KGS Procurement Standard

Annex: Environmental Hazardous Substance Management Standard

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Contents

1. Purpose

This Standard has been designed to clearly describe the management standard for the chemical substances that related to our products as well as to promote awareness of the standard among our business partners.

2. Scope of Application

This Standard applies to all the products, parts, materials, and indirect materials we purchase as we as the manufacturing processes of the these items.

3. Application of the Standard

It goes without saying that this Standard has been established in compliance with laws. Should a customer wish to apply its own standard, however, we may apply the customer standard separately from usual cases for other customers. As for our suppliers, we request them to ensure that the KGS standard is applied for the operations of their consignee companies or those from which they purchase goods and materials for manufacturing products which are delivered to our company.

4. Definition of Terms

1) Supplier and Customer

"Supplier" refers to a company or a group from whom we purchase goods. "Customer" refers to a company or a group to whom we sell goods.

2) Indirect material

Indirect material refers to packaging materials (carton, plastic bag, cushioning material, tape, label, ink, adhesive, etc.) and chemicals (mold lubricant, solvent, cleaning agent, etc.).

3) Environmental hazardous substance

Environmental hazardous substance refers to a substance contained in products and materials or used during manufacture and with a significantly adverse impact (aspect) on human body and/or global environment. In accordance with laws and regulations as well as customer requests, we specify the substance to manage it by planning its elimination or reduction.

4) Containment

Containment refers to a condition in which the substance is mixed in or added and attached to a product, or fills the product regardless of whether it is intentional or not.

5) Impurity

Impurity refers to a substance that is naturally and unintentionally contained in a material and/or formed during production and cannot be removed completely by technical means. For the substances that have Maximum Content Value (MCV) defined in the Procurement Standard must not be contained more than the quantity of MCV even if the substances are impurities.

6) Content rate

Content rate refers to a value that the mass of the designated substance in one component (in homogeneous material) divided by the mass of the component (the homogeneous material).

7) Intentional use

Intentional use refers to the intentional use of chemical substances which occurred when the substances are expected to be contained during the manufacturing or work

processes of materials, parts, or products. The purpose of this use is to achieve the appearance or quality characteristics of the materials, parts, or products.

8) Homogeneous material

Homogeneous material refers to a material that cannot be mechanically disjointed into different materials. The term “mechanically disjointed” means that the materials can be, in principle, separated by mechanical actions such as unscrewing, cutting, crushing, grinding and abrasive processes.
(Example: plastics, ceramics, glass, metals, alloys, paper, board, resins, ink, coat, etc.)

9) Evidence

Evidence is the result of quantitative and qualitative analysis of a specified substance. For the substances with the specific MCV, its evidence must be obtained by quantitative analysis method with adequate accuracy. See Table 12 for details of the analysis method.

10) Material Safety Data Sheet (MSDS)

Material Safety Data Sheet (MSDS) is a form with data regarding the properties and handling of a product. It is an obligation of a company to submit this form to another company where the product is delivered.

11) MSDSplus

MSDSplus is a basic form recommended by Joint Article Management Promotion-consortium (JAMP) and used to provide information on the chemical substances contained in a product. The form shows Names of Regulations that regulate components contained in a product, Presence of Substances which are controlled, Names of Substances, CAS Numbers, Concentration, and other information.

12) Article Information Sheet (AIS)

Article Information Sheet (AIS) is a basic form recommended by Joint Article Management Promotion-consortium (JAMP) and used to provide information on the chemical substances contained in a product. The form shows an article’s Mass, Place, Material, and Presence of Substances/Content/Concentration par article of the substances controlled by regulations.

13) Substances of Very High Concern (SVHC)

Substances of Very High Concern (SVHC) are chemical substances designated as substances of very high concern in REACH Regulation of EU.

14) JGP format

The JGP format is an answer sheet set by Japan Green Procurement Survey Standardization Initiative (JGPSSI) and used for a survey of environmentally hazardous substances.

15) JAMA sheet

The JAMA sheet is a standard survey form used to gather information on materials of automobile parts and contained substances proposed by Japan Automobile Manufacturers Association, Inc. (JAMA).

16) International Material Data System（IMDS）

The International Material Data System (IMDS) is the web-based system adopted to archive and report data for gathering and analyzing automotive parts and material information.

17) Global Automotive Declarable Substance List (GADSL)

The Global Automotive Declarable Substance List (GADSL) is a list of declared or

banned substances of IMDS.

18) Joint Industry Guide (JIG)

The Joint Industry Guide (JIG) is a collaborative guideline issued by Japan Green Procurement Survey Standardization Initiative (JGPSSI), Electronic Industries Alliance (EIA), and European Information & Communications Technology Industry Association (EICTA). The purpose of this guide is to standardize the controlled substances related to Green Procurement.

5. Management Standard for Environmental Hazardous Substances

Our company manages environmentally hazardous substances by dividing them into two ranks.

A	Banned substance	- Must not be contained in products, packaging materials, etc. - Must not be used in manufacturing processes	See Table 1.
B	Controlled substance	It is preferable that containing the substances in a product or packaging material and using them in manufacturing processes are avoided. Depending on the product, presence of substance (content) must be understood.	See Table 2.

Exempt uses of the banned substances are specified in Table 1-1.

6. Survey on Environmental Hazardous Substances

1) We request that you provide us with the following information on chemical substances used in products, parts, materials, and packaging materials you deliver to us as well as those used in manufacturing processes.

Goods delivered to our company		Document to be submitted
1. Raw material		(1) MSDS (2) MSDSplus (3) Chemical Substance Content Survey (4) Evidence of RoHS compliant (Analysis data)
2. Parts		(1) AIS (2) Chemical Substance Content Survey (3) Survey of Chemical Substance Used in Manufacturing Process (4) Evidence of RoHS compliant (Analysis data of parts or raw material used)
3.Indirect material	Packaging material	(1) Confirmation of Non-Use of Banned Substances for Packing Material
	Medial agent (mold release, solvent, adhesive etc.)	(1) MSDS (2) Chemical Substance Content Survey
4. Product by contract manufacturers	Product for which we supply with materials	(1) Survey of Chemical Substance Used in Manufacturing Process

	Product for which our supplier purchases materials	(1) MSDS for raw material (2) MSDSplus for raw material (3) AIS for parts, plating, etc. (4) Chemical Substance Content Survey (5) Survey of Chemical Substance Used in Manufacturing Process (6) Confirmation of Non-Use of Banned Substances for Packing Material (7) Evidence of RoHS compliant (Analysis data of parts or raw material used)

2) If there is any information you cannot disclose because it is confidential know-how, please advise us first, and then provide us with the documents to show the banned substances are not contained in products.

