Samsung Electronics

Standards for Control of Substances concerning Product Environment

(SEC Registration No. 0QA-2049)

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Environment Strategy Team

Customer Satisfaction & Environment Center

Contents

Chapter 1 General Provision

Article 1 (Preface)

In order to sell our products to the world marketplace, Samsung Electronics ('The Company') must guarantee and verify environmental compliance for all parts and components of finished products to prevent adverse effects on the environment and the health. The following list of substances with environmental impacts was developed based on global regulatory and requirements of customers.

Article 2 (Purpose)

The purpose of this standard (0QA-2049), is to minimize the risk regarding adverse effects on human health and the environment as well as that products and parts sold by Samsung Electronics('SEC') comply with global environmental regulations.

Article 3 (Scope)

1. This standard applies to all products and parts developed and to be sold by SEC regardless of region.
   *Product : Finished product purchased by SEC to sell (outsourcing product, purchasing product)
   *Part : Part composing product of SEC (including packaging, battery, subsidiary material)

2. This standard applies to all products designed, developed and manufactured by the company regardless of region.

Articles 4 (Definitions)

1. Substances concerning Product Environment

Substances which are restricted and controlled to use by the company due to their negative effects on the environment and the health

2. Classification of Substances concerning Product Environment

1) Class I: Substances are regulated by EU RoHS Directive 2011/65/EU (recasting 2002/95/EC). These substances are restricted to be used in Electrical and Electronic Equipment (EEE).

2) Class II: Substances are managed by regulation or convention other than EU RoHS Directive. These substances are restricted to be used in products

3) Class III: Substances which are voluntary phase-out due to the potentially negative effects to the environment or the health

4) Others: Substances need to be monitored because these substances are expected to regulate in the future

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3. Exceptions

The exceptions of Class I and II are adopted from the decisions of EU RoHS Directive and other legislations concerning product environment. The exceptions of Class III and others are adopted when they are needed to maintain specific quality, characteristic, appearance or performance of products. The exceptions can be used until appropriate measures or substitutes are developed.

4. Threshold Limit

The maximum concentration level at which the presence of a substance can be tolerated in a material. The threshold limits are provided for detection sensitivity errors of instrumental measurements and impurities in a material. When the supplies are exceeding the threshold limit of restricted substances, Samsung Electronics regards the supplies as the intentional use of restricted substances and prohibits the supplier from the delivery of supplies.

5. Precision Analysis

Precision Analysis is a test using equipments with high precision and may differ from screening test such as using XRF equipment which indicates approximate concentration of certain substances. Detailed analysis equipment means such as AAS, ICP, IC and UV/VIS for Inorganic compounds and GC/MS for organic compounds.

1) Organic Materials

Organic materials are a general term of organic compounds which are chemical compounds whose molecules contain carbon. It covers plastic, rubber, ink and so on.

2) Inorganic Materials

Inorganic materials are a general term of inorganic compounds which are chemical compounds except organic compounds. It covers metal, alloy, ceramic, and so on.

* CV-AAS: Cold Vapor-Atomic Absorption Spectroscopy, * DMA : Direct Mercury Analyzer
* AFS : Atomic fluorescence Spectrometry * ICP: Inductively Coupled Plasma
* UV-VIS: Ultraviolet-Visible Spectroscopy
* GC/MS: Gas Chromatography/Mass Spectrometry
* C-IC: Combustion Ion Chromatography

6. Outsourcing finished product

Finished products, which make use of external manufacturing facilities including ODM, OEM, foundry

7. Purchasing product

Product with SEC brand manufactured by outsourcing company and developed by SEC or outsourcing company such as flip cover of cell phone, small fridge, virus doctor etc.

Article 5 (Standard for Operation and Management)

1. The company manages Substances concerning Product Environment by classifying them as Class I, II, III and others. The substances are restricted from application date. Standards and methods of control are regularly revised.

2. The company will provide a grace period for improvements until substitutes or other methods are available.

3. The suppliers submit an approval sheet with the contents of Substance concerning Product Environment of the new supplies on in written document and comply with the Standards for Control of Substances concerning Product Environment.

Note: Substances in Class I shall be confirmed to comply with the threshold limit, by the precision analysis data. Substances in Class II, III and others shall not be confirmed by precision analysis data. When Samsung Electronics requires, suppliers shall provide precision analysis data to Samsung Electronics and prove to comply with the threshold limits.

Chapter 2 Standard for Control of Substances concerning Product Environment

Article 6 (Standard for Control of Substances in Products)

1. This standard applies to the unit of homogeneous materials in parts of being supplied by suppliers.

* Homogeneous material means a unit that can not be mechanically disjointed in single materials.

2. List of Control of substances in products

Table 1. Banned and restricted substances

*Class I : Substances are regulated by EU RoHS Directive 2011/65/EU. These substances are restricted to be used in products.

Class	Substance / Material	Regulation
I	Cadmium and its compounds	EU RoHS, Packaging, Battery Directive; OSPAR Priority Chemicals; Korea RoHS; China RoHS, Japan J-Moss; US/CA SB-20/50
	Lead and its compounds	EU RoHS, Packaging, Battery Directive; California Proposition 65; OSPAR Priority Chemicals; Korea RoHS; China RoHS, Japan J-Moss; US/CA SB-20/50 US CPSC Public Law 110-314
	Mercury and its compounds	EU RoHS, Packaging, Battery Directive; OSPAR Priority Chemicals; Korea RoHS; China RoHS,China MII Method; Japan J-Moss; US/CA SB-20/50
	Hexavalent chromium and its compounds	EU RoHS, Packaging Directive; OSPAR Priority Chemicals; Korea RoHS; China MII Method; China RoHS, Japan J-Moss; US/CA SB-20/50
	Polybrominated biphenyls (PBBs)	EU RoHS Directive; OSPAR Priority Chemicals; Korea RoHS; China MII Method; China RoHS, Japan J-Moss;
	Polybrominated diphenylethers (PBDEs)	EU RoHS Directive; OSPAR Priority Chemicals; Korea RoHS; China MII Method; China RoHS, Japan J-Moss

Notes: EU directive 2015/863 to restrict 4 phthalates(DEHP, BBP, DBP, DIBP) was adopted on 31th March 2015 and shall apply from 22nd July 2019 (medical devices : 22nd July 2021).

This standard will be updated soon accordingly.

Table 2. Banned and restricted substances

*Class II: Substances are managed by regulation or convention other than EU RoHS Directive.
These substances are restricted to be used in products.

Class	Substance / Material	Regulation
II	Polychlorinated biphenyls (PCBs) Polychlorinated terphenyls (PCTs) Polychrlorinated naphthalenes (PCNs, with three or more chlorine substituents)	Stockholm Convention , ANNEX XVII of REACH Regulation (EC) No 1907/2006; Japan Law concerning the evaluation of chemical substances
	Ozone layer depleting substances/ Greenhouse Gas (CFCs, HCFCs, Halons, HFCs, PFCs, SF6)	Montreal Protocol EC 1005/2009 (EC 2037/2000) US Clean Air Act, No 517/2014 EU
	Asbestos	ANNEX XVII of REACH Regulation (EC) No 1907/2006;
	Formaldehyde	Austria - BGB I 1990/194: Formaldehydverordnung, §2, 12/2/1990; US CA Code of Regulation §93120
	Short-chain chlorinated paraffins (Alkane 10～13 carbon chain)	ANNEX XVII of REACH Regulation (EC) No 1907/2006;
	Azo colorants	ANNEX XVII of REACH Regulation (EC) No 1907/2006
	Nickel and its compounds	ANNEX XVII of REACH Regulation (EC) No 1907/2006
	Organic tin compounds	EU REG. NO. 276/2010 ANNEX XVII of REACH Regulation (EC) No 1907/2006
	Arsenic and its compounds	ANNEX XVII of REACH Regulation (EC) No 1907/2006
	PFOSs(Perfluorooctane Sulfonates)	Stockholm convention COMMISSION REGULATION (EU) No 757/2010 Commission Regulation (EC) No 552/2009;
	DMF(Dimethylfumarate)	COMMISSION DECISION 2009/251/EC
	PCP(Pentachlorophenol)	Norway Product Regulation Annex XVII of REACH Regulation (EC) No 1907/2006
	PFOA (Pentadecafluorooctanoic acid)	Norway Product Regulation Annex XVII of REACH Regulation (EC) No 1907/2006
	PAH Polycyclic Aromatic Hydro carbons	Annex XVII of REACH regulation (EC) No 1907/2006
	Bisphenol A	France ACT N.2012-1442 of 24 Dec.2012 to suspend manufacture, import, export and placing on the market of any packaging for food containing Bisphenol A
	HBCD(Hexabromocyclododecane)	Norway: Product Regulation No. 922 of 2004 - Amendment
	Nonylphenol, Nonylphenol Ethoxylate	Turkey: Hazardous Chemical Content of some Consumer Products
	6 Phthalates	US CPSC Public Law 110-314

Table 3. Voluntary phase-out of substances

*Class III: Substances which are voluntary phase-out due to the potentially negative effects to the environment or the health

Class	Substance / Material	Application	Start of Phase-out	Phase-out Date
III	TBBP-A	**All products**	-	January, 2008
	Brominated Flame Retardants	Printed wiring boards in **mobile phones**	-	July, 2007
		Mobile phones (including accessories and chargers)	January, 2009	January, 2010
		MP3 players (including accessories)	July, 2009	
		Digital cameras and Camcorders: main PWB and case	January, 2010	July, 2010
		Notebooks	January, 2011	January, 2012
	PVC	Mobile phones (including accessories and chargers)	July, 2009	April, 2010
		MP3 players (including accessories)		
		Digital cameras and Camcorders: internal wires	January, 2010	July, 2010
		TVs: Internal wires (except LCD/LED panel and PDP module)	September, 2009	January, 2011
		Notebooks (except power cord and adapter)	January, 2011	January, 2012
		Monitors: internal wires (except panel)		
		Home theaters: internal wires		
	Phthalates	Mobile phones (including accessories and chargers)	January, 2010	January, 2011
		MP3 players (including accessories)		
		Digital cameras and Camcorders: internal wires	January, 2012	January, 2013
		TVs: internal wires (except LCD/LED panel and PDP module)		
		Notebooks (except power cord and adapter)		
		Monitors: internal wires (except panel)		
		Home theaters: internal wires		
		Printers (>25g plastic part (excepting power cord)	-	June,2013
	Antimony Compounds	Mobile phones (including accessories and chargers)	January, 2012	January, 2013
		MP3 players (including accessories)		
		Digital cameras and Camcorders: Main PWB, case and internal wires		
		TVs: internal wires (except LCD/LED panel and PDP module)		
		Notebooks (except power cord and adapter)		
		Monitors: internal wires (except panel)		
		Home theaters: internal wires		
	Beryllium and its compounds	Mobile phones , MP3 players	January, 2010	January, 2011
		All products	January, 2012	January, 2013
	Cobalt dichloride	All product	-	Jun.2011
	Chlorinated Flame Retardants	Mobile phones, MP3 players	January.2011	January, 2012

Notes:

- **Start of Phase-out**: Date from which **ALL NEW MODELS starting development** will be free of target substances according to application scope above. The phase-out is not applied to THE MODELS already developed and in development before the start date of phase-out.
- **Phase-out Date**: Date from which **ALL NEW MODELS put on the market** will have achieved phase-out according to application scope above. This voluntary phase-out doesn't apply to non-consumer products

Table 4. Monitored substances

Class	Substance / Material	Application Product	Remarks
Others	Perchlorate Compounds	All products	Substances need to be monitored such as EU REACH SVHC candidate list or substances which are expected to regulate in the future
	Radioactive Substances		
	MCCP		
	Triclosan		
	(DBHP)BT		
	Triphenyl phosphate		
	Substances in SVHC candidate list *		

* Substances in EU REACH SVHC Candidate list(163 substances by July 2015), refer to Annex-4

(http://echa.europa.eu/web/guest/candidate-list-table)

3. Standard for Control of Class I Substances

Note: ppm = mg/kg by weight

Exemptions of control of substances and Examples of substances and its compounds: Annex 1 and 2

1) Cadmium and its compounds (Cd)

Example of use	pigment, anti-corrosion surface treatment, electric and electronic materials, optical material, stabilizer, stabilizer for PVC, plating, electrode, etc.	
Application	Organic materials	Inorganic materials
Threshold Limit	5 ppm	80 ppm
Implementation date	January 2005	
Test Equipment	ICP, AAS, AFS	
Test Method	IEC 62321-5:2013, EPA-3051, EPA-3052 and etc.	

2) Lead and its compounds (Pb)

Example of use	rubber hardener, pigment, paint, lubricant, plastic stabilizer, battery material, free-machining alloy, free-cutting steels, optical materials, X-ray shielding in CRT glass, electrical solder materials, mechanical solder, curing agent, vulcanizing agent, resin stabilizer, plating, metal alloy, resin additives			
Application	Organic materials	Inorganic materials	Accessible parts of children's product(12 years or younger)[1)]	
			Paint, coating	Others
Threshold Limit	100ppm	800ppm	90ppm	100ppm
Implementation date	January 2005		September 2015	
Test Equipment	ICP, AAS, AFS			
Test Method	IEC 62321-5:2013, EPA-3050B, EPA-3051, EPA-3052, ISO 6101-2, ISO 6503, ASTM 3505B, ASTM 4004 and etc.		CPSC-CH-E1003-09.1	CPSC-CH-E1001-08.1 CPSC-CH-E1002-08.1

1) RoHS exemptions do not apply.

Consumer products designed or intended by the manufacturer for use by children 12 years or younger

3) Mercury and its compounds (Hg)

Example of use	fluorescent bulb, contact point material, pigment, anti-corrosion, high-efficiency phosphor, antibacterial treatment	
Application	Organic materials	Inorganic materials
Threshold Limit	800 ppm	800 ppm
Implementation date	January 2005	
Test Equipment	ICP, CV-AAS, AFS, DMA	
Test Method	IEC 62321-5:2013, EPA-3050B, EPA-3052 and etc.	

4) Hexavalent chromium and its compounds (Cr^{+6})

Example of use	pigment, paint, ink, catalyst, plating, anti-corrosion surface treatment, dye, paint dryer, surface treatment, chromate treatment, paints adhesion enhancement, anti-corrosion		
Application	Organic materials	Inorganic materials	Genuine leathers having contact with skin
Threshold Limit	800 ppm	800 ppm	3ppm
Implementation date	February 2005		May 2015
Test Equipment	ICP, CV-AAS, AFS, DMA		
Test Method	IEC 62321-5:2013, EPA-3050B, EPA-3052, ISO 17075 and etc.		

