ULVAC

List of Surveyed Chemical Substances under Voluntary Control for Green Procurement

ULVAC Group

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For the purposes of chemical substance control, ULVAC Group developed its Green Procurement Standard in November 2003, and started distributing it to its suppliers. To respond to the significant measures introduced by the national and international legislative enhancement lead most notably by the enforcement of the EU's RoHS Directive in 2003, ULVAC Group is asking its suppliers to take steps to replace, reduce, or determine chemical substances contained in their supplies. ULVAC Group has classified the targeted substances in the three categories defined below, and listed them in the List of Surveyed Chemical Substances under Voluntary Control for Green Procurement

・Level I "substances prohibited from use or attachment" are substances that have a significant impact on human health or ecosystems, the use of which is prohibited or limited by national or international law, or prohibited by ULVAC Group's voluntary controls, and consequently prohibited from use or attachment (hereafter, use) in the Group's products.
・Level II "chemical substances under voluntary control" are substances that do not fall into the Level I category, are targeted by national or international law or by ULVAC Group's voluntary control, and the use of which should be reduced gradually. Includes some chemical substances where a deadline for elimination has been designated.

Table 1-1 Level I: Substances Prohibited from Use or Attachment

No	Substance (Substance Group) under Voluntary Control	CAS No.	Prohibited from use as of	Typical purposes for use
I - 1	Specific amine formed from the breakdown of Azo dye and pigment *Note 1	—	Immediately	Electrical wire coating (pigments, paints, colourings)
I - 2	Aldrin	309-00-2	Immediately	Wood preservatives, insect repellents, antifungal agents, paints (limited to wood-preserving, insect-repelling, or antifungal paints)
I - 3	Endrin	72-20-8	Immediately	Instant-effect insecticides, insect repellents
I - 4	Chlordanes	57-74-9	Immediately	Instant-effect insecticides, insect repellents, miticides, contact pesticides with toxic residue
I - 5	Trichloro-fluoro-methane and other CFCs designated in the Ozone Layer Protection Law	—	Immediately	Refrigerants, foaming agents
I - 6	Di-μ-oxo-di-n-butyl-stannio-hydroxyboran (DBB)	—	Immediately	—
I - 7	Dibromotetrafluoroethane and other Halons designated in the Ozone Layer Protection Law	—	Immediately	Fire extinguishants
I - 8	Dibromofluoromethane and other HBFCs designated in the Ozone Layer Protection Law	—	Immediately	Fire extinguishants
I - 9	Dioxins	—	Immediately	—
I - 10	Dieldrin	60-57-1	Immediately	Wood preservatives, insect repellents, antifungal agents, paints (limited to wood-preserving, insect-repelling, or antifungal paints)
I - 11	4-nitrodiphenyl and its salts	—	Immediately	Synthetic intermediates
I - 12	Bis(chloromethyl) ether	542-88-1	Immediately	—
I - 13	Bis (tributyl tin) = oxido	56-35-9	Immediately	Preservatives, antifungal agents, paints (limited to paints used to prevent shellfish,