3) By our customers' request, we may ask you to conduct a survey based on other standard than this standard. (JGP format, IMDS, JAMA sheet, other customer specific formats)

   The JAMA sheet can be used in place of the component table shown in Chemical Substance Content Survey.

7. Elimination of the Environmental Hazardous Substance Control Standard

We will eliminate this policy in accordance with change in social conditions or trends of regulations as well as upon request by our customers. In the event of elimination, we may ask you for cooperation by conducting a survey once again. Please see the revision history shown in Table 3.

Table 1 Banned Substances (Rank A)

No.	Substance	CAS No.	Regulation details (* Allowable concentration refers to concentration in homogeneous material.)	Law and regulation
1	Mercury and its compounds	See Table 1-3.	(1) Intentional use prohibited and less than 1000ppm (2) The sum of cadmium, hexavalent chromium, lead, and mercury is less than 100 ppm for packaging material (3) Use also prohibited in a manufacturing process * Exemption of application: See Table 1-1.	RoHS Directive EU Packaging and Packaging Waste Directive
2	Hexavalent chromium and its compounds	See Table 1-3.	(1) Intentional use prohibited and less than 1000ppm (2) The sum of cadmium, hexavalent chromium, lead, and mercury is less than 100 ppm for packaging material (3) Use also prohibited in a manufacturing process * Exemption of application: See Table 1-1.	RoHS Directive EU Packaging and Packaging Waste Directive REACH Annex XVII
			* Table 1-2 shows the hexavalnet chromium of SVHC	REACH SVHC
3	Cadmium and its compounds	See Table 1-3.	(1) Intentional use prohibited; Less than 5ppm for plastic (including rubber), paint, and ink, and less than 100ppm for other (2) The sum of cadmium, hexavalent chromium, lead, and mercury is less than 100 ppm for packaging material (3) Use also prohibited in a manufacturing process * Exemption of application: See Table 1-1.	RoHS Directive EU Packaging and Packaging Waste Directive REACH Annex XVII
4	Lead and its compounds	See Table 1-3.	(1) Intentional use prohibited; Less than 100ppm for plastic (including rubber), paint, ink, and surface treatment of electrode or lead terminal, and less than 1000ppm for other (2) The sum of cadmium, hexavalent chromium, lead, and mercury is less than 100 ppm for packaging material (3) Use also prohibited in a manufacturing process * Exemption of application: See Table 1-1.	RoHS Directive EU Packaging and Packaging Waste Directive REACH Annex XVII
			* Table 1-2 shows the lead compounds of SVHC	REACH SVHC
5	Polybrominated biphenyl (PBBs)	See Table 1-3.	(1) Intentional use prohibited and less than 1000ppm (2) Use also prohibited in a manufacturing process	RoHS Directive、Japanese Chemical Substances Control Law REACH Annex XVII
6	Polybrominated biphenyl ethers (PBDEs)	See Table 1-3.	(1) Intentional use prohibited and less than 1000ppm (2) Use also prohibited in a manufacturing process	RoHS Directive、Japanese Chemical Substances Control Law REACH Annex XVII
7	Polychlorinated naphtalene (PCN) = Number of chlorines is three or more.	See Table 1-3.	Intentional use prohibited	Japanese Chemical Substances Control Law
8	Polychlorinated terphenyl (PCT)	See Table 1-3.	Intentional use prohibited	REACH Annex XVII Japanese Chemical

				Substances Control Law
9	Polychlorinated biphenyl (PCB)	See Table 1-3.	Intentional use prohibited	Japanese Chemical Substances Control Law
10	PCB alternative substance	See Table 1-3.	Intentional use prohibited and less than 1000ppm	REACH Annex XVII
11	Hexachlorobenzene	118-74-1	Intentional use prohibited	Japanese Chemical Substances Control Law
12	Aldrin	309-00-2	Intentional use prohibited	Japanese Chemical Substances Control Law
13	Dieldrin	60-57-1	Intentional use prohibited	Japanese Chemical Substances Control Law
14	Endrin	7220-8	Intentional use prohibited	Japanese Chemical Substances Control Law
15	DDT	50-29-3	Intentional use prohibited	Japanese Chemical Substances Control Law
16	Chlordanes	57-748	Intentional use prohibited	Japanese Chemical Substances Control Law
17	N,N'-dytril-para-phenylenediamine, N-tolyl-N'-xylyl-para-phenylenediamine, N,N'-dixylil-para-phenylenediamine	620-917 27417-40-9 2872630-9 70290-050	Intentional use prohibited	Japanese Chemical Substances Control Law
18	2,4,6-Tri-tert-butylphenol	732263	Intentional use prohibited	Japanese Chemical Substances Control Law
19	Toxaphene	8001352	Intentional use prohibited	Japanese Chemical Substances Control Law
20	Mirex	2385855	Intentional use prohibited	Japanese Chemical Substances Control Law
21	Kelthane or Dicofol	115322	Intentional use prohibited	Japanese Chemical Substances Control Law
22	Hexachlorobuta-1,3-diene	87-68-3	Intentional use prohibited	Japanese Chemical Substances Control Law
23	2-(2H-1,2,3-Benzotriazol-2-yl)-4,6-di-tert-butylphenol	3846-717	Intentional use prohibited	Japanese Chemical Substances Control Law
24	Perfluorooctane sulfonate (including salts) (PFOS)	See Table 1-3.	(1) Intentional use prohibited (2) Use also prohibited in a manufacturing process	Japanese Chemical Substances Control Law REACH Annex XVII

