



# Shinano Kenshi Group Green Procurement Standards

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Shinano Kenshi Group Green Procurement Standards
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## Shinano Kenshi Group Green Procurement Standards

### 1. Introduction

The role of companies in protecting the environment toward building a "sustainable society" has become increasingly important in recent years. We believe that environmental activities should be carried out with the recognition that "harmony with the environment is an important element for our products and services".

We believe that providing environmentally friendly products and services to customers from the customer's point of view will fulfill our "social responsibility" as a good company.

However, it is difficult to realize this only with our company's efforts. Therefore, it is necessary for each supplier who provides parts and materials to tackle environmental protection, and supply materials with less impact on the environment. This means that we will promote the creation of a "sustainable society" with our business partners.

From this point of view, we will procure environmentally friendly parts and materials preferentially from suppliers who are proactive in protecting the environment. (= green procurement.)

This document describes what you would like to observe regarding green procurement standards.

### 2. Objective

We aim to continuously reduce environmentally hazardous substance by controlling the prohibited substances and controlled substances contained in parts and materials which purchased by the Shinano Kenshi group (hereinafter write as Shinano Kenshi). Then, we aim to assure quality of parts and materials from upstream.

### 3. Scope of application

- Purchased parts included in the product.
- Parts, materials, packaging materials used for products, auxiliary materials used for products.
- Includes prototypes.

### 4. Definition of terms

- Environment-related substances

These are substances that have a significant influence on the environment and the human body.

These substances may be contained in Shinano Kenshi products, auxiliary materials and packaging materials.

These include prohibited substances and controlled substances.

- Prohibited substances

These are substances in Attached list 1 "Prohibited substances list".

Prohibited substances are substances that are not permitted to contain in parts and materials

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to be supplied to Shinano Kenshi exceeding the threshold or added intentionally.

- **Controlled substances**

These are substances that need to be reported to Shinano Kenshi among the substances contained in parts and materials to be supplied to Shinano Kenshi.

- **Non-use warranty of prohibited substances**

This is a warranty that the prohibited substances are not contained in parts and materials when suppliers supply them to Shinano Kenshi.

- **Controlled threshold of Shinano Kenshi**

This is threshold to perform precision measurement and investigate cause of contamination when prohibited substances are contained exceeding the controlled threshold in parts and materials.

The supplier should take corrective action after the investigation.

- **Prohibition threshold**

This is threshold to prohibit supplies to Shinano Kenshi if prohibited substances are contained in parts and materials exceeding the prohibition threshold.

- **Intentional addition**

This is to intentionally add substances in order to improve the performance of parts and materials.

- **Impurities**

Impurities are substances contained in natural materials and can't be technically removed in the purification process.

- **Threshold**

The threshold value is a boundary value that determines the presence or absence of substances for each homogeneous material unit of parts and materials.

- **Homogeneous material**

Homogeneous material is a material which components are same and which can't be mechanically separated.

Mechanically separation is cutting, polishing, grinding, etc.

e.g. metal, alloy, resin, glass, porcelain, paper, etc.

### 5. Outline of Green Procurement Standards

Suppliers should manage and report environmental substances in accordance with this document.

Shinano Kenshi will not purchase generally parts and materials that contain prohibited substances.

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**6. Requests to suppliers**

Suppliers should submit the following documents and data.

Contents	Document/Data	Period
Non-use warranty of prohibited substances	• Non-use warranty in Shinano Kenshi format	• Before the supply of new parts and materials • On 4M changes • On request from Shinano Kenshi
Information of controlled substances	• chemSHERPA or IMDS or equivalent data	• Before the supply of new parts and materials • On 4M changes • On request from Shinano Kenshi
Other data	• Precision analysis data (ICP data etc.)	• On request from Shinano Kenshi

**6.1 Required documents and data**

- Please submit non-use warranties of prohibited substances.
- Please submit information about controlled substances.

Please submit chemSHERPA or IMDS or equivalent data for information about controlled substances.