Notes: A judgment of containing Hexavalent chromium is based on the Spot-Test which is indicated by Samsung Electronics.

5) Polybrominated biphenyls (PBBs)

Example of use	flame retardant
Application	Organic materials
Threshold Limit	900 ppm
Implementation date	February 2005
Test Equipment	GC/MS
Test Method	IEC 62321:2008,EPA-3540C, EPA-3545, EPA-3550B and etc.

6) Polybrominated diphenylethers (PBDEs)

Example of use	flame retardant
Application	Organic materials
Threshold Limit	900 ppm
Implementation date	February 2005
Test Equipment	GC/MS
Test Method	IEC 62321:2008,EPA-3540C, EPA-3545, EPA-3550B and etc.

Notes: All sorts of PBDEs including Deca-BDE are banned.

4. Standard for Control of Class Ⅱ Substances

Note: ppm = mg/kg by weight

Exemptions of control of substances and Examples of substances and its compounds: Annex 1 and 2

7) Polychlorinated biphenyls (PCBs) / Polychlorinated Terphenyls (PCTs) / Polychlorinated naphthalences (PCNs): with 3 or more chlorine substituents

Example of use	insulation oil, lubricant oil, electrical insulation medium, solvent, electrolytic solution, stabilizer, electricity, flame retardant, water-resistant, insulator
Application	All parts
Threshold Limit	No intentional use
Implementation date	May 14, 2004
Test Equipment	GC/MS, GC/ECD
Test Method	EPA-8082, EPA-1668, KS C 2375, DIN EN 61619

8) Ozone depleting substances & Greenhouse Gas: CFCs, HCFCs, Halons (ODSs), HFCs, PFCs, SF6

Example of use	CFCs, HCFCs, Halons	HFCs (GWP>150)	HFCs, PFCs, SF6
Application	Refrigerant, foam blowing agent, extinguishant, solvent cleaner	Refrigerant in refrigerator for Europe	Refrigerant in refrigerator, foam blowing agent for Austria, Swiss, Denmark
Threshold Limit	No intentional use	No intentional use	No intentional use
Implementation date	May 14, 2004	1st Jan, 2015	1st Jan, 2002
Test Equipment	GC/ECD		
Test Method	EPA-8021B, EPA-524.1, EPA-524.2		

Notes: HCFC-22 are prohibited from using and containing in products placing on the markets which regulate ODS by the law.

9) Asbestos and its compounds

Example of use	brake lining pad, insulator, filler, abrasive, pigment, paint, talc, adiabatic material
Application	All parts
Threshold Limit	No intentional use
Implementation date	May 14, 2004
Test Equipment	Electron Microscope (TEM or SEM), Phase Contrast Microscopy, X-Ray Diffractometer, Thermal analysis
Test Method	EPA-0435, JIA-A 1481, NIOSH NMAM #7400, OSHA ID-160, HSE MDHS 39/4

10) Formaldehydes

Example of use	adhesive, antiseptic solution, preservative	
Application	Wooden products	Fiber
Threshold Limit	0.1 ppm (in a test chamber)	0.1 ppm (in a test chamber)
Implementation date	May 14, 2004	April 1, 2011
Test Equipment	HPLC, Spectrometer, Photoelectric colorimeter	
Test Method	ASTM D6007-2, E1333-96, EPA TO-11A, ISO 16000-3, KS M ISO 16000-3, KS M 1998-1~4	

Notes: Products containing composite woods for the U.S market comply with the formaldehyde threshold limit of the California Code of Regulation §93120. This regulation is applied to composite woods (HWPW-CC, HWPW-VC), particle boards (PB) and MDF (Medium Density Fiberboard) excluding woods for packages and pallets.

11) Short-chain chlorinated paraffins: Alkane 10~13 Carbon chain (SCCPs)

Example of use	plasticizer for PVC, flame retardant	
Application	Paints, waxes, oils, rubbers, plastics and textiles	All parts
Threshold Limit	1,000 ppm	1,000ppm
Implementation date	May 14, 2004	April 1, 2011
Test Equipment	GC/MS, GC/ECD	
Test Method	EPA 3540C, EPA 3550C, EPA 8081B, EPA 8270D	

12) Azo colorants

Example of use	pigment, dyes, colorants
Application	Textiles and leather articles which may come into direct and prolonged contact with the skin (e.g. belt, strap, ear phone, head set, shoulder string)
Threshold Limit	30 ppm
Implementation date	May 14, 2004
Test Equipment	GC/MS, GC/MSD, HPLC
Test Method	EN 14362-1~2, CEN ISO/TS 17234

13) Nickel and its compounds (Ni)

Example of use	pigment, paint, optical thin film, reflection coating, battery materials, conductive, materials, semiconductors, surface treatment, magnetic thin film, nickel plating, electrode, catalyst, alloy	
Application	Resurfacing and External metal components intended to come into direct and prolonged contact with the skin (e.g. external antenna, enclosures, belt, strap, ear phone, head set, shoulder string, button, key, ring, decoration)	
Threshold Limit	0.5μg-Ni/cm^2 per week	0.28 μg-Ni/cm^2 per week
Implementation date	May 14, 2004	July 1, 2012
Test Equipment	ICP/OES	
Test Method	EN 1811:1999	EN 1811:2011+AC:2012(3samples)

Notes : Nickel emissions management is carried out based on analysis report

(Refer to e-CIMS(P-EHS) or Approval sheet)

14) Organic tin compounds

Example of use	anti-septic, anti-oxidizer, antibacterial and antifungal agents, anti-foulant, paint, pigment, anti-staining	
Application	Paints, inks, preservatives and fungicides	All parts
Threshold Limit	No intentional use	1,000ppm
Implementation date	May 14, 2004	January 1, 2012
Test Equipment	GC/MS, GC-FPD	
Test Method	EPA 0280, DIN 38407	

Notes : Dioctyltin (DOT) : One of REACH Annex XVII substances, scope is limited to fiber parts coming into contact with skin(bags, pouches, covers and etc.), wallpaper, flooring, gloves, shoes, child protection product, sanitary product, diaper, clothing and molding kit(RTV-2) for wall.

15) Arsenic compounds and its compounds (As)

Example of use	pigment, paint, dye, anti-foamer for glass, GaAs semiconductor
Application	Wooden products, totally or partly submerged parts
Threshold Limit	No intentional use
Implementation date	May 14, 2004
Test Equipment	ICP, AAS
Test Method	EPA-3050B, EPA-3051, EPA-3052, ISO 6101-2 EPA200.8, EPA6020, EPA6010B etc.

16) Perfluorooctane Sulfonates (PFOSs)

Example of use	cleaner, Insulating oil, pigment, flux, adhesive, fluorinated mold spatt, PTFE
Application	All parts
Threshold Limit	1,000 ppm (1 ㎍/㎡ for textiles and coated materials)
Implementation date	May 1, 2008
Test Equipment	LC/MS
Test Method	Acid/Metal Salt/ Amide:USEPA 3540C

Note: PFOS Chemical formula: C8F17SO2X [X = OH, Metal salt (O-M+)], Halogenated substances, including polymers and amide derivatives

17) DMF (Dimethylfumarate)

Example of use	Silica-gel, texture/leather, wood, poly urethane
Application	All parts
Threshold Limit	0.1 mg/kg
Implementation date	May 1, 2009
Test Equipment	GC/MS
Test Method	EPA-3540C

18) PCP (Pentachlorophenol)

Example of use	Preserving agent, preservatives etc.
Application	Textile and leather
Threshold Limit	5 ppm
Implementation date	September 30, 2013
Test Equipment	GC/MS
Test Method	DIN 53313, US EPA 8270

19) PFOA (Perfluorooctanoic Acid)

Example of use	Coating materials, preservatives etc.
Application	All parts
Threshold Limit	10ppm (Textile and coatings for 1 ㎍/㎡)
Implementation date	September 30, 2013
Test Equipment	LC/MS
Test Method	US EPA 3520, 3540, 3550

Exception) Food contact materials, medical devices

20) PAH(Polycyclic aromatic hydrocarbons) Skin contact applications only

Example of use	Rubbers, Headphones, 3D Glasses
Application	Consumer products
Threshold Limit	1ppm (products intended for children 0.5ppm)
Implementation date	27th December 2015
Test Equipment	GC/MS
Test Method	US EPA 3630C, 8100, 8310

21) Bisphenol A

Example of use	Polycarbonate(PC), Epoxy resin, paint and etc.
Application	Components of plastic made from Bisphenol A as monomer, coming into contact with food
Threshold Limit	No intentional use
Implementation date	1st January 2015
Test Equipment	GC/MS, HPLC, LC
Test Method	EN71-10, US EPA 3540C, ASTM D 7574-09 Korea Standards and Specifications for Food Utensils, Containers and Packages

22) HBCD (Hexabromocyclododecane)

Example of use	Flame retardant etc.	
Application	Components for Korean ・ European market	Components for others
Threshold Limit	No intentional use	No intentional use
Implementation date	1st July 2015	1st October 2015
Test Equipment	GC/MS, LC/MS	
Test Method	EPA 3540C, EPA 3545, EPA 3550B etc.	

23) Nonylphenol, Nonylphenol Ethoxylate

Example of use	Cleaner, surfactants
Application	Leather, fiber, paper * medical equipment is excluded
Threshold Limit	No intentional use
Implementation date	14th January 2015
Test Equipment	HPLC, LC/MS
Test Method	ASTM D7485, ASTM D7065 etc.

Notes : this don't apply to non-consumer products.

24) 6 phthalates (BBP, DBP, DEHP, DINP, DIDP, DNOP)

Example of use	Plasticizer etc.
Application	Accessible parts of children's product(12 years or younger) which is PVC, rubber, adhesive, paint[1)]
Threshold Limit	1,000 ppm each
Implementation date	1st September 2015
Test Equipment	GC/MS
Test Method	CPSC-CH-C1001-09.3

1) Consumer products designed or intended by the manufacturer for use by children 12 years or younger

5. Standard for Control of Class Ⅲ Substances

Note: ppm = mg/kg by weight

Exemptions of control of substances and Examples of substances and its compounds: Annex 1 and 2

No	Substance	Application	Threshold Limit	Test Equipment	Test Method	Example of use
25	Tetrabromo bisphenol-A (TBBP-A)	Organic materials	900 ppm	GC/MS LC/MS	EPA-3540C, EPA-3545 EPA-3550B	flame retardant
26	Brominated flame retardants (BFRs)	Organic materials	No intentional use (Br 900ppm)	IC	EN 50267-2-2, EN 14582:2007, ASTM D7359	flame retardant
27	Polyvinyl chloride (PVC)	Organic materials	No intentional use (Cl 900ppm)	FT-IR	KS 0210	wire jacket
28	Phthalates	All parts	1,000 ppm	GC/MS HPLC	ASTM D3421-75, EN 14372:2004, US EPA 3540C, US CPSCCH-C1001-09.1,EPA 0506, KSM 1991	plasticizer
29	Antimony and compounds	All parts	700 ppm	ICP	EPA 3050B, ISO 8124-3, EPA 3052, KS K 0852, KS K 0731, EPA 7062	flame retardant
30	Beryllium and its compounds	All parts	1,000 ppm	ICP	EPA 3050B, ISO 8124-3, EPA 3052, KS K 0852, KS K 0731 EPA 7062	Connector
31	Cobalt dichloride	All parts	No intentional use (Co 1,000ppm)	ICP	EPA-3052, BS 3482-9:1991[desiccants]	silica gel, humidity I ndicator
32	Chloride Flame Retardants	Organic materials	No intentional use (Cl 900ppm)	IC	EN 50267-2-2, EN 14582:2007, ASTM D7359	flame retardant

Note: Phase-out date of each substance in applications/products follows the Phase-out date of Table 2 in Article 6.

Article 7 (Standard for Control of Substances in Packaging Materials)

1. Definition of Packaging Materials

'Packaging Material' means the secondary materials which are used for the storage, protection, handling and delivery of products. This packaging standard covers the final materials which are delivered to the consumer.

2. Standard for Control of Substances in Packaging Materials

Note: Regulation : European Parliament and Council Directive 94/62/EC

ppm = mg/kg by packaging weight

*Not presented in a separate case management standards Article 9 (Standard for Control of Substances in Products) should be applied to the management criteria.

Exemptions of control of substances and Examples of substances and its compounds: Annex 2 and 3

1) Cadmium, Lead, Mercury and Hexavalent chromium (Cd, Pb, Hg and Cr^{+6})

Example of use	Refer to Detailed example of use of Class Ⅰ sub
Application	All packaging materials
Threshold Limit	80 ppm (Sum of concentrations of Cd, Pb, Hg and Cr+6)
Implementation date	14th May 2004
Test Equipment	ICP, AAS
Test Method	IEC62321(Ed.2008), EPA-3050B, EPA-3051, EPA-3052, ISO 6101-2, ISO 6503, ASTM 3505B, ASTM 4004

2) Ozone depleting substances: CFCs, HCFCs, Halons (ODSs)

Example of use	foam blowing agent
Application	All packaging materials
Threshold Limit	No intentional use
Implementation date	14th May 2004
Test Equipment	GC/ECD
Test Method	EPA-8021B, EPA-524.1, EPA-524.2

3) Polyvinyl chloride (PVC)

Example of use	flame retardant
Application	Vinyl packaging, pallet
Threshold Limit	No intentional use
Implementation date	14th May 2004
Test Equipment	FT-IR

Test Method	KS 0210

4) Brominated flame retardants (BFRs)

Example of use	flame retardant
Application	All packaging materials
Threshold Limit	Br : 900ppm
Implementation date	February 2005
Test Equipment	IC
Test Method	EN 50267-2-2, EN 14582:2007, ASTM D7359

5) Cobalt dichloride ($CoCl_2$)

Example of use	silica gel, humidity Indicator
Application	Desiccant (Silica gel), Humidity Indicator
Threshold Limit	No intentional use (Co 1,000ppm)
Implementation date	June 2011
Test Equipment	ICP
Test Method	EPA-3052

Article 8 (Standard for Control of Substances in Batteries)

1. Definition of batteries

Batteries mean a finalized product unit that is consist of cell and battery pack. This standard covers accumulators also.

