

Guideline for content of chemical substances in products
[For semiconductor products]

October 1, 2008

Fuji Electric Device Technology Co., Ltd.
Manufacture Management Div.,
Semiconductor Manufacture Group
Environmental Management Dept.,
Business Planning Group

Guideline for content of chemical substances in products

[For semiconductor products]

Foreword

In recent years, environmental consciousness in company activities has been increasingly emphasized from the standpoint of maintaining and improving the global environment as well as that of Japan.

Fuji Electric Device Technology Co., Ltd. (hereinafter called “our company”) also established a basic environmental protection policy to reduce the environmental impact at stages of procurement, production, usage and disposal.

At the same time, following the trend of Agenda 21^{*1} and SAICM^{*2}, EU REACH regulation took effect in June 2007 as a global regulation of chemical substances. Subsequently, actual activities were started at the end of June 2008 where candidate substances of very high concern were announced.

To deal with these trends, we have added the chemical substances specified in the regulations in Europe such as REACH regulation, GADSL for automobiles, etc. to our prohibited substances, as well as have reviewed our guideline for content of chemical substances in our semiconductor products, for example, by specifying new controlled substances.

We would appreciate it if you would understand our new guideline for control of chemical substances that is used to avoid and reduce the risk of hazardous substances that contaminate parts or materials and to control amounts of chemical substances, and continue to cooperate with our green procurement activity.

*1: Agenda 21 is an action program to achieve sustainable development that was adopted at the Earth Summit in 1992.

*2: SAICM stands for “Strategic Approach to International Chemicals Management” that was adopted at the International Conference on Chemical Management in 2006.

1. Purpose of this guideline

The purpose of our guideline for content of chemical substances in our products is to improve the environmental quality of our products by both clearly specifying the prohibited substances and substances whose amounts in products should be controlled with respect to their parts, materials, etc. that constitute our semiconductor products manufactured and sold by our company and affiliated manufacturing companies in the domestic and overseas offices, and by familiarizing the business partners who provide parts and materials for manufacturing semiconductor products of our company and affiliated manufacturing companies with the guideline.

2. Applicable scope

- 1) Scope of products to be covered by the guideline
Semiconductor products that are sold by our company to customers
- 2) Parts, material, etc. to be covered by the guideline
Parts and materials that constitute our semiconductor products and auxiliary materials that are delivered to customers in shipping
The details are as follows:
 - (1) Semifinished products (subassemblies such as functional units, modules, board assembly, etc.)
 - (2) Parts (electrical components, mechanism elements, semiconductor devices, printed-wiring board, storage media, packing materials, and packing parts)
 - (3) Accessories (screws, built-up mica, etc.)
 - (4) Components of auxiliary materials (adhesive tape, solder material, adhesive, etc.) used for products
 - (5) Instruction manuals
 - (6) Service parts
 - (7) Packing materials that are used by suppliers of parts for shipping and protection (trays, reels, sticks, bags, cushioning materials, staplers, sheets, cellophane wrap, corrugated board, tape, banding bands, labels, and printing ink/paint)

3. Definition of terms

1) Content

Used to indicate that a substance adheres or is added, filled, injected or mixed (including unintentional mixing or adhesion during processing) regardless of whether it is intentional or not.

2) Impurities

Substances that are contained in natural materials and cannot be completely removed in a refining process, or generated by a synthesis reaction for which it is technically impossible to remove them completely

3) Prohibited substances

Substances whose production or use is prohibited by laws or treaties and substances whose use is prohibited by our standard, for which it is required to submit a certification for ensuring that the product does not contain prohibited substances. Although it is not allowed to use prohibited substances intentionally, an amount of impurities less than the threshold values is allowed.

4) Controlled substances

Substances that should be appropriately controlled and whose content should be checked, for which it is required to submit a report indicating whether the product contains the substances. If using controlled substances intentionally, please report the design value or measured value of the content.

5) Substances for periodic reporting

Part of prohibited substances whose content is specified in the EU directive or domestic laws and whose evidential data is required. The date of the evidential data should be within one year from that of analysis and updated continuously.

6) Exemption from the application

Substances exempted from laws or regulations, or substances or parts to be used for which there is no alternative technology solution at present.

7) Pre-registration of REACH regulation

Pre-register the articles whose release of substances is intentional and the materials (substances and preparations) to be exported to the European market in ECHA (European Chemicals Agency) between June 1 and December 1, 2008.

4. Major applicable laws and regulations

1) Japanese laws and regulations

(1) Law Concerning the Examination and Regulation of Manufacture, etc of Chemical Substances

(2) Industrial Safety and Health Law

(3) Poisonous Material Control Law

(4) Water Pollution Prevention Law

(5) Waste Disposal and Public Cleansing Law

(6) Law Concerning the Protection of the Ozone Layer through the Control of Specified Substances and Other Measures

(7) Pollutant Release and Transfer Register Law

(8) Nuclear Reactor Regulation Law

(9) Export Trade Control Ordinance

(10) Law Concerning the Promotion of Measures to Cope with Global Warming

(11) Air Pollution Control Law

2) Overseas laws and regulations

(1) EU RoHS directive

(2) EU Package Directive

(3) EU ELV Directive

(4) EU 76/769/EEC Directive

(5) EU 67/548/EEC Directive

(6) EU REACH regulation

(7) USA Toxic Substances Control Act (TSCA)

(8) Chemical Weapons Convention

(9) GADSL (Global Auto Declarable Substance List)

5. Categories, etc. of control and specific name of substances

- 1) Prohibited substances (Table A)
- 2) Controlled substances (Table B)
- 3) Substances for periodic reporting (Table C)

6. Allowable concentration

Basically based on the threshold values specified in Japanese and overseas laws relating to content of chemical substances in products, EU RoHS Directive, EU ELV Directive, EU Package Directive, etc. Apply our standard for lead in some types of resin, cadmium, and cadmium in solder.

Comply with the threshold values specified in laws and directives for other substances. For parts, materials, etc., do not use substances that are added intentionally except for items exempted from the application specified by us.

7. Items exempted from the application

Main items that are exempted from the application are those exempted from Japanese and overseas laws and regulations for chemical product content in products, EU RoHS Directive, etc.