**A) Submission with chemSHERPA**

- It is mandatory to report content of substances which in the chemSHERPA controlled substance list.
- Please use the latest chemSHERPA controlled substance list.
- The format of chemSHERPA is acceptable either chemSHERPA-AI or chemSHERPA-CI.
- The component information is mandatory.
- The compliance judgment information is optional for chemSHERPA-AI.
- Please refer to the following website about the chemSHERPA.  
URL : <https://chemsherpa.net/>

**B) Submission with IMDS**

- It is mandatory to report content of substances which are in the GADSL list.
- Please use the latest GADSL list.
- Please use "58480" as the ID of Shinano Kenshi.
- Please refer to the following website about the GADSL list.  
URL : <https://www.gadsl.org/>

**C) Submission with data equivalent to the above**

- Please submit data equivalent to chemSHERPA or IMDS (composition of parts and

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materials, and chemical substances data contained in them) if submission by chemSHERPA or IMDS is difficult.

- It is mandatory to report content of substances which are in the chemSHERPA controlled substance list or the GADSL list even in this case.
  - Please contact us if you have any questions about how to fill in and how to submit.
- We may ask you to submit precision analysis data (ICP data etc.) in addition to A), B) and C).
  - Please submit measurement data for each homogeneous material for precision analysis data.

### 6.2 About prohibited substances

We may ask suppliers individually to set lower prohibition thresholds and add substance groups depending on requests from our customers for Attached list 1 "Prohibited Substances List".

### 6.3 Request for investigation

Please submit the investigation results of suppliers and measurement results of third parties, if there is a doubt that prohibited substances are contained exceeding the controlled threshold of Shinano Kenshi in supplied parts and materials by acceptance inspection of Shinano Kenshi etc.

Shinano Kenshi can make a measurement request to a third party, if it is difficult for the supplier to submit measurement results within the specified period, but the measurement cost in this case is basically borne by the supplier. Please investigate the cause of contamination. Please perform corrective action if it is confirmed that it exceeds the controlled threshold of Shinano Kenshi.

Some of the substance groups have the controlled threshold of Shinano Kenshi that is lower than the threshold value of various laws and regulations considering the measurement error.

## 7. Management of prohibited substances at suppliers

We believe that compliance with laws such as RoHS Directive and REACH Regulation is a responsibility to be accomplished by a company. We ask suppliers to strive to manage the prohibited substances in order to comply with these various laws and regulations in cooperation with Shinano Kenshi.

We also ask suppliers to strive to manage the prohibited substances and cooperate in preventing contamination and mixed up of nonconforming products, in order to provide products that satisfy these standards over the long term.

**Shinano Kenshi Group Green Procurement Standards****8. Related laws and regulations**

- EU・RoHS Directive
- EU・REACH Regulation
- Japan・Chemical Substances Control Law(CSCL)
- Japan・Industrial Safety and Health Law
- PRTRs
- POPs

**9. Annex**

- Annex : Non-use warranty of prohibited substances

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**Revision history**

Ver.	Revision date	Revised contents
00	Dec. 7, 2018	First issue.
01	July 16, 2019	Change the threshold of prohibited substances - Phthalate esters (DEHP/DBP/BBP/DIBP) - PFOA and its salts, PFOA related substances (The writing in red is the changed places.)



## Shinano Kenshi Group Green Procurement Standards

**Attached list 1 : List of prohibited substances**

- Threshold is for concentration in homogeneous material.

No.	Substances group	Prohibited / Permitted	Purposes and uses	Controlled threshold of Shinano Kenshi [ppm]	Prohibition threshold [ppm]	Examples of related laws and regulations
1	Cadmium and its compounds	Prohibited	Packing material (total content of cadmium, lead, mercury, hexavalent chromium)	100	100	- RoHS Directive
			Filter glass, Cadmium and its compounds in electrical contacts, Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses	100	100	
			Batteries	20	20	
			Other than the above	75	100	
2	Lead and its compounds	Prohibited	Plastics, rubber, paint, printing (pigment, ink)	300	1000	- RoHS Directive
			Cable (lead in polyvinyl chloride electric wire coating)	300	1000	
			Solder with lead content less than 85% by weight	800	1000	
			Lead as an alloying element in steel for machining purposes and in galvanized steel.	3500	3500	
			Lead as an alloying element in aluminum	4000	4000	
			Lead in copper alloy	40000	40000	
			Packing material (total content of cadmium, lead, mercury, hexavalent chromium)	100	100	
			Batteries	40	40	
			Other than the above	800	1000	

