercury and its compounds (*3)	All uses other than uses specified as exceptions from application	Prohibition of intentional use, 1,000 ppm	In metal; 500 ppm In plastic; 100 ppm	RoHS Directive (2011/65/EU) <Exception from application> Products to which RoHS does not apply
		Packing materials/paint, ink etc. used for packing materials	Prohibition of intentional use (*2)	Prohibition of intentional use (*2)	EU Directive (94/62/EC)
5	PBB, PBDE: Specific bromine flame retardants (*5)	All uses [Use examples] Such as flame retardants for plastic	Prohibition of intentional use, 1,000 ppm (PBB, PBDE: each 1,000 ppm)	In plastic; 100 ppm (PBB, PBDE: each 100 ppm)	RoHS Directive (2011/65/EU)
6	PCB ; polychlorinated biphenyl	All uses	Prohibition of intentional use	Prohibition of intentional use	Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances (CSCL) EU POPs Regulation Annex I

7	Asbestos; chrysotile, crocidolite, amosite, anthophyllite, tremolite, actinolite	All uses [Use examples] Such as uses for insulating material/filler	Prohibition of intentional use	Prohibition of intentional use	Occupational Safety and Health Act German Chemicals Prohibition Regulation EU REACH Regulation Annex X VII
8	Chlorinated paraffin (carbon number 10-13,) (CAS No. 85535-84-8)	All uses [Use examples] Such as flame retardants for printed wiring board	Prohibition of intentional use	Prohibition of intentional use	CSCL EU REACH Regulation Annex X VII EU POPs Regulation Annex I
9	Ozone depleting substances * Montreal Protocol on Substances that Deplete the Ozone Layer Appendix A (Group I, II) Appendix B (Group I, II, III) Appendix C (Group I, II, III) Appendix E (Group I)	All uses Use in the manufacturing process such as washing is also prohibited.	Prohibition of intentional use	Prohibition of intentional use	Law Concerning the Protection of the Ozone Layer * Montreal Protocol on Substances that Deplete the Ozone Layer
10	PCN; polychloronaphthalene (1 or more chlorine atoms)	All uses [Use examples] Such as plasticizers/machine oil	Prohibition of intentional use	Prohibition of intentional use	CSCL EU POPs Regulation Annex I
11	PCT ; Polychlorinated Terphenyls	All uses [Use examples] Such as lubricating oil and flame retardants for plastics	Prohibition of intentional use	Prohibition of intentional use	CSCL EU REACH Regulation Annex X VII
12	Bis(tributyl-tin)oxide; TBTO (CAS No. 56-35-9)	All uses [Use examples] Such as paint, ink, antiseptic, antimold, etc.	Prohibition of intentional use	Prohibition of intentional use	CSCL EU REACH Regulation Annex X VII
13	Trisubstituted organotin compounds (tributyltin (TBT) compounds and triphenyltin (TPT) compounds etc.)	All uses [Use examples] Such as paint, ink, antiseptic, antimold, etc.	Prohibition of intentional use, 1,000 ppm of tin components	Prohibition of intentional use, 1,000 ppm of tin components	CSCL EU REACH Regulation Annex X VII
14	Some azo dye and pigments (colorants) that produce specified amines (*6)	Uses where the substance is brought in continuously contact with human body (earphones, headphones, etc.)	Prohibition of intentional use	Prohibition of intentional use	EU REACH Regulation Annex X VII
15	Formaldehyde: formalin (CAS No. 50-00-0)	Wood products using fiber board, particle board or plywood (speaker, rack, etc.)	0.1ppm	Prohibition of intentional use	German Chemicals Prohibition Regulation
16	Nickel and its compounds	Uses where the substance is brought in continuously contact with human body (earphones, headphones, etc.)	0.5µg/cm2/week Test standard; EN1811 :2011 + A1 :2015	Prohibition of intentional use	EU REACH Regulation (94/27/EC) Annex X VII
17	Arsenic and its compounds	Uses as Preservative for wood, Antifoam agents, Fining Agents	1,000ppm	Prohibition of intentional use	EU REACH Regulation Annex X VII PRTR law
18	Radioactive substances	All uses	Prohibition of intentional use	Prohibition of intentional use	Laws Concerning the Prevention from Radiation Hazards due to Radioisotopes and Others