2. Standard for Control of Substances in Batteries

Note: Regulation : EU Battery Directive 2006/66/EC

ppm = mg/kg by weight in battery

*Not presented in a separate case management standards Article 9 (Standard for Control of Substances in Products) should be applied to the management criteria

Exemptions of control of substances and Examples of substances and its compounds: Annex 2 and 3

1) Cadmium and its compounds (Cd)

Example of use	Refer to Detailed example of use of Class I substanc	
Application	Batteries and accumulators	
Threshold Limit	10 ppm	2 ppm
Implementation date	14th May 2004	December 2013
Test Equipment	ICP, AAS	
Test Method	IEC62321(Ed.2008), EPA-3050B, EPA-3051, EPA-3052, ISO 6101-2, ISO 6503, ASTM 3505B, ASTM 4004	

2) Lead and its compounds (Pb)

Example of use	Refer to Detailed example of use of Class I substa
Application	Batteries and accumulators
Threshold Limit	40 ppm
Implementation date	14th May 2004
Test Equipment	ICP, AAS
Test Method	IEC62321(Ed.2008), EPA-3050B, EPA-3051, EPA-3052, ISO 6101-2, ISO 6503, ASTM 3505B, ASTM 4004

Notes: Lead-acid accumulators are exempted from the threshold limit.

3) Mercury and it compounds (Hg)

Example of use	Refer to Detailed example of use of Class I substa
Application	Batteries and accumulators
Threshold Limit	1 ppm
Implementation date	14th May 2004
Test Equipment	ICP, AAS
Test Method	IEC62321(Ed.2008), EPA-3051, EPA-3052

Article 9 (Standard for Control of Substances in Wearable Products)

1. Definition of wearable products

Products intended to be in direct contact with skin for prolonged periods (e.g. watch, head-set, goggle etc.)

2. Standard for Control of Substances in wearable products

* Wearable products should meet the standard of Article 9

* Examples of substances and its compounds: Annex 3

1) **Application : Leather or textile accessible to skin**

2) **Implementation date : 1st September 2015**

3) **Substance and limit** (ppm = mg/kg by weight)

Name	Natural fiber	Synthetic fabric	Leather	Method
pH Value(unit : pH)	4.0~7.5	4.0~7.5	3.5~7.5	KS K ISO 3071
Formaldehyde	75	75	75	KS K ISO 14184-1
Pentachlorophenol	0.5	0.5	0.5	KS K 0733
Tetrachlorophenols, Sum	0.5	0.5	0.5	
Trichlorophenols, Sum	0.5	0.5	0.5	
Arsenic	1	-	-	KS K 0731
Lead	1	1	1	
Cadmium	0.1	0.1	0.1	
Mercury	0.02	-	-	
Copper	50	50	50	
Chromium	2.0	2.0	2.0[1)]	
Hexavalent chromium	0.5	0.5	0.5	
Cobalt	4	4	4	
Nickel	4	4	4	
Antimony	10	10	10	
PFOS(ug/m2)[2)]	1	1	1	EM201
PFOA(mg/kg)[2)]	0.25	0.25	0.25	
Pesticides, Sum	1	-	-	KS K 0732
Organo stannic compounds(TBT,TPT,DBT,DOT), Each	1	1	1[1)]	KS K 0737
Phthalate, Sum	1000	1000	1000	KS M 1991
Azo dyestuffs, Each	20	20	20	KS K 0147 KS K 0734
DMF(Dimethylformamide)	-	-	0.1	KS M 0031
Chlorinated benzene, chlorinated toluene, Sum	-	1	-	MSD, ECD
Alkyl phenols, Sum	100	100	100	Methanol extraction GC-MSD
Alkylphenol ethoxlates, Sum	1000	1000	1000	ISO/TC 38/SC N2701 LC-MSD
Short-chain chlorinated paraffins, Sum	1000	1000	1000	EPA 3540C
Allergenic dyestuffs, carcinogenic dyestuffs, Each	50	50	50	DIN 54231:2005

1) These limit applies to only artificial leather.

2) PFOS/PFOA : Water and oil repellent finishing or coating only

[Annex 1] Eco-partner certification for suppliers

1. Purpose

All suppliers which enter a business relationship with SEC have to remove and improve hazardous substances in products, parts and raw materials. Furthermore they have to set up environmental management system to comply with environmental regulations.

Eco-partners Are suppliers which are acknowledged by Samsung because they strictly comply with environmental regulations such as RoHS and Samsung's standard in accordance to their own internal process. Only Eco-Partner certified suppliers are eligible to enter a business relationship with Samsung.

2. Scope

All suppliers which provide parts and products developed to sell from SEC.

* Exception : suppliers for mold, facility, foundry and consumable

3. Criteria for certification

Compliance with Standards for control of substances concerning product environment (0QA-2049) and supplier's environmental management system will be assessed.

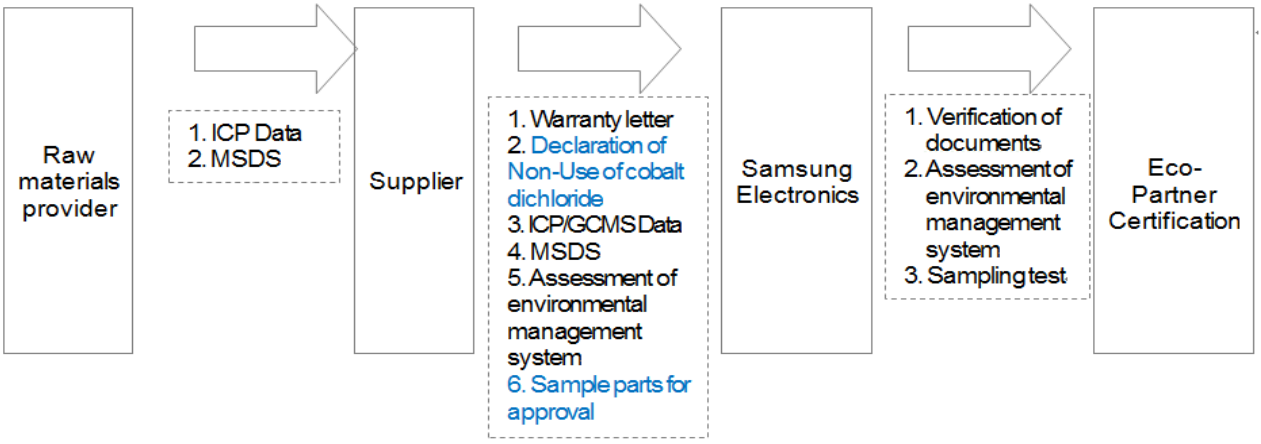
1) Criteria

Pass/Fail	Item		Valid period
	Compliance with 0QA-2049	Environmental management system	
Pass	Compliance	Higher than 80 points	2 years
Fail	Compliance	Lower than 80 points <	Prohibited to enter a business
	Non- compliance	-	

* Penalty: 1st fail→ re-assessment in one month, 2nd fail→ trade suspension for 6 months, 3rd fail→ permanent trade suspension

Site visit to the manufacturing facility is mandatory, even when then supplier does not have its own mfg. site

2) Process for certification



* warranty letter : document proving the supplier comply with 0QA-2049 and ensure their information submitted is accurate and truthful.

[Annex 2] Exemptions (Substances in Products 1/12)

1. Exemptions of Class I

Note : Exemptions of Class I substances are based on Annex of EU RoHS Directive.

Exemption		Scope and dates of applicability
1	Mercury in single capped (compact) fluorescent lamps not exceeding (per burner):	-
1(a)	For general lighting purposes < 30 W : 5 mg	Expires on 31 December 2011; 3,5 mg may be used per burner after 31 December 2011 until 31 December 2012; 2,5 mg shall be used per burner after 31 December 2012
1(b)	For general lighting purposes≥ 30 W and < 50 W: 5 mg	Expires on 31 December 2011; 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	No limitation of use until 31 December 2011; 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	Expires on 31 December 2017
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): 5 mg	Expires on 31 December 2011; 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): 5 mg	Expires on 31 December 2011; 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): 5 mg	Expires on 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011

[Annex 2] Exemptions (Substances in Products 2/12)

1. Exemptions of Class I

Note : Exemptions of Class I substances are based on Annex of EU RoHS Directive.

Exemption		Scope and dates of applicability
2(a) (4)	Tri-band phosphor with normal lifetime and a tube diameter > 28 mm (e.g. T12): 5 mg	Expires on 31 December 2012; 3,5 mg may be used per lamp after 31 December 2012
2(a) (5)	Tri-band phosphor with long lifetime (≥25 000 h): 8 mg	Expires on 31 December 2011; 5 mg may be used per lamp after 31 December 2011
2(b)	Mercury in other fluorescent lamps not exceeding (per lamp):	
2(b) (1)	Linear halophosphate lamps with tube > 28 mm (e.g. T10 and T12): 10 mg	Expires on 13 April 2012
2(b) (2)	Non-linear halophosphate lamps (all diameters): 15 mg	Expires on 13 April 2016
2(b) (3)	Non-linear tri-band phosphor lamps with tube diameter > 17 mm (e.g. T9)	No limitation of use until 31 December 2011; 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)	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011
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)	No limitation of use until 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011
3(b)	Medium length (> 500 mm and≤ 1 500 mm)	No limitation of use until 31 December 2011; 5 mg may be used per lamp after 31 December 2011
3(c)	Long length (> 1 500 mm)	No limitation of use until 31 December 2011; 13 mg may be used per lamp after 31 December 2011

[Annex 2] Exemptions (Substances in Products 3/12)

1. Exemptions of Class I

Note : Exemptions of Class I substances are based on Annex of EU RoHS Directive.

Exemption		Scope and dates of applicability
4(a)	Mercury in other low pressure discharge lamps (per lamp)	No limitation of use until 31 December 2011; 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)-I	P≤ 155 W	No limitation of use until 31 December 2011; 30 mg may be used per burner after 31 December 2011
4(b)-II	155 W < P≤ 405 W	No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011
4(b)-III	P > 405 W	No limitation of use until 31 December 2011; 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)-I	P≤ 155 W	No limitation of use until 31 December 2011; 25 mg may be used per burner after 31 December 2011
4(c)-II	155 W < P≤ 405 W	No limitation of use until 31 December 2011; 30 mg may be used per burner after 31 December 2011
4(c)-III	P > 405 W	No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011

[Annex 2] Exemptions (Substances in Products 4/12)

1. Exemptions of Class I

Note : Exemptions of Class I substances are based on Annex of EU RoHS Directive.

Exemption		Scope and dates of applicability
4(d)	Mercury in High Pressure Mercury (vapour) lamps (HPMV)	Expires on 13 April 2015
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)	Hand crafted Luminous Discharge Tubes (HLDT) used for signs, decorative or architectural and specialist lighting and light-artwork	Expires on 31st Dec. 2018
5(a)	Lead in glass of cathode ray tubes	-
5(b)	Lead in glass of fluorescent tubes not exceeding 0,2 % by weight	-
6(a)	Lead as an alloying element in steel for machining purposes and in galvanized 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(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)-I	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	-

[Annex 2] Exemptions (Substances in Products 5/12)

1. Exemptions of Class I

Note : Exemptions of Class I substances are based on Annex of EU RoHS Directive.

Exemption		Scope and dates of applicability
7(c)-II	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	-
7(c)-III	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(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	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) applications	-
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	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(a)	Lead in white glasses used for optical applications	-

[Annex 2] Exemptions (Substances in Products 6/12)

1. Exemptions of Class I

Note : Exemptions of Class I substances are based on Annex of EU RoHS Directive.

Exemption		Scope and dates of applicability
13(b)	Cadmium and lead in filter glasses and glasses used for reflectance standards	-
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	Expires 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	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages	-
16	Lead in linear incandescent lamps with silicate coated tubes	Expires on 1 September 2013
17	Lead halide as radiant agent in high intensity discharge (HID) lamps used for professional reprography applications	-
18(a)	Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps when used as speciality lamps for diazoprinting reprography, lithography, insect traps, photochemical and curing processes containing phosphors such as SMS ((Sr,Ba) 2 MgSi 2 O 7 :Pb)	Expires on 1 January 2011
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)	-

[Annex 2] Exemptions (Substances in Products 7/12)

1. Exemptions of Class I

Note : Exemptions of Class I substances are based on Annex of EU RoHS Directive.

Exemption		Scope and dates of applicability
19	Lead with PbBiSn-Hg and PbInSn-Hg in specific compositions as main amalgam and with PbSn-Hg as auxiliary amalgam in very compact energy saving lamps (ESL)	Expires on 1 June 2011
20	Lead oxide in glass used for bonding front and rear substrates of flat fluorescent lamps used for Liquid Crystal Displays (LCDs)	Expires on 1 June 2011
21	Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses	-
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	Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors	-
25	Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring	-
26	Lead oxide in the glass envelope of black light blue lamps	Expires on 1 June 2011
27	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	Expired on 24 September 2010
29	Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC (1)	-

[Annex 2] Exemptions (Substances in Products 8/12)

1. Exemptions of Class I

Note : Exemptions of Class I substances are based on Annex of EU RoHS Directive.

Exemption		Scope and dates of applicability
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	Lead in soldering materials in mercury free flat fluorescent lamps (which e.g. are used for liquid crystal displays, design or industrial lighting)	-
32	Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes	-
33	Lead in solders for the soldering of thin copper wires of 100 µm diameter and less in power transformers	-
34	Lead in cermet-based trimmer potentiometer elements	-
35	Cadmium in photoresistors for optocouplers applied in professional audio equipment	-
36	Mercury used as a cathode sputtering inhibitor in DC plasma displays with a content up to 30 mg per display	Expired on 1 July 2010
37	Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body	-
38	Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide	-
39	Cadmium in colour converting II-VI LEDs (< 10 µg Cd per mm 2 of light-emitting area) for use in solid state illumination or display systems	Expires on 1 July 2014
40	Cadmium in photoresistors for analogue optocouplers applied in professional audio equipment	Expires on 31 December 2013
41	Solders and termination finishes of electrical and electronic components, finishes of printed circuit boards used in ignition modules and other electrical and electronic engine control systems	Expires on 31 December 2018

[Annex 2] Exemptions (Substances in Products 9/12)

1. Exemptions of ClassI :Equipment utilising or detecting ionising radiation

Note:Exemptions of Class I substances are based on Annex of EU RoHS Directive.