				algae, and other aquatic life forms from attaching themselves to surfaces)
No	Substance (Substance Group) under Voluntary Control	CAS No.	Prohibited from use as of	Typical purposes for use
I - 14	Bromochloromethane	74-97-5	Immediately	—
I - 15	Hexachlorobenzene	118-74-1	Immediately	Germicides, antifungal agents, dirt-proof agents, synthetic intermediates
I - 16	Pentachlorophenyl	87-86-5	Immediately	Insecticides, insect repellents, agricultural chemicals (including intermediates)
I - 17	Polychloroterphenyl (PCT)	61788-33-8	Immediately	Electrical insulating materials
I - 18	Polychloronaphthalene (number of chlorines greater than 2)	—	Immediately	Lubricating oils, paints, plastic stabilants (electric characteristics, fire resistance, water resistance, sterility), electrical insulating materials, flame retardants
I - 19	Polychlorobiphenyl (PCB)	1336-36-3	Immediately	Condensers, transformer oils
I - 20	Monomethyldichlorodiphenylmethane	—	Immediately	—
I - 21	Monomethyldibromodiphenylmethane (DBBT)	99688-47-8	Immediately	—
I - 22	Monomethyltetrachlorodiphenylmethane	76253-60-6	Immediately	—
I - 23	DDT	789-02-06, 50-29-3	Immediately	Wood preservatives, insect repellents, antifungal agents, paints (limited to wood-preserving, insect-repelling, or antifungal paints)
I - 24	Bromomethane (Methyl bromide) *Note 2	74-83-9	Immediately	Germicides, antifungal agents, dirt-proof agents, insecticides, insect repellents, herbicides, synthetic intermediates, food fumigants, soil fumigants
I - 25	Organic chlorine substances of which the acceptable levels in underground water are specified in Water Quality Pollution Prevention Law *Note 3	—	Immediately	—
I - 26	Asbestos (Amosite, crocidolite, actinolite, anthophylite, chrysotile, tremolite etc)	—	Immediately	Insulating materials, bulking agents, friction materials, electrical insulating materials, fillers, pigments/paints(indicated as talc (containing asbestos fibre-like materials) on ingredient list) , thermal insulators
I - 27	Short-chain paraffin chloride (limited to carbon chain length of 10-13)	—	Immediately	Vinyl chloride plasticisers, flame retardants
I - 28	Tributyl tins (TBTs), Triphenyltins (TPTs)	—	Immediately	Stabilants, antioxidant/anti-aging substances, antiseptic/antifungal agents, dirt-proof agents
I - 29	Radioactive Substances *Note 4	—	Immediately	Thorium for optical glass (lens)
I - 30	HCFCs specified in Ozone Layer Protection Law	—	Immediately	Refrigerants, foaming agents
I - 31	Benzidine, Preparations containing Benzidine and other substances	—	Immediately	Dyes, synthetic rubber hardeners
I - 32	4-aminobiphenyl	92-67-1	Immediately	Dye intermediates
I - 33	β-Naphthylamine ; 2-Naphthylamine	91-59-8	Immediately	Dye intermediates
I - 34	N,N'-ditolyl-p-phenylenediamine, N-tolyl-N'-xylyl-p-phenylene diamine and N,N'-dixylyl-pphenylenediamine	—	Immediately	Rubber antioxidant, styrene butadiene rubber
I - 35	2,4,6-tri-tert-butylphenol	732-26-3	Immediately	Anti-oxidants

I - 36	toxaphene	8001-35-2	Immediately	Pesticides
I - 37	mirex	2385-85-5	Immediately	Flame retardants,pesticides
I - 38	kelthane or dicofol	115-32-2	Immediately	Mitcide
I - 39	Hexachlorobutane-1,3-diene	87-68-3	Immediately	Solvents
I - 40	2-(2'-Hydroxy-3',5'-di-tert-butyl phenyl)benzotriazole)	3846-71-7	Immediately	Adhesives, bulking agent, inks and paints, plastics
I - 41	Perfluoro(octane-1-sulfonic acid)	1763-23-1 2795-39-3 4021-47-0 29457-72-5 29081-56-9 70225-14-8 56773-42-3 251099-16-8	Immediately	Plating agent, semiconductor/LSI film-forming material, extinguishing agent, water repellent, paper surface-treating agent, plastic modifier
I - 42	Perfluorooctane-1-sulfonyl fluoride	307-35-7	Immediately	Water and oil repellent,surfactant
I - 43	Pentachlorobenzene	608-93-5	Immediately	Agrichemical
I - 44	(1alpha,2alpha,3beta,4alpha,5beta,6beta)-1,2,3,4,5,6-hexachlorocyclohexane	319-84-6	Immediately	By-product of lindane
I - 45	Beta-HCH	319-85-7	Immediately	By-product of lindane
I - 46	Lindane	58-89-9	Immediately	Agrichemical
I - 47	Chlordecone	143-50-0	Immediately	Agrichemical
I - 48	Hexabromobiphenyl	40088-47-9	Immediately	Flame retardant
I - 49	Diphenyl ether, tetrabromo derivative	32534-81-9	Immediately	Flame retardant
I - 50	Benzene, 1,1'-oxybis-, pentabromo derivative	68631-49-2 207122-15-4	Immediately	Flame retardant
I - 51	Diphenyl ether, hexabromo derivative	446255-22-7 207122-16-5	Immediately	Flame retardant
I - 52	Endosulfan	115-29-7 959-98-8 33213-65-9	Immediately	Pesticide (insecticide)
I - 53	Hexabromocyclododecan(HBCD)	25637-99-4 3194-55-6 4736-49-6 65701-47-5 134237-50-6 134237-51-7 134237-52-8 138257-17-7 138257-18-8 138257-19-9 169102-57-2 678970-15-5 678970-16-6 678970-17-7	Immediately	Flame retardant