19	Perfluorooctane sulfonates (PFOS) and its salts	All uses [Use examples] Such as plating, paint/adhesives	Prohibition of intentional use	Prohibition of intentional use	CSCL EU POPs Regulation Annex I
20	Specific benzotriazole 2-(2H-1,2,3-benzotriazole-2-yl)-4,6-di-tert-butylphenol (CAS No. 3846-71-7)	All uses	Prohibition of intentional use	Prohibition of intentional use	CSCL
21	Cobalt chloride (CAS No. 7646-79-9)	All uses	Prohibition of intentional use	Prohibition of intentional use	CSCL PRTR law EU Directive (2003/34/EEC, 98/98/EC, 2004/73/EC)
22	Hydrofluorocarbon (HFC), perfluoro carbon (PFC), Sulfur hexafluoride(SF ₆)	In case of use in product of refrigerant, heat insulating material	Prohibition of intentional use	Prohibition of intentional use	EU Regulation (2006/842/EC)
23	PVC; polyvinyl chloride; Polyvinyl chloride polymer; polyvinyl chloride resin (CAS No. 9002-86-2)	- Heat shrink tubes - Flexible flat cables (FFC) - Suction cups for mounting in-vehicle products - Cable ties - Insulating plates, decorative panels, labels, sheets, and laminates - Fabrics used for carrying bags, carrying cases, etc - Packaging materials (e.g. bags, adhesive tapes, cartons), but except for packing materials for delivery such as trays and reels	Prohibition of intentional use	Prohibition of intentional use	Law Concerning Special Measures against Dioxins <Exception from application> Binder for resins used for paints, inks, coating agents, adhesives etc.
24	Beryllium oxide (CAS No. 1304-56-9)	All uses	Prohibition of intentional use	Prohibition of intentional use	EU WEEE Directive (2002/96/EC)
25	Dimethyl fumarate (DMF) (CAS No. 624-49-7)	All uses [Use examples] Such as antimold, desiccant, etc.	Prohibition of intentional use, 0.1 ppm	Prohibition of intentional use, 0.1 ppm	EU European Commission decision (2009/251/EC) EU REACH Regulation Annex X VII
26	Dibutyltin (DBT) compounds	All uses	1,000 ppm of tin component	1,000 ppm of tin component	EU REACH Regulation Annex X VII
27	Diocetyl tin (DOT) compounds	All uses	Prohibition of intentional use, 1,000 ppm of tin components	Prohibition of intentional use, 1,000 ppm of tin components	EU REACH Regulation Annex X VII
28	Bis (2-ethylhexyl) phthalate (DEHP) (CAS No. 117-81-7) Dibutyl phthalate (DBP) (CAS No. 84-74-2) Benzyl butyl phthalate (BBP) (CAS No. 85-68-7) Diisobutyl phthalate (DIBP) (CAS No. 84-69-5)	All uses [Use examples] Plasticizer for cable, cord (including plug, connector), leather film, etc, additive for paint, adhesive, etc	Prohibition of intentional use Each 1,000ppm	Prohibition of intentional use Each 1,000ppm	EU REACH Regulation Annex XIV RoHS Directive (2011/65/EU) Regulation start on July 22, 2019

29	Tris (2-chloroethyl) phosphate (TCEP) (CAS No. 115-96-8)	All uses	1,000ppm	1,000ppm	EU REACH Regulation Annex X IV State of Vermont Regulation
30	Tris (1-methyl-2-chloroethyl) phosphate (TCPP) (CAS No. 13674-84-5)	Uses as flame retardants for plastics and fiber	1,000ppm	1,000ppm	State of Vermont Regulation
31	Tris (1,3-dichloro-2-propyl) phosphate (TDCPP) (CAS No. 13674-87-8)	Uses as flame retardants for plastics and fiber	1,000ppm	1,000ppm	State of Vermont Regulation
32	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified	All uses	Prohibition of intentional use	Prohibition of intentional use	CSCL EU REACH Regulation Annex X IV EU POPs Regulation
33	4,4'-Diaminodiphenylmethane (CAS No. 101-77-9)	Uses as hardener for epoxy resin and adhesive, etc	1,000ppm	1,000ppm	EU REACH Regulation Annex X IV
34	N-Phenyl-benzenamine reaction products with styrene and 2,4,4-trimethylpentene (BNST) (CAS No. 68921-45-9)	All uses	Prohibition of intentional use	Prohibition of intentional use	Canadian Environmental Protection Act (CEPA)
35	Perfluorooctanic acids (PFOA) and its salts and esters (*7)	All uses	1,000ppm	1,000ppm	Norway Prohibition on Certain Hazardous Substances in Consumer Products
36	PAHs (The following 8 substances) Benzo[a]pyrene (CAS No. 50-32-8) Benzo[e]pyrene (CAS No. 192-97-2) Benzo[a]anthracene (CAS No. 56-55-3) Chrysene (CAS No. 218-01-9) Benzo[b]fluoranthene (CAS No. 205-99-2) Benzo[j]fluoranthene (CAS No. 205-82-3) Benzo[k]fluoranthene (CAS No. 207-08-9) Dibenzo[a,h]anthracene (CAS No. 53-70-3)	Toy and article which contains the part of the rubber and the plastic that touches skin or mouth directly to a long time or repetition	Toy: Each substance 0.5ppm Article except for Toy: Each substance 1ppm	Toy: Each substance 0.5ppm Article except for Toy: Each substance 1ppm	EU REACH Regulation Annex X VII
37	Halogenated diphenyl methanes (*8)	All uses	1,000 ppm	1,000 ppm	EU REACH Regulation Annex X VII