Exemption			Scope and dates of applicability
1		Lead, cadmium and mercury in detectors for ionising radiation.	22nd July 2021
2		Lead bearings in X-ray tubes.	22nd July 2021
3		Lead in electromagnetic radiation amplification devices: micro-channel plate and capillary plate.	22nd July 2021
4		Lead in glass frit of X-ray tubes and image intensifiers and lead in glass frit binder for assembly of gas lasers and for vacuum tubes that convert electromagnetic radiation into electrons.	22nd July 2021
5		Lead in shielding for ionising radiation.	22nd July 2021
6		Lead in X-ray test objects.	22nd July 2021
7		Lead stearate X-ray diffraction crystals.	22nd July 2021
8		Radioactive cadmium isotope source for portable X-ray fluorescence spectrometers.	22nd July 2021
	Sensors, detectors and electrodes		22nd July 2021
	1a	Lead and cadmium in ion selective electrodes including glass of pH electrodes.	22nd July 2021
	1b	Lead anodes in electrochemical oxygen sensors.	22nd July 2021
	1c	Lead, cadmium and mercury in infra-red light detectors.	22nd July 2021
	1d	Mercury in reference electrodes: low chloride mercury chloride, mercury sulphate and mercury oxide.	22nd July 2021
9		Cadmium in helium-cadmium lasers.	22nd July 2021
10		Lead and cadmium in atomic absorption spectroscopy lamps.	22nd July 2021
11		Lead in alloys as a superconductor and thermal conductor in MRI.	22nd July 2021
12		Lead and cadmium in metallic bonds to superconducting materials in MRI and SQUID detectors.	Expires on 30 June 2021
13		Lead in counterweights.	22nd July 2021
14		Lead in single crystal piezoelectric materials for ultrasonic transducers.	22nd July 2021
15		Lead in solders for bonding to ultrasonic transducers.	22nd July 2021
16		Mercury in very high accuracy capacitance and loss measurement bridges and in high frequency RF switches and relays in monitoring and control instruments not exceeding 20 mg of mercury per switch or relay.	22nd July 2021
17		Lead in solders in portable emergency defibrillators.	22nd July 2021

[Annex 2] Exemptions (Substances in Products 10/12)

1. Exemptions of ClassI: Equipment utilizing or detecting ionizing radiation

Exemption		Scope and dates of applicability
18	ead in solders of high performance infrared imaging modules to detect in the range 8-14 µ.m.	22nd July 2021
19	Lead in Liquid crystal on silicon (LCoS) displays.	22nd July 2021
20	Cadmium in X-ray measurement filters.	22nd July 2021
21	Cadmium in phosphor coatings in image intensifiers for X-ray images X-ray	until 31 December 2019 and in spare parts for X-ray systems placed on the EU market before 1 January 2020.
22	Lead acetate marker for use in stereotactic head frames for use with CT and MRI and in positioning systems for gamma beam and particle therapy equipment.	Expires on 30 June 2021.
23	Lead as an alloying element for bearings and wear surfaces in medical equipment exposed to ionising radiation.	Expires on 30 June 2021.
24	Lead enabling vacuum tight connections between aluminium and steel in X-ray image intensifiers.	Expires on 31 December 2019.
25	Lead in the surface coatings of pin connector systems requiring nonmagnetic connectors which are used durably at a temperature below – 20 °C under normal operating and storage conditions.	Expires on 30 June 2021.
26	Lead in — solders on printed circuit boards, — termination coatings of electrical and electronic components and coatings of printed circuit boards, — solders for connecting wires and cables, — solders connecting transducers and sensors, that are used durably at a temperature below – 20 °C under normal operating and storage conditions.	Expires on 30 June 2021
27	Lead in — solders, — termination coatings of electrical and electronic components and printed circuit boards, — connections of electrical wires, shields and enclosed connectors, which are used in (a) magnetic fields within the sphere of 1 m radius around the isocentre of the magnet in medical magnetic resonance imaging equipment, including patient monitors designed to be used within this sphere, or (b) magnetic fields within 1 m distance from the external surfaces of cyclotron magnets, magnets for beam transport and beam direction control applied for particle therapy.	Expires on 30 June 2020

[Annex 2] Exemptions (Substances in Products 11/12)

1. Exemptions of ClassI :Equipment utilising or detecting ionising radiation

	Exemption	Scope and dates of applicability
28	Lead in solders for mounting cadmium telluride and cadmium zinc telluride digital array detectors to printed circuit boards.	Expires on 31 December 2017.
29	Lead in alloys, as a superconductor or thermal conductor, used in cryo-cooler cold heads and/or in cryo-cooled cold probes and/or in cryo-cooled equipotential bonding systems, in medical devices (category 8) and/or in industrial monitoring and control instruments.	Expires on 30 June 2021.
30	Hexavalent chromium in alkali dispensers used to create photocathodes in X-ray image intensifiers until 31 December 2019 and in spare parts for X-ray systems placed on the EU market before 1 January 2020.	Expires 31st December 2019 (applies to spare parts for equipment placed on the EU market before 1 January 2020).
31	Lead, cadmium and hexavalent chromium in reused spare parts, recovered from medical devices placed on the market before 22 July 2014 and used in category 8 equipment placed on the market before 22 July 2021, provided that reuse takes place in auditable closed-loop business-to-business return systems, and that the reuse of parts is notified to the consumer.	Expires on 21 July 2021.
32	Lead in solders on printed circuit boards of detectors and data acquisition units for Positron Emission Tomographs which are integrated into Magnetic Resonance Imaging equipment.	Expires on 31 December 2019
33	Lead in solders on populated printed circuit boards used in Directive 93/42/EEC class IIa and IIb mobile medical devices other than portable emergency defibrillators.	Expires on 30 June 2016 for class IIa and on 31 December 2020 for class IIb.
34	Lead as an activator in the fluorescent powder of discharge lamps when used for extracorporeal photopheresis lamps containing BSP (BaSi 2 O 5 :Pb) phosphors.	Expires on 22 July 2021.
35	Cold Cathode Fluorescent Lamps (CCFL) for backlighting liquid crystal displays	Expires on 21 Jul. 2024.
36	C-press compliant pin connector systems for industrial monitoring and control instruments	Expires on 31 Dec. 2020
37	Platinised platinum electrodes used for conductivity measurements	Expires on 31 Dec. 2018.
38	Solder in one interface of large area stacked die elements	Expires on 31 Dec. 2019
39	Micro-Channel Plates(MCPs)	Expires on 21 Jul. 2021(Category 8 and Cat 9 Monitoring and control instruments), 2023 (In vitro Diagnostics), 2024 (Cat. 9 Industrial monitoring control instruments)
40	Dielectric ceramic in capacitors for a rated voltage of less than 125V AC or 250V DC for industrial monitoring and control instruments	Expires on 31 Dec. 2020 (applies to spare parts for equipment placed on the EU market before1 January 2021)

[Annex 2] Exemptions (Substances in Products 12/12)

1. Exemptions of ClassI :Equipment utilising or detecting ionising radiation

41	Lead as a thermal stabiliser in polyvinyl chloride (PVC) used as base material in amperometric, potentiometric and conductometric electrochemical sensors which are used in in-vitro diagnostic medical devices for the analysis of blood and other body fluids and body gases	Expires on 31 Dec. 2018.
42	Mercury in electric rotating connectors used in intravascular ultrasound imaging systems capable of high operating frequency (> 50 MHz) modes of operation	Expires on 30 June 2019.

2. Exemptions of Class II

Subs	Exemption	Remarks
PFOS	Photoresists or anti reflective coatings for photolithography process	Expires on 31 December 2015
PFOS	Photographic coatings applied to films, papers, or printing plates	
PFOS	Mist suppressants for non-decorative hard chromium (VI)	

3. Exemptions of Class III

Subs	Exemption	Remarks
Sb	Added in ceramics for certain electronic components	HHP : Expires on 31 January 2012
Sb	Used as a catalyst in polymeric materials for certain electronic components	HHP : Expires on 31 January 2012
Sb	Additives in optical glass for preventing air bubbles and removing impurities.	
Sb	Additives in optical glass for preventing air bubbles and removing impurities.	-
Sb	Resistive layer inside Resistor Chip for technical reason	-
Sb	SnSb paste used for installation of LSC(Land Side Capacitor) on CPU Substrate of PC	-
Sb	Additives for thermal conduction on N type semiconductor(Bi2(Te, Se3) and P type semiconductor((Bi, Sb)2 Te3) Used in Thermal Electronic devices	-
Be	Beryllium alloy used in connectors and certain electronic components	-

[Annex 2] Exemptions (Substances in Packages)

Subs	Exemption	Remarks
Cd Pb Hg Cr^{6+}	- Packaging entirely made of lead crystal glass - Glass packaging is allowed to exceed where it complies with all the conditions established in (Commission Decision 2001/171/EC) · No lead, cadmium, mercury or hexavalent chromium shall be intentionally introduced during the manufacturing process · The packaging material may only exceed the concentration limits because of the addition of recycled materials	

[Annex 3] Examples of substances and its compounds (Class I)

1) Cadmium and its compounds

Substance name	CAS No
Cadmium	7440-43-9
Cadmium alloys	-
Cadmium oxide	1306-19-0
Cadmium sulfide	1306-23-6, 8048-07-5
Cadmium carbonate	513-78-0
Cadmium chloride	10108-64-2
Cadmium nitrate	10325-94-7
Cadmium nitrate tetrahydrate	10022-68-1
Cadmium sulfate	10124-36-4
Cadmium stearate	2223-93-0
Other cadmium compounds	-

2-1) Lead and its compounds

Substance name	CAS No
Lead; metal	7439-92-1
Lead/Tin alloy	-
Lead(Ⅱ)oxide	1317-36-8
Lead(Ⅳ)oxide	1309-60-0
Dilead trioxide	-
Lead(Ⅱ, Ⅳ)oxide	1314-41-6
Lead azide	13424-46-9
Lead(Ⅱ)fluoride	7783-46-2
Lead(Ⅱ)chloride	7758-95-4
Lead(Ⅳ)chloride	13463-30-4
Lead(Ⅱ)iodide	10101-63-0
Lead(Ⅱ)sulfide	1314-87-0
Lead(Ⅱ)cyanide	592-05-2
Lead fluoroborate	13814-96-5
Lead fluosilicate	25808-74-6
Lead nitrate	10099-74-8
Lead carbonate	598-63-0
Lead hydroxcarbonate	1344-36-1
Lead perchlorate	13637-76-8
Lead(Ⅱ) sulfate	7446-14-2, 15739-80-7
Lead oxide sulfate	12202-17-4
Lead(Ⅱ) phosphate	7446-27-7

[Annex 3] Examples of substances and its compounds (Class I)

2-2) Lead and its compounds

Substance name	CAS No
Lead thiocyanate	592-87-0
Lead(Ⅱ)acetate, trihydrate	6080-56-4
Lead(Ⅱ)acetate	301-04-2
Lead(Ⅳ)acetate	546-67-8
Lead oleate	1120-46-3
Lead stearate	1072-35-1, 7428-48-0
Lead(Ⅱ)metaborate	10214-39-8
Lead metasilicate	11120-22-2, 22569-74-0
Lead antimonite	13510-89-9
Lead arsenate(1:1)	7784-40-9
Lead(Ⅱ)arsenite	10031-13-7
Lead chromate; chrome yellow	1344-37-2
Lead molybdate	10190-55-3
Calcium plumbate	12013-69-3
Tetramethyl lead	75-74-1
Tetraethyl lead	78-00-2
Lead hydrocarbonate	1319-46-6
Lead selenide	12069-00-0
Lead (II) titanate	12060-00-3
Lead sulfate, sulphuric acid, lead salt	15739-80-7
Lead (II) chromate	7758-97-6
Other Lead compounds	-

3-1) Mercury and its compounds

Substance name	CAS No
Mercury	7439-97-6
Mercury alloys;amalgam	-
Mercury(Ⅰ)oxide	15829-53-5
Mercury(Ⅱ)oxide	21908-53-2
Mercury(Ⅰ)chloride	10112-91-1
Mercury(Ⅱ)chloride	7487-94-7
Mercury(Ⅱ)nitrate	10045-94-0
Mercury(Ⅰ)sulfate	7783-35-9
Mercury(Ⅱ)fulminate	628-86-4
Mercury(Ⅱ)acetate	1600-27-7
Methylmercury salts	e.g. 22967-92-6

[Annex 3] Examples of substances and its compounds (Class I)

3-2) Mercury and its compounds

Substance name	CAS No
Ethylmercury salts	-
Propylmercury salts	-
Phenylmercury salts	-
Methoxyethyl-mercury salts	-
Dialkylmercury	-
Diphenylmercury	587-85-9
Mercuric sulfide	1344-48-5
Mercuric chloride	33631-63-9
Other mercury compounds	-

4) Hexavalent chromium and its compounds

Substance name	CAS No
Chromium trioxide	1333-82-0
Lithium chromate	14307-35-8
Sodium chromate	7775-11-3
Potassium chromate	7789-00-6
Patassium chlorochromate	16037-50-6
Ammonium chromate	7788-98-9
Copper chromate	13548-42-0
Magnesium chromate	13423-61-5
Calcium chromate	13765-19-0
Strontium chromate	7789-06-2
Barium Chromate	10294-40-3
Lead chromate	1344-38-3
Lead chromate	1344-37-2
Zinc chromate	12018-19-8, 13530-65-9, 14018-95-2
Sodium dichromate	10588-01-9
Potassium dichromate	7788-50-9
Ammonium dichromate	7789-09-05
Calcium dichromate	14307-33-6
Dichromic acid	13530-68-2
Copper chromite	12053-18-8
Zinc dichromate	-
Other chromium compound	-

[Annex 3] Examples of substances and its compounds (Class I)

5) Polybrominated biphenyls (PBBs)

Substance name	CAS No
2,2',4,4',5,5'-HEXABROMOBIPHENYL (PBB)	59080-40-9
2-BROMOBIPHENYL (PBB)	2052-07-5
3-BROMOBIPHENYL (PBB)	2113-57-7
4-BROMOBIPHENYL (PBB)	92-66-0
DECABROMOBIPHENYL (PBB)	13654-09-6
HEXABROMOBIPHENYL (PBB)	36355-01-8
P,P'-DIBROMOBIPHENYL (PBB)	92-86-4
POLYBROMINATED BIPHENYL MIXTURE (PBB)	67774-32-7
POLYBROMINATED BIPHENYLS (PBB)	59536-65-1
TETRABROMOBIPHENYL (PBB)	40088-45-7
Nonabiphenyl	27753-52-2
Heptabromobiphenyl	35194-78-6
Pentabrphenyl	56307-79-0
Tribromobiphenyl	59080-34-1
Octabromobiphenyl	61288-13-9
Other PBBs compounds	-

6) Polybrominated diphenylethers (PBDEs)

Substance name	CAS No
4-BROMODIPHENYL ETHER (PBDE)	101-55-3
DECABROMODIPHENYL ETHER (PBDE)	1163-19-5
DIBROMODIPHENYL ETHER (PBDE)	2050-47-7
HEPTABROMODIPHENYL ETHER (PBDE)	68928-80-3
HEXABROMODIPHENYL ETHER (PBDE)	36483-60-0
NONABROMODIPHENYL ETHER (PBDE)	63936-56-1
OCTABROMODIPHENYL ETHER (PBDE)	32536-52-0
PENTABROMODIPHENYL ETHER (PBDE)	32534-81-9
TETRABROMODIPHENYL ETHER (PBDE)	40088-47-9
TRIBROMODIPHENYL ETHER (PBDE)	49690-94-0
Other PBDEs compounds	-