* Note 1: Specific amine not to be generated by reductive decomposition (reductive degradation) of Azo dye and pigment due to the possibility of long hours of direct contact to a human body and oral cavity. Refer to table 2.
* Note 2: Totally eliminated on January 1, 2005 with the Montreal Protocol of Substances that Deplete the Ozone Layer.
* Note 3: Organic Chlorine Substances for Which Acceptable Levels in Underground Water Are Specified in Water Quality Pollution Prevention Law See Table 3 for details
* Note 4: Radioactive Substances See Table 4 for details

Table 1-2 Level II: Chemical Substances under Voluntary Control

No	Substance (Substance Group) under Voluntary Control	CAS No.	Elimination Target	Typical purposes for use
Ⅱ- 1	Cadmium and its compounds * Note 5	—	—	Pigments, anticorrosive surface treatment, battery cell materials, optical materials, stabilants, stabilisation of electric contacts, photosensitive resistor/semiconductor (CdS), plating materials, pigments for resins, fluorescent materials for optical glass, electrodes, soldering materials, contacts, galvanisation, contact protection, vinyl chloride stabilants
Ⅱ- 2	Hexavalent chromium compounds * Note 5	—	—	Pigments, paints, inks, catalysts, plating, anticorrosive surface treatment, dyes, paint dryers, surface treatment (chromating, paint adherence improvement), rust prevention
Ⅱ- 3	Mercury and its compounds * Note 5	—	—	Fluorescent materials, materials in electrical contacts, colouring pigments, anticorrosive agents, high-efficiency light emitting materials, antibacterial treatment
Ⅱ- 4	Lead and its compounds * Note 5	—	—	Rubber curing agents, pigments, paints, lubricants, plastic stabilants, battery cell materials, free-cutting alloys, optical materials, X-ray shielding, electrical/mechanical soldering materials, rubber curing agents, highly dielectric materials, resin stabilants, glass dopant, plating materials, alloys, resin additives
Ⅱ- 5	PBBs * Note 5	—	—	Flame retardants
Ⅱ- 6	PBDEs * Note 5	—	—	Flame retardants
Ⅱ- 7	Dibutyl phthalate (DBP)	84-74-2	—	Plasticizer, Additive
Ⅱ- 8	Butyl benzyl phthalate (BBP)	85-68-7	—	Plasticizer
Ⅱ- 9	Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	—	Plasticizer, Dielectric, Solvent
Ⅱ- 10	Diisobutyl phthalate (DIBP)	84-69-5	—	Plasticizer, Celluloid, Nail polish

* Note 5: Table 5 indicate the Ulvac Co., Ltd. regulatory value (concentration) of RoHS designated substances
Table 6 indicate the use of excluded RoHS designated substances
* Note 6: See Table 7 for details.

Table 2: Azo Compounds (Amines that should not be generated from splitting of Azo groups)

No	Substance	CAS No.	Chemical Formula
Ⅰ-1- 1	o-anisidine	90-04-0	C7H9NO
2	2-naphthylamine	91-59-8	C10H9N
3	3,3'-dichlorobenzidine	91-94-1	C12H10Cl2N2
4	4-aminobiphenyl	92-67-1	C12H11N
5	Benzidine	92-87-5	C12H12N2
6	o-toluidine	95-53-4	C7H9N
7	4-chloro-o-toluidine	95-69-2	C7H8ClN
8	2,4-toluenediamine	95-80-7	C7H10N2
9	o-aminoazotoluene	97-56-3	C14H15N3
10	5-nitro-o-toluidine	99-55-8	C7H8N2O2
11	3,3'-dichloro-4, 4'-diaminodiphenylmethane	101-14-4	C13H12Cl2N2
12	4,4'-methylenedianiline	101-77-9	C13H14N2
13	4,4'-diaminodiphenylether	101-80-4	C12H12N2O
14	p-chloroaniline	106-47-8	C6H6ClN
15	o-dianisidine	119-90-4	C14H16N2O2
16	3,3'-dimethylbenzidine	119-93-7	C14H16N2
17	2-methoxy-5-methylaniline	120-71-8	C8H11NO
18	2,4,5-trimethylaniline	137-17-7	C9H13N
19	4,4'-thiodianiline	139-65-1	C12H12N2S
20	4-methoxy-m-phenylenediamine	615-05-4	C7H10N2O
21	3,3'-dimethyl-4, 4'-diaminodiphenylmethane	838-88-0	C15H18N2