8. Forms for the survey

The following are the two forms for the survey based on this guideline:

- 1) Certification relating to prohibited substances (Form a)
- 2) Component information list of delivered products (Form b-1, b-2, b-3): Use the attached forms and fill in them referring to the fill-in example.

Inquiries for this guideline:

If you have any questions please contact the following:

Fuji Electric Device Technology Co., Ltd.

S.Nishizawa nishizawa-shigeru@fujielectric.co.jp

K.Makita makita-kazuyuki@fujielectric.co.jp

Environmental Technology Section,

Environmental Management Dept., Business Planning Group

Tel: +81-263-27-9778 Fax: +81-263-25-9892

Table A. Prohibited substances

	Substance name	CAS No.	Applicable laws and regulations	JGPSSI classification	Former our prohibited-substances No.
1	Ozone-depleting substance	Attached table 1	Ozonosphere Protection Law	C04	1-22, 83, 84
2	Polychlorinated biphenyl (PCB)	1336-36-3	Law of Chemical Examination and Regulation(C1)	B05	47
3	Polychloronaphthalene(PCN)	1321-65-9	Law of Chemical Examination and Regulation(C1)	B06	46
4	The pigment containing hexachlorobenzene and byproduction hexachlorobenzene	Attached table 2	Law of Chemical Examination and Regulation(C1)		45
5	Aldrin	309-00-2	Law of Chemical Examination and Regulation(C1)		39
6	Dieldrin	60-57-1	Law of Chemical Examination and Regulation(C1)		42
7	Endrin	72-20-8	Law of Chemical Examination and Regulation(C1)		40
8	DDT	50-29-3	Law of Chemical Examination and Regulation(C1)		43
9	Chlordane	57-74-9	Law of Chemical Examination and Regulation(C1)		41
10	N,N'-di-p-tolyl p-phenylene diamine	620-91-7	Law of Chemical Examination and Regulation(C1)		76
11	2,4,6-trree tertiary-butylphenol	732-26-3	Law of Chemical Examination and Regulation(C1)		62
12	Toxaphene	8001-35-2	Law of Chemical Examination and Regulation(C1)		58
13	Mirex	2385-85-5	Law of Chemical Examination and Regulation(C1)		57
14	Bistributyl tin = oxide	56-35-9	Law of Chemical Examination and Regulation(C1)		85
15	Hexachlorobuta- 1,3-diene	87-68-3	Law of Chemical Examination and Regulation(C1)		
16	Kelthane	115-32-2	Law of Chemical Examination and Regulation(C1)		
17	2-(2H-1,2,3-benzotriazol 2-yl)-4,6-di- tert-butyl phenol	3846-71-7	Law of Chemical Examination and Regulation(C1)		
18	Yellow phosphorus match	7723-14-0	Industrial Safety and Health Law		25
19	Benzidine and its salt	92-87-5	Industrial Safety and Health Law	C02	30
20	4-amino diphenyl and its salt	92-67-1	Industrial Safety and Health Law	C02	23
21	Asbestos (asbestos, amosite, blue asbestos, etc.)	Attached table 3	Industrial Safety and Health Law	C01	24, 26
22	4-nitrodiphenyl and its salt	92-93-3	Industrial Safety and Health Law		29
23	Bis(chloromethyl)ether	542-88-1	Industrial Safety and Health Law		27
24	beta-naphthylamine and its salt	91-59-8	Industrial Safety and Health Law	C02	28
25	Benzene rubber cement (5% of content limit)	71-43-2	Industrial Safety and Health Law		31
26	Chloromethyl methyl ether	107-30-2	Industrial Safety and Health Law		71
27	Benzylidyne = trichloride	98-07-7	Industrial Safety and Health Law		72
28	Fluoroacetic acid, its salt, and amide	144-49-0	Poisonous Control Law		60
29	Tetraalkyl lead	1762-26-1	Poisonous Control Law		
30	Organophosphorus compound	Attached table 4	Poisonous Control Law		61
31	Octamethylphosphoramide	152-16-9	Poisonous Control Law		63
32	Aluminium phosphide	20859-73-8	Poisonous Control Law		64
33	Ethylene oxide	75-21-8	Poisonous Control Law		69
34	Sodium azide	26628-22-8	Poisonous Control Law		77
35	Cyanide	143-33-9	Poisonous Control Law		78
36	Radioactive material	Attached table 5	Nuclear Law		
37	Methoxalen	298-81-7	Law of PRTR		73
38	1,3 dichloropropene	542-75-6	Law of PRTR		74
39	Polyvinyl chloride (PVC) and a polyvinyl chloride compound (product content)	9002-86-2	Self-imposed control	B07	56
40	0-alkyl=alkyl phosphono fluoridates	96-64-0	Chemical Weapons Convention		32
41	salt	50782-69-9	Chemical Weapons Convention		33
42	0-alkyl=alkyl N,N-dialkyl phospholamido cyanide	77-81-6	Chemical Weapons Convention		34
43	Surfur mustard	505-60-2	Chemical Weapons Convention		35
44	Saxitoxin	35523-89-8	Chemical Weapons Convention		36
45	Ricin	9009-86-3	Chemical Weapons Convention		37
46	Lewisite	541-25-3	Chemical Weapons Convention		38
47	Cadmium	7440-43-9	EU Directive etc.	A05	48
48	Hexavalent chromium	1333-82-0	EU Directive etc.	A07	49
49	Mercury	7439-97-6	EU Directive etc.	A10	50
50	Lead	7439-92-1	EU Directive etc.	A09	51
51	Polybrominated biphenyls/-diphenyl ethers	67774-32-7	EU Directive etc.	B02,B03	52
52	Bis(tributyltin)oxide compounds/triphenyl tin compounds	56-35-9	EU Directive etc.	A17,A18	44
53	Chlorinated paraffins	61788-76-9	EU Directive etc.	B09	53
54	Azo compounds that may produce specified amines (example : benzidines anisidines, toluidines etc.)	Attached table 6	EU Directive etc.	C02	54
55	Formaldehyde (ban on the content to wooden goods)	50-00-0	EU Directive etc.		55
56	Pentachlorophenol	87-86-5	EU Directive etc.		59
57	Dioxins, furan	1746-01-6	EU Directive etc.		65
58	Nickel compound (human body contact parts are prohibition and alloy center are excepted)	6018-89-9	EU Directive etc.	A11	66
59	Polychloro terphenyl :P CT	61788-33-8	EU Directive etc.		75
60	Monomethyldibromodiphenylmethane: DBBT	99688-47-8	EU Directive etc.		79
61	Dioxo-di-n-butylstanniohydroxyborane, DBB	75113-37-0	EU Directive etc.		80
62	Monomethyl-tetrachloro-diphenyl methane	76253-60-6	EU Directive etc.		81
63	Monomethyl-dichloro-diphenyl methanes	81161-70-8	EU Directive etc.		82
64	Chloroethylene (vinyl chloride monomer) (as aerosol)	75-01-4	EU Directive etc.		70
65	Phosphoric acid tris (2, 3 -dibromopropyl) ester(use to the fiber which touches skin)	126-72-7	EU Directive etc.		
66	Triaziridinylphosphineoxide (use to the fiber which touches skin)	545-55-1	EU Directive etc.		
67	Arsenide (use to an organism, wood, and industrial water)	7440-38-2	EU Directive etc.		67
68	Chloroform	67-66-3	EU Directive etc.		
69	1,1,2-trichloroethane	79-00-5	EU Directive etc.		
70	1,1,2,2-tetrachloroethane	79-34-5	EU Directive etc.		
71	1,1,1,2-tetrachloroethane	630-20-6	EU Directive etc.		
72	Pentachloroethane	76-01-7	EU Directive etc.		
73	1,1-dichloroethylene	75-35-4	EU Directive etc.		
74	Hexachloroethane	67-72-1	EU Directive etc.		
75	Nonyl phenol, Nonyl phenol ethoxy rate	25154-52-3	EU Directive etc.		
76	Perfluorooctane sulfonate (PFOS) and its salt	1763-23-1	EU Directive etc.		
77	2, 4, 5-T and its salt, an ester compound	93-76-5	Export Trade Control Ordinance		
78	BINAPACRYL	485-31-4	Export Trade Control Ordinance		
79	Captafol/Difolatan	2425-06-1	Export Trade Control Ordinance		
80	Chlorodimeform	6164-98-3	Export Trade Control Ordinance		
81	Chlorobenzilate	510-15-6	Export Trade Control Ordinance		
82	4, 6 - Dinitro - o - cresol	534-52-1	Export Trade Control Ordinance		
83	Dinitrobutylphenol	88-85-7	Export Trade Control Ordinance		
84	1,2-dibromoethane (EDB)	106-93-4	Export Trade Control Ordinance		
85	1,2-dichloroethane	107-06-2	Export Trade Control Ordinance		
86	Hexachloro cyclo hexane: HCH (isomeric mixture)	608-73-1	Export Trade Control Ordinance		
87	Linden	58-89-9	Export Trade Control Ordinance		