25	4-nitrodiphenyl and its salt	9293-3	Intentional use prohibited	Industrial Safety and Health Law
26	4-aminodiphenyl and its chlorides	9267-1	Intentional use prohibited (*including the case where it is generated by degradation of azo compounds)	Industrial Safety and Health Law
27	Beta naphthylamine and its chlorides	9159-8	Intentional use prohibited (*including the case where it is generated by degradation of azo compounds)	Industrial Safety and Health Law
28	Benzidine and its chlorides	92-87-5	Intentional use prohibited (*including the case where it is generated by degradation of azo compounds)	Industrial Safety and Health Law
29	Asbestos	See Table 1-3.	Intentional use prohibited	Industrial Safety and Health Law
30	Bis (chloromethyl) ether	542-88-1	Intentional use prohibited	Industrial Safety and Health Law
31	Yellow phosphorus match	7723-14-0	Intentional use prohibited	Industrial Safety and Health Law
32	Rubber cement containing benzene	7143-2	Intentional use prohibited (where the benzene accounts for more than 5% of the rubber cement solvent)	Industrial Safety and Health Law
33	Ozone depleting substances	See Table 1-3.	(1) Intentional use prohibited (2) Use also prohibited in a manufacturing process	Law Concerning the Protection of the Ozone Layer through the Control of Specified Substances and oth
34	Dioxins (PCDD, PCDF, and coplanar-PCB)	See Table 1-3.	Intentional use prohibited	Law Concerning Special Measures against Dioxins
35	Greenhouse effect gas (PFC, SF6, HFC)	See Table 1-3.	Intentional use prohibited	Concerning the Promotion of the Measures to Cope with Global Warming
36	Formaldehyde	50-00-0	Intentional use prohibited for the use in wooden parts and the use of fiber for areas contacting human body	Air Pollution Control Law GADSL
37	Xanthotoxol (Methoxsalen)	298-817	Intentional use prohibited	
38	manganese N,N'-ethylenebis(dithiocarbamate) (or maneb)	12427-38-2	Intentional use prohibited	
39	Acrylonitrile	107-13-1	Intentional use prohibited	Air Pollution Control Law
40	Acetaldehyde	7507-0	Intentional use prohibited	Air Pollution Control Law
41	Ethylene oxide	75218	Intentional use prohibited	Air Pollution Control Law
42	Cyanide compounds	See Table 1-3.	Intentional use prohibited	Water Pollution Control Law
43	Thallium and its compounds	See Table 1-3.	Intentional use prohibited	
44	Tellurium and its compounds	See Table 1-3.	Intentional use prohibited	
45	Pentachlorophenol	87-86-5	Intentional use prohibited	REACH Annex XVII Water Pollution Control Law
46	Monomethyl-dibromo-diphenyl methane (DBBT)	99688-47-8	Intentional use prohibited	EC Directive (76/769/EEC)
47	Monomethyl-tetrachloro-diphenyl methane	76253-60-6	Intentional use prohibited	EC Directive (76/769/EEC)

48	Organophosphorus compounds (Paration.Methyl paration, Methyl demeton, Ethyl-P-Nitrophenylbenzene Thiophosphate)	See Table 1-3.	Intentional use prohibited	Water Pollution Control Law
49	Arsenic and its compounds	See Table 1-3.	Intentional use prohibited and less than 1000ppm * Exemption of application: See Table 1-1.	Water Pollution Control Law REACH Annex XVII
			※ Arsenic compounds for SVHC are shown in Table 1-3.	REACH SVHC
50	Chlorinated paraffins (Short and Medium-Chain Polychlorinated Paraffins)	8553584-8	Intentional use prohibited	GADSL REACH Annex XVII
			※ Shortchain chlorinated. Paraffins for SVHC are shown in Table 1-3.	REACH SVHC
51	Tri-substituted organostannic compounds (including TPTs and TBTs)	See Table 1-3.	Intentional use prohibited	GADSL REACH Annex XVII Japanese Chemical Substances Control Law
52	Dibutyltin compounds	See Table 1-3.	Intentional use prohibited and less than 1000ppm * Exemption of application: See Table 1-3.	REACH Annex XVII
53	Dioctyltin compounds	See Table 1-3.	Intentional use prohibited and less than 1000ppm * Exemption of application: See Table 1-3.	REACH Annex XVII
54	Dibutyltin hydrogen borate (DBB)	75113-37-0	Intentional use prohibited	GADSL REACH Annex XVII
55	Azo compounds	See Table 1-3.	Azo dye used in areas contacting human body and pigment which produce specific amine in Table 1-3 by reductive degradation	REACH Annex XVII JIG
56	Radioactive substance	See Table 1-3.	Intentional use prohibited	JIG
57	Perchlorate	779103-9	Intentional use prohibited	JIG
58	Polyvinyl chloride (PVC)	9002-862	(1) Intentional use prohibited and less than 1000ppm (2) Intentional use for packaging material prohibited and 1000ppm * Exemption of application: See Table 1-3.	JIG
59	SVHC	See Table 1-3.	Intentional use prohibited and less than 1000ppm	REACH
60	Dimethyl fumarate	62448-7	Intentional use prohibited and less than 1000ppm	2009/251/EC

Table 1-1 Exemption to Use a Banned Substance

No.	Substance name	Exempt application
1	Mercury and its compounds	(1) Mercury in compact fluorescent lamps not exceeding 5 mg per lamp
		(2) Mercury in straight fluorescent lamps for general purposes not exceeding: − halophosphate 10 mg − triphosphate with normal lifetime 5 mg − triphosphate with long lifetime 8 mg
		(3) Mercury in straight fluorescent lamps for special purposes
		(4) Mercury contained in other lamps which are not specified in Annex of the Directive of 200295/EC (RoHS Directive)
2	Hexavalent chromium and its compounds	Hexavalent chromium as an anti-corrosion of the carbon steel cooling system in absorption refrigerators
3	Cadmium and its compounds	Cadmium and its compounds in electrical contacts and cadmium plating except for applications banned under Directive 91338/EEC amending Directive 76/769/EEC relating to restrictions on the marketing and use of certain dangerous substances and preparations
4	Lead and its compounds	(1) Lead in glass of cathode ray tubes, electronic components and fluorescent tubes
		(2) Lead as an alloying element in steel containing up to 0,35 % lead by weight, aluminum containing up to 0,4 % lead by weight and as a copper alloy containing up to 4 % lead by weight
		(3) Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead)
		(4) Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission as well as network management for telecommunications
		(5) lead in electronic ceramic parts (e.g. piezoelectronic devices)
		(6) Lead in lead-bronze bearing shells and bushes
		(7) Lead used in compliant pin connector systems
		(8) Lead as a coating material for the thermal conduction module c-ring
		(9) Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip
		(10) Lead and cadmium in optical and filter glass
		(11) Compositions as main amalgam and with PbSn-Hg as auxiliary amalgam in very compact Energy Saving Lamps (ESL)
		(12) Lead as impurity in RIG (rare earth iron garnet) Faraday rotators used for fibre optic communications systems
		(13) Lead in finishes of fine pitch components other than connectors with a pitch of 0.65 mm or less with NiFe lead frames and lead in finishes of fine pitch components other than connectors with a pitch of 0.65 mm or less with copper lead frames
		(14) Lead oxide in plasma display panels (PDP) and surface conduction electron emitter displays (SED) used in structural elements; notably in the front and rear glass dielectric layer, the bus electrode, the black stripe, the address electrode, the barrier ribs, the seal frit and frit ring as well as in print pastes
47	Arsenic and its compounds	Arsenic used for semiconductor, glass, copper foil, photosensitizing agent, magnet filter, battery
52	Dibutyltin compounds	Existing parts for which we limit customers to sell upon request from customers (including addition of upgraded items)
53	Dioctyltin compounds	Existing parts for which we limit customers to sell upon request from customers (including addition of upgraded items)
58	Polyvinyl chloride (PVC)	(1) Existing parts for which we limit customers to sell upon request from customers (including addition of upgraded items)
		(2) Exterior equipment (MEF)
		(3) Vinyl chloride cable for optical fiber
		(4) Power cord for EU
		(5) External wiring