(*1) Substances shall be controlled under the values indicated by ppm. When "Prohibition of intentional use" and numerical value shown in "Regulation value", both of them shall be satisfied.

(*2) For packing materials, the allowable concentration of impurities of heavy metals such as mercury, cadmium, hexavalent chromium and lead shall be less than 100 ppm in total. The allowable concentration of cadmium in a plastic region shall be less than 5 ppm.

(*3) Analysis of cadmium, lead and mercury

- The ICP-AES shall be the standard, and the ICP-MS method or the AAS method may be used.
- The following pretreatment methods for specimens shall be the standards:

1) Cadmium

a) Pretreatment in plastic

Wet decomposition under the presence of sulfuric acid (according to BS EN1122:2001 "Plastics-Determination of cadmium-Wet decomposition method") shall be used. Any method by which it can be ensured that the detection limit of cadmium contained in a product is less than 5 ppm may be used. For example, incineration under the presence of sulfuric acid or pressurized acid decomposition (microwave method) in a closed container.

b) Pretreatment in metal

Any method by which it can be ensured that the detection limit of cadmium contained in a product is less than 5 ppm may be used. For example, "Wet decomposition under the presence of mixed acid of sulfuric acid and nitric acid" or "Microwave decomposition (MW method) with sulfuric acid, hydrochloric acid or mixed acid".

2) Lead

Complete dissolution by wet decomposition with sulfuric acid, nitric acid and hydrogen peroxide solution shall be used. Any other method by which it can be ensured that the detection limit of lead is less than 30 ppm and that lead can be completely dissolved may be used.

3) Mercury

Pressurized acid decomposition (microwave method) under nitric acid/hydrochloric acid shall be used.

4) As a pretreatment method of cadmium, lead and mercury, the method specified in IEC62321 may be used.

(*4) Analysis of hexavalent chromium

a) Ultraviolet-visible spectroscopy (UV-Vis Analysis) shall be the standard.

b) The pretreatment method for specimens shall be the Hot Water Extraction (JIS) as the standard. Alkaline Extraction (EPA) is also recommended. Unless otherwise specified by Mitsumi Group, however, the above standard pretreatment method shall be used as a high priority when the pretreatment is outsourced to an outside analysis institution.

c) Analysis data obtained through the qualitative analysis (colorimetry) by Spot test and Boiling Water Extraction described in IEC62321 Annex shall not be valid.

If Hot Water Extraction-Diphenylcarbazide absorptiometry or Boiling Water

Extraction-Diphenylcarbazide absorptiometry are mentioned in the analysis data to clarify the use of absorptiometry for the quantitative analysis, the analysis data shall be judged as valid. Analysis data by digital pack test is also acceptable on condition that it is used for quantitative analysis.

(*5) Analysis of PBB and PBDE in plastic

a) The GC/MS method (gas chromatography mass spectrometry) shall be the standard.

b) For the pretreatment method for specimens, Dissolution and Reprecipitation (thermoplastic resin) or High-Speed Solvent Extraction (thermohardening resin) is recommended. Unless otherwise specified by Mitsumi Group, however, the above standard pretreatment method shall be used as a high priority when the pretreatment is outsourced to an outside analysis institution.

c) As a pretreatment method, the method specified in IEC62321 may be used.

(*6) List of specific amine compounds

	Chemical substance name	CAS No.
1	4-aminoazobenzene	60-09-3
2	o-anisidine	90-04-0
3	2-naphthylamine	91-59-8
4	3,3'-dichlorobenzidine	91-94-1
5	4-aminodiphenyl	92-67-1
6	Benzidine	92-87-5

7	o-toluidine	95-53-4
8	4-chloro-o-toluidine	95-69-2
9	2,4-toluenediamine	95-80-7
10	o-aminoazotoluene	97-56-3
11	5-nitro-o-toluidine	99-55-8
12	4,4-methylene-bis-(2-chloroaniline)	101-14-4
13	4,4-diaminodiphenylmethane	101-77-9
14	4,4-oxydianiline	101-80-4
15	p-chloroaniline	106-47-8
16	3,3-dimethoxybenzidine	119-90-4
17	3,3-dimethylbenzidine	119-93-7
18	p-cresidine	120-71-8
19	2,4,5-trimethylaniline	137-17-7
20	4,4-thiodianiline	139-65-1
21	2,4-diaminoanisole	615-05-4
22	3,3-dimethyl-4,4-diaminodiphenylmethane	838-88-0