[Annex 3] Examples of substances and its compounds (Class Ⅱ)

7) Polychlorinated biphenyls (PCBs) / Polychlorinated Terphenyls (PCTs) / Polychlorinated naphthalences (PCNs): with 3 or more chlorine substituents

Substance name	CAS No
Polychlorinated biphenyls(PCB)	1336-36-3
Polychlorinated terphenyls(PCT)	61788-33-8
Polychlorinated naphthalenes(PCN)	70776-03-3
Trichloronaphthalenes	1321-65-9
Tetrachloronaphthalenes	1335-88-2
Pentachloronaphthalenes	1321-64-8
Octachloronaphthalenes	2234-13-1
Monomethyl-tetrachloro-diphenyl methane (Ugilec 141)	76253-60-6
Monomethyl-dibromo-diphenyl methane (DBBT)	99688-47-8
Other PCBs, PCTs, PCNs and its compounds	-

8-1) Ozone layer depleting substances & Greenhouse Gas

Group	Substance name	CAS No
Group Ⅰ CFCs (Annex A/ Ⅰ)	C F Cl3 (CFC-11)	75-69-4
	C F2 Cl2 (CFC-12)	75-71-8
	C2 F3 Cl3 (CFC-113)	76-13-1
	C2 F4 Cl2 (CFC-114)	1320-37-2
	C2 F5 Cl (CFC-115)	76-15-3
Group Ⅱ Other CFCs (Annex B/ Ⅰ)	C F3 Cl (CFC-13)	75-72-9
	C2 F Cl5 (CFC-111)	354-56-3
	C2 F2 Cl4 (CFC-112)	28605-74-5
	C3 F Cl7 (CFC-211)	135401-87-5
	C3 F2 Cl6 (CFC-212)	3182-26-1
	C3 F3 Cl5 (CFC-213)	2354-06-5
	C3 F4 Cl4 (CFC-214)	2268-46-4
	C3 F5 Cl3 (CFC-215)	1652-81-9
	C3 F6 Cl2 (CFC-216)	662-97-2
	C3 F7 Cl (CFC-217)	422-86-6
Group Ⅲ Halons (Annex A/ Ⅱ)	CF2 BrCl (halon-1211)	353-59-3
	CF3 Br (halon-1301)	75-63-8
	C2 F4 Br2 (halon-2402)	124-73-2
Group Ⅳ CTC (Annex B/ Ⅱ)	C Cl4 (carbon tetrachloride)	56-23-5
Group Ⅴ 1,1,1-TCA (Annex B/ Ⅲ)	C2 H3 Cl3 (methylchloroform)	71-55-6

[Annex 3] Examples of substances and its compounds (Class Ⅱ)

8-2) Ozone layer depleting substances & Greenhouse Gas

Group	Substance name	CAS No
Group Ⅵ Methyl bromide (Annex E/ Ⅰ)	C H3 Br (methyl bromide)	-
Group Ⅶ HBFCs (Annex C/ Ⅱ)	C H F Br2 (HBFC-21 B2)	1868-53-7
	C H F2 Br (HBFC-22 B1)	1511-62-2
	C H2 F Br (HBFC-31 B1)	373-52-4
	C2 H F Br4 (HBFC-121 B4)	306-80-9
	C2 H F2 Br3 (HBFC-122 B3)	-
	C2 H F3 Br2 (HBFC-123 B2)	354-04-1
	C2 H F4 Br (HBFC-124 B1)	124-72-1
	C2 H2 F Br3 (HBFC-131 B3)	-
	C2 H2 F2 Br2 (HBFC-132 B2)	75-82-1
	C2 H2 F3 Br (HBFC-133 B1)	421-06-7
	C2 H3 F Br2 (HBFC-141 B2)	358-97-4
	C2 H3 F2 Br (HBFC-142 B1)	-
	C2 H4 F Br (HBFC-151 B1)	762-49-2
	C3 H F Br6 (HBFC-221 B6)	-
	C3 H F2 Br5 (HBFC-222 B5)	-
	C3 H F3 Br4 (HBFC-223 B4)	-
	C3 H F4 Br3 (HBFC-224 B3)	-
	C3 H F5 Br2 (HBFC-225 B2)	431-78-7
	C3 H F6 Br (HBFC-226 B1)	-
	C3 H2 F Br5 (HBFC-231 B5)	-
	C3 H2 F2 Br4 (HBFC-232 B4)	-
	C3 H2 F3 Br3 (HBFC-233 B3)	-
	C3 H2 F4 Br2 (HBFC-234 B2)	-
	C3 H2 F5 Br (HBFC-235 B1)	460-88-8
	C3 H3 F Br4 (HBFC-241 B4)	-
	C3 H3 F2 Br3 (HBFC-242 B3)	70192-80-2
	C3 H3 F3 Br2 (HBFC-243 B2)	70192-83-5
	C3 H3 F4 Br (HBFC-244 B1)	679-84-5
	C3 H4 F Br3 (HBFC-251 B1)	75372-14-4
	C3 H4 F2 Br2 (HBFC-252 B2)	460-25-3
	C3 H4 F3 Br (HBFC-253 B1)	421-46-5
	C3 H5 F Br2 (HBFC-261 B2)	51584-26-0
	C3 H5 F2 Br (HBFC-262 B1)	-
	C3 H6 F Br (HBFC-271 B1)	352-91-0

[Annex 3] Examples of substances and its compounds (Class Ⅱ)

8-3) Ozone layer depleting substances & Greenhouse Gas

Group	Substance name	CAS No
Group Ⅷ HCFCs (Annex C/ Ⅰ)	C H F Cl2 (HCFC-21)	75-43-4
	C H F2 Cl (HCFC-22)	75-45-6
	C H2 F Cl (HCFC-31)	593-70-4
	C2 H F Cl4 (HCFC-121)	354-14-3
	C2 H F2 Cl3 (HCFC-122)	354-21-2
	C2 H F3 Cl2 (HCFC-123)	306-83-2
	C2 H F4 Cl (HCFC-124)	2837-89-0
	C2 H2 F Cl3 (HCFC-131)	134237-34-6
	C2 H2 F2 Cl2 (HCFC-132)	25915-78-0
	C2 H2 F3 Cl (HCFC-133)	75-88-7
	C2 H3 F Cl2 (HCFC-141)	25167-88-8
	C H3 C F Cl2 (HCFC-141b)	1717-00-6
	C2 H3 F2 Cl (HCFC-142)	25497-29-4
	C H3 C F2 Cl (HCFC-142b)	75-68-3
	C2 H4 F Cl (HCFC-151)	1615-75-4
	C3 H F Cl6 (HCFC-221)	134237-35-7
	C3 H F2 Cl5 (HCFC-222)	134237-36-8
	C3 H F3 Cl4 (HCFC-223)	134237-37-9
	C3 H F4 Cl3 (HCFC-224)	134237-38-0
	C3 H F5 Cl2 (HCFC-225)	128903-21-9
	C F3 C F2 C H Cl2 (HCFC-225ca)	422-56-0
	CF2 Cl C F2 C H Cl F (HCFC-225cb)	507-55-1
	C3 H F6 Cl (HCFC-226)	134308-72-8
	C3 H2 F Cl5 (HCFC-231)	134190-48-0
	C3 H2 F2 Cl4 (HCFC-232)	134237-39-1
	C3 H2 F3 Cl3 (HCFC-233)	134237-40-4
	C3 H2 F4 Cl2 (HCFC-234)	127564-83-4
	C3 H2 F5 Cl (HCFC-235)	134237-41-5
	C3 H3 F Cl4 (HCFC-241)	134190-49-1
	C3 H3 F2 Cl3 (HCFC-242)	134237-42-6
	C3 H3 F3 Cl2 (HCFC-243)	134237-43-7
	C3 H3 F4 Cl (HCFC-244)	134190-50-4
	C3 H4 F Cl3 (HCFC-251)	134190-51-5
	C3 H4 F2 Cl2 (HCFC-252)	134190-52-6

[Annex 3] Examples of substances and its compounds (Class Ⅱ)

8-4) Ozone layer depleting substances & Greenhouse Gas

Group	Substance name	CAS No
Group Ⅷ HCFCs (Annex C/Ⅰ)	C3 H4 F3 Cl (HCFC-253)	134237-44-8
	C3 H5 F Cl2 (HCFC-261)	134237-45-9
	C3 H5 F2 Cl (HCFC-262)	134190-53-7
	C3 H6 F Cl (HCFC-271)	134190-54-8
Group ⅨBromochloromethane	C H2 Br Cl (Bromochloromethane)	-
Group Ⅹ New substances	C Br2 F2 (halon-1202)	-
	C3 H7 Br (n-propyl bromide)	-
	C2 H5 Br (Ethyl bromide	-
	C F3 I (Trifluoromethyl iodide)	-
	C H3 Cl (Methyl chloride)	-
	Other ODS and its compounds	-
Greenhouse gas	Carbon tetrafluoride (Perfluoromethane)	75-73-0
	Perfluoroethane(Hexafluoroethane)	76-16-4
	Perfluoropropane (Octafluoroproane)	76-19-7
	Perfluorobutane(Decafluorobutane)	355-25-9
	Perfluoropentane (Dodecafluoropentane)	678-26-2
	Perfluorohexane(Tetradecafluorohexane)	355-42-0
	Perfluorocyclobutane	115-25-3
	Sulfur Hexafluoride (SF6)	2551-62-4
	HFC-23CHF3	75-46-7
	HFC-32CH2F2	75-10-5
	HFC-41CH3F	593-35-3
	HFC-43-10meeC5H2F10	138495-42-8
	HFC-125C2HF5	354-33-6
	HFC-134C2H2F4	359-35-3
	HFC-134aCH2FCF3	811-97-2
	HFC-152aC2H4F2	75-37-6
	HFC-143C2H3F3	430-66-0
	HFC-143aC2H3F3	420-46-2
	HFC-227eaC3HF7	431-89-0
	HFC-236cbCH2FCF2CF3	677-56-5
	HFC-236eaCHF2CHFCF3	431-63-0
	HFC-236faC3H2F6	690-39-1
	HFC-245caC3H3F5	679-86-7

[Annex 3] Examples of substances and its compounds (Class Ⅱ)

8-5) Ozone layer depleting substances & Greenhouse Gas

Group	Substance name	CAS No
Greenhouse gas	HFC-245faCHF2CH2CF3	460-73-1
	HFC-365mfcCF3CH2CF2CH3	406-58-6
	Other GHGs	-

9) Asbestos and its compounds

Substance name	CAS No
Actinolite	77536-66-4
Amosite (Grunerite)	12172-73-5
Anthophyllite	77536-67-5
Asbestos	1332-21-4
Chrysotile	12001-29-5
Crocidolite	12001-28-4
Tremolite	77536-68-6
Other Asbestos and its compounds	-

10) Formaldehydes

Substance name	CAS No
Formaldehyde	50-00-0
Formaldehyde, reaction products with Butylphenol	91673-30-2
Formaldehyde, Polymer with Bromophenol and (Chloromethyl)Oxirane	68541-56-0
Other Formaldehydes and its compounds	-

11) Short-chain chlorinated paraffins : Alkane 10~13 Carbon chain (SCCPs)

Substance name	CAS No
ALKANES, C10-12, CHLORO	108171-26-2
ALKANES, C10-13, CHLORO	85535-84-8
ALKANES, C10-14, CHLORO	85681-73-8
ALKANES, C10-21, CHLORO	84082-38-2
ALKANES, C10-26, CHLORO	97659-46-6
ALKANES, C10-32, CHLORO	84776-06-7
ALKANES, C12-13, CHLORO	71011-12-6
ALKANES, C12-14, CHLORO	85536-22-7
ALKANES, C6-18, CHLORO	68920-70-7
ALKANES, CHLORO	61788-76-9
Other Alkane 10-13 Carbon chain and its compounds	-

[Annex 3] Examples of substances and its compounds (Class Ⅱ)

12) Azo colorants

Substance name	CAS No
2,4,5-trimethylaniline	137-17-7
2,4-diaminoanisole	615-05-4
2,4-toluenediamine	95-80-7
2-naphthylamine	91-59-8
3,3-dichlorobenzidine	91-94-1
3,3-dimethlbenzidine	119-93-7
3,3-dimethoxybenzidine	119-90-4
3,3-dmethyl-4,4-diaminodiphenylmethane	838-88-0
4,4-diaminodiphenylmethane	101-77-9
4,4-methylene-bis-(2-chloroaniline)	101-14-4
4,4-oxydianiline	101-80-4
4,4-thiodianiline	139-65-1
4-aminoazobenzene	60-09-3
4-aminodiphenyl	92-67-1
4-chloro-o-toluidine	95-69-2
5-nitro-o-toluidine	99-55-8
Benzidine	92-87-5
o-anisidine	90-04-0
ortho-Aminoazotoluene	97-56-3
ortho-toluidine	95-53-4
p-chloroaniline	106-47-8
p-cresidine	120-71-8
2,4-xylidine	95-68-1
2,6-xylidine	87-62-7
Other Azo and its compounds	-

[Annex 3] Examples of substances and its compounds (Class Ⅱ)

13) Nickel and its compounds

Substance name	CAS No
Nickel	7440-02-0
Nickel(Ⅱ)oxide	1313-99-1
Nickel Sulfate	7786-81-4
Nickel chloride	7718-54-9
Nickel Sulfammate solution	13770-89-3
Other Nickel and its compounds	-

14-1) Organic tin compounds (TBT/TPT)

Substance name	CAS No
Tributyl tin (TBT)	56573-85-4
Triphenyl tin (TPT)	668-34-8
Tributyl tin oxide (TBTO)	56-35-9
Coplymer of alkyl(c=8) acrylate,methyl methacrylate and tributyltin methacrylate	67772-01-4
Methyl Methacrylate and tributyl tin methacrylate	-
Tributyl 2,3-dibromosuccinate	31732-71-5
Tributyl tin acetate	56-36-0
Tributyl tin bromide	1461-23-0
Tributyl tin chloride	1461-22-9, 7342-38-3
Tributyl tin fluoride	1983-10-4
Tributyl tin fumarate	6454-35-9
Tributyl tin laurate	3090-36-6
Tributyl tin naphthenate	85409-17-2
Tributyl tin phthalate	4782-29-0
Tributyl tin rosin salts	26239-64-5
Tributyl tin sulfamate	6517-25-5
Tributyltin cyclopentane carbonate=mixture	5409-17-2
Tributyltinmethacrylate	2155-70-6
Triphenyl tin acetate(fentin acetate)	900-95-8
Triphenyl tin bromide	56-35-9
Triphenyl tin chloride	639-58-7
Triphenyl tin chloro acetate	7094-94-2
Triphenyl tin fluoride(fentin fluoride)	379-52-2
Triphenyl tin hydroxide	76-87-9
Triphenyl tin N, N' -dimethyldithiocarbamate	1803-12-9
Triphenyltin fatty acid((9-11) salt)	18380-71-7, 18380-72-8, 47672-31-1, 94850-90-5
Trivutyl tin maleate	14275-57-1
Other Organic tin and its compounds	-