Table 3 Organic Chlorine Substances for Which the Acceptable Levels in Underground Water Are Specified in Water Quality Pollution Prevention Law

No	Substance	CAS No.	Chemical Formula
Ⅰ-25 -1	Dichloromethane（methylene chloride）	75-09-2	CH2CL2
-2	Tetrachloromethane; Carbon tetrachloride	56-23-5	CCL4
-3	1,2-Dichloroethane	107-06-2	C2H4CL2
-4	1,1-Dichloroethylene; Vinylidene chloride	75-35-4	C2H2CL2
-5	cis-1,2-Dichloroethylene	156-59-2	C2H2CL2
-6	1,1,1-Trichloroethane	71-55-6	C2H3CL3
-7	1,1,2-Trichloroethane	79-00-5	C2H3CL3
-8	Trichloroethylene	79-01-6	C7H10N2
-9	Tetrachloroethylene	127-18-4	C14H15N3
-10	1,3-Dichloropropene	542-75-6	C7H8N2O2

Table 4 Radioactive Substances

No	Substance	CAS No.	Chemical Formula
Ⅰ-29 -1	Uranium	7440-61-1	U
-2	Plutonium	—	Pu
-3	Radon	10043-92-2	Rn
-4	Americium	—	Am
-5	Thorium	7440-29-1	Th
-6	Other radioactive substances	—	—

Table 5 Regulatory Values for RoHS Designated Substances

No	Chemical Substances under Voluntary Control (Group)	Regulatory Value
Ⅱ- 1	Cadmium and its compounds	≦100ppm
Ⅱ- 2	Hexavalent chromium compounds	≦1000ppm
□- 3	Mercury and its compounds	≦1000ppm
□- 4	Lead and its compounds	≦1000ppm
□- 5	PBBs	≦1000ppm
□- 6	PBDEs	≦1000ppm
□ -7	Dibutyl phthalate (DBP)	≦1000ppm
□ -8	Butyl benzyl phthalate (BBP)	≦1000ppm
□ -9	Bis(2-ethylhexyl) phthalate (DEHP)	≦1000ppm
□ -10	Diisobutyl phthalate (DIBP)	≦1000ppm

Note) The values above are Ulvac Co., Ltd., regulatory values. Some Ulvac Group regulatory values may be lower than the above values. Please check to each company of the Ulvac Group.

Table 6 Uses of Excluded RoHS Designated Substances
Our company accepts the following as uses and has excluded them.