(*7) Perfluorooctanic acids and its salts and esters

No	Chemical substance (group) name	CAS No.
1	Perfluorooctanic acid (PFOA)	335-67-1
2	Ammonium Pentadecafluorooctanoate (APFO)	3825-26-1
3	Sodium perfluorooctanoate	335-95-5
4	Potassium perfluorooctanoate	2395-00-8
5	Silver perfluorooctanoate	335-93-3
6	Perfluorooctanoyl fluoride	335-66-0
7	Methyl Pentadecafluorooctanoate	376-27-2
8	Ethyl perfluorooctanoate	3108-24-5

(*8) Halogenated diphenyl methanes

No	Chemical substance (group) name	CAS No.
1	Monomethyl-tetrachloro-diphenyl methane	76253-60-6
2	Monomethyl-dichloro-diphenyl methane	81161-70-8
3	Monomethyl-dibromo-diphenyl methane	99688-47-8

(2) Substances whose use is be prohibited for certain products (Class A)

Substances, among the environment related chemical substances, which are not to be contained in any part and material used for certain products of Mitsumi products, intentionally or beyond threshold values, according to customer request for limit of use.

Ensure that for the substances whose use is to be prohibited specified in the Certificate of not using environment related chemical substances which the related Business Division of Mitsumi Group requests you to submit, the regulation values are met.

No	Chemical substance (group)	Object to be controlled	Regulation value (*1)	Remarks Major reference regulations
1	Natural rubber	All uses	Prohibition of intentional use	High possibility of causing allergic contact dermatitis
2	Bis (2-ethylhexyl) phthalate (DEHP) (CAS No. 117-81-7) Dibutyl phthalate (DBP) (CAS No. 84-74-2) Benzyl butyl phthalate (BBP) (CAS No. 85-68-7) Diisononyl phthalate (DINP) (CAS No. 28553-12-0) (CAS No.68515-48-0) Diisodecyl phthalate (DIDP) (CAS No. 26761-40-0) Di-n-octyl phthalate (DNOP) (CAS No. 117-84-0)	Toy and product for the child	Prohibition of intentional use, sum total of 6 substances; 1,000 ppm	EU REACH Regulation (1907/2006/EC) Annex XVII Taiwan CNS4797 (Safety standard for toys) American Consumer Product Safety Improvement Act (CPSIA) Japan Toy Safety Standard (ST Standard) The regulation value shall be the analysis value by GC/MS method.
3	Phthalates (The following 11 substances) Bis (2- methoxyethyl) phthalate (DMEP) (CAS No. 117-82-8) Di-n-hexyl Phthalate (DnHP) (CAS No. 84-75-3) Diethyl phthalate (DEP) (CAS No. 84-66-2) Dimethyl phthalate (DMP) (CAS No. 131-11-3) Diisoheptyl phthalate (DIHP) (1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich) (CAS No. 71888-89-6) Di(heptyl, nonyl, undecyl) phthalate (DHNUP) (1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters) (CAS No. 68515-42-4) Diisopentyl phthalate (DIPP) (CAS No. 605-50-5) Di-n-pentyl phthalate (DnPP) (CAS No. 131-18-0) n-Pentyl-isopentyl phthalate (nPIPP) (CAS No. 776297-69-9)	All uses	Each substance 1,000ppm	EU REACH Regulation California Proposition 65