	Substance name	CAS No.	Applicable laws and regulations	JGPSSI classification	Former our prohibited-substances No.
88	Monocrotophos	6923-22-4	Export Trade Control Ordinance		
89	Benomyl	17804-35-2	Export Trade Control Ordinance		
90	Carbofuran	1563-66-2	Export Trade Control Ordinance		
91	Thiuram	137-26-8	Export Trade Control Ordinance		
92	Methamidophos	10265-92-6	Export Trade Control Ordinance		
93	Tricyclohexyltin hydroxide (cyhexatin)	13121-70-5	Export Trade Control Ordinance		
94	Chloro nitrofen	1836-77-7	Export Trade Control Ordinance		
95	Pentachloro nitrobenzene	82-68-8	Export Trade Control Ordinance		
96	Mitomycin-C	50-07-7	U.S. toxic substance control act		
97	Reserpine	50-55-5	U.S. toxic substance control act		
98	Ethyl carbamate	51-79-6	U.S. toxic substance control act		
99	Methylthiouracil	56-04-2	U.S. toxic substance control act		
100	3-methylcholanthrene	56-49-5	U.S. toxic substance control act		
101	Diethylstilbestrol	56-53-1	U.S. toxic substance control act		
102	Phenacetin	62-44-2	U.S. toxic substance control act		
103	Ethylmethane sulfonate	62-50-0	U.S. toxic substance control act		
104	N-methyl N-nitro N-nitrosoguanidine	70-25-7	U.S. toxic substance control act		
105	Pentabromoethylbenzene	85-22-3	U.S. toxic substance control act		
106	2-chloro 6-methylaniline	87-63-8	U.S. toxic substance control act		
107	1,3,5-trinitrobenzene	95-35-4	U.S. toxic substance control act		
108	1,2,4,5-tetrachlorobenzene	95-94-3	U.S. toxic substance control act		
109	1-bromo 2-chloroethane	107-04-0	U.S. toxic substance control act		
110	Carbonyl fluoride	353-50-4	U.S. toxic substance control act		
111	2-hexanone	591-78-6	U.S. toxic substance control act		
112	Pentachlorobenzene	608-93-5	U.S. toxic substance control act		
113	N-methyl N-nitroso urethane	615-53-2	U.S. toxic substance control act		
114	Hexamethylphosphoric triamide	680-31-9	U.S. toxic substance control act		
115	N-nitrosopyrrolidine	930-55-2	U.S. toxic substance control act		
116	N-nitrosodiethanolamine	1116-54-7	U.S. toxic substance control act		
117	Hexachloropropene	1888-71-7	U.S. toxic substance control act		
118	Trichlorobutylene oxide	3083-25-8	U.S. toxic substance control act		
119	Epibromohydrin	3132-64-7	U.S. toxic substance control act		
120	4-chloroo-toluidine hydrochloride	3165-93-3	U.S. toxic substance control act		
121	Erionite	12510-42-8	U.S. toxic substance control act		