Table 1-2 Analysis Method

No.	Substance for analysis	Analysis method
1	Mercury and its compounds	RoHS Directive analysis method of IEC62321 or the following methods: 1) Screening Analysis 2) Precision Analysis (1) Preconditioning - A pressurized acid decomposition method done in a sealed container (a microwave decomposition method [e.g. EPA 3052:1996]) - A heating evaporation-cold-vapor mercur-atomic-absorption method - A wet decomposition method (e.g. Kjeldahl method) in which a decomposition flask with a reflux condenser is used to decompose mercury by sulfuric cid or nitric acid. etc. * In the process of preconditioning, particular attention is required to avoid mercury sublimation, and sediments must be completely dissolved by some technical means. (2) Measurement Method - Inductively Coupled-Plasma-Atomic (Optical) Emission Spectroscopy (ICP-AES[IC-OES]) (e.g. EN ISO 11885:1998); - Atomic Absorption Spectroscopy (AAS) (e.g. EN ISO5961:1995) - Inductively Coupled-Plasma Mass Spectroscopy (ICP-MS). etc. * When the mercury concentration is expected to be low, it is recommended to use one of the following methods. - A reduction-evaporation atom-absorption method - ICP-AES (ICP-OES) method with a hydride-generation apparatus - ICP-MS method with a hydride-generation apparatus
2	Hexavalent chromium and its compounds	RoHS Directive analysis method of IEC62321 or the following methods: 1) Screening Analysis: Total Chromium determination by X-Ray Fluorescence Analysis 2) Precision Analysis (1) Preconditioning - Elution methods such as boiling water extraction and alkaline extraction (e.g. EPA3060A, JISH8625) (2) Measurement method - Ultraviolet-Visible (UV/VIS) Spectroscopy (e.g. EPA 7196A, JISH8625)
3	Cadmium and its compounds	RoHS Directive analysis method of IEC62321 or the following methods: 1) Screening Analysis: X-Ray Fluorescence Analysis 2) Precision Analysis (1) Preconditioning - Incineration under the existence of sulfuric acid; - A pressurized acid decomposition method done in a sealed container (a microwave decomposition method [e.g. EPA3052:1996, EN13346:2000]) - An acid decomposition method under the existence of nitric acid, hydrogen-peroxide water and hydrochloric acid (e.g. EPA3050B Rev.2:1996); and - A wet decomposition method under the existence of sulfuric acid, nitric acid, and hydrogen-peroxide water (e.g. BS EN1122:2001) etc. * In the process of preconditioning, sediments must be completely dissolved by some technical means (e.g. alkali fusion). (2) Measurement method - Inductively Coupled-Plasma-Atomic (Optical) Emission Spectroscopy (ICP-AES[IC-OES]) (e.g. EN ISO 11885:1998); - Atomic Absorption Spectroscopy (AAS) (e.g. EN ISO5961:1995) - Inductively Coupled-Plasma Mass Spectroscopy (ICP-MS). etc. * Both cadmium and lead can be simultaneously analyzed by each of the measurement methods except for AAS.
4	Lead and its compounds	RoHS Directive analysis method of IEC62321 or the following methods: 1) Screening Analysis: X-Ray Fluorescence Analysis 2) Precision Analysis (1) Preconditioning - Incineration under the existence of sulfuric acid; - A pressurized acid decomposition method done in a sealed container (a microwave decomposition method [e.g. EPA3052:1996, EN13346:2000]) - An acid decomposition method under the existence of nitric acid, hydrogen-peroxide water and hydrochloric acid (e.g. EPA3050B

		Rev.2:1996); and - A wet decomposition method under the existence of nitric acid and hydrogen-peroxide water etc. * In the process of preconditioning, sediments must be completely dissolved by some technical means (e.g. alkali fusion). (2) Measurement method - Inductively Coupled-Plasma-Atomic (Optical) Emission Spectroscopy (ICP-AES[IC-OES]) (e.g. EN ISO 11885:1998); - Atomic Absorption Spectroscopy (AAS) (e.g. EN ISO5961:1995) - Inductively Coupled-Plasma Mass Spectroscopy (ICP-MS). etc. * Both cadmium and lead can be simultaneously analyzed by each of the measurement methods except for AAS.
5	Polybrominated biphenyl (PBBs)	RoHS Directive analysis method of IEC62321
6	Polybrominated biphenyl ethers (PBDEs)	RoHS Directive analysis method of IEC62321
34	Formaldehyde	Standard Value (emission content): The value can be obtained by one of the following methods. (1) Chamber Method EN717-1:2002 Concentration in the air: Equal to or less than 0.1 ppm (or 0.124 mg/m^3) in an air-tight chamber whose volume is 12m^3, 1m^3, or 0.0225m^3. (2) Perforator Method EN 120:1992 - Equal to or less than 6.5 mg in 100g of a particleboard without a surface treatment (the average value of six months) - Equal to or less than 7.0 mg in 100g of a fiberboard without a surface treatment (the average value of six months), or equal to or less than 8.0 mg in 100g of a particleboard/fiberboard without a surface treatment (the value derived from the one-time measurement based on EN120) (3) Desiccator's method JIS A 5905, JIS A 5908 - Average content: 0.5 mg/l or less, Maximum content: 0.7 mg/l or less (Use N=2 to check the average and maximum values.)
55	Azo compounds	The methods to decompose azo compounds and extract amines are as follows: EN 14362-1:2003, CEN ISO-TS 17234:2003, EN 14362-2:2003
60	Dimethyl fumarate	Extract solvent and measure the substance using GC/MS etc.

