

ULVAC

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.List of  
Surveyed Chemical Substances  
under Voluntary Control  
for Green Procurement

ULVAC Group

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## List of Surveyed Chemical Substances under Voluntary Control for Green Procurement

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. For some of the Level-II chemical substances, a deadline for elimination has been designated.
- Level III “chemical substances under voluntary control” are Type 1 and Type 2 specific chemical substances designated by the PRTR Law, that do not fall into the Levels I or II categories.

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
-1	Azo compounds (Scope: surface that comes in contact with human body) * Note 1.	-	Immediately	Electrical wire coating (pigments, paints, colourings)
-2	Amosite	12172-73-5	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
-3	Aldrin	309-00-2	Immediately	Wood preservatives, insect repellents, antifungal agents, paints (limited to wood-preserving, insect-repelling, or antifungal paints)
-4	Endrin	72-20-8	Immediately	Instant-effect insecticides, insect repellents
-5	Crocidolite	12001-28-4	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 insulator
-6	Chlordanes	57-74-9	Immediately	Instant-effect insecticides, insect repellents, miticides, contact pesticides with toxic residue
-7	Trichloro-fluoro-methane and other CFCs designated in the Ozone Layer Protection Law	-	Immediately	Refrigerants, foaming agents
-8	Di-μ-oxo-di-n-butyl-stannio-hydroxyboran (DBB)	-	Immediately	-
-9	Dibromotetrafluoroethane and other Halons designated in the Ozone Layer Protection Law	-	Immediately	Fire extinguishants

No	Substance (Substance Group) under Voluntary Control	CAS No.	Prohibited from use as of	Typical purposes for use
-10	Dibromofluoromethane and other HBFCs designated in the Ozone Layer Protection Law	-	Immediately	Fire extinguishants
-11	Dioxins	-	Immediately	-
-12	Dieldrin	60-57-1	Immediately	Wood preservatives, insect repellents, antifungal agents, paints (limited to wood-preserving, insect-repelling, or antifungal paints)
-13	4-nitrodiphenyl and its salts	-	Immediately	Synthetic intermediates
-14	Bis(chloromethyl) ether	542-88-1	Immediately	-
-15	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)
-16	Bromochloromethane	74-97-5	Immediately	-
-17	Hexachlorobenzene	118-74-1	Immediately	Germicides, antifungal agents, dirt-proof agents, synthetic intermediates
-18	Pentachlorophenyl	87-86-5	Immediately	Insecticides, insect repellents, agricultural chemicals (including intermediates)
-19	Polychloroterphenyl (PCT)	61788-33-8	Immediately	Electrical insulating materials
-20	Polychloronaphthalene	1321-65-9, 1335-88-2, 1321-64-8	Immediately	Lubricating oils, paints, plastic stabilants (electric characteristics, fire resistance, water resistance, sterility), electrical insulating materials, flame retardants
-21	Polychlorobiphenyl (PCB)	1336-36-3	Immediately	Condensers, transformer oils
-22	Monomethyldichlorodiphenylmethane	-	Immediately	-
-23	Monomethyldibromodiphenylmethane (DBBT)	99688-47-8	Immediately	-
-24	Monomethyltetrachlorodiphenylmethane	76253-60-6	Immediately	-
-25	DDT	789-02-06, 50-29-3	Immediately	Wood preservatives, insect repellents, antifungal agents, paints (limited to wood-preserving, insect-repelling, or antifungal paints)

\* Note 1: Cases where azo compounds are used in products that are presumed to continuously come into contact with the human body may be split into specific amines listed in Table 2 according to the contact points with the human body.

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

No	Substance (Substance Group) under Voluntary Control	CAS No.	Elimination target date	Typical purposes for use
-1	Bromomethane (Methyl bromide) *Note 2	74-83-9	Jan 2005	Germicides, antifungal agents, dirt-proof agents, insecticides, insect repellents, herbicides, synthetic intermediates, food fumigants, soil fumigants