No		Exemption		Scope and dates of applicability
1	1	Mercury in single capped (compact) fluorescent lamps not exceeding (per burner)		
	1(a)	For general lighting purposes < 30 W:	2.5 mg	2,5 mg shall be used per burner after 31 December 2012
	1(b)	For general lighting purposes ≥ 30 W and < 50 W	3.5 mg	3,5 mg may be used per burner after 31 December 2011
	1(c)	For general lighting purposes ≥ 50 W and < 150 W	5 mg	
	1(d)	For general lighting purposes ≥ 150 W	15 mg	
	1(e)	For general lighting purposes with circular or square structural shape and tube diameter ≤ 17 mm	7 mg	7 mg may be used per burner after 31 December 2011
	1(f)	For special purposes	5 mg	
	1(g)	For general lighting purposes < 30 W with a lifetime equal or above 20 000 h	3,5 mg	2017/12/31
2	2(a)	Mercury in double-capped linear fluorescent lamps for general lighting purposes not exceeding (per lamp)		
	2(a)(1)	Tri-band phosphor with normal lifetime and a tube diameter < 9 mm (e.g. T2)	4 mg	4 mg may be used per lamp after 31 December 2011
	2(a)(2)	Tri-band phosphor with normal lifetime and a tube diameter ≥ 9 mm and ≤ 17 mm (e.g. T5)	3 mg	3 mg may be used per lamp after 31 December 2011
	2(a)(3)	Tri-band phosphor with normal lifetime and a tube diameter > 17 mm and ≤ 28 mm (e.g. T8)	3.5 mg	3,5 mg may be used per lamp after 31 December 2011
	2(a)(4)	Tri-band phosphor with normal lifetime and a tube diameter > 28 mm (e.g. T12)	3.5 mg	3,5 mg may be used per lamp after 31 December 2012
	2(a)(5)	Tri-band phosphor with long lifetime (≥ 25 000 h)	5 mg	5 mg may be used per lamp after 31 December 2011
	2(b)	Mercury in other fluorescent lamps not exceeding (per lamp)		
	2(b)(3)	Non-linear tri-band phosphor lamps with tube diameter > 17 mm (e.g. T9)	15 mg	15 mg may be used per lamp after 31 December 2011
	2(b)(4)	Lamps for other general lighting and special purposes (e.g. induction lamps)	15 mg	15 mg may be used per lamp after 31 December 2011
3	3	Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp)		

	3(a)	Short length (≤ 500 mm)	3.5 mg	3,5 mg may be used per lamp after 31 December 2011
	3(b)	Medium length (> 500 mm and ≤ 1 500 mm)	5 mg	5 mg may be used per lamp after 31 December 2011
	3(c)	Long length (> 1 500 mm)	13 mg	13 mg may be used per lamp after 31 December 2011
4	4(a)	Mercury in other low pressure discharge lamps (per lamp)	15 mg	15 mg may be used per lamp after 31 December 2011
	4(b)	Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index Ra > 60		
	4(b)-□	P ≤ 155 W	30 mg	30 mg may be used per burner after 31 December 2011
	4(b)-□	155 W < P ≤ 405 W	40 mg	40 mg may be used per burner after 31 December 2011
	4(b)-□	P > 405 W	40 mg	40 mg may be used per burner after 31 December 2011
	4(c)	Mercury in other High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner)		
	4(c)-□	P ≤ 155 W	25 mg	25 mg may be used per burner after 31 December 2011
		155 W < P ≤ 405 W	30 mg	30 mg may be used per burner after 31 December 2011
		P > 405 W	40 mg	40 mg may be used per burner after 31 December 2011
	4(e)	Mercury in metal halide lamps (MH)		
	4(f)	Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex		
	4(g)	Mercury in hand crafted luminous discharge tubes used for signs, decorative or architectural and specialist lighting and light-artwork, where the mercury content shall be limited as follows: (a) 20 mg per electrode pair + 0,3 mg per tube length in cm, but not more than 80 mg, for outdoor applications and indoor applications exposed to temperatures below 20 °C; (b) 15 mg per electrode pair + 0,24 mg per tube length in cm, but not more than 80 mg, for all other indoor applications.		2018/12/31

5	5(a)	Lead in glass of cathode ray tubes	
	5(b)	Lead in glass of fluorescent tubes not exceeding 0,2 % by weight	
6	6(a)	Lead as an alloying element in steel for machining purposes and in galvanised steel containing up to 0,35 % lead by weight	
	6(b)	Lead as an alloying element in aluminium containing up to 0,4 % lead by weight	
	6(c)	Copper alloy containing up to 4 % lead by weight	
7	7(a)	Lead in high melting temperature type solders (i.e. lead- based alloys containing 85 % by weight or more lead)	
	7(b)	Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission, and network management for telecommunications	
	7(c)-□	Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound	
	7(c)-□	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	
	7(c)-□	Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC	Expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013
	7(c)-IV	Lead in PZT based dielectric ceramic materials for capacitors being part of integrated circuits or discrete semiconductors'	
8	8(a)	Cadmium and its compounds in one shot pellet type thermal cut-offs	Expires on 1 January 2012 and after that date may be used in spare parts for EEE placed on the market before 1 January 2012
	8(b)	Cadmium and its compounds in electrical contacts	
9	9	Hexavalent chromium as an anticorrosion agent of the carbon steel cooling system in absorption refrigerators up to 0,75 % by weight in the cooling solution	
	9(b)	Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVACR) application	