Table 1-3 Banned Substances

No.	Substance group	Substance	CAS No.
1	Mercury and its compounds	Mercury	7439-97-6
		Mercury alloys; amalgam	
		Mercury (I) oxide	15829-53-5
		Mercury (II) oxide	21908-53-2
		Mercury (I) chloride	10112-91-1
		Mercury (II) chloride	7484-94-7
		Mercury (II) nitrate	10045-94-0
		Mercury (I) sulfate）	628-86-4
		Mercury (II) fulminate	
		Mercury (II) acetate	1600-27-7
		Methylmercury saits	22967-92-6
		Ethylmercury salts	
		Propylmercury salts	
		Phenylmercury salts	
		Methylmercury salts	
		Dialkylmercury	
		Diphenylmercury	587-85-9
		Other mercury compounds	
2	Hexavalent chromium and its compounds	Chromium (VI) oxide; chromium trioxide	1333-82-0
		Chromium acid	7738-94-5
		Lithium chromate	14307-35-8
		Sodium chromate	7775-11-3
		Potassium chromate	7789-00-6
		Potassium; chlorochromate	16037-50-6
		Ammonium chromate	7788-98-9
		Copper chromate	13548-42-0
		Magnesium chromate	13423-61-5
		Calcium chromate	13765-19-0
		Strontium chromate	7789-06-2
		Barium chromate	10294-40-3
		Lead chromate; chrome yellow	1344-37-2
		Zinc chromate	12018-19-8 13530-65-9 14018-95-2
		Sodium dichromate; Sodium bichromate	10588-01-9
		Potassium dichromate	7778-50-9
		Ammonium dichromate	7789-09-5
		Calcium dichromate	14307-33-6
		Zinc dichromate	14018-95-2
		Dichromic acid	13530-68-2
		Chromic acid	
		Other hexavalent chromium compounds	
3	Cadmium and its compounds	Cadmium	7440-43-9
		Cadmium alloys	
		Cadmium oxide	1306-19-0
		Cadmium chloride	10108-64-2
		Cadmium sulfide	1306-23-6 8047-07-5
		Cadmium nitrate	10325-94-7
		Cadmium nitrate tetrahydrate	10022-68-1
		Cadmium sulfate	10124-36-4
		Cadmium stearate	2223-93-0
		Other cadmium compounds	
4	Lead and its compounds	Lead	7349-92-1
		Lead/tin alloy	
		Lead (II) oxide	1317-36-8
		Lead (IV) oxide	1309-60-0
		Dilead trioxide	
		Lead (II, IV) oxide	1314-41-6
		Lead azide	13424-46-9
		Lead (II) fluoride	7783-46-2
		Lead (II) chloride	7758-95-4

		Lead (IV) chloride	13463-30-4
		Lead (II) iodide	10101-63-0
		Lead (II) sulfide	1314-87-0
		Lead (II) cyanide	592-05-2
		Lead fluoroborate	13814-96-5
		Lead hexafluorosilicate	25808-74-6
		Lead nitrate	10099-74-8
		Lead carbonate	598-63-0
		Bis[carbonato(2-)]dihydroxytrilead	1344-36-1
		Lead perchlorate	13637-76-8
		Lead (II) sulfate	7446-14-2 ; 15739-80-7
		Lead oxide sulfate	12202-17-4
		Lead (II) Phosphate	7446-27-2
		Lead thiocyanate	592-87-0
		Lead (II) acetate tryhydrate	6080-56-4
		Lead (II) acetate	301-04-2
		Lead (IV) acetate	546-67-8
		Lead oleate	1120-46-3
		Lead stearate	7428-48-0
		Lead (II) metaborate	10214-39-8
		Lead metasilicate	11120-22-2 ; 10099-76-0
		Lead antimonate	13510-89-9
		Lead arsenate (1:1)	7784-40-9
		Lead (II) arsenite	10031-13-7
		Lead chromate; chrome yellow	1344-37-2
		Lead molybdate	10190-55-3
		Calcium plumbate	12013-69-3
		Tetramethyllead	75-74-1
		Tetraethyllead	78-00-2
		0ther lead compounds and alloys	
5	Polybrominated biphenyl (PBBs)	Polybrominated biphenyls	2052-07-5 2113-57-7 92-66-0 59536-65-1
		Decabromobiphenyl	13654-09-6
		Octabromodiphenyl	61288-13-9
		Hexabromobiphenyl	59080-40-9 36355-01-8 67774-32-7
		Tetrabromobiphenyl	40088-45-7
		Dibromobiphenyl	92-86-4
		Other PBBs	
6	Polybrominated biphenyl ethers (PBDEs)	Polybromodiphenyl ethers; PBDE Polybromodiphenyl oxides; PBDO Polybrominated biphenyl ethers; PBBE	
		Decabromodiphenyl ether; DBDE Decabromodiphenyl oxide; DBDPO	1163-19-5
		Octabromodiphenyl ether; OBDE Octabromodiphenyl oxide; OctaBDE	32536-52-0
		Hexabromodiphenyl ether; Hexabromodiphenyl oxide	36483-60-0
		Pentabromodiphenyl ether; Pentabromodiphenyl oxide	32534-81-9
		Other PBDEs	
7	Polychlorinated naphtalene (PCN) = Number of chlorines is three or more.	Trichloronaphthalene	1321-65-9
		Tetrachloronaphthalene	1335-88-2
		Pentachloronaphthalene	1321-64-8
		Octachloronaphthalene	2234-13-1
8	Polychlorinated terphenyl (PCTs)	Polychlorinated terphenyl	61788-33-8
		Aroclor 5442	12642-23-8
9	Polychlorinated biphenyl (PCB)	Polychlorinated biphenyl	1336-36-3
		Aroclor 1254	11097-69-1
		Monomethyl-tetrachloro-diphenyl methane	6253-60-6
		Monomethyl-dichloro-diphenyl methane	
		Monomethyl-dibromo-diphenyl methane	99688-47-8