Table A Supplementary 1 RoHS prohibited-substances allowable concentration

Substance name	Object component	Allowable concentration (Threshold value) ppm
Lead	Resin	100
	Ink	100
	Lead-free soldering	1000
	Unelectrolyzed nickel metal plating	1000
	Metal	1000
	Ceramics	1000
	Metal plating	1000
	Lead-free soldering metal plating	1000
	Copper alloys, brass, phosphor bronze	40000
	Aluminium alloy	4000
	Steel materials	3500
	Packaging material	4 heavy-metal sum total 100
	Cadmium	Resin
Ink		5
Lead-free soldering		20
Solder		20
Metal		75
Ceramics		75
Metal plating		75
Solder metal plating		20
Lead-free soldering metal plating		20
Packaging material		5
		4 heavy-metal sum total 100
Mercury		Resin
	Ink	1000
	Lead-free soldering	1000
	Solder	1000
	Metal	1000
	Ceramics	1000
	Metal plating	1000
	Packaging material	4 heavy-metal sum total 100
Hexavalent chromium	Resin	1000
	Ink	1000
	Lead-free soldering	1000
	Solder	1000
	Metal	1000
	Ceramics	1000
	Metal plating	1000
	Packaging material	4 heavy-metal sum total 100
PBB (Polybromobiphenyl)	Resin (flame retarder)	1000
PBDE (Polybromodiphenyl ether)	Resin (flame retarder)	1000

Table A Supplementary 2 Items exempted from the application

substance	Items exempted from the application
Cadmium	<ul style="list-style-type: none"> • Cadmium and its compounds in electrical contacts and cadmium plating except for applications banned under Directive 91/338/EEC amending Directive 76/769/EEC relating to restriction on the marketing and use of certain dangerous substances and preparations. • Lead and cadmium in optical and filter glass • Lead and cadmium in printing inks for application of enamels on borosilicate glass
Lead	<ul style="list-style-type: none"> • Lead in glass of cathode ray tubes, electronic components and fluorescent tubes • Lead as an alloying element in steel containing up to 0.35% lead by weight, aluminium containing up to 0.4% lead by weight and as a copper alloy containing up to 4% lead by weight. • Lead in high melting temperature type solders (i.e. lead based alloys containing 85% by weight or more lead) • Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission as well as network management for telecommunication. • Lead in electronic ceramic parts (e.g. piezoelectric devices) • Lead in lead-bronze bearing shells and bushes. • Lead used in compliant pin connector systems. • Lead as a coating material for the thermal conduction module c-ring. • Lead and cadmium in optical and filter glass. • Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80% and less than 85% by weight. • Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip packages. • Lead in linear incandescent lamps with silicate coated tubes. • Lead halide as radiant agent in high Intensity Discharge lamps for professional reprography applications. • Lead as activator in the fluorescent powder (1% lead by weight or less) of discharge lamps when used as sun tanning lamps containing phosphors such as BSP (BaSi2O5:Pb) as well as when used as speciality lamps for diazo-printing reprography, lithography, insect traps, photochemical and curing processes containing phosphors such as SMS ((Sr,Ba)2MgSi2O7:Pb). • Lead with PbBiSn-Hg and PbInSn-Hg in specific composition as main amalgam and with PbSn-Hg as auxiliary amalgam in very compact Energy Saving Lamps. • Lead oxide in glass used for bonding front and rear substrates of flat fluorescent lamps used for Liquid Crystal Displays. • Lead and cadmium in printing inks for application of enamels on borosilicate • Lead as impurity in RIG (rare earth iron garnet) Faraday rotators used for fibre optic communications systems. • Lead in finishes of fine pitch components other than connectors with a pitch of 0.65mm or less with NiFe lead frames and lead in finishes of fine pitch components other than connectors with pitch of 0.65mm or less with copper lead frames. • Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors. • Lead oxide in plasma display panels (PDPs) and surface conduction electron emitter displays (SEDs) 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. • Lead oxide in the glass envelope of Black Light Blue (BLB) lamps. • Lead alloys as solder for transducers used in high-powered (designated to operate for several hours at acoustic power levels of 125 dB SPL and above) loudspeakers. • Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493 EEC, • Lead in the solder of in-vehicle electronic components (ELV)
Mercury	<ul style="list-style-type: none"> • Mercury in compact fluorescent lamps not exceeding 5mg per lamp • Mercury in straight fluorescent lamps for general purposes not exceeding 10mg in halophosphate lamps <ul style="list-style-type: none"> • 5mg in triphosphate lamps with a normal lifetime • 8mg in triphosphate lamps with a long lifetime • Mercury in straight fluorescent lamps for special purposes • Mercury in other lamps not specifically mentioned in 2002/95/EC, Annex
Hexavalent chromium	<ul style="list-style-type: none"> • Hexavalent chromium as an anti-corrosion of the carbon steel cooling system in absorption refrigerators.
PBB/PBDE	
PFOS	<p>Exempted by content</p> <ol style="list-style-type: none"> (1) It is less than [0.005wt%] during a substance and pharmacy. (2) It is less than [0.1wt%] in semimanufactured goods, a product, and parts. (3) Inside of the quality of another fiber and covering workpiece Less than two 1 ug/m <p>Exempted Application</p> <ol style="list-style-type: none"> (1) Photographic coatings applied to films, papers, or printing plates (2) Photoresists or anti reflective coatings for photolithography processes.