No	Substance (Substance Group) under Voluntary Control	CAS No.	Elimination target date	Typical purposes for use
- 2	Cadmium and its compounds	-	Jan 2006	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
- 3	Hexavalent chromium compounds	-	Jan 2006	Pigments, paints, inks, catalysts, plating, anticorrosive surface treatment, dyes, paint dryers, surface treatment (chromating, paint adherence improvement), rust prevention
- 4	Mercury and its compounds	-	Jan 2006	Fluorescent materials, materials in electrical contacts, colouring pigments, anticorrosive agents, high-efficiency light emitting materials, antibacterial treatment
- 5	Lead and its compounds	-	Jan 2006	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
- 6	PBBs	-	Jan 2006	Flame retardants
- 7	PBDEs	-	Jan 2006	Flame retardants
- 8	Acrylonitrile	107-13-1	-	Pigments, paints, synthetic resins, synthetic fibres
- 9	Acetaldehyde	75-07-0	-	Fuels, photosensitive materials, dyes, solvents, cleaning agents, germicides, antifungal agents, dirt-proof agents, preservatives, drugs, pharmaceutical intermediates, Synthetic resins
- 10	Antimony and its compounds	-	-	Pigments, paints, catalysts, lead-free soldering materials, stabilants, n-type dopant, III-V semiconductor substrates (GaSb), flame retardants, resistance membrane moderator, polymerised catalysts
- 11	Asbestos (excluding Level I asbestos: Amosite and Crocidolite)	1332-21-4	-	Insulating materials, bulking agents, friction materials, electrical insulating materials, filler, pigments/paints (indicated as talc (containing asbestos fibre-like materials) in ingredient list), thermal insulator
- 12	Ethylene oxide	75-21-8	-	Flavouring substances, surfactants, detergents, germicides, antifungal agents, dirt-proof agents, synthetic resins, synthetic intermediates, textile treatment agents
- 13	Short-chain paraffin chloride	108171-26-2	-	Vinyl chloride plasticisers, flame retardants
- 14	N, N'-Ethylene Bis (Dithiocarbamic acid) Manganese (Maneb)	75-21-8	-	-
- 15	Xylene	1330-20-7	-	-

No	Substance (Substance Group) under Voluntary Control	CAS No.	Elimination target date	Typical purposes of use
- 16	Chrome and trivalent chrome compounds	-	-	-
- 17	Chloroethylene (Vinyl chloride monomer)	75-01-4	-	Synthetic resins, synthetic intermediates
- 18	Chloroform (Trichloromethane)	67-66-3	-	Solvents, cleaning agents, drugs, pharmaceutical intermediates, synthetic intermediates, cooling medium, aniline detection
- 19	Cobalt and its compounds	-	-	Magnetic materials, pigments, paints, plating, hardening
- 20	Bromic flame retardants (excluding PBB and PBDE)	-	-	Flame retardants, package forming and sealing
- 21	Selenium and its compounds	-	-	Photosensitive materials, pigments, paints, catalysts, oxidising agents, semiconductor materials, photoreceptive elements, photoelectric cell
- 22	Thallium and its compounds	7440-28-0	-	Germicide, antifungal agent, dirt-proof agents, alloys
- 23	Tellurium and its compounds	13494-80-9	-	Special steel, catalysts, glass, ceramic colouring agents
- 24	Toluene - -	108-88-3	-	-
- 25	Tributyl tins (TBTs), Triphenyltins (TPTs)	-	-	Stabilants, antioxidant/anti-aging substances, antiseptic/antifungal agents, dirt-proof agents
- 26	Nickel and its compounds	-	-	Pigments, paints, black colouring agents for zinc and brass, optical thin membranes, battery cell materials, conductor printing paste, semiconductor material, surface treatment, magnetic thin membranes, plating, electrodes, catalysts, alloys
- 27	Halogenated resin additives * Note 3	-	-	-
- 28	Bismuth and its compounds	-	-	Lead-free soldering materials, soldering materials
- 29	Arsenic and its inorganic compounds	-	-	Glass discolouring, pigments, paints, dyes, glass defoaming agents, n-type dopant, III-V semiconductor substrates (GaAs), flame retardants, copper foil surface treatment, ingredient of GaAs
- 30	1,3-Butadiene	106-99-0	-	Synthetic resins, synthetic intermediates
- 31	Ether phthalate - -	-	-	Plasticisers, dyes, pigments, paints, inks, adhesives, lubricants
- 32	Beryllium and its compounds	-	-	Ceramics, alloys, catalysts, self-hardening alloys, alloys for springs, soldering materials
- 33	Benzylidyne trichloride	98-07-7	-	Dyes, agricultural chemicals (including intermediates), drugs, pharmaceutical intermediates, synthetic intermediates, stabilants, antioxidant/anti-aging substances, UV absorbing agents
- 34	Benzene	71-43-2	-	Solvents, cleaning agents, synthetic intermediates