10	PCB alternative	Monomethyl-dichloro-diphenyl methane		8116170-8
		Monomethyl-dibromo-diphenyl methane		99688-47-8
		Monomethyl-tetrachloro-diphenyl methane		76253-60-6
24	Perfluorooctane sulfonate (including salts)（PFOS）	Perfluorooctane sulfonate		1763-23-1
		Perfluorooctane sulfonate (ammonium salt)		29081-56-9
		Perfluorooctane sulfonate（diethanolamine salt）		7022514-8
		Perfluorooctane sulfonate (potassium salt.)		2795-39-3
		Perfluorooctane sulfonate (lithium salt)		29457-72-5
29	Asbestos	Asbestos		1332-21-4; 132207-32-0; 132207-33-1
		Crocidolite		12001-28-4
		Chrysotile		12001-29-5
		Amosite		1217273-5
		Anthophyllite		77536-67-5
		Tremolite		77536-68-6
		Actinolite		77536-66-4
33	Ozone depleting substances	CFCs	CFC-11	75-69-4
			CFC-12	75-71-8
			CFC-13	75-72-9
			CFC-111	354-56-3
			CFC-112	28605-74-5
			CFC-113	76-13-1
			CFC-114	76-14-2
			CFC-115	76-15-3
			CFC-211	422-78-6
			CFC-212	3182-26-1
			CFC-213	134237-31-3
			CFC-214	29255-31-0
			CFC-215	1599-41-3
			CFC-216	661-97-2
			CFC-217	422-86-6
		Specific halons	Halon-1211	353-59-3
			Halon-1301	75-63-8
			Halon-2402	124-73-2
		Carbon tetrachloride		56-23-5
		1, 1, 1-Trichloroethane		71-55-6
		Bromochloromethane		74-97-5
		Metylbromide		74-83-9
		HBFC	Dibromofluoromethane	1868-53-7
			Bromodifluoromethane	1511-62-2
			Tribromodifluoroethane	
			Bromotetrafluoroethane	124-72-1
			Dibromodifluoroethane	75-82-1
			Dibromofluoroethane	358-97-4
			Bromofluoroethane	762-49-2
			Pentabromodifluoropropane	
			Tribromotetrafluoropropane	
			Bromohexafluoropropane	2252-79-1
			Tetrabromodifluoropropane	
			Dibromotetrafluoropropane	
			Tetrabromofluoropropane	
			Dibromotrifluoropropane	70192-83-5
			Tribromofluoropropane	75372-14-4
			Bromotrifluoropropane	421-46-5
			Dibromofluoropropane	
			Bromofluoromethane	373-52-4
			Tetrabromofluoroethane	306-80-9
			Dibromotrifluoroethane	354-04-1
			Tribromofluoroethane	
			Bromotrifluoroethane	421-06-7
			Bromodifluoroethane	359-07-9
			Hexabromofluoropropane	

34	Dioxins (PCDD, PCDF, and coplanar-PCB)	Poly Chlorinated Dibenzo-para-Dioxin		
		Poly Chlorinated Dibenzo Furan		51207-31-9
		Coplaner Poly Chlorinated Biphenyl		
35	Greenhouse effect gas (PFC, SF6, HFC)	PFC	PFC-14	75-73-0
			PFC-116	76-16-4
			PFC-218	76-19-7
			PFC-3110	355-25-9
			PFC-4112	678-26-2
			PFC-5114	355-42-0
			PFC-c318	115-25-3
		SF6	Sulfur hexafluoride	2551-62-4
		HFC	HFC-125	354-33-6
			HFC-134	359-35-3
			HFC-134a	811-97-2
			HFC-143	430-66-0
			HFC-143a	420-46-2
			HFC-152a	75-37-6
			HFC-227ea	431-89-0
			HFC-23	75-46-7
			HFC-236fa	690-39-1
			HFC-245ca	679-86-7
			HFC-32	75-10-5
			HFC-41	593-53-3
			HFC-43-10mee	138485-42-8
42	Cyanogen compounds	Ethylene cyanohydrin		109-78-4
		Copper Cyanide		14763-77-0
		Phenyl isocyanate		103-71-9
		Barium cyanide		54262-1
		Zinc cyanide		557-21-1
		Barium cyanide		542-62-1
43	Thallium and its compounds	Thallium		7440-28-0
		Thallium oxide		1314-12-1
		Thallium sulfate		744618-6
		Thallium nitrate		10102-45-1
		Other thallium compounds		
44	Tellurium and its compounds	Tellurium		13484-80-9
		Dimethyl tellurium		593-80-6
		Tellurium dioxide		148081-89-0
		Tellurium trioxide		
		Tellurium Hexafluoride		7783-80-4
		Tellurium tetrachloride		
		Hydrogen telluride		7783-09-7
		Other Tellurium Compounds		
48	Specific organophosphorous compound (Parathion, Methyl Parathion, Methyl Demeton, and EPN)	Parathion		56-38-2
		Methyl parathion		298-00-0
		Demeton methyl		8022-00-2
		EPN		2104-64-5
49	Arsenic and its compounds	Arsenic		7440-38-2
		Gallium arsenide		1303-00-0
		Arsenic pentoxide		1303-28-2
		Arsenic trioxide		1327-53-3
		Other arsenic compounds		
51	Trisubstituted organic tin compounds (including TPTs and TBTs)	Tributyl tin oxide		56-35-9
		Triphenyl tin N, N' -Dimethyldithiocarbamate		1803-12-9
		Triphenyltin fluoride		379-52-2
		Triphenyl tin acetate		900-95-8
		Triphenyl tin chloride		639-58-7
		Triphenyltin hydroxide		76-87-9
		Triphenyl tin fatty acid salts		18380-71-7 18380-72-8 47672-31-1 94850-90-5