	Dipentyl phthalate (DPP) (1,2-Benzenedicarboxylic acid, dipentylester, branched and linear) (CAS No. 84777-06-0)			
	1,2-Benzenedicarboxylic acid, di-C6-10-alkyl esters (CAS No. 68515-51-5); 1,2-Benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with $\geq 0.3\%$ of dihexyl phthalate (CAS No. 68648-93-1)			
4	Chlorinated hydrocarbons (*2)	All uses	1,000 ppm	Law Concerning the Protection of the Ozone Layer
5	Bromine	All uses	900 ppm	Law Concerning Special Measures against Dioxins
6	Chlorine	All uses	900 ppm	Bromine + Chlorine; 1,500 ppm
7	Antimony trioxide	All uses	1,000 ppm	Global Automotive Declarable Substance List. (GADSL)
8	Red phosphorus	Fire retardant in plastic	Prohibition of intentional use	Mitsumi Group self-restriction
9	TBBP-A	All uses	1,000 ppm	Global Automotive Declarable Substance List. (GADSL)
10	Lead and its compounds (Refer to (*3) of 6-1) for the analysis.)	Outer parts that may be touched by hand	Coating material; 90 ppm Outer parts except coating materials: 100 ppm	CPSIA (Consumer Product Safety Improvement Act) Outer parts specified by Mitsumi Group shall be subject to control.
11	Benzene	Use in the manufacturing process is prohibited	5mg/kg	EU REACH Regulation Annex X VII
12	Beryllium and its compounds	All uses	Prohibition of intentional use and 1,000 ppm	EU WEEE Directive (2002/96/EC) PRTR law
13	Tris(1-aziridinyl)phosphine oxide (TAPO)	Fabrics which touch skin directly	Prohibition of intentional use	EU REACH Regulation Annex X VII
14	Tris(2,3-dibromopropyl)phosph ate (TBPP)	Fabrics which touch skin directly	Prohibition of intentional use	EU REACH Regulation Annex X VII
15	5-tert-butyl-2,4,6-trinitro-m-xyle ne (musk xylene)	The preparation spices for a perfume, soap, etc.	1,000 ppm	EU REACH Regulation Annex X VII
16	PVC; polyvinyl chloride; Polyvinyl chloride polymer; polyvinyl chloride resin (CAS No. 9002-86-2)	All uses	Prohibition of intentional use	Law Concerning Special Measures against Dioxins

(*1) Substances shall be controlled under the values indicated by ppm. When “Prohibition of intentional use” and numerical value shown in “Regulation value”, both of them shall be satisfied.

(*2) Details of chlorinated hydrocarbons

No	Chemical substance (group) name	CAS No.
1	1,1-dichloroethylene	75-35-4
2	Pentachloroethane	76-01-7

3	Dichloromethane (also known as methylene chloride)	75-09-2
4	Tetrachloroethane	25322-20-7
5	1,1,1,2-Tetrachloroethane	79-34-5
6	Tetrachloroethylene	127-18-4
7	Chloroform	67-66-3
8	1,1,2-Trichloroethane	79-00-5
9	Trichloroethylene	79-01-6

(3) Substances which are to be totally eliminated as soon as possible (Class B)

This is the substances which are to be totally eliminated until Mitsumi Group prohibition use date in Mitsumi Group. Containing beyond the regulation value is prohibited after the date.

Currently, there is no substance of Class B.

(4) Substances to be controlled (Class C)

This is the substances whose contents are to be monitored and whose proper control are promoted by Mitsumi Group. Please Submit information about accurate contents when there is containing beyond the standard value or there is intentional use.

No	Chemical substance (group) name	CAS No.	Object to be controlled	Standard value (*1)	Remarks Major reference regulations
1	REACH Regulation The Substances of Very High Concern(SVHC)(*2)(*3)(*4)	---	All uses	1,000ppm	EU REACH Regulation
2	Substituted Diphenylamine(*5)	---	All uses	Intentional use	CEPA
3	2-(2-aminoethylamino) ethanol	111-41-1	All uses	Intentional use	CEPA

(*1) Substances shall be controlled under the values indicated by ppm.

(*2) We ask to obtain latest list from official website of ECHA (European Chemical Agency) about the Substances of Very High Concern (SVHC) of REACH Regulation and control it.

ECHA Candidate List URL <http://echa.europa.eu/web/guest/candidate-list-table>

(*3) SVHC becomes Class C in principle when it is added to SVHC List. Please establish rule of SVHC including information giving immediately for the new additional SVHC.

(*4) When there is mention in Class AA, Class A or Class B about SVHC substances, those become the control object of that classification also. But, There is a difference in the object to be controlled and the regulation value by the classification.

(*5) The List of Substituted Diphenylamine

	Chemical substance (group) name	CAS No.
1	4-octyl-N-(4-octylphenyl)-Benzenamine	101-67-7
2	4-octyl-N-phenyl-Benzenamine	4175-37-5
3	4-(1-methyl-1-phenylethyl)-N-[4-(1-methyl-1-phenylethyl)phenyl]-Benzenamine	10081-67-1
4	4-(1,1,3,3-tetramethylbutyl)-N-[4-(1,1,3,3-tetramethylbutyl)phenyl]-Benzenamine	15721-78-5
5	4-nonyl-N-(4-nonylphenyl)-Benzenamine	24925-59-5
6	ar-octyl-N-(octylphenyl)-Benzenamine	26603-23-6
7	ar-nonyl-N-phenyl-Benzenamine	27177-41-9
8	ar-nonyl-N-(nonylphenyl)-Benzenamine	36878-20-3
9	N-phenyl-Benzenamine reaction products with 2,4,4-trimethylpentene	68411-46-1
10	Styrenated N-phenyl-Benzenamine	68442-68-2
11	2-ethyl-N-(2-ethylphenyl)-Benzenamine (tripropenyl) derivatives	68608-77-5
12	N-phenyl-Benzenamine (tripropenyl) derivatives	68608-79-7
13	N-phenyl-Benzenamine reaction products with isobutylene and 2,4,4-trimethylpentene	184378-08-3