14-2) Organic tin compounds(DBT/DOT)

Substance name	CAS No
Dibutyl tin	1002-53-5
Dibutyltin dimaleate	10192-92-4
Dibutyltin diacetate	1067-33-0
Dibutyltin dilauryl mercaptide	1185-81-5
Dibutyltin dioleate	13323-62-1
Dibutyltin dipalmitate	13323-63-2
Dibutyltin disalicylate	14214-24-5
Di-n-butyltin bis(methyl maleate)	15546-11-9
Dibutytin di(2-ethylhexyl maleate)	15546-12-0
Di-n-butyltin di(monobutyl)maleate	15546-16-4
Bis (acetato) dibutyltin	17523-06-7
Dibutyltin dihexanoate	19704-60-0
Dibutyltin S,S'-bis (isooctyl mercaptoacetate)	26636-01-1
Dibutyltin bis(octylthioglycolate)	2781-09-1
Dibutyltin dibutoxide	3349-36-8
Dibutyltin dioctanoate	4731-77-5
Dibutyltin dibenzoate	5847-54-1
Dibutyltin distearate	5847-55-2
Diisobutyltin oxide	61947-30-6
Dibutyltin dichloride	683-18-1
Dibutyltin bis(benzyl maleate)	7324-74-5
Dibutyltin hydrogen borate	75113-37-0
Dibutyltin dilaurate	77-58-7
Dibutyltin maleate	78-04-6
Dibutyltin mercaptopropionate	78-06-8
Dibutyltin mercaptoacetate	78-20-6
Dibutyltin oxide	818-08-6
Dibutyltin linoleate	85391-79-3
Dibutyltin isooctanoate	85702-74-5
Dibutyltin linolenate	95873-60-2
Dibutyltin diisostearate	59963-28-9
Dibutyltin dibutyrate	28660-63-1
Dibutyltin bis(isooctylmaleate)	25168-21-2
Dioctyltin bis(2-ethylhexyl thioglycolate) (DOT)	15571-58-1
Dioctyltin maleate (DOT)	16091-18-2
Dioctyl tin (DOT)	26401-97-8
Dioctyltin bis(isooctyl maleate) (DOT)	33568-99-9
Dioctyltin dichloride (DOT)	3542-36-7
Dioctyltin oxide; Dioctyloxostannane (DOT)	870-08-6
Dioctyltin dilaurate (DOT)	3648-18-8

[Annex 3] Examples of substances and its compounds (Class Ⅱ)

15) Arsenic compounds and its compounds

Substance name	CAS No
Diarsenic Pentoxide	1303-28-2
Diarsenic Trioxide	1327-53-3
Arsenic	7440-38-2
Arsenic acid disodium salt, Heptahydrate	10048-95-0
Arsenic acid, calcium salt	7778-44-1
Arsenic acid, copper salt	10103-61-4
Arsenic acid, diammonium salt	7784-44-3
Lead hydrogen arsenate	7784-40-9
Arsenic acid, magnesium salt	10103-50-1
Arsenic trichloride	7784-34-1
Arsenic trihydride	7784-42-1
Arsenious acid, copper(II) salt	10290-12-7
Arsenious acid, potassium salt	10124-50-2
Other Arsenic acid and its salts	-

16) Perfluorooctane Sulfonates (PFOSs)

Substance name	CAS No
Perfluoroctane Sulfonates (PFOSs) C8F17SO2X, where X = OR, NR or other derivative	-
Perfluorooctane sulfonic acid and its salts	1763-23-1
Perfluorooctane sulfonyl fluoride	307-35-7

17) DMF

Substance name	CAS No
Biocide dimethylfumarate	624-49-7

18) PCP

Substance name	CAS No
Pentachlorophenol	87-86-5
Other Pentachlorophenol and its salts	-

[Annex 3] Examples of substances and its compounds (Class Ⅲ)

19) PFOA

Substance name	CAS No
Perfluorooctanoic acid	335-67-1
Perfluorooctanoic acid ammonium salt	3825-26-1
Perfluorooctanoic acid sodium salt	335-95-5
Perfluorooctanoic acid potassium salt	2395-00-8
Silver perfluorooctanoate	335-93-3
Perfluorooctanoyl fluoride	335-66-0
Methyl perfluorooctanoate	376-27-2
Ethyl perfluorooctanoate	3108-24-5
Other PFOAs	-

20) PAHs

Substance name	CAS No
Acenaphthen	83-32-9
Acenaphthylen	208-96-8
Anthracen	120-12-7
Benzo[a]anthracen	56-55-3
Benzo[b]fluoranthen	205-99-2
Benzo[j]fluoranthen	205-82-3
Benzo[k]fluoranthen	207-08-9
Benzo[ghi]perylen	191-24-2
Benzo[a]pyren	50-32-8
Benzo[e]pyren	192-97-2
Chrysen	218-01-9
Dibenzo[a,h]anthracen	53-70-3
Fluoranthen	206-44-0
Fluoren	86-73-7
Indeno[1,2,3-cd]pyren	193-39-5
Naphthalin	91-20-3
Phenanthren	85-01-08
Pyren	129-00-0

21) Bisphenol A

Substance name	CAS No
Bisphenol A	80-05-7

22) HBCD

Substance name	CAS No
Hexabromocyclododecane	25637-99-4, 3194-55-6
Alpha-hexabromo cyclododecane	134237-50-6
Beta-hexabromo cyclododecane	134237-51-7
Gamma-hexabromo cyclododecane	134237-52-8

23) Nonylphenol, Nonylphenol Ethoxylates

Substance name	CAS No
Nonylphenol	25154-52-3
Nonylphenol Ethoxylates	9016-45-9, 26027-38-3, 37205-87-1, 68412-54-4, 127087-87-0

24) 6 Phthalates (BBP, DBP, DEHP, DINP, DIDP, DNOP)

Substance name	CAS No
Bis (2-ethylhexyl) phthalate (DEHP)	117-81-7
Butyl benzyl phthalate (BBP)	85-68-7
Dibutylphthalate (DBP)	84-74-2
Diisononyl phthalate (DINP)	28553-12-0
Diisodecyl phthalate(DIDP)	68515-49-1
Di-n-octyl phthalate (DNOP)	117-84-0

[Annex 3] Examples of substances and its compounds (Class Ⅲ)

25) Tetrabromobisphenol-A (TBBP-A)

Substance name	CAS No
3,5,3',5'-Tetrabromo-bisphenol A (TBBA)	79-94-7
TBBA bis-(2-hydroxy-ethyl-ether)	4162-45-2
TBBA carbonate oligomer	28906-13-0
TBBA carbonate oligomer, 2,4,6-tribromo-phenol terminated	71342-77-3
TBBA carbonate oligomer, phenoxy end capped	94334-64-2
TBBA-(2,3-dibromo-propyl-ether)	21850-44-2
TBBA, unspecified	30496-13-0
TBBA-bis-(allyl-ether)	25327-89-3
TBBA-bisphenol A-phosgene polymer	32844-27-2
TBBA-dimethyl-ether	37853-61-5
TBBA-epichlorhydrin oligomer	40039-93-8
TBBA-TBBA-diglycidyl-ether oligomer	70682-74-5
TBBA, 2,2-Bis(4-(2,3-Epoxypropyloxy)dibromophenyl) propane polymer	68928-70-1
TBBA-polycarbonate	156042-31-8

26-1) Brominated Flame Retardants and its compounds

Substance name	CAS No
Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(14)[Aliphatic/alicyclic brominated compounds]	-
Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(15)[Aliphatic/alicyclic brominated compounds in combination with antimony compounds]	-
Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(16)[Aromatic brominated compounds excluding brominated diphenyl ether and biphenyls)]	-
Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(17)[Aromatic brominated compounds excluding brominated diphenyl ether and biphenyls) in combination with antimony compounds]	-
Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(22)[Aliphatic/alicyclic chlorinated and brominated compounds]	-
Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(42)[Brominated organic phosphorus compounds]	-
1,2-Bis(2,4,6-tribromo-phenoxy) ethane	37853-59-1
1,2-Dibromo-4-(1,2 dibromo-methyl)-cyclo-hexane	3322-93-8
1,3-Butadiene homopolymer,brominated	68441-46-3
2,3-Dibromo-2-butene-1,4-diol	3234-02-4
2,4,6-tribromo-phenol	118-79-6
2,4,6-Tribromo-phenyl-allyl-ether	3278-89-5
2,4-Dibromo-phenol	615-58-7

[Annex 3] Examples of substances and its compounds (Class Ⅲ)

26-2) Brominated Flame Retardants and its compounds

Substance name	CAS No
2-Hydroxy-propyl-2-(2-hydroxy-ethoxy)-ethyl-TBP	20566-35-2
Bis(2-ethylhexyl)tetrabromo-phtalate	26040-51-7
Bis(methyl)tetrabromo-phtalate	55481-60-2
Brominated epoxy resin end-capped with tribromophenol	135229-48-0
Brominated epoxy resin end-capped with tribromophenol	139638-58-7
Brominated polystyrene(BRPS)	57137-10-7
Brominated trimethylphenyl-lindane	59789-51-4
Bromo dichloromethane	75-27-4
Bromo-/Chloro-alpha-olefin	82600-56-4
Bromo-/Chloro-paraffins	68955-41-9
Chlorinated and brominated phosphate ester	125997-20-8
Decabromo-diphenyl-ethane	84852-53-9
Dibromo-neopentyl-glycol	3296-90-0
Dibromo-propanol	96-13-9
Dibromo-styrene grafted PP	171091-06-8
Ethylene-bis(5,6-dibromo-norbornane-2,3-dicarboximide)	52907-07-0
N,N'-Ethylene –bis-(tetrabromo-phthalimide)	32588-76-4
Octabromo diphenyl(C12H2BR8)	61288-13-9
Pentabromo-benzyl bromide	38521-51-6
Pentabromo-benzyl-acrylate, monomer	59447-55-1
Pentabromo-benzyl-acrylate, polymer	59447-57-3
Pentabromo-phenol	608-71-9
Pentabromo-toluene	87-83-2
Poly(2,6-dibromo-phenylene oxide)	69882-11-7
Poly-dibromo-styrene	31780-26-4
TBBS-bis-(2,3-dibromo-propyl-ether)	42757-55-1
TBPA Na salt	25357-79-3
TBPA, glycol-and propylene-oxide esters	75790-69-1
Tetrabromo phthalic anhydride(TBPA)	632-79-1
Tetrabromo-bisphenol S	39635-79-5
Tetrabromo-chyclo-octane	31454-48-5
Tetra-decabromo-diphenoxy-benzene	58965-66-5
Tribromo-bisphenyl-maleinimide	59789-51-4
Tribromo-neopentyl-alcohol	36483-57-5
Tribromo-phenyl-allyl-ether, unspecified	26762-91-4
Tribromo-styrene	61368-34-1

[Annex 3] Examples of substances and its compounds (Class Ⅲ)

26-3) Brominated Flame Retardants and its compounds

Substance name	CAS No
Tris-(2,3-dibromo-propyl)-isocyanurate	52434-90-9
Tris(2,4-Dibromo-phenyl) phosphate	49690-63-3
Tris(tribromo-neopentyl) phosphate	19186-97-1
Vinyl bromide	593-60-2
Hexabromo cyclododecane(HBCDD)	25637-99-4, 3194-55-6
alpha-hexabromocyclododecane	134237-50-6
beta-hexabromocyclododecane	134237-51-7
gamma-hexabromocyclododecane	134237-52-8
Other BFRs, Brominated Flame Retardants and its compounds	-

27) Polyvinyl chloride (PVC)

Substance name	CAS No
Polyvibyl Chloride(PVC)	93050-82-9
Polyvibyl Chloride(PVC)	9002-86-2
Polyvinylidene Chloride(PVC)	9002-85-1
Polyvinylimidazolinium Chloride(PVC)	81517-61-5
Other PVC compounds	-

28) Phthalates

Substance name	CAS No
Diethyl phthalate (DEP)	84-66-2
Dimethyl phthalate (DMP)	131-11-3
Di-N-hexyl phthalate(DnHP)	84-75-3
Diisobutyl phthalate (DIBP)	84-69-5
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	68515-42-4
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear (DPP)	84777-06-0
Bis(2-methoxyethyl) phthalate (DMEP)	117-82-8
Di-n-pentyl phthalate (DnPP)	131-18-0
n-Pentyl-isopentyl phthalate (nPIPP)	776297-69-9
Diisopenthyl phthalate (DIPP)	605-50-5
Bis (2-ethylhexyl) phthalate (DEHP)	117-81-7
Butyl benzyl phthalate (BBP)	85-68-7
Dibutylphthalate (DBP)	84-74-2
Diisononyl phthalate (DINP)	28553-12-0
Diisodecyl phthalate(DIDP)	68515-49-1
Di-n-octyl phthalate (DNOP)	117-84-0

[Annex 3] Examples of substances and its compounds (Class Ⅲ)

29) Antimony and compounds

Substance name	CAS No
Antimony Trioxide	1309-64-4
Antimony trisulfide	1345-04-6
Antimony trichloride	10025-91-9
Sodium antimonate	15432-85-6
Antimony pentoxide	1314-60-9
Antimony pentachloride	7647-18-9
Antimony(111) bromide	7789-61-9
Antimony(V) sulfide	1315-04-4
Antimony oxide	1327-33-9
Antimony tetroxide	1332-81-6
Antimony trifluoride	7783-56-4
Antimony	7440-36-0
Indium antimony	1312-41-0
Other Antimony and its compounds	-

30) Beryllium and compounds

Substance name	CAS No
Beryllium metal	7440-41-7
Beryllium oxide	1304-56-9
Beryllium carbonate	66104-24-3
Beryllium chloride	7787-47-5
Beryllium fluoride	7787-49-7
Beryllium hydroxide	13327-32-7
Beryllium nitrate	13597-99-4
Beryllium phosphate	13598-15-7
Beryllium sulfate	13510-49-1
Beryllium sulphate tetrahydrate	7787-56-6
Other Beryllium and its compounds	-