		Triphenyltin chloroacetate		7094-94-2
		Tributyl tin methacrylate		2155-70-6
		Bis (tributyl tin) fumarate		6454-35-9
		Tributyl tin fluoride		1983-10-4
		Bis (tributyl tin) 2, 3-Dibromosuccinate		31732-71-5
		Tributyl tin acetate		56-36-0
		Tributyltin laurate		3090-36-6
		Bis (tributyl tin) phthalate		4782-29-0
		Octyl acrylate-Methyl methacrylate-Tributyltin methacrylate copolymer (alkyl; C=8)		67772-01-4
		Tributyl tin sulfamate		6517-25-5
		Bis (t ributyl tin) maleate		14275-57-1
		Mixture of tributyl tin cyclopentanecarboxylate and its analogs		5409-17-2
		[1R-(1alpha, 4a.beta., 4b.aipha., 10a. alpha.)]-tributyl[[[1, 2, 3, 4, 4a, 4b, 5, 6, 10, 10a, -decahydro-7-iso propyl-1, 4a-dimethyl-1-phena nthryl]carbonyl]oxy]stannane		26239-64-5
		Tributyl tin chloride		1066-45-1
		Sulfuric acid trimethylstannyl ester		63869-87-4
		Trimethyltin (IV) hydroxido		56-24-6
		Triethyltin (IV) chloride		994-31-0
		Trietyltinhydroxide		994-32-1
		Tripropyltin chloride		2279-76-7
		Trimethyliodostannane		73927-92-1
52	Dibutyltin compounds	Dibutyltin		1002-53-5
		Dibutyltin maleate		10192-92-4
		Stannane, bis(methoxymaleoyloxy)dibutyl		15546-11-9
		Di-n-butyltin bis(2-ethylhexanoate)		2781-10-4
		Dibutyltin dichloride		683-18-1
		Dibutyltin Oxide		818-08-6
53	Dioctyltin compounds	di-n-Octyltin bis(2-ethylhexyl) mercaptoacetate		15571-58-1
		Dioctyl(maleate)tin		16091-18-2
		Dioctyl tin		26401-97-8
		Di-n-octyltin bis(ethyl maleate)		33568-99-9
		Dioctyldichlorotin		3542-36-7
55	Azo compounds	Specific amine	4-Aminoazobenzene	60-09-3
			o-Anisidine	90-04-0
			2-Naphthylamine	91-59-8
			3,3'-dichlorobenzidine	91-94-1
			4-Aminodiphenyl	92-67-1
			Benzidine	92-87-5
			o-toluidine	95-53-4
			4-chrolo-o-toluidine	95-69-2
			24-Toluenediamine	95-80-7
			o-aminoazotoluene	97-56-3
			5-nitro-o-toluidine	99-55-8
			4,4'-Methylenebis(2-chloroaniline)	101-14-4
			4,4'-Diaminodiphenylmethane	101-77-9
			44-Oxydianiline	101-80-4
			p- Chloroaniline	106-47-8
			3,3’-dimethoxybenzidine	119-90-4
			3,3'-Dimethylbenzidine	119-93-7
			p-Cresidine	120-71-8
			245-trimethylaniline	137-17-7
			44-Thiodianiline	139-65-1
			24－diaminoanisole	615-05-4
			3,3-dimethyl-4,4'-diaminodiphenylmethane	838-88-0
56	Radioactive substance	Uranium		7440-61-1
		Plutonium		
		Radon		10043-92-2
		Americium		
		Thorium		7440-29-1
		Cesium		7440-46-2

		Strontium	7440-24-6
		Other radioactive substance	
59	SVHC	Anthracene	120-12-7
		4,4'-Diaminodiphenylmethane	101-77-9
		Dibutyl phthalate	84-74-2
		Cobalt chloride	7646-79-9
		Diarsenic Pentoxide	1303-28-2
		Diarsenic pentaoxide	1327-53-3
		Sodium dichromate dihydrate	7789-12-0 10588-01-9
		5-tert-butyl-2,4,6-trinitro-m-xylene	81-15-2
		Bis (2-ethyl(hexyl)phthalate)	117-81-7
		Hexabromocyclododecane and all major diastereoisomers identified	25637-99-4 3194-55-6 134237-50-6 134237-51-7 134237-52-8
		Alkanes, C10-13, chloro［Short Chain Chlorinated Paraffins］	85535-84-8
		Bis(tributyltin)oxide	56-35-9
		Lead hydrogen arsenate	7784-40-9
		Triethyl arsenate	15606-95-8
		Benzyl butyl phthalate	85-68-7
		Anthracene oil	90640-80-5
		Anthracene oil, anthracene paste, distn. Lights	91995-17-4
		Anthracene oil, anthracene paste, anthracene fraction	91995-15-2
		Anthracene oil, anthracene-low	90640-82-7
		Anthracene oil, anthracene paste	90640-81-6
		Coal tar pitch volatiles	65996-93-2
		Aluminosilicate, Refractory Ceramic Fibres	
		Zirconia Aluminosilicate, Refractory Ceramic Fibres	
		2,4-Dinitrotoluene	121-14-2
		Diisobutyl phthalate	84-69-5
		Lead chromate	7758-97-6
		Lead chromate molybdate sulfate red (C.I. Pigment Red 104)	12656-85-8
		Lead sulfochromate yellow (C.I. Pigment Yellow 34)	1344-37-2
		Tris(2-chloroethyl)phosphate	115-96-8
		Acrylamide	79-06-1
		Trichloroethylene	79-01-6
		Boric acid	10043-35-3 11113-50-1
		Disodium tetraborate, anhydrous	1330-43-4 12179-04-3 1303-96-4
		Tetraboron disodium heptaoxide, hydrate	12267-73-1
		Sodium chromate	7775-11-3
		Potassium chromate	7789-00-6
		Ammonium dichromate	7789-09-5
		Potassium dichromate	7778-50-9

Table 2 Controlled Substances (Rank B)

No.	Substance	CAS No.
1	Phthalate ester (other than banned substances)	See Table 2-1.
2	Antimony and its compounds	See Table 2-1.
3	Cobalt and its compounds (other than banned substances)	See Table 2-1.
4	Organotin compounds (other than banned substances)	See Table 2-1.
5	Beryllium and its compounds	See Table 2-1.
6	1,1,2-trichloroethane	79-00-5
7	1,3-butadiene	106-99-0
8	Ethylene glycol	107-211
9	Creosote	800158-9
10	Chromium and its compounds (other than banned substances)	See Table 2-1.
11	Chloroform (Trichloromethane)	67-66-3
12	Chloroethylene (Vinyl Chloride)	75-01-4
13	Selenium and its compounds	See Table 2-1.
14	Talc	14807-96-6
15	Nickel and its compounds	See Table 2-1.
16	Bromine and its compounds (other than banned substances)	See Table 2-1.
17	Chlorine and its compounds (other than banned substances)	See Table 2-1.
18	Fluorine and its compounds	See Table 2-1.
19	Bismuth and its compounds	See Table 2-1.
20	Phenol	108-95-2
21	Boron and its compounds	7440-42-8
22	Magnesium and its compounds	7487-88-9
23	Manganese and its compounds	7439-96-5
24	Simazine	122-34-9
25	Tetrachloroethylene	127-18-4
26	VOC: Volatile Organic Compounds	See Table 2-1.
27	Bisphenol A	80-05-7