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No.	Substances group	Prohibited / Permitted	Purposes and uses	Controlled threshold of Shinano Kenshi [ppm]	Prohibition threshold [ppm]	Examples of related laws and regulations
2	Lead and its compounds	Permitted	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85% by weight or more lead)	-	-	- RoHS Directive
			Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectric devices, or in a glass or ceramic matrix compound	-	-	
			Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	-	-	
			Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages	-	-	
3	Mercury and its compounds	Prohibited	Packing material (total content of cadmium, lead, mercury, hexavalent chromium)	100	100	- RoHS Directive
			Batteries	5	5	
			Other than the above	800	1000	
4	Hexavalent chromium and its compounds	Prohibited	Packing material (total content of cadmium, lead, mercury, hexavalent chromium)	100	100	- RoHS Directive
			Other than the above	800	1000	
5	Polybrominated biphenyls (PBBs)	Prohibited	All uses	800	1000	- RoHS Directive
6	Polybrominated diphenyl ethers (PBDEs) (Including decabromodiphenyl ether)	Prohibited	All uses	800	1000	- RoHS Directive

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No.	Substances group	Prohibited / Permitted	Purposes and uses	Controlled threshold of Shinano Kenshi [ppm]	Prohibition threshold [ppm]	Examples of related laws and regulations
7	Phthalate esters (DEHP/DBP/BBP/DIBP)	Prohibited	Products covered under the EU RoHS Directive	800 (Concentration of one of the phthalates)	1000 (Concentration of one of the phthalates)	- RoHS Directive
		Prohibited	Other than products covered under the EU RoHS Directive	1000 (Concentration in total of the four phthalates)	1000 (Concentration in total of the four phthalates)	- REACH ANNEX XVII
8	Tri-substituted organostannic compounds	Prohibited	All uses	1000 (Concentration is in tin conversion)	1000 (Concentration is in tin conversion)	- REACH ANNEX XVII
9	Dibutyltin compounds (DBT)	Prohibited	All uses	1000 (Concentration is in tin conversion)	1000 (Concentration is in tin conversion)	- REACH ANNEX XVII
10	Diocetyl tin compounds (DOT)	Prohibited	- Textile articles intended to come into contact with the skin - Two-component room temperature vulcanisation moulding kits (RTV-2 moulding kits).	1000 (Concentration is in tin conversion)	1000 (Concentration is in tin conversion)	- REACH ANNEX XVII
		Permitted	Other than the above	-	-	

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No.	Substances group	Prohibited / Permitted	Purposes and uses	Controlled threshold of Shinano Kenshi [ppm]	Prohibition threshold [ppm]	Examples of related laws and regulations
11	Perfluorooctanesulfonic acid and its salts (PFOS)	Prohibited	Other than the below	1000	1000	- CSCL
		Permitted	- Photographic coatings applied to films, papers or printing plates - Photo-lithography processes for semiconductors or etching processes for compound semiconductors	-	-	
12	Perfluorooctanoic acid (PFOA) and its salts	Prohibited	All uses	25ppb (0.025ppm)	25ppb (0.025ppm)	- REACH ANNEX XVII
	Perfluorooctanoic acid (PFOA) related substances	Prohibited	All uses	1000ppb (1ppm) (Concentration in total)	1000ppb (1ppm) (Concentration in total)	
13	Polychlorinated biphenyl (PCB) Polychlorinated terphenyl (PCT)	Prohibited	All uses	Prohibit intentional addition	Prohibit intentional addition	- REACH ANNEX XVII - CSCL - PRTR - POPs
14	Polychloronaphthalenes (PCN) (Cl=>2)	Prohibited	All uses	Prohibit intentional addition	Prohibit intentional addition	- CSCL
15	Short chain chlorinated paraffins (SCCP)	Prohibited	All uses	Prohibit intentional addition	Prohibit intentional addition	- REACH SVHC PRTR
16	Hexabromocyclododecane (HBCDD)	Prohibited	All uses	Prohibit intentional addition	Prohibit intentional addition	- REACH SVHC CSCL
17	Bis(tributyltin)oxide (TBTO)	Prohibited	All uses	Prohibit intentional addition	Prohibit intentional addition	- REACH SVHC - CSCL