11	11(a)	Lead used in C-press compliant pin connector systems	May be used in spare parts for EEE placed on the market before 24 September 2010
	11(b)	Lead used in other than C-press compliant pin connector systems	Expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013
12	12	Lead as a coating material for the thermal conduction module C-ring	May be used in spare parts for EEE placed on the market before 24 September 2010
13	13(a)	Lead in white glasses used for optical applications	
	13(b)	Cadmium and lead in filter glasses and glasses used for reflectance standards	
14	14	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	Expired on 1 January 2011 and after that date may be used in spare parts for EEE placed on the market before 1 January 2011
15	15	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages	
17	17	Lead halide as radiant agent in high intensity discharge (HID) lamps used for professional reprography applications	
18	18(b)	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 (BaSi 2 O 5 :Pb)	
21	21	Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses	
23	23	Lead in finishes of fine pitch components other than connectors with a pitch of 0,65 mm and less	May be used in spare parts for EEE placed on the market before 24 September 2010
24	24	Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors	
25	25	Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring	
29	29	Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC	
30	30	Cadmium alloys as electrical/mechanical solder joints to electrical conductors located directly on the voice coil in transducers used in high-powered loudspeakers with sound pressure levels of 100 dB (A) and more	

31	31	Lead in soldering materials in mercury free flat fluorescent lamps (which, e.g. are used for liquid crystal displays, design or industrial lighting)	
32	32	Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes	
33	33	Lead in solders for the soldering of thin copper wires of 100 µm diameter and less in power transformers	
34	34	Lead in cermet-based trimmer potentiometer elements	
37	37	Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body	
38	38	Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide	
41	41	Lead in solders and termination finishes of electrical and electronic components and finishes of printed circuit boards used in ignition modules and other electrical and electronic engine control systems, which for technical reasons must be mounted directly on or in the crankcase or cylinder of hand-held combustion engines (classes SH:1, SH:2, SH:3 of Directive 97/68/EC of the European Parliament and of the Council	2018/12/31
42	42	Spare parts (exchange parts, repaired parts) and components that contain RoHS designated substances and have been used in products that have been already been marketed and recycled, refurbished, or have been modified for long life.	
43	43	Lead in lead storage battery used in Uninterruptible Power Supply(UPS).	

Table 7 Halogenated Resin Additives

No	Substance	CAS No.	Chemical Formula
□-23-1	1,1,2,2-Tetrabromoethane	79-27-6	C2H2Br4
-2	Tetrabromobisphenol A	79-94-7	C15H12Br4O2
-3	Hexabromobenzene	87-82-1	C6Br6
-4	Tris（2-chloroethyl） phosphate	115-96-8	C6H12Cl3PO4
-5	1,2,5,6,9,10-hexabromocyclodecane	3194-55-6	C12H18Br6
-6	Polytetrafluoroethylene	—	（C2F4）n
-7	Tetrabromobisuphenol a bis（dibromopropyl ether）	21850-44-2	C21H20O2Br8
-8	Other halogenated resin additives	—	C7H10N2

Table 8 Laws, Directives, etc. Taken into Consideration for Selection of Chemical Substances under Voluntary Control

1	Law Concerning Reporting, etc. of Release of Specific Chemical Substances to the Environment and Promotion of the Improvement of their Management (PRTR Law)
2	Occupational Health and Safety Law
3	Law Concerning the Protection of the Ozone Layer through the Control of Specified Substances and Other Measures (Ozone Layer Protection Law
4	Law concerning the Promotion of Measures to Cope with Global Warming (Global Warming Prevention Law)
5	Atmospheric Pollution Prevention Law
6	Water Quality Pollution Prevention Law
7	Law concerning Examination and Regulation of Manufacture, etc. of Chemical Substances (Chemical Substance Examination Law)
8	Law for Control of Poisonous and Powerful Agents
9	Waste Management & Public Cleansing Law
10	Law Concerning Special Measures against Dioxins
11	EU's Directive 76/769/EEC relating to restrictions on the marketing and use of certain dangerous substances and preparations
12	EU's End-of-Life Vehicles (ELV) Directive
13	EU's Waste Electrical and Electronic Equipment (WEEE) Directive and Restriction of Hazardous Substances (RoHS) Directive
14	Basel Convention
15	OECD Joint Ordinance * Note 7
16	Montreal Protocol of Substances that Deplete the Ozone Layer