(5) Main regulations about the chemical substances

Object	Remarks
Japanese CSCL (Class I Specified Chemical Substance)	CSCL: Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances
Industrial Safety and Health Law	
Poisonous and Deleterious Substances Control Act (Specified poisonous substances)	
PRTR Law	Pollutant Release and Transfer Register Law
Japan Toy Safety Standard (ST Standard)	
EU REACH Regulation (EC) No 1907/2006 Annex XIV	
EU REACH Regulation (EC) No 1907/2006 Annex XVII	
EU REACH Regulation (EC) No 1907/2006 the Substances of Very High Concern (SVHC)	ECHA Candidate List URL http://echa.europa.eu/web/guest/candidate-list-table
EU RoHS directive (2011/65/EU)	
EU Battery directive (2006/66/EC)	
EU CLP Regulation	
EU POPs Regulation	
EU Packaging and Packaging Waste Directive (94/62/EC)	
EU Nickel Directive (94/27/EC)	
EU Commission Directive (2004/73/EC)	
EU Certain fluorinated greenhouse gases Regulation (2006/842/EC)	
EU Commission Decision (2009/251/EC)	
Norway Prohibition on Certain Hazardous Substances in Consumer Products	
Danish Cadmium Regulation	
American Consumer Product Safety Improvement Act (CPSIA)	
California Proposition 65	
State of Vermont Regulation	
Canadian Environmental Protection Act (CEPA)	
Taiwan Toy Safety Standard CNS4797	

7. Enactment and Revision/Abolishment

Decision through deliberation on matters in regard to this guideline shall be made by the "Companywide Chemical Substances Control Committee" (hereinafter referred to as Chemical Substances Control Committee), which consists of the representatives of Divisions and Business Divisions. Matters decided through deliberations shall be approved by the general manager of the Business Support Division.

If the necessity to revise or abolish this guideline arises, the Chemical Substances Control Committee shall make deliberations and a decision on revision or abolishment.

8. Inquiry about this guideline

For individual inquiries, contact the Division of Mitsumi Group which requested the Investigation.

For general inquiries, contact the following person in charge:

Mitsumi Electric Co., Ltd.

Environment Promotion Section, Quality Assurance & Environment Department,

Business Support Division TEL: 042-310-5072 (main) FAX: 042-310-5082

Deputy Department Manager: Junichi Watanabe, E-mail: watanabe.junichi@mitsumi.co.jp