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No.	Substances group	Prohibited / Permitted	Purposes and uses	Controlled threshold of Shinano Kenshi [ppm]	Prohibition threshold [ppm]	Examples of related laws and regulations
18	Dimethyl fumarate (DMF)	Prohibited	All uses	Prohibit intentional addition	Prohibit intentional addition	- REACH ANNEX XVII
19	Azocolourants and Azodyes that form certain amines	Prohibited	Textile and leather articles which may come into direct and prolonged contact with the human skin or oral cavity, such as clothes, footwear, and bags, etc.	30	30	- REACH ANNEX XVII
		Permitted	Other than the above	-	-	
20	Polycyclic aromatic hydrocarbons (PAHs)	Prohibited	Rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity	1	1	- REACH ANNEX XVII
		Permitted	Other than the above	-	-	
21	Asbestos	Prohibited	All uses	Prohibit intentional addition	Prohibit intentional addition	- REACH ANNEX XVII PRTR
22	Radioactive substances	Prohibited	All uses	Prohibit intentional addition	Prohibit intentional addition	-
23	2-(2H-benzotriazol-2-yl)-4,6-di-tert-butylphenol	Prohibited	All uses	Prohibit intentional addition	Prohibit intentional addition	- REACH SVHC - CSCL
24	Red / Yellow phosphorous	Prohibited	All uses	Prohibit intentional addition	Prohibit intentional addition	- Industrial Safety and Health Law
25	Polyvinyl chloride (PVC)	Prohibited	Packaging materials	Prohibit intentional addition	Prohibit intentional addition	-
		Permitted	Other than the above	-	-	-

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**Attached list 2 : Details of prohibited substances**

- The following details are representative examples, and not for all substances listed.

No.	Substances group	Substances name	Chemical formula	CAS No.
1	Cadmium and its compounds	Cadmium	Cd	7440-43-9
		Cadmium oxide	CdO	1306-19-0
		Cadmium sulfide	CdS	1306-23-6
		Cadmium chloride	CdCl <sub>2</sub>	10108-64-2
		Cadmium sulfate	CdSO <sub>4</sub>	10124-36-4
		Other cadmium compounds	-	-
2	Lead and its compounds	Lead	Pb	7439-92-1
		Lead carbonate	PbCO <sub>3</sub>	598-63-0
		Lead(II) carbonate basic	C <sub>2</sub> H <sub>2</sub> O <sub>8</sub> Pb <sub>4</sub>	1319-46-6
		Lead dioxide	PbO <sub>2</sub>	1309-60-0
		Lead oxide	Pb <sub>3</sub> O <sub>4</sub>	1314-41-6
		Lead(II) sulfide	PbS	1314-87-0
		Lead monoxide	PbO	1317-36-8
		Lead(II) carbonate basic	2PbCO <sub>3</sub> Pb(OH) <sub>2</sub>	1319-46-6
		Lead(II) sulfate	PbSO <sub>4</sub>	7446-14-2
		Lead(II) o-phosphate	Pb <sub>3</sub> (PO <sub>4</sub> ) <sub>2</sub>	7446-27-7
		Lead arsenate	PbHAsO <sub>4</sub>	7784-40-9
		Lead chromate	PbCrO <sub>4</sub>	7758-97-6
		Lead titanium oxide	PbTiO <sub>3</sub>	12060-00-3
		Sulphuric acid, lead salt	PbSO <sub>4</sub>	15739-80-7
		Lead azide	N <sub>6</sub> Pb	13424-46-9
		lead 2,4,6-trinitro-m-phenylene dioxide	C <sub>6</sub> H <sub>3</sub> N <sub>3</sub> O <sub>8</sub> Pb	15245-44-0
		Lead dipicrate	C <sub>12</sub> H <sub>4</sub> N <sub>6</sub> O <sub>14</sub> Pb	6477-64-1
Other lead compounds	-	-		
3	Mercury and its compounds	Mercury	Hg	7439-97-6
		Mercury chloride	HgCl <sub>2</sub>	7487-94-7
		Mercuric oxide	HgO	21908-53-2
		Other mercury compounds	-	-