Table A. Prohibited substances
Attached table 1. ozone-depleting substance

	Substance name	CAS No.	Montreal Protocol classification	JGPSSI classification	Former our prohibited-substances No.
1	CFC-11	75-69-4	CFC(A-I)	C04097	1
2	CFC-12	75-71-8		C04099	5
3	CFC-113	76-13-1 1625-89-7		C04097	2
4	CFC-114	76-14-2 1320-37-2		C04097	3
5	CFC-115	76-15-3		C04097	4
6	HALON-1211	353-59-3	HALON(A-II)	C04098	6
7	HALON-1301	75-63-8		C04098	7
8	HALON-2402	124-73-2		C04098	8
9	CFC-13	75-72-9	Other CFC(s)(B-II)	C04099	11
10	CFC-111	354-56-3		C04099	9
11	CFC-112	76-12-0 28605-74-5		C04099	10
12	CFC-211	422-78-6 135401-87-5		C04099	12
13	CFC-212	661-96-1 3182-26-1		C04099	13
14	CFC-213	1652-89-7 2354-06-5 134237-31-3		C04099	14
15	CFC-214	2268-46-4 29255-31-0		C04099	15
16	CFC-215	76-17-5 1599-41-3 1652-81-9 4259-43-2		C04099	16
17	CFC-216	661-97-2		C04099	17
18	CFC-217	422-86-6		C04099	18
19	Carbon tetrachloride	56-23-5	Carbon tetrachloride(B-III)	C04100	19
20	1,1,1 trichloroethane	71-55-6	(B-III)	C04101	20
21	Bromochloromethane	74-97-5	(C-III)		83
22	Methyl bromide	74-83-9	(E)	C04103	22
23	Dibromofluoromethane	1868-53-7	HBFC(C-II)	C04104	84
24	Bromo difluoromethane	1511-62-2		C04104	84
25	Bromofluoromethane	373-52-4		C04104	84
26	Tetrabromofluoroethane	306-80-9		C04104	84
27	Tribromo difluoroethane			C04104	84
28	Dibromotrifluoroethane	354-04-1		C04104	84
29	Bromotetrafluoroethane	124-72-1		C04104	84
30	Tribromofluoroethane			C04104	84
31	Dibromofluoroethane	75-82-1		C04104	84
32	Bromotrifluoroethane	421-06-7		C04104	84
33	Dibromofluoroethane	358-97-4		C04104	84
34	Bromo difluoroethane			C04104	84
35	Bromofluoroethane	762-49-2		C04104	84
36	Hexabromo fluoropropane			C04104	84
37	Pentabromodifluoropropane			C04104	84
38	Tetrabromotrifluoropropane			C04104	84
39	Tribromotetra fluoropropane			C04104	84
40	Dibromo pentafluoropropane	431-78-7		C04104	84
41	Bromohexafluoropropane	2252-79-1		C04104	84
42	Pentabromo fluoropropane			C04104	84
43	Tetrabromodifluoropropane			C04104	84
44	Tribromotrifluoropropane			C04104	84
45	Dibromotetra fluoropropane			C04104	84
46	Bromo pentafluoropropane	460-88-8		C04104	84
47	Tetrabromo fluoropropane			C04104	84
48	Tribromodifluoropropane	70192-80-2		C04104	84
49	Dibromotrifluoropropane	70192-83-5		C04104	84
50	Bromotetra fluoropropane	679-84-5		C04104	84
51	Tribromo fluoropropane	75372-14-4		C04104	84
52	Dibromodifluoropropane	460-25-3		C04104	84
53	Bromotrifluoropropane	421-46-5		C04104	84
54	Dibromo fluoropropane	51538-26-0		C04104	84
55	Bromodifluoropropane			C04104	84
56	Bromo fluoropropane	352-91-0		C04104	84
57	HCFC-21	75-43-4	HCFC(C-I)	C04105	21
58	HCFC-22	75-45-6		C04105	21
59	HCFC-31	593-70-4		C04105	21
60	HCFC-121	354-11-0 354-14-3 134237-32-4		C04105	21
61	HCFC-122	354-21-2 41834-16-6		C04105	21

	Substance name	CAS No.	Montreal Protocol classification	JGPSSI classification	Former our prohibited-substances No.
62	HCFC-123	306-83-2 354-23-4 812-04-4 34077-87-7 90454-18-5		C04105	21
63	HCFC-124	354-25-6 2837-89-0 63938-10-3		C04105	21
64	HCFC-131	359-28-4 811-95-0 27154-33-2 134237-34-6		C04105	21
65	HCFC-132	431-06-1 471-43-2 1649-08-7 1842-05-3 25915-78-0		C04105	21
66	HCFC-133	75-88-7 1330-45-6		C04105	21
67	HCFC-141	430-57-9 1717-00-6 25167-88-8		C04105	21
68	HCFC-141b	1717-00-6		C04105	21
69	HCFC-142	75-68-3 25497-29-4		C04105	21
70	HCFC-142b	75-68-3		C04105	21
71	HCFC-151	1615-75-4		C04105	21
72	HCFC-221	134237-35-7		C04105	21
73	HCFC-222	134237-36-8		C04105	21
74	HCFC-223	134237-37-9		C04105	21
75	HCFC-224	134237-38-0		C04105	21
76	HCFC-225	422-44-6 422-48-0 422-56-0 431-86-7 507-55-1 13474-88-9 111512-56-2 127564-92-5 128903-21-9 136013-79-1		C04105	21
77	HCFC-225ca	422-56-0		C04105	21
78	HCFC-225cb	507-55-1		C04105	21
79	HCFC-226	134308-72-8		C04105	21
80	HCFC-231	134190-48-0		C04105	21
81	HCFC-232	134237-39-1		C04105	21
82	HCFC-233	7425-83-9 134237-40-4		C04105	21
83	HCFC-234	127564-83-4		C04105	21
84	HCFC-235	460-92-4 134237-41-5		C04105	21
85	HCFC-241	134190-49-1		C04105	21
86	HCFC-242	134237-42-6		C04105	21
87	HCFC-243	338-75-0 460-69-5 7125-99-7 134237-43-7		C04105	21
88	HCFC-244	679-85-6 134190-50-4		C04105	21
89	HCFC-251	818-99-5 134190-51-5		C04105	21
90	HCFC-252	134190-52-6		C04105	21
91	HCFC-253	460-35-5 134237-44-8		C04105	21
92	HCFC-261	7799-56-6 134237-45-9		C04105	21
93	HCFC-262	102738-79-4 134190-53-7		C04105	21
94	HCFC-271	420-44-0 134190-54-8		C04105	21

Table A. Prohibited substances

Attached table 2. The pigment containing hexachlorobenzene and byproduction hexachlorobenzene

	Substance name	CAS No.	Remarks
1	Hexachlorobenzene	118-74-1	
2	Tetrachlorophthalic anhydride	117-08-8	
3	Solven tread 1 3 5	20749-68-2	
4	Pigment yellow 1 1 0	5590-18-1	
5	Pigment yellow 1 3 8	30125-47-4	
6	Pigment red 2 5 7	117989-29-4 70833-37-3	
7	Pigment green 7 (Phthalocyanine Green)	1328-53-6 14832-14-5	
8	Pigment green 3 6	14302-13-7	
9	Pigment blue 7 6	68987-63-3	