31) Cobalt dichloride

Substance name	CAS No
Cobalt dichloride	7646-79-9

32-1) Chlorinated Flame Retardants and its compounds

Substance name	CAS No
BROMODICHLOROMETHANE	75-27-4
CHLORENDIC ANHYDRIDE	115-27-5
CHLORINATED PARAFFINS	63449-39-8
CHLOROENDRIC ACID	115-28-6
TETRACHLOROPHTHALIC ANHYDRIDE(TCPA)	117-08-8
CYCLOPROPANECARBOXYLIC ACID, 3-(2-CHLORO-3,3,3-TRIFLUORO-1-PROPENYL)-2,2-DIMETHYL-, (2-METHYL(1,1 -BIPHENYL)-3-YL)METHYL ESTER, (1.ALPHA.,3.ALPHA.(Z))-	82657-04-3
(S)-2-CHLOROPROPIONIC ACID	29617-66-1
1-(3,4-DICHLOROPHENYL)-3,3-DIMETHYLUREA	330-54-1
1H-BENZIMIDAZOLE, 2-(2-CHLOROPHENYL)-	3574-96-7
1H-ISOINDOLE-1,3(2H)-DIONE, 4,5,6,7-TETR	30125-47-4
1-PROPENE, HOMOPOLYMER, CHLORINATED	68442-33-1
2-(4-CHLOROBENZYL)-BENZIMIDAZOLE	5468-66-6
2-BUTANONE, 3-CHLORO-	4091-39-8
2-CHLORO-6-NITROANISOLE	80866-77-9
2-NAPHTHALENECARBOXAMIDE COMPOUND	5280-78-4
2-NAPHTHALENECARBOXAMIDE, 4-[(2,5-DICHLOROPHENYL)AZO]-3-HYDROXY-N-PHENYL-	6041-94-7
2-NAPHTHANILIDE, 4 -CHLORO-3-HYDROXY-2 ,5 -DIMETHOXY-4-((2-METHOXY-5-(PHENYLCARBAMOYL)PHENYL)AZO)-	5280-68-2
2-NAPHTALENECARBOXAMIDE, 3-HYDROXY-4-((2-METHOXY-5-((PHENYLAMINO)CARBONYL)PHENYL)AZO)-N-(2-METHOXY-5-CHLOROPHENYL)-	67990-05-0
1,4-BIS((1-(2,5-DICHLOROPHENYLAZO)-2-HYDROXY-3-NAPHTHOYAL)AMINO)BENZENE	3905-19-9
2-NAPHTHALENECARBOXYLIC ACID, 4-((5-CHLORO-4-METHYL-2-SULFOPHENYL)AZO)-3-HYDROXY-	7585-41-3
2-NAPHTHALENECARBOXYLIC ACID, CHLORO-AZO	7023-61-2
4,5-DICHLORO-2-N-OCTYL-3-ISOTHIAZOLONE	64359-81-5
3-(4-CHLOROPHENYL)-1,1-DIMETHYLUREA	150-68-5
2-PYRAZOLIN-5-ONE, 4,4 -(3,3 -DICHLORO-4,4 -BIPHENYLYLENEBISAZO)-	3520-72-7
4(2-CHLOROETHYL)MORPHOLINE HYDROCHLORIDE	3647-69-6
4-CHLORO-O-TOLUIDINE	95-69-2
4-CHLOROTOLUENE	106-43-4
5-CHLORO-2-METHYL-4-ISOTHIAZOLIN-3-ONE	26172-55-4
ACETIC ACID VINYL ESTER, POLYMER WITH CHLOROETHYLENE AND VINYL ALC.	25086-48-0
ANILINE HYDROCHLORIDE	142-04-1
BARIUM CHLORIDE (BACL2), DIHYDRATE	10326-27-9
BASIC PIGMENT VIOLET 23 PICCS CARBAZOLE	215247-95-3
BENZAMIDE, 2,6-DICHLORO-	2008-58-4
BENZAMIDE,-CHLORO -AZO-TRIFLUOROMETHYL	57971-97-8

32-2) Chlorinated Flame Retardants and its compounds

Substance name	CAS No
BENZENE, 1,2,4-TRICHLORO-	120-82-1
BENZENE, 1,2-DICHLORO-	95-50-1
BENZENE, 1-CHLORO-3-NITRO-	121-73-3
BENZENE, 1-CHLORO-4-ETHENYL-	1073-67-2
BENZENESULFONIC ACID, 4-CHLORO-2-((2-HYDROXY-3-(((2-	73263-37-3
C.I. 20055 CROMOPHTAL RED	68259-05-2
BUPIVACAINE HYDROCHLORIDE	14252-80-3
BUTANAMIDE, N,N -(3,3 -DIMETHYL(1,1 -BIPHENYL)-4,4 -DIYL)BIS(2-((2,4-DICHLOROPHENYL)AZO)-3-OXO-	5979-28-2
ACETOACETAMIDE, 2-((4-CHLORO-2-NITROPHENYL)AZO)-N-(2-OXO-5-BENZIMIDAZOLINYL)-	12236-62-3
2-BUTENAMIDE, 2-((4-CHLORO-2-NITROPHENYL)AZO)-3-HYDROXY-N-(2-METHOXYPHENYL)-	13515-40-7
BUTENAMIDE, 2-((4-CHLORO-2-NITROPHENYL)AZO)-N-(2-CHLOROPHENYL)-3-OXO-	6486-23-3
C.I. PIGMENT YELLOW 55	6358-37-8
2-BUTENAMIDE, N-(4-CHLORO-2,5-DIMETHOXYPHENYL)-2-((2,5-DIMETHOXY-4-((PHENYLAMINO)SULFONYL)PHENYL)AZO)-3-HYDROXY-	12225-18-2
BUTYL 2,4-DICHLOROPHENOXYACETATE	94-80-4
C.I. PIGMENT GREEN 7	1328-53-6
C.I. PIGMENT YELLOW 83	5567-15-7
CARBONIC DICHLORIDE	75-44-5
CARBONIC DICHLORIDE, POLYMER WITH 4,4 -(1-METHYETHYLIDENE)BIS(2,6-DIBROMOPHENOL), 2,4,6-TRIBROMOPHENOL-TERMINATED	71342-77-3
CHLORIDE	16887-00-6
CHLORINE	22537-15-1
CHLORINE	7782-50-5
CHLOROANILINE	27134-26-5
CHLORODIHYDROQUINOACRIDINEDIONE	3089-17-6
CHLORODIPHENYL	37324-23-5
CHLOROMETHYL PIVALATE (POM)	18997-19-8
CHLOROMETHYL THIAZOLONE	55965-84-9
CHLOROPENTANES, MIXTYRE OF ISOMERS	29656-63-1
CHLOROTOLURON	15545-48-9
CHROMATE(3-), BIS(5-CHLORO-3-((4,5-DIHYD	73324-05-7
CHROMATE, CHLOROPHENYL, AZO	31714-55-3
COBALT CHLORIDE (COCL2)	7646-79-9
COBALT CHLORIDE (COCL2), HEXAHYDRATE	7791-13-1
COPPER PERCHLOROPHTHALOCYANINE	14832-14-5
COPPER MONOCHLOROPHTHALOCYANINE	12239-87-1
DIARYLANILIDE YELLOW	6358-85-6

32-3) Chlorinated Flame Retardants and its compounds

Substance name	CAS No
DICHLORO-2,2-P-CYCLOPHANE	28804-46-8
DICHLORODIMETHYLSILANE REACTION PRODUCT WITH SILICA	68611-44-9
DICHLOROMETHANE	75-09-2
1,4:7,10-DIMETHANODIBENZO(A,E)CYCLOOCTENE	13560-89-9
DYE 26	76871-75-5
EPICHLOROHYDRIN	106-89-8
POLYOLEFINS SULFONIC ACIDS	68037-39-8
HYDROCHLORIC ACID	7647-01-0
ISOINDOLE-TETRACHLORO-QUINOLINYL	56731-19-2
1-(4-CHLORO-O-SULFO-5-TOLYLAZO)-2-NAPHTHOL, BARIUM SALT	5160-02-1
LITHIUM CHLORIDE (LICL)	7447-41-8
LITHIUM PERCHLORATE	7791-03-9
METHYLAMINE HYDROCHLORIDE	593-51-1
METHYLPHOSPHONIC DICHLORIDE	676-97-1
NICKEL CHLORIDE (NICL2)	7718-54-9
NICKEL CHLORIDE (NICL2), HEXAHYDRATE	7791-20-0
PARA-DICHLOROBENZENE	106-46-7
PENTACHLORO-PHENOL	87-86-5
2-(2 -HYDROXY-3 -TERT-BUTYL-5 -METHYLPHENYL)-5-CHLOROBENZOTRIAZOLE	3896-11-5
PHENOL, 2,4-DICHLORO-	120-83-2
PHOSPHONOUS DICHLORIDE, PHENYL-	644-97-3
PHOSPHOROUS TRICHLORIDE	7719-12-2
PHOSPHORUS OXYCHLORIDE	10025-87-3
PHOSPHORUS PENTACHLORIDE	10026-13-8
POLYCHLORINATED NAPHTHALENES	70776-03-3
POLYCHLOROPRENE	9010-98-4
POLYVINYL CHLORIDE (PVC)	93050-82-9
3-(4-((2,6-DICHLORO-4-NITROPHENYL)AZO)-N-(2-HYDROXYETHYL)ANILINO)PROPIONITRILE, ACETATE (ESTER)	5261-31-4
1-(4-CHLORO-O-SULFO-5-TOLYLAZO)-2-NAPHTHOL, BARIUM SALT	5160-02-1
PYRROLO(3,4-C)PYRROLE-1,4-DIONE COMPOUND	84632-65-5
CHLORINATED NATURAL RUBBER	9006-03-5
TRICHLOROVINYLSILICON	75-94-5
SODIUM CHLORIDE	7647-14-5
TETRACHLOROETHYLENE	127-18-4
TETRACHLORO-U-HYDROXY(U-METHACRYLATO-O:O)DICHROMIUM	15096-41-0
THIOSULFAN	115-29-7
TRICHLORO DI-P-XYLYLENE	29716-49-2
TRICHLOROETHYLENE	79-01-6

32-4) Chlorinated Flame Retardants and its compounds

Substance name	CAS No
TRIETHYLAMINE HYDROCHLORIDE	554-68-7
TRIS(2-CHLOROETHYL)PHOSPHATE	115-96-8
TRIS(CHLOROETHYL) PHOSPHATE	29716-44-7
VINYL CHLORIDE	75-01-4
VINYL CHLORIDE COPOLYMER	25037-78-9
VINYL CHLORIDE-VINYL ACETATE COPOLYMERS	9003-22-9
ETHANAMINIUM, N-(6-(DIETHYLAMINO)-9-(2-(METHOXYCARBONYL)PHENYL)-3H-XANTHEN-3-YLIDENE)-N-ETHYL-, CHLORIDE	39393-39-0
BENZOIC ACID, 2-(6-(ETHYLAMINO)-3-(ETHYLIMINO)-2,7-DIMETHYL-3H-XANTHEN-9-YL)-	3068-39-1
ZINC CHLORIDE	7646-85-7

[Annex 3] Examples of substances and its compounds (Wearable products)

33-1) Pesticides

Substance name	CAS No	Substance name	CAS No
2,4,5-T	93-76-5	DDTs	50-29-3 789-02-6
2,4-D	94-75-7	Diazinon	333-41-5
Azinophosmethyl	86-50-0	Dichlorprop	120-36-2
Azinophosethyl	2642-71-9	Dicrotophos	141-66-2
Aldrin	309-00-2	Dieldrin	60-57-1
Bromophos-ethyl	4824-78-6	Dimethoate	60-51-5
Captafol	2425-06-1	Dinoseb and salts	88-85-7
Carbaryl	63-25-2	Endosulfan, α	959-98-8
Chlordane	57-74-9	Endosulfan, β	33213-65-9
Chlordimeform	6164-98-3	Endrin	72-20-8
Chlorfenvinphos	470-90-6	Esfenvalerate	66230-04-4
Fenvalerate	51630-58-1	Malathion	121-75-5
Heptachlor	76-44-8	MCPA	94-74-6
Heptachlorepoxide	1024-57-3	MCPB	94-81-5
Hexachlorobenzene	118-74-1	Mecoprop	93-65-2
Hexaclorcyclohexane, α	319-84-6	Metamidophos	10265-92-6
Hexaclorcyclohexane, β	319-85-7	Methoxychlor	72-43-5
Hexaclorcyclohexane, δ	319-86-8	Mirex	2385-85-5
Isodrine	465-73-6	Monocrotophos	6923-22-4
Kelevane	4234-79-1	Parathion	56-38-2
Kepone	143-50-0	Parathion-methyl	298-00-0
Lindan	58-89-9	Perthane	72-56-0
Coumaphos	56-72-4	Phosdrin/mevinphos	7786-34-7
Cyfluthrin	68359-37-5	Propethamphos	31218-83-4
Cyhalothrin	91465-08-6	Profenophos	41198-08-7
Cypermethrin	52315-07-8	Quinalphos	13593-03-8
DEF	78-48-8	Strobane	8001-50-1
Deltamethrin	52918-63-5	Telodrine	297-78-9
DDDs	53-19-0 72-54-8	Toxaphene	8001-35-2
DDEs	3424-82-6 72-55-9	Trifluralin	1582-09-8

[Annex 3] Examples of substances and its compounds (Wearable products)

33-2) Allergenic dyestuffs

Substance name	CAS No
C.I. Disperse Blue 1	2475-45-8
C.I. Disperse Blue 3	2475-46-9
C.I. Disperse Blue 7	3179-90-6
C.I. Disperse Blue 26	3860-63-7
C.I. Disperse Blue 35	12222-75-2
C.I. Disperse Blue 102	12222-97-8
C.I. Disperse Blue 106	12223-01-7
C.I. Disperse Blue 124	61951-51-7
C.I. Disperse Brown 1	23355-64-8
C.I. Disperse Orange 1	2581-69-3
C.I. Disperse Orange 3	730-40-5
C.I. Disperse Orange 37	12223-33-5
C.I. Disperse Orange 76	13301-61-6
C.I. Disperse Red 1	2872-52-8
C.I. Disperse Red 11	2872-48-2
C.I. Disperse Red 17	3179-89-3
C.I. Disperse Yellow 1	119-15-3
C.I. Disperse Yellow 3	2832-40-8
C.I. Disperse Yellow 9	6373-73-5
C.I. Disperse Yellow 39	12236-29-2
C.I. Disperse Yellow 49	54824-37-2