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No.	Substances group	Substances name	Chemical formula	CAS No.
4	Hexavalent chromium and its compounds	chromium(+6) cation	Cr6+	18540-29-9
		Sodium dichromate	Na <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	10588-01-9
		Chromium(VI) oxide	CrO <sub>3</sub>	1333-82-0
		Chromic acid, dichromic acid	H <sub>2</sub> CrO <sub>4</sub>	7738-94-5
			H <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	13530-68-2
		Chromium (IC) chromate	Cr <sub>2</sub> (CrO <sub>4</sub> ) <sub>3</sub>	24613-89-6
		pentazinc chromate octahydroxide, potassium hydroxyoctaoxidizincatedichromate(1-)	CrH <sub>8</sub> O <sub>12</sub> Zn <sub>5</sub> ,	49663-84-5
			Cr <sub>2</sub> K <sub>2</sub> O <sub>8</sub> Zn	11103-86-9
		Calcium chromate	CaCrO <sub>4</sub>	13765-19-0
		Ammonium chromate	(NH <sub>4</sub> ) <sub>2</sub> CrO <sub>4</sub>	7788-98-9
		Potassium dichromate	K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	7778-50-9
		Sodium chromate	Na <sub>2</sub> CrO <sub>4</sub>	7775-11-3
		Ammonium dichromate	(NH <sub>4</sub> ) <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	7789-09-5
		Strontium chromate	SrCrO <sub>4</sub>	7789-06-2
		Potassium chromate	K <sub>2</sub> CrO <sub>4</sub>	7789-00-6
Pigment Yellow 34	PbCrO <sub>4</sub>	1344-37-2		
CI NO 77605	-	12656-85-8		
Other hexavalent chromium compounds	-	-		
5	Polybrominated biphenyls (PBBs)	PBBs	C <sub>12</sub> H <sub>x</sub> Br <sub>(10-x)</sub>	-
6	Polybrominated diphenyl ethers (PBDEs) (Including decabromodiphenyl ether)	PBDEs	C <sub>12</sub> H <sub>x</sub> Br <sub>(10-x)</sub> O	-
7	Phthalate esters (DEHP/DBP/BBP/DIBP)	Bis(2-ethylhexyl) phthalate-DEHP	C <sub>24</sub> H <sub>38</sub> O <sub>4</sub>	117-81-7
		Butyl benzyl phthalate-BBP	C <sub>19</sub> H <sub>20</sub> O <sub>4</sub>	85-68-7
		Dibutyl phthalate-DBP	C <sub>16</sub> H <sub>22</sub> O <sub>4</sub>	84-74-2
		Diisobutyl phthalate-DIBP	C <sub>16</sub> H <sub>22</sub> O <sub>4</sub>	84-69-5
8	Tri-substituted organostannic compounds	Tributyltin compounds (TBT)	-	-
		Triphenyltin compounds (TPT)	-	-
9	Dibutyltin compounds (DBT)	Dibutyltin compounds (DBT)	-	-