No	Substance (Substance Group) under Voluntary Control	CAS No.	Elimination target date	Typical purposes for use
- 35	Radioactive substances * Note 4	-	-	Thorium for optical glass (lens)
- 36	Polychlorinated Naphthalenes (with more than three chlorines)	-	-	Lubricating oils, paints, plastic stabilants (electric characteristics, fire resistance, water resistance, sterility), electrical insulating materials, flame retardants
- 37	Polyvinyl Chloride -	9002-86-2	-	Electrical insulation, chemical resistance, transparency, coating materials
- 38	Formaldehyde	50-00-0	-	Surfactants, germicides, antifungal agents, dirt-proof agents, agricultural chemicals (including intermediates), preservatives, synthetic resins, synthetic intermediates, reducing agents for plating solution
- 39	Magnesium	7439-95-4	-	Alloys, optical materials, optical thin membranes, structural materials, aluminium alloys (Geraldine), magnesium alloys, fatty acid salt accelerators, desiccants, rust-preventive plating materials, thermistor materials
- 40	Manganese and its compounds	-	-	Stainless steel, deoxidation of and additive to special steel, additive to non-ferrous metals, welding rod coating
- 41	Inorganic cyanide compounds (excluding complex salts and cyanates) - -	-	-	Pigments, paints, plating, plastic materials, plating agents
- 42	9-methoxy-7H-furo [3,2-g][1] benzopyran-7-one (methoxsalen)	298-81-7	-	Drugs, pharmaceutical intermediates
- 43	Organic tine compounds (excluding Bis (tributyltin) = oxido)	-	-	-
- 44	Sulphur hexafluoride	2551-62-4	-	Semiconductor crystallisation, electric insulating equipment
- 45	HCFCs specified in Ozone Layer Protection Law	-	-	Refrigerants, foaming agents
- 46	HFCs specified in Global Warming Prevention Law	-	-	Refrigerants, foaming agents
- 47	PFCs specified in Global Warming Prevention Law	-	-	Cleaning agents, semiconductor crystallisation
- 48	Organic chlorine substances of which the acceptable levels in underground water are specified in Water Quality Pollution Prevention Law * Note 5	-	Jul 2004	-

\* Note 2: Total elimination deadline is set for 1<sup>st</sup> Jan 2005 in the Montreal Protocol on Substances that Deplete the Ozone Layer.

\* Note 3: See Table 4 for details.

\* Note 4: See Table 5 for details.

\* Note 5: See Table 3 for details.

Table 1-3 Level III: Chemical Substances under Voluntary Control

Type 1 and Type 2 specific chemical substances designated by the PRTR Law, that are not included in the above tables of Levels I and II substances.

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

No	Substance	CAS No.	Chemical Formula
- 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
- 48 -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 Halogenated Resin Additives

No	Substance	CAS No.	Chemical Formula
-27 -1	1,1,2,2-Tetrabromoethane	79-27-6	C <sub>2</sub> H <sub>2</sub> Br <sub>4</sub>
-2	Tetrabromobisphenol A	79-94-7	C <sub>15</sub> H <sub>12</sub> Br <sub>4</sub> O <sub>2</sub>
-3	Hexabromobenzene	87-82-1	C <sub>6</sub> Br <sub>6</sub>
-4	Tris(2-chloroethyl) phosphate	115-96-8	C <sub>6</sub> H <sub>12</sub> Cl <sub>3</sub> PO <sub>4</sub>
-5	1,2,5,6,9,10-hexabromocyclodecane	3194-55-6	C <sub>12</sub> H <sub>18</sub> Br <sub>6</sub>
-6	Polytetrafluoroethylene	-	(C <sub>2</sub> F <sub>4</sub> ) <sub>n</sub>
-7	Tetrabromobisphenol a bis(dibromopropyl ether)	21850-44-2	C <sub>21</sub> H <sub>20</sub> O <sub>2</sub> Br <sub>8</sub>
-8	Other halogenated resin additives	-	C <sub>7</sub> H <sub>10</sub> N <sub>2</sub>

Table 5 Radioactive Substances

No	Substance	CAS No.	Chemical Formula
-35 -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 6 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 6

\* Note 6: 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.

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#### 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".