Akimitsu Isshiki, E-mail: ishhiki.akimitsu@mitsumi.co.jp

Revision history

History	Revision date	Revised by	Page	Section	Revision content
First Edition	Mar. 4. 2009	Watanabe		---	This was separated from the Environment Related Chemical Substances Control Standard and established.
Second Edition	Sep. 28 2010	Watanabe		---	Check revision.
Third Edition	Dec. 7. 2011	Watanabe		---	Check revision
Fourth Edition	Sep. 1 2015	Sakurada	All 2 3 4 5 6 7 8 9 11	All 4. 1 (1) 1)-4) 5),6) (2),(3),(4) (5) 1) 2) 3) 5) 4. 2 4. 3 5. (7) (11)-(15) (16) 6. (1) No.1 ~No.5 No.3 No.5 No.6, N.8,10,19 No.17 8 No.22 No.23 No.25 No.28 No.29 No.30 No.31 No.32 No.33 (*3) 11 6. (2) No.2 No.5	Change the construction of the item number. < Materials to be submitted > Change the number of 1)-4) and contents. Change Investigation Sheet for Chemical Substances Contained in Products from JAMA sheet to AIS. Add 5) Constituent Contents Table and 6) Others materials. Add Item (2),(3),(4) Correct writing error and write in (5). Change analytical method name. ICP⇒ICP-AES、ICP-MS Change explanation. Add <Standard precise analysis>. Change [an internal laboratory]⇒[an internal laboratory of suppliers] Change [MSDS]⇒[SDS] < Entry to delivery specifications > Change [Environment Related Chemical Substances Control Guideline (AE-01-0001)Annex]⇒[Environment Related Chemical Substances Control Guideline (AE-01-0001)] Add < The update of Materials to be submitted > < Definition of Terms > Add [This is not "Intentional use]. Add (11)-(15). Delete a part. < Environment Related Chemical Substances List Prohibited substances (Class AA)> Change name of regulation. RoHS: (2002/95/EC) ⇒ (2011/65/EU) Change Object to be controlled. [All uses]⇒[All uses other than uses specified as exceptions from application] Change number of item (*4)⇒(*5) Add regulation name in Remarks [EU POPs 規則 Annex I] Add regulation name in Remarks [EU POPs 規則 Annex I] Change in Remarks<Exceptions from application> 「glass」⇒[glass (except for liquid crystal panel)] Change Object to be controlled. [All uses]⇒[In case of use in product of refrigerant, heat insulating material] Change name of regulation in Remarks [EU Directive]⇒[EU Regulation] Change <Exceptions from application> in Remarks. [power cord (for destination of levels other than level 3)]⇒[power cord], [vinyl chloride copolymer and polyvinyl chloride for levels other than levels 1, 2 and 3]⇒[The parts, materials, sub-materials or packing materials which contain in case of except for the regulation object.] Add regulation name in Remarks [EU REACH Regulation Annex X VII] Add substances in Class AA Pthalic acid ester 4 substances(DEHP、DBP、BBP、DIBP) Add substance in Class AA Tris (2-chloroethyl) phosphate(TCEP) Add substance in Class AA Tris (1-methyl-2-chloroethyl) phosphate(TCPP) Add substance in Class AA Tris (1,3-dichloro-2-propyl) phosphate(TDCPP) Add substance in Class AA Hexabromocyclododecane(HBCDD) and all major diastereoisomers identified Add substances in Class AA 4,4'-Diaminodiphenylmethane Change analytical method name. [atomic absorption analysis method]⇒[AAS] < Environment Related Chemical Substances List Prohibited substances (Class A)> Change Object to be controlled. [All uses]⇒[Toy and product for the child] Delete [The regulation value shall be the analysis value by GC/MS method] in Remarks. Change Regulation value. 「16 substances」⇒「18 substances」 Delete [Precise analysis; GC/MS method] in Remarks. Change name of regulation in Remarks 「ZEK01-08」⇒「ZEK01. 4-08」

				No.9	Change Object to be controlled. [All uses]⇒[Fire retardant in plastic] Change Regulation value. [1,000ppm]⇒[Prohibition of intentional use]
			12	No.11 No.14 No.15 No.16	Add in (Refer to (*3) of 6-1) for the analysis.) in Chemical substance Add substance in Class A Tris(1-aziridinyl)phosphine oxide Add substance in Class A Tris(2,3-dibromopropyl)phosphate Add substance in Class A N-Phenyl-benzenamine reaction products with styrene and 2,4,4-trimethylpentene
			13	No.17 No.18 No.19 No.20 (*2) (*4) (*5) 6. (3)	Add substance in Class A Bis (2- methoxyethyl) phthalate Add substance in Class A Di-n-hexyl Phthalate Add substance in Class A Perfluorooctanic acids (PFOA) and its salts and esters Add substance in Class A 5-tert-butyl-2,4,6-trinitro-m-xylene (muskxylene) Add Cas No in Details of chlorinated hydrocarbons. Change the turn of the material/ Add List of Perfluorooctanic acids and its salts and esters.
				6. (3)	< Environment Related Chemical Substances List Prohibited substances (Class B)> Change explanation. Delete 7 substances because they was moved to Class AA or A.
				No.1 (*1) (*2) 6. (4)	Add substance in Class B PAHs (8 substances) Change a note. Add a note. < Environment Related Chemical Substances List Prohibited substances (Class B)>
				No.1	Change explanation. Delete 1 substance because they was moved to Class A. REACH Regulation: It stopped mentioning it individually about the Substances of Very High Concern (SVHC) and "It was mentioned as "SVHC" in one.
			14	No.2, No.3 No.4 No.5 No.6 No.7 No.8 No.9 No.10 No.11 No.12 No.13 No.14 No.15 No.16 (*2) (*3) (*4) (*5) 6. (5)	Add substance in Class C Substituted Diphenylamine Add substance in Class C 2-(2-aminoethylamino) ethanol Add substance in Class C Arsenic and its compounds Add substance in Class C Beryllium and its compounds Add substance in Class C Nickel and its compounds Add substance in Class C Selenium and its compounds Add substance in Class C Brominated flame retardants except for PBB, PBDE Add substance in Class C Bisphenol A Add substance in Class C Alkyl phenol (Number of carbon 5-9) Add substance in Class C 2,4-dichlorophenol Add substance in Class C Di(2-ethylhexyl) adipate Add substance in Class C Benzophenone Add substance in Class C Octachlorostyrene Add substance in Class C Trichloroethylene Add substance in Class C Tetrachloroethylene Add a note. Change sentence in note. Add a note. Add the List of Substituted Diphenylamine.
			15	8.	Add the item of 6. 5) Main regulations about the chemical substances. Add the person in charge
Fifth Edition	Sep. 1 2015	Isshiki	5	5. (15)	< Definition of Terms > Change [material composition] into [constituent component and its contents (ratio) for each region]
			6	6. (1)	< Environment Related Chemical Substances List Prohibited substances (Class A)>
			7	No.1 No.16 No.17	Mitsumi Group control value of cadmium and its compounds in metal is changed from 75ppm to 50ppm . Change Nickel compounds into Nickel and its compounds Change Object to be controlled of Arsenic and its compounds into Uses as a preservative for wood Delete Exception from application
			8	No.22 No.23	Add substance in Class AA Add Sulfur hexafluoride(SF ₆) into HFC, PFC Change Object to be controlled and Exception from application of PVC; polyvinyl chloride; Polyvinyl chloride polymer; polyvinyl chloride resin
			9	No.34 No.35	Add substance in Class AA N-Phenyl-benzenamine reaction products with styrene and 2,4,4-trimethylpentene (BNST) Add substance in Class AA Perfluorooctanic acids (PFOA) and its salts and esters
			11	No.36 6. (2)	Add substance in Class AA PAHs 8 substances < Environment Related Chemical Substances List