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No.	Substances group	Substances name	Chemical formula	CAS No.
10	Diocetyl tin compounds (DOT)	Diocetyl tin compounds (DOT)	-	-
11	Perfluorooctanesulfonic acid (PFOS) and its salts	Heptadecafluorooctanesulfonic acid	C <sub>8</sub> H <sub>F</sub> 17SO <sub>3</sub>	1763-23-1
12	Perfluorooctanoic acid (PFOA) and its salts	Pentadecafluorooctanoic acid	C <sub>8</sub> H <sub>F</sub> 15O <sub>2</sub>	335-67-1
	Perfluorooctanoic acid (PFOA) related substances			
13	Polychlorinated biphenyl (PCB)	Polychlorinated biphenyl (PCB)	-	1336-36-3
	Polychlorinated terphenyl (PCT)	Polychlorinated terphenyl (PCT)	-	61788-33-8
		Other PCBs/PCTs	-	-
14	Polychloronaphthalenes (PCN) (Cl=>2)	Polychloronaphthalenes (PCN) (Cl=>2)	-	70776-03-3
15	Short chain chlorinated paraffins (SCCP)	Chloroparaffin	-	108171-26-2
		Polychloroalkane(C20-32)	-	108171-27-3
16	Hexabromocyclododecane (HBCDD)	Hexabromocyclododecane	C <sub>12</sub> H <sub>18</sub> Br <sub>6</sub>	25637-99-4
		1,2,5,6,9,10-Hexabromocyclododecane	C <sub>12</sub> H <sub>18</sub> Br <sub>6</sub>	3194-55-6
		α- Hexabromocyclododecane	C <sub>12</sub> H <sub>18</sub> Br <sub>6</sub>	134237-50-6
		β- Hexabromocyclododecane		134237-51-7
γ- Hexabromocyclododecane	134237-52-8			
17	Bis(tributyltin)oxide (TBTO)	Bis(tributyltin)oxide (TBTO)	C <sub>24</sub> H <sub>54</sub> O <sub>2</sub> Sn <sub>2</sub>	56-35-9
18	Dimethyl fumarate (DMF)	Dimethyl fumarate (DMF)	C <sub>6</sub> H <sub>8</sub> O <sub>4</sub>	624-49-7



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No.	Substances group	Substances name	Chemical formula	CAS No.
19	Azocolourants and Azodyes that form certain amines	4-Aminoazobenzene	-	60-09-3
		o-Anisidine	-	90-04-0
		2-Aminonaphthalene	-	91-59-8
		3,3'-Dichlorobenzidine	-	91-94-1
		4-Aminobiphenyl	-	92-67-1
		Benzidine	-	92-87-5
		o-Toluidine	-	95-53-4
		4-Chloro-2-methylaniline	-	95-69-2
		2,4-Diaminotoluene	-	95-80-7
		O-Aminoazotoluene	-	97-56-3
		2-Methyl-5-nitroaniline	-	99-55-8
		4,4'-Methylene bis(2-chloroaniline)	-	101-14-4
		4,4'-Methylenedianiline	-	101-77-9
		4,4'-Oxydianiline	-	101-80-4
		4-Chloroaniline	-	106-47-8
		3,3'-Dimethoxybenzidine	-	119-90-4
		o-Tolidine	-	119-93-7
		2-Methoxy-5-methylaniline	-	120-71-8
		2,4,5-Trimethylaniline	-	137-17-7
4,4'-Thiodianiline	-	139-65-1		
2,4-Diaminoanisole	-	615-05-4		
4,4'-Diamino-3,3'-dimethyldiphenylmethane	-	838-88-0		
20	Polycyclic aromatic hydrocarbons (PAHs)	Benzo[a]pyrene	-	50-32-8
		Benzo[e]pyrene	-	192-97-2
		1,2-Benzanthracene	-	56-55-3
		Chrysene	-	218-01-9
		Benzo(b)fluoranthene	-	205-99-2
		Benzo(j)fluoranthene	-	205-82-3
		Benzo(k)fluoranthene	-	207-08-9
		Dibenz[a,h]anthracene	-	53-70-3