Table A. Prohibited substances

Attached table 3. asbestos

	Substance name	CAS No.	Remarks
1	Actinolite	77536-66-4	
2	Amosite	12172-73-5	
3	Anthophyllite	77536-67-5	
4	Chrysotile	12001-29-5	
5	Blue asbestos	12001-28-4	
6	Tremolite	77536-68-6	

Table A. Prohibited substances

Attached table 4. organic phosphorous compound

	Substance name	CAS No.	Remarks
1	Parathion	56-38-2	
2	Phosphamidon	13171-21-6	
3	METHYLDEMETON	8022-00-2	
4	METHYLPARATHION	298-00-0	
5	Tetraethyl pyrophosphate (TEPP),	107-49-3	
6	EPN	2104-64-5	

Table A. Prohibited substances

Attached table 5. radioactive material

	Substance name	CAS No.	Remarks
1	Uranium	7440-61-1	
2	Plutonium	7440-07-5	
3	Radon	10043-92-2	
4	Americium	7440-35-9	
5	Thorium	7440-29-1	
6	Caesium	7440-46-2	
7	Strontium	7440-24-6	
8	Others		

Table A. Prohibited substances

Attached table 6. azo compound (specific amine compound)

	Substance name	CAS No.	Remarks
1	4-amino diphenyl	92-67-1	
2	Benzidine	92-87-5	
3	4-chloro-o-toluidine	95-69-2	
4	2-naphthylamine	91-59-8	
5	0-aminoazotoluene	97-56-3	
6	2-amino 4-nitrotoluene	99-55-8	
7	p-chloroaniline	106-47-8	
8	2, 4 diaminoanisole	615-05-4	
9	4,4'-diaminodiphenylmethane	101-77-9	
10	3, 3'-dichlorobenzidine	91-94-1	
11	3,3'-dimethoxybenzidine	119-90-4	
12	3,3'-dimethylbenzidine	119-93-7	
13	3,3'-dimethyl 4,4'-diaminodiphenylmethane	838-88-0	
14	p-cresidine	120-71-8	
15	4,4'-methylene bis- (2-chloroaniline)	101-14-4	
16	4,4'-OXYDIANILINE	101-80-4	
17	4,4'-THIODIANILINE	139-65-1	
18	O-toluidine	95-53-4	
19	2-4-toluylenediamine	95-80-7	
20	2,4,5-trimethylaniline	137-17-7	
21	o-anisidine	90-04-0	
22	4-aminoazobenzene	60-09-3	

Table B. Controlled substances

	Substance name	CAS No.	Applicable laws and regulations	Remarks
1	Antimony and its compound	7440-36-0	Law of PRTR	JGPSSI-level B
2	Arsenic and its compound	7440-38-2	Law of PRTR	JGPSSI-level B
3	Beryllium and its compound	7440-41-7	Law of PRTR	JGPSSI-level B
4	Bismuth and its compound	7440-69-9		JGPSSI-level B
5	Nickel and its compound	6018-89-9	Law of PRTR	JGPSSI-level B
6	Selenium and its compound	7782-49-2	Law of PRTR	JGPSSI-level B
7	Magnesium and its compound	7439-95-4	Industrial Safety and Health Law	JGPSSI-level B
8	Cobalt and its compound	7440-48-4	Law of PRTR	
9	Brominated flame retardants (except for PBB and PBDE)			JGPSSI-level B
10	Chlorine system flame retarder			
11	Phosphorus system flame retarder			
12	Phthalic ester	Attached table 7		JGPSSI-level B
13	Copper and its compound	7440-50-8	Industrial Safety and Health Law	JGPSSI-level B
14	Gold and its compound	7440-57-5		JGPSSI-level B
15	Palladium and its compound	7440-05-3		JGPSSI-level B
16	Silver and its compound	7440-22-4	Law of PRTR	JGPSSI-level B
17	Thallium and its compound	7440-28-0	Law of PRTR	
18	Global warming substance (Kyoto Protocol)	Attached table 8	Law of Global Warming	
19	Volatile organic compound (VOC)	Attached table 9	Air Pollution Control Law	
20	A halogen system and other organic compounds	Attached table 10		
21	Organotin compound (except tributyl and triphenyl)			
22	Law of Chemical Examination and Regulation	Attached table 11		
23	PFOA(s) (par fluorooctanoic acid)			
24	Nitrosoamine			
25	67/548/of Europe EEC appendix ICat1, 2, 3	Ref: http://ecb.jrc.ec.europa.eu/classification-labelling/search-classlab/classlab/excel/Annex1_EN.zip		Cautions: Objects are Cat1, Cat2 and Cat3.
26	76/769/of Europe EEC appendix I	Ref: http://www.chemical-net.info/pdf_reach/REACH_official%20journal_e20.pdf		
27	GADSL (Global Automotive Declarable Substance list)	Ref: www.gadsl.org		

Table C. Substances for periodic reporting

Please give us presentation of a analysis result (analytical data based on ICP, GC-MS, etc.), and MSDS once per year about 5 following substance groups. (It is the data acquired within one year about analytical data)

	Substance name	CAS No.	Object component
1	Cadmium	7440-43-9	All the parts, component, and packing material which constitute FDT products
2	Hexavalent chromium	1333-82-0	
3	Mercury	7439-97-6	Resin, ink, a leadframe, solder, metal plating packing material, electronic components, adhesives, aluminum wire, and etc
4	Lead	7439-92-1	
5	PBB, PBDE *	67774-32-7	

* About a packing material, and metal parts and material, the analytical data of specific brominated flame retardants are unnecessary.