				No.3~19 No.5 No.8	Substances whose use is prohibited for certain products (Class A)> Change No (Number) for Chemical substance (group) name Add substance in Class A Phthalate 8 substances Change regulation value of PAHs 18 substances Delete substance in Class A N-Phenyl-benzenamine reaction products with styrene and 2,4,4-trimethylpentene (BNST) Delete substance in Class A Perfluorooctanic acids (PFOA) and its salts and esters
			12		
			13	6. (3) 6. (4)	< Environment Related Chemical Substances List Substances which are to be totally eliminated as soon as possible (Class B)> Delete substance in Class B PAHs 8 substance. < Environment Related Chemical Substances List Substances to be controlled (Class C)> Delete substance in Class C Arsenic and its compounds Delete substance in Class C Beryllium and its compounds Delete substance in Class C Nickel and its compounds Delete substance in Class C Selenium and its compounds Delete substance in Class C Brominated flame retardants except for PBB, PBDE Delete substance in Class C Bisphenol A Delete substance in Class C Alkyl phenol (Number of carbon 5-9) Delete substance in Class C 2,4-dichlorophenol ,Di(2-ethylhexyl) adipate Delete substance in Class C Benzophenone, Octachlorostyrene Delete substance in Class C Trichloroethylene ,Tetrachloroethylene
			15	8	Change the person in charge
Sixth Edition	Jun. 9 2017	Isshiki	1		Change [organization name] into [Environment Promotion Section Quality Assurance & Environment Department Business Support Division]
			2	4.1 (1)2	< Selection and inspection of parts, materials, sub-materials and packing materials to be newly purchased by Mitsumi Group > Change standard of Investigation Sheet for Chemical Substances Contained in Products into chemSHERPA-AI
			3-4	3),(5)-2	Move sentence of analysis data from (5) Add sentence of phthalates
				6)	Change sentence
			5	(2) 5 (14) (15)	Add sentence of chemSHERPA-CI < Definition of Terms > Add chemSHERPA-AI Add chemSHERPA-CI
			7-10	6.(1)	< Environment Related Chemical Substances List Prohibited substances (Class AA)>
				No.5,7,8,9, 10,11,12,13, 19,25,28	Change expression of [Object to be controlled] (Not change contents, but change it into 「All uses [Use examples] 」)
				No.16	Change Regulation value of Nickel and its compounds
				No.17	Change Object to be controlled of Arsenic and its compounds
				No.23,24,28	Add and change Major reference regulations
			12	No.37 (*8)	Add substance in Class AA Halogenated diphenyl methanes Add table of Halogenated diphenyl methanes
			13-		< Environment Related Chemical Substances List
			14		Substances whose use is prohibited for certain products (Class A)>
				No.3	Let old version No.3,4,5 be No.3
				No.3,5,6,7,9, 12, No.3	Add and change Major reference regulations Add substance in Class A 1,2-Benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-Benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate
				No.12	Change [Object to be controlled] into [All Uses]
				No.16	Add substance in Class A PVC; polyvinyl chloride; Polyvinyl chloride polymer; polyvinyl chloride resin Delete substance in Class A Halogenated diphenyl methanes Delete substance in Class A PAHs18substances
			16	7	Change [approved by] into the general manager of Business Support Division
				8	Change [organization name] into [Environment Promotion Section Quality Assurance & Environment Department Business Support Division]