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No.	Substances group	Substances name	Chemical formula	CAS No.
21	Asbestos	Ferroactinolite	-	12172-67-7
		Asbestos, Amosite	-	12172-73-5
		Anthophyllite	-	17068-78-9
		Chrysotile	H4Mg3O9Si2	12001-29-5
		Crocidoliteasbestos	Fe2H16Mg3Na2O24Si 8+14	12001-28-4
		Tremolite	-	14567-73-8
		Other asbestos	-	-
22	Radioactive substances	Uranium	U	7440-61-1
		Plutonium	Pu	7440-07-5
		Radon	Rn	10043-92-2
		Americium	Am	7440-35-9
		Thorium	Th	7440-29-1
		Cesium	Cs	7440-46-2
		Other radioactive substances	-	-
23	2-(2H-benzotriazol-2-yl)-4,6-di-tert-butylphenol	2-(2H-benzotriazol-2-yl)-4,6-di-tert-butylphenol	C20H25N3O	3846-71-7
24	Red / Yellow phosphorous	Red / Yellow phosphorous	P	7723-14-0 12185-10-3
25	Polyvinyl chloride (PVC)	Polyvinyl chloride (PVC)	(CH2CHCl)n	9002-86-2

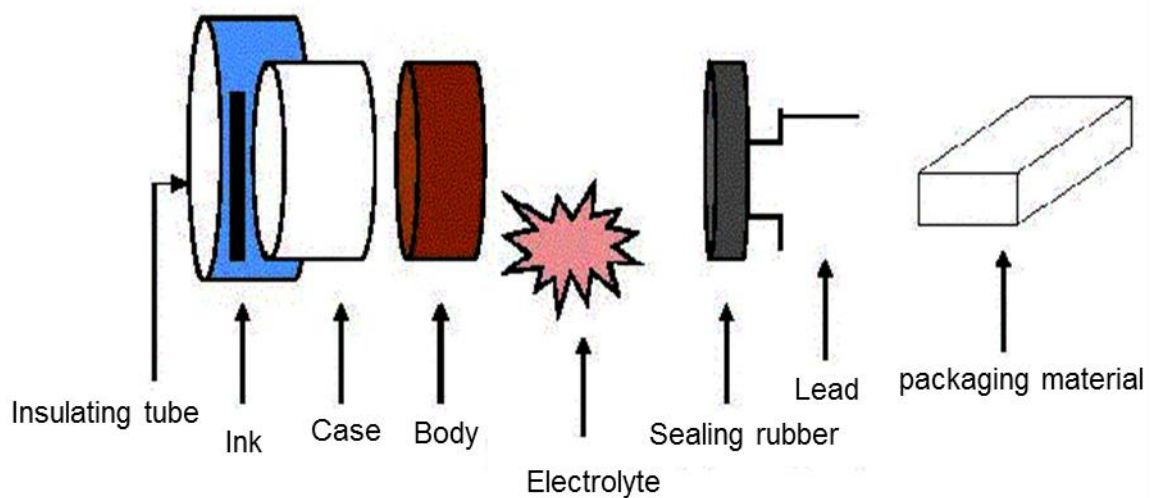
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**Appendix 1 : Method of calculating the content of substances and judgment by threshold**

The calculation of the content of substances is calculated using the minimum unit (homogeneous material) that can be mechanically separated as the denominator. Threshold judgment should be done for each homogeneous material generally.

Procedure example)

e.g.) For electronics parts (capacitor)



1. Separate to units that can be mechanically separated. (e.g.: Insulating tube, Ink, Lead, Solder, Plating etc.)
2. Use the weight of the separated material (homogeneous material) as the denominator.
3. Weight% (Wt%) is calculated using the weight of the chemical substance to be investigated in the separated material (homogeneous material) as a molecule.
4. Weight% (Wt%) is compared with the threshold to judge the presence or absence.

Calculation example)

- For solder (Sn - 37 Pb), the lead content is 37 [Wt%] irrespective of the solder amount.
- When 6 [mg] of lead is contained in the 1.2 [g] of wire,  $6/1200=0.5$ [Wt%]=5000[ppm].  
(1ppm=1mg/kg)