Table 2-1 Controlled Substances

No.	Substance group	Substance	CAS No.
1	Phthalate ester (other than banned substances)	Diisooctyl phthalate	27554-26-3
		Diisodecyl phthalate	26761-40-0
		Diisononyl phthalate	28553-12-0
		Diisobutyl phthalate	84-69-5
		Dicyclohexyl phthalate	84-61-7
		Di (2-ethylhexyl) phthalate	117-81-7
		Di-n-octyl phthalate	117-84-0
		Butyl benzyl phthalate	85-68-7
		Dimethyl terephthalate	120-61-6
		Di-n-heptyl phthalate	3648-21-3
		Diethyl phthalate	84-66-2
		Di-n-pentyl Phthalate	131-18-0
		Di-n-propyl Phthalate	131-16-8
		Di-n-hexyl Phthalate	84-75-3
		Other Phthalate Ester Compounds	
2	Antimony and its compounds	Antimony	7440-36-0
		Antimony (III) fluoride, Antimony trifluoride	7783-56-4
		Antimony (III) iodide, Antimonyiodide	7790-44-5
		Antimony (V)-pentachloride	7647-18-9
		Antimony pentafluoride	7783-70-2
		Sodium antimonate	
		Antimony pentoxide	1314-60-9
		Antimony pentasulfide	1315-04-4
		Antimony trichloride	10025-91-9
		Antimony trioxide	1309-64-4
		Antimony trisulfide	1345-04-6
		Antimony potassium tartrate, trihydrate; Antimony (III) potassium tartrate trihydrate	28300-74-5
		Stibine	7803-52-3
		Other antimony compounds	
3	Cobalt and its compounds (other than banned substances)	Cobalt	7440-48-4
		Cobalt hydrocarbonyl	16842-03-8
		Cobalt (II) acetate tetrahydrate	6147-53-1
		Cobalt (II) oxide	1307-96-6
		Cobalt (II) nitrate hexahydrate	10026-22-9
		Cobalt (II) carbonate, basic	513-79-1
		Cobalt oxide (II, III); Cobalt oxide	1308-06-1
		Other Cobalt Compounds	
4	Organotin compounds (other than banned substances)	Dibutyltin diacetate	1067-33-0
		acetic acid: trimethyltin	1118-14-5
		Dibutyltindilaurate	77-58-7
		Diphenyl tin sulfide	20332-10-9
		Other organotin compounds	
5	Beryllium and its compounds	Beryllium	7440-41-7
		Beryllium chloride	7787-47-5
		Beryllium silicate	1591-85-2
		Beryllium oxide	
		Beryllium fluoride	
		Beryllium sulfate	
		Beryllium sulfate tetrahydrate	
		Other beryllium compounds	
10	Chromium and its compounds (other than banned substances)	Chromium	7440-47-3
		Basic Chromic Sulfate	64093-79-4
		Chromium(Ⅲ) acetate n-hydrate	1066-30-4
		Other Chromium Compounds	7782-49-2
13	Selenium and its compounds	Selenium	
		Selenium oxide	7446-08-4
		Selenium disulfide	7448-86-4
		Selenium hexafluoride	7783-79-1

		Selenous acid	7783-00-8
		Hydrogen selenide	7783-07-5
		Selenic acid	7783-08-6
		Selenium sulfide	7446-34-6
		Other selenium compounds	
15	Nickel and its compounds	Nickel (excluding alloy (eg. Stainless))	7440-02-0
		Nickel (II) acetate tetrahydrate	6018-89-9
		Nickel (II) oxide	1313-99-1
		Nickel nitrate	13138-45-9
		Nickel (II) hydroxide	12054-48-7
		Nickel carbonate	3333-67-3
		Nickel carbonyl	13463-39-3
		Bis (dimethyldithiocarbamato) nickel complex	15521-65-0
		Nickel sulfide	12035-72-2
		Nickel (II) sulphate	7786-81-4
		Nickel chloride	7718-54-9
		Other nickel compounds	
16	Bromine and its compounds (other than banned substances)	Ethyl bromoethanoate	105-36-2
		Bromophenols	
		Tris(2,3-dibromopropyl) phosphate	126-72-7
		Other bromine compounds	
17	Chlorine and its compounds (other than banned substances)	1,2,3-Trichlorobenzene	87-61-6
		1,2,4-Trichlorobenzene	120-82-1
		1,3,5 Trichlorobenzene	108-70-3
		Antimony pentachloride	7647-18-9
		Arsenic III chloride	784-34-1
		Aluminium chloride	7446-70-0
		Antimony trichloride	10025-91-9
		Other chlorine compounds	
18	Florine and its compounds	Methyl fluoroacetate	453-18-9
		Vinyl fluoride	75-02-5
		Phosphoramidic bromidefluoride	758-71-4
		Other Florine compounds	
19	Bismuth and its compounds	Bismuth	7440-69-9
		Bismuth trioxide	1304-76-3
		Bismuth nitrate	10361-44-1
		Other bismuth compounds	
23	Manganese and its compounds	Manganese	7439-96-5
		Manganese dioxide	1313-13-9
		Potassium permanganate	7722-64-7
		Other manganese compounds	
26	VOC: Volatile Organic Compounds	Toluene	108-88-3
		o-Xylene	95-47-6
		1,4-Dichlorobenzene m-Xylene	106-46-7 108-38-3
		Ethylbenzene	100-41-4
		Styrene	100-42-5
		Dibutyl phthalate	84-74-2
		Chlorpyrifos	2921-88-2
		n-Tetradecane	629-59-4
		Di (2-ethylhexyl) phthalate	117-81-7
		Diazinon	333-41-5
		Acetaldehyde	75-07-0
		2-sec-butylphenyl N-methylcarbamate; fenobucarb; BPMC	3766-81-2

Table3 Revision History

Edition	Revision date	Revision details
1	November 2008	First edition Reviewed the second edition of KGS Procurement Standard for making the following revisions. Then, issued Environmental Hazardous Substance Management Standard as the first annex to the third edition. (1) Added six substances to (A) Banned Substance: HFC, PFC, PFOS, Kelthane, Hexachlorobutadiene, Specific benzotriazole (2) Removed Greenhouse gas HFC and PFC from (B) Restricted Substance (as they are now classified into (A) above) (3) Added Perfluorooctanoic acid (PFOA) to (A) Banned Substance (4) Reviewed the range of Lead to be banned classified into (A) Banned Substance (5) Reviewed the range of Polyvinyl chloride to be banned classified into (A) Banned Substance (6) Specified the restricted substances of Hexabromocyclododecane (HBCD) that is one of the Halogenated resin additives of (B) Restricted Substance (7) Reviewed the substances of (A) and (B) and numbered them consecutively.
2	October 2010	Fully reviewed controlled substances and its investigation methods along with responding to REACH regulation, revision of Japanese Chemical Substances Control Law, and change of requirements from customers etc.