Table B. Controlled substances
Attached table 7. phthalic ester

Substance name	CAS No.	Remarks
1 Dibutyl phthalate, DBP	84-74-2	
2 Diisobutyl phthalate, DIBP	84-69-5	
3 Diheptyl phthalate , DHP	3648-21-3	
4 Dioctyl phthalate, DOP	117-84-0	
5 Bis phthalate (2-ethyl hexyl), DEHP	117-81-7	
6 Phthalic acid benzyl butyl ester, BBP	85-68-7	
7 Diethyl phthalate, DEP	84-66-2	
8 Dipropyl phthalate, DprP	131-16-8	
9 Dicyclohexyl phthalate, DCHP	84-61-7	
10 Dipentyl phthalate, DPP	131-18-0	
11 Dihexyl phthalate	84-75-3	
12 Diisodecyl phthalate, DIDP	26761-40-0	
13 Phthalic acid diisononyl ester, DINP	28553-12-0 68515-48-0	
14 Others		

Table B. Controlled substances
Attached table 8. global warming substance

Substance name	CAS No.	Remarks
1 Carbon dioxide	124-38-9	
2 Methane	74-82-8	
3 Dinitrogen oxide	10024-97-2	
4 Trifluoromethane, HFC-23	75-46-7	
5 Difluoromethane, HFC-32	75-10-5	
6 Fluoromethane, HFC-41	593-53-3	
7 1,1,1,2,2-pentafluoroethane, HFC-125	354-33-6	
8 1,1,2,2-tetrafluoroethane, HFC-134	359-35-3	
9 1,1,1,2-tetrafluoroethane, HFC-134a	811-97-2	
10 1,1,2-trifluoroethane, HFC-143	430-66-0	
11 1,1,1-trifluoroethane, HFC-143a	420-46-2	
12 1, 1-difluoroethane, HFC-152a	75-37-6	
13 1,1,1,2,3,3,3-hepta fluoropropane, HFC-227ea	431-89-0	
14 1,1,1,3,3,3-hexafluoropropane, HFC-236fa	690-39-1	
15 1, 1, 2, 2, 3-pentafluoropropane, HFC-245ca	679-86-7	
16 1,1,1,2,3,4,4,5,5,5-decafluoropentane, HFC-43-10mee	138495-42-8	
17 Par fluoromethane, PFC-14	75-73-0	
18 Par fluoroethane, PFC-116	76-16-4	
19 Par fluoropropane, PFC-218	76-19-7	
20 Par fluorobutane and PFC-31-10	355-25-9	
21 Par fluorocyclobutane, PFC-c318	115-25-3	
22 Par fluoropentane and PFC-41-12	678-26-2	
23 Perfluorohexane and PFC-51-14	355-42-0	
24 Sulfur hexafluoride, SF6	2551-62-4	

Table B. Controlled substances
Attached table 9. volatile organic compound (VOC)

Substance name	CAS No.	Remarks
1 Dichloromethane	75-09-2	
2 Acrylonitrile	107-13-1	
3 Tetrachloroethylene	127-18-4	
4 Acetaldehyde	75-07-0	
5 Trichloroethylene	79-01-6	
6 1,3-butadiene	106-99-0	
7 1,2-dichloroethylene	540-59-0	

Table B. Controlled substances

Attached table 10. Halogenated compound and other compounds

	Substance name	CAS No	Applicable laws and regulations
1	1,4-Dioxane	123-91-1	Law of Chemical Examination and Regulation(C-2)
2	3-amino-1H-1,2,4-triazole	61-82-5	Law of Chemical Examination and Regulation(C-2)
3	Paradichlorobenzene	106-46-7	Law of Chemical Examination and Regulation(C-2)
4	CHLORPYRIPHOS	2921-88-2	Law of Chemical Examination and Regulation(C-2)
5	2-S-BUTYLPHENYLMETHYLCARBAMATE	3766-81-2	Law of Chemical Examination and Regulation(C-2)
6	1,2-dichloropropane	78-87-5	Law of Chemical Examination and Regulation(C-2)
7	Acetic acid	94-75-7	Law of Chemical Examination and Regulation(C-2)
8	Chlorendic acid	115-28-6	Law of Chemical Examination and Regulation(C-2)
9	Chlorothalonil	1897-45-6	Law of Chemical Examination and Regulation(C-2)
10	Diazinon	333-41-5	Law of Chemical Examination and Regulation(C-2)
11	O-ethyl thiophosphate O-(4-nitrophenyl) phenyl ester	2104-64-5	Law of Chemical Examination and Regulation(C-2)
12	Fenitrothion	122-14-5	Law of Chemical Examination and Regulation(C-2)
13	Carbon disulfide	75-15-0	Law of Chemical Examination and Regulation(C-2)
14	THIOBENCARB	28249-77-6	Water Pollution Prevention Law
15	Simazine	122-34-9	Water Pollution Prevention Law
16	1-bromopropane	106-94-5	Industrial Safety and Health Law
17	2,4-dinitrotoluene	121-14-2	Industrial Safety and Health Law
18	2-bromopropane	75-26-3	Industrial Safety and Health Law
19	Dichloroethane	75-34-3	Industrial Safety and Health Law
20	Benzotrichloride	98-07-7	Industrial Safety and Health Law
21	1,2-dibromo-3-chloropropane	96-12-8	Industrial Safety and Health Law
22	1,2,3-trichloropropane	96-18-4	Industrial Safety and Health Law
23	1,4-dichloro 2-butene	764-41-0	Industrial Safety and Health Law
24	Creosote	8001-58-9	Industrial Safety and Health Law
25	Chlorobenzene	108-90-7	Industrial Safety and Health Law
26	Dimethylcarbanylchloride	79-44-7	Industrial Safety and Health Law
27	Vinyl bromide	593-60-2	Industrial Safety and Health Law
28	Hexachlorocyclopentadiene	77-47-4	Industrial Safety and Health Law
29	Benzo(a) pyrene	50-32-8	Industrial Safety and Health Law
30	Benzo(b) fluoranthene	205-99-2	Industrial Safety and Health Law
31	Benzanthracene	56-55-3	Industrial Safety and Health Law
32	Methoxychlor	72-43-5	Industrial Safety and Health Law
33	Telodrin	297-78-9	Poisonous Control Law
34	Benzo(j) fluoranthene	205-82-3	Air pollution control Law
35	Benzo(k) fluoranthene	207-08-9	Air pollution control Law
36	2,4,5-trichlorophenol	95-95-4	Air pollution control Law
37	2,4,6-trichlorophenol	88-06-2	Air pollution control Law
38	Dibenz (a, h) anthracene	53-70-3	Air pollution control Law
39	1,3-dichlorohydrin	96-23-1	Law of PRTR
40	Aminobenzene	62-53-3	Law of PRTR
41	Isoprothiolane	50512-35-1	Law of PRTR
42	S-BENZYL-O,O-DIISOPROPYLTHIOPHOSPHATE	26087-47-8	Law of PRTR
43	BIS(QUINOLIN-8-OLATO)COPPER(II)	10380-28-6	Law of PRTR
44	Bisphenol A	80-05-7	Law of PRTR
45	PROPYZAMIDE	23950-58-5	Law of PRTR
46	2-(2,4,5-trichlorophenoxy) propionic acid	93-72-1	Waste Disposal and Public Cleansing Law
47	3,3-dichlorobenzidine dihydrochloride	612-83-9	Waste Disposal and Public Cleansing Law
48	Dichlorophenyldichloro tolyl methane		Waste Disposal and Public Cleansing Law
49	Tetrachlorophenol, its salt, and a tetrachlorophenoxy compound	58-90-2	Waste Disposal and Public Cleansing Law
50	Isodrin	465-73-6	Waste Disposal and Public Cleansing Law
51	4-amino 3-fluorophenol	399-95-1	
52	Nitrite	14957-65-0	
53	Chlorophenyl chloro tolyl methane		
54	Propylenediaminetetraacetic acid (PDTA),	4408-81-5	
55	Metal carbonyl		
56	Poly terphenyl bromide :P BT		
57	Coal tar		
58	Chlordecone	143-50-0	
59	Endosulfan	115-29-7	
60	Anthracene	120-12-7	REACH(SVHC)
61	Cyclophosphamide	50-18-0	
62	Bisphenol B	77-40-7	
63	Phenylphenol	92-69-3	
64	4,4-dihydroxy-diphenyl	92-88-6	Law of Chemical Examination and Regulation
65	Para-hydroxybenzoic-acid n-propyl	94-13-3	
66	Para-hydroxybenzoic acid n-butyl	94-26-8	
67	N-cyclohexyl-2-benzothiazole sulfenamide	95-33-0	Law of PRTR
68	Methyl p-hydroxybenzoate	99-76-3	
69	Para-hydroxybenzoic acid	99-96-7	
70	Ethyl p-hydroxybenzoate	120-47-8	
71	Benzophenone 2	131-55-5	