* Note 7: Ordinance to specify wastes that Japan needs to regulate based on the Decision of the OECD Council Concerning the Transfrontier Movements of Wastes Destined for Recovery Operations

The contents of the list are subject to change due to future expansion of the body of knowledge and revisions and changes in laws and regulations. ULVAC Group will revise the List of Surveyed Chemical Substances under Voluntary Control for Green Procurement as necessary to promote activities that are most appropriate.

Please be advised that this Green Procurement Standard documentation may be revised due to changes in current laws and regulations as well as social trends.

Revision Record of Green Procurement Standard

Version	Revised Date	Reason and Description
Ver.1.1	Nov.1, 2003	New Provision
Ver.1.2	Mar.1, 2004	□.List of Surveyed Chemical Substances under Voluntary Control for Green Procurement Table 1-2: Level II：Chemical Substances under Voluntary Control □-48 Elimination target date “Jul 2005” has been Changed to ”Jul 2004”.
Ver.2	Dec.1, 2006	□.List of Surveyed Chemical Substances under Voluntary Control for Green Procurement 1) Table 1-1: “Bromomethane”, “Organic Chlorine Substances for Which Acceptable Levels in Underground Water Are Specified in Water Quality Pollution Prevention Law”, “Short-chain paraffin chloride”, “Tributyl tins (TBTs), Triphenyltins (TPTs)”, “Halogenated Resin Additives”, and “Trichloro-fluoro-methane and other HCFCs designated in the Ozone Layer Protection Law” have been changed from Level II to Level I, with use prohibited effective immediately. 2) Table 1-1: “Asbestos (excluding Level I asbestos: Amosite and Crocidolite)” has been changed from Level II to Level I, with the use of all asbestos prohibited effective immediately. 3) Table 1-2: The elimination date for “Cadmium and its compounds”, “Hexavalent chromium compounds”, “Mercury and its compounds”, “Lead and its compounds”, “PBBs”, and “PBDEs” has been changed. 4） Table 4: Ulvac Co., Ltd.’s regulatory values have been listed for RoHS Designated Substances. 5) Table 5: The use of products containing excluded RoHS Designated Substances has been listed. 6) Table 6:The Use of products excluded RoHS Designated Substances has been listed. 7) Inquiries to: The inquiry “TEL” and “FAX” numbers have been changed.
Ver.3	Sep.. 20 , 2008	1) Revised each RoHS specified substances' regulation value on table 5 from "under" to "or less". 2) Added No.22 to 29 (8 items) to table 6 [excluded RoHS specified substances' use] 3) Deleted Procurement department from the contact 4) Revised writings on specific amine
Ver.4	Sec. 09 , 2008	Table 1-2 Level II: Revise RoHS target to June/2011 for self-management chemical substances (to be banned in the future, reducing substances) : cadmium, hexavalent cromium, mercury, lead, PBBs、PBDEs
Ver.5	Nov.01 , 2009	1) Added No.30-38 and 40 to table 6 [excluded RoHS specified substances' use] 2) Deleted "List of □. green procurement, self management substances for investigation " from this standard document and newly disclosed them as Ulvac group self management substance list.
Ver.6	Jan. 01 , 2013	1) Revise appendix 6 to update the RoHS applicable period. 2) The abolition target of RoHS6 substance is changed.
Ver.6.1	Dec.13.2013	1）Revise appendix 6

		2) Deleted ”inquiries”
Ver.7	Aug 23,2016	1）Revise appendix 1-1. Added a prohibition material to the Chemical Substance Control Law of Japan (the Class I Specified Chemical Substances), Industrial Safety and Health Law(Production prohibition material) 2) Revise appendix 2-1. Added 4 substances about EU RoHS2. 3) Revise appendix 6.