	Substance name	CAS No	Applicable laws and regulations
72	2, 4 - dihydroxy benzophenone	131-56-6	
73	Monobutyl phthalate	131-70-4	
74	tert-butylmethyl ether	1634-04-4	
75	Phthalic acid Mono-2-ethyl hexyl	4376-20-9	
76	Methoxycinnamic acid octyl	5466-77-3	
		9016-45-9	Law of PRTR
77	Poly(oxyethylene) nonylphenyl ether	26027-38-3	
		51938-25-1	
78	3 -benzylidene camphor	15087-24-8	
79	Butylated hydroxyanisole (BHA)	25013-16-5	
80	2-tert-butyl 4 -phenyl phenol	42479-87-8	
81	Quadro silane	33204-76-1	
82	3-(4-Methylbenzylidene)-camphor	36861-47-9	

Table B. Controlled substances

Attached table 11. Law of Chemical Examination and Regulation (Type 1 Monitoring Chemical Substances)

	Substance name	CAS No	Remarks
1	Mercury oxide (II)	21908-53-2	
2	1-tert-butyl-3,5-dimethyl- 2,4,6-trinitrobenzene	81-15-2	
3	Cyclododeca- 1,5,9-triene	4904-61-4	
4	Cyclododecane	294-62-2	
5	1,2,5,6,9,10-hexabromocyclododecane	3194-55-6	
6	1,1-bis(tert-butylidioxy)-3, 3, 5-trimethyl	6731-36-8	
7	Tetraphenyltin	595-90-4	
8	1,3,5-tribromo-2-(2,3-dibromo-2-methylpropoxy) benzene	36065-30-2	
9	O-(2,4-dichlorophenyl) =O-ethyl phenylphosphonothioate	3792-59-4	
10	1,3,5-tri-tert-butylbenzene	1460-02-2	
11	Polybromobiphenyl (the number of bromine restricts to the thing of 2 to 5)	92-86-4	
12	Dipentene dimer or its hydride	57912-86-4	
13	2-isopropylbicyclo [4.4.0] Deccan or 3-isopropylbicyclo [4.4.0] Deccan	1010-74-8	
14	2,6-di-tert-butyl-4 phenylphenol	2668-47-5	
15	Diisopropyl naphthalene	38640-62-9	
16	Triisopropyl naphthalene	35860-37-8	
17	2,4-di-tert-butyl-6-(5-chloro-2H-1,2,3-benzotriazol 2-yl) phenol	3864-99-1	
18	Chlorinated paraffin (C11, 7-12 chlorine)	18993-26-5	
19	Diethylbiphenyl	28575-17-9	
20	Hydroterphenyl	61788-32-7	
21	Dibenzyltoluene	26898-17-9	
22	Triethylbiphenyl	42343-17-9	
23	N,N-dicyclohexyl-1,3-benzothiazole 2-sulfenamide	4979-32-2	
24	2-(2H-1,2,3-benzotriazol 2-yl)-6-sec-butyl-4-tert-butyl phenol	36437-37-3	
25	2,4-di-tert-butyl-6-[(2-nitrophenyl) diazenyl] phenol	52184-14-2	
26	Perfluoro (1,2-dimethylcyclohexane)	306-98-9	
27	2,2` and 6,6-tetra-tert-butyl-4,4`-methylenediphenol	118-82-1	
28	Perfluoro dodecanoic acid	307-55-1	
29	Perfluoro tridecanoic acid	72629-94-8	
30	Perfluoro tetradecanoic acid	376-06-7	
31	Perfluoro pentadecanoic acid	141074-63-7	
32	Perfluoro hexadecanoic acid	67905-19-5	
33	Perfluoro heptane	335-57-9	
34	Perfluoro octane	307-34-6	
35	2,2,3,3,4,4,5-heptafluoro-5-(perfluoro butyl) oxo run Or 2,2,3,3,4,4,5-heptafluoro-4-(perfluoro butyl) oxo run	335-36-4	