33-3) Carcinogenic dyestuffs

Substance name	CAS No
C.I. Acid Red 26	3761-53-3
C.I. Basic Red 9	569-61-9
C.I. Basic Violet 14	632-99-5
C.I. Direct Black 38	1937-37-7
C.I. Direct Blue 6	2602-46-2
C.I. Direct Red 28	573-58-0
C.I. Disperse Blue 1	2475-45-8
C.I. Disperse Orange 11	82-28-0
C.I. Disperse Yellow 3	2832-40-8
C.I. Disperse Orange 149	85136-74-9
C.I. Disperse Yellow 23	6250-23-3

33-4) Trichlorophonol

Substance name	CAS No
2,3,4-Trichlorophonol	15950-66-0
2,3,5-Trichlorophonol	933-78-8
2,3,6-Trichlorophonol	933-75-5
2,4,5-Trichlorophonol	95-95-4
2,4,6-Trichlorophonol	88-06-2
3,4,5-Trichlorophonol	609-19-8

[Annex 3] Examples of substances and its compounds (Wearable products)

33-5) Tetrachlorophenol

Substance name	CAS No
2,3,5,6-Tetrachlorophenol	935-95-5
2,3,4,6-Tetrachlorophenol	58-90-2
2,3,4,5-Tetrachlorophenol	4901-51-3

33-6) Chlorinated benzenes, chlorinated toluenes

Substance name	CAS No
Dichlorobenzene	
Tetrachlorobenzene	
Hexachlorobenzene	
Dichlorotoluenes	
Tetrachlorotoluenes	
Trichlorobenzene	
Pentachlorobenzene	
Chlorotoluenes	
Trichlorotoluenes	
Pentachlorotoluenes	

33-7) Alkylphenols

Substance name	CAS No
n-Nonylphenol	25154-52-3
tert-Octylphenol	27193-28-8

33-8) Alkylphenol ethoxlates

Substance name	CAS No
Nonylphenol ethoxylate	9016-45-9
Octylphenol ethoxylate	9036-19-5

[Annex 3] Examples of substances and its compounds (Others)

Category Code	Substance name	CAS No
Perchlorate Compounds	Lithium perchlorate	7791-03-9
	Other perchlorate compounds	-
Radioactive Substances	Uranium-238	7440-61-1
	Radon	10043-92-2
	Americium-241	14596-10-2
	Thorium-232	7440-29-1
	Cesium (Radioactive Isotopes only)	7440-46-2(Cs-137 010045-97-3)
	Strontium (Radioactive Isotopes only)	7440-29-6(Sr-90 10098-97-2)
	Other radioactive substances	-
MCCP	Medium-chain chlorinated paraffins, C14-C17	85535-85-9
Triclosan	Triclosan	3380-34-5
(DBHP)BT	2-(2H-benzotriazol-2-yl)-4,6-di-tert-butylphenol	3846-71-7
PFRs	Triphenyl phosphate	115-86-6

[Annex 4] : Substances in EU SVHC candidate list

No	SEC standard		Substance name	CAS No	Date of inclusion
1	Class1	Pb	Lead hydrogen arsenate	7784-40-9	2008-10-28
2	Class1	Cr+6	Sodium dichromate	10588-01-9 7789-12-0	2008-10-28
3	Class2	Diarsenic Trioxide	Diarsenic trioxide	1327-53-3	2008-10-28
4	Class2	TBTs, TPTs, TBTO	Bis(tributyltin)oxide (TBTO)	56-35-9	2008-10-28
5	Class2	Arsenic	Triethyl arsenate	15606-95-8	2008-10-28
6	Class2	Diarsenic Pentoxid	Diarsenic pentaoxide	1303-28-2	2008-10-28
7	Class2	4,4-MDA	4,4'- Diaminodiphenylmethane (MDA)	101-77-9	2008-10-28
8	Class2	SCCP	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	2008-10-28
9	Class2	Phthalate	Benzyl butyl phthalate (BBP)	85-68-7	2008-10-28
10	Class2	Phthalate	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	2014-12-17 2008-10-28
11	Class2	HBCDD	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified: Alpha-hexabromocyclododecane Beta-hexabromocyclododecane Gamma-hexabromocyclododecane	25637-99-4	2008-10-28
12	Class2	Phthalate	Dibutyl phthalate (DBP)	84-74-2	2008-10-28
13	Class2	Anthracene	Anthracene	120-12-7 3194-55-6 134237-50-6 134237-51-7 134237-52-8	2008-10-28
14	Others	REACH	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	2008-10-28
15	Class1	Pb	Lead chromate	7758-97-6	2010-01-13
16	Class1	Pb	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	12656-85-8	2010-01-13
17	Class1	Cr+6	Lead sulfochromate yellow (C.I. Pigment Yellow 34)	1344-37-2	2010-01-13
18	Class3	Phthalate	Diisobutyl phthalate	84-69-5	2010-01-13
19	Class3	CFRs	Tris(2-chloroethyl)phosphate	115-96-8	2010-01-13
20	Class2	Anthracene	Anthracene oil	90640-80-5	2010-01-13
21	Class2	Anthracene	Anthracene oil, anthracene paste, anthracene fraction	91995-15-2	2010-01-13

No	SEC standard		Substance name	CAS No	Date of inclusion
22	Others	Anthracene	Anthracene oil, anthracene-low	90640-82-7	2010-01-13
23	Others	Anthracene	Anthracene oil, anthracene paste	90640-81-6	2010-01-13
24	Others	Anthracene	Anthracene oil, anthracene paste,distn. lights	91995-17-4	2010-01-13
25	Others	REACH	2,4-Dinitrotoluene	121-14-2	2010-01-13
26	Others	REACH	Pitch, coal tar, high temp.	65996-93-2	2010-01-13
27	Others	REACH	Acrylamide	79-06-1	2010-03-30
28	Class1	Cr+6	Sodium chromate	7775-11-3	2010-06-18
29	Class1	Cr+6	Potassium chromate	7789-00-6	2010-06-18
30	Class3	CFRs	Trichloroethylene	79-01-6	2010-06-18
31	Class1	REACH	Potassium dichromate	7778-50-9	2010-06-18
32	Others	REACH	Tetraboron disodium heptaoxide, hydrate	12267-73-1	2010-06-18
33	Class1	REACH	Ammonium dichromate	7789-09-5	2010-06-18
34	Others	REACH	Boric acid	10043-35-3 11113-50-1	2010-06-18
35	Others	REACH	Disodium tetraborate, anhydrous	1303-96-4 1330-43-4 12179-04-3	2010-06-18
36	Class1	Cr+6	Chromium trioxide	1333-82-0	2010-12-15
37	Others	REACH	Cobalt(II) diacetate	71-48-7	2010-12-15
38	Others	REACH	Cobalt(II) sulphate	10124-43-3	2010-12-15
39	Others	REACH	2-Ethoxyethanol	110-80-5	2010-12-15
40	Others	REACH	Acids generated from chromium trioxide and their oligomers. Names of the acids and their oligomers: Chromic acid, Dichromic acid, Oligomers of chromic acid and dichromic acid.	7738-94-5 13530-68-2	2010-12-15
41	Others	REACH	2-Methoxyethanol	109-86-4	2010-12-15
42	Others	REACH	Cobalt(II) carbonate	513-79-1	2010-12-15
43	Others	REACH	Cobalt(II) dinitrate	10141-05-6	2010-12-15
44	Class1	Cr+6	Strontium chromate	7789-06-2	2011-06-20
45	Class3	Cobalt dichloride	Cobalt dichloride	7646-79-9	2011/06/20 - 2008/10/28
46	Class3	Phthalate	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	2011-06-20
47	Class3	Phthalate	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alyl esters	68515-42-4	2011-06-20

No	SEC standard		Substance name	CAS No	Date of inclusion
48	Others	REACH	1-Methyl-2-pyrrolidone	872-50-4	2011-06-20
49	Others	REACH	1,2,3-Trichloropropane	96-18-4	2011-06-20
50	Others	REACH	2-Ethoxyethyl acetate	111-15-9	2011-06-20
51	Others	REACH	Hydrazine	302-01-2 7803-57-8	2011-06-20
52	Class1	Pb	Lead diazide, Lead azide	13424-46-9	2011-12-19
53	Class1	Pb	Lead dipicrate	6477-64-1	2011-12-19
54	Class1	Pb	Lead styphnate	15245-44-0	2011-12-19
55	Class1	Pb	Trilead diarsenate	3687-31-8	2011-12-19
56	Class2	Arsenic	Calcium arsenate	7778-44-1	2011-12-19
57	Class2	Azo	2-Methoxyaniline; o-Anisidine	90-04-0	2011-12-19
58	Class2	Azo	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	2011-12-19
59	Class2	Formaldehyde	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	2011-12-19
60	Class3	Phthalate	Bis(2-methoxyethyl) phthalate	117-82-8	2011-12-19
61	Others	REACH	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	2011-12-19
62	Others	REACH	N,N-dimethylacetamide	127-19-5	2011-12-19
63	Others	REACH	Phenolphthalein	77-09-8	2011-12-19
64	Others	REACH	1,2-dichloroethane	107-06-2	2011-12-19
65	Others	REACH	Dichromium tris(chromate)	24613-89-6	2011-12-19
66	Others	REACH	Pentazinc chromate octahydroxide	49663-84-5	2011-12-19
67	Class2	REACH	Arsenic acid	7778-39-4	2011-12-19
68	Others	REACH	Potassium hydroxyoctaoxodizincatedichromate	11103-86-9	2011-12-19
69	Others	REACH	Zirconia Aluminosilicate Refractory Ceramic Fibres are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.1 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, and fulfil the three following conditions: a) oxides of aluminium, silicon and zirconium are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm). c) alkaline oxide and alkali earth oxide (Na2O+K2O+CaO +MgO+BaO) content less or equal to 18% by weight	-	2011-12-19

No	SEC standard		Substance name	CAS No	Date of inclusion
70	Others	REACH	Aluminosilicate Refractory Ceramic Fibres are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.1 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, and fulfil the three following conditions: a) oxides of aluminium and silicon are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm) c) alkaline oxide and alkali earth oxide (Na2O+K2O+CaO+MgO+BaO) content less or equal to 18% by weight	-	2011-12-19
71	Others	REACH	Bis(2-methoxyethyl) ether	111-96-6	2011-12-19
72	Class1	Pb	Lead(II) bis(methanesulfonate)	17570-76-2	2012-06-18
73	Others	TGIC	1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (β-TGIC)	59653-74-6	2012-06-18
74	Others	Diboron trioxide	Diboron trioxide	1303-86-2	2012-06-18
75	Others	TGIC	1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC)	2451-62-9	2012-06-18
76	Others	REACH	α,α-Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	6786-83-0	2012-06-18
77	Others	REACH	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler’s base)	101-61-1	2012-06-18
78	Others	REACH	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	2012-06-18
79	Others	REACH	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	561-41-1	2012-06-18

No	SEC standard		Substance name	CAS No	Date of inclusion
80	Others	REACH	Formamide	75-12-7	2012-06-18
81	Others	REACH	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	548-62-9	2012-06-18
82	Others	REACH	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	2012-06-18
83	Others	REACH	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	2580-56-5	2012-06-18
84	Others	REACH	4,4'-bis(dimethylamino)benzophenone (Michler's ketone)	90-94-8	2012-06-18
85	Class1	Pb	Sulfurous acid, lead salt, dibasic	62229-08-7	2012-12-19
86	Class1	Pb	Lead cyanamidate	20837-86-9	2012-12-19
87	Class1	Pb	Pyrochlore, antimony lead yellow	8012-00-8	2012-12-19
88	Class1	Pb	Lead bis(tetrafluoroborate)	13814-96-5	2012-12-19
89	Class1	Pb	Lead dinitrate	10099-74-8	2012-12-19
90	Class1	Pb	Silicic acid, lead salt	11120-22-2	2012-12-19
91	Class1	Pb	Lead titanium zirconium oxide	12626-81-2	2012-12-19
92	Class1	Pb	Lead monoxide (lead oxide)	1317-36-8	2012-12-19
93	Class1	Pb	Silicic acid (H2Si2O5), barium salt (1:1), lead-doped [with lead (Pb) content above the applicable generic concentration limit for 'toxicity for reproduction' Repr. 1A (CLP) or category 1 (DSD); the substance is a member of the group entry of lead compounds, with index number 082-001-00-6 in Regulation (EC) No 1272/2008]	68784-75-8	2012-12-19
94	Class1	Pb	Trilead bis(carbonate)dihydroxide	1319-46-6	2012-12-19
95	Class1	Pb	Lead oxide sulfate	12036-76-9	2012-12-19
96	Class1	Pb	Lead titanium trioxide	12060-00-3	2012-12-19
97	Class1	Pb	Acetic acid, lead salt, basic	51404-69-4	2012-12-19

No	SEC standard		Substance name	CAS No	Date of inclusion
98	Class1	Pb	[Phthalato(2-)]dioxotrilead	69011-06-9	2012-12-19
99	Class1	Pb	Tetralead trioxide sulphate	12202-17-4	2012-12-19
100	Class1	Pb	Dioxobis(stearato)trilead	12578-12-0	2012-12-19
101	Class1	Pb	Tetraethyllead	78-00-2	2012-12-19
102	Class1	Pb	Pentalead tetraoxide sulphate	12065-90-6	2012-12-19
103	Class1	Pb	Trilead dioxide phosphonate	12141-20-7	2012-12-19
104	Class1	Pb	Orange lead (lead tetroxide)	1314-41-6	2012-12-19
105	Class1	Pb	Fatty acids, C16-18, lead salts	91031-62-8	2012-12-19
106	Class1	PBDEs	Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)	1163-19-5	2012-12-19
107	Class2	Azo	6-methoxy-m-toluidine (p-cresidine)	120-71-8	2012-12-19
108	Class2	DBT	Dibutyltin dichloride (DBTC)	683-18-1	2012-12-19
109	Class2	Azo	o-Toluidine	95-53-4	2012-12-19
110	Class2	Azo	4,4'-methylenedi-o-toluidine	838-88-0	2012-12-19
111	Class2	Azo	4-methyl-m-phenylenediamine (toluene-2,4-diamine)	95-80-7	2012-12-19
112	Class2	Azo	o-aminoazotoluene	97-56-3	2012-12-19
113	Class2	Azo	4,4'-oxydianiline and its salts	101-80-4	2012-12-19
114	Class2	Azo	Biphenyl-4-ylamine	92-67-1	2012-12-19
115	Class3	Phthalate	N-pentyl-isopentylphthalate	776297-69-9	2012-12-19
116	Class3	Phthalate	Diisopentylphthalate	605-50-5	2012-12-19
117	Class2	REACH	4-Aminoazobenzene	60-09-3	2012-12-19
118	Others	REACH	3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	2012-12-19
119	Others	REACH	Furan	110-00-9	2012-12-19
120	Others	REACH	N,N-dimethylformamide	68-12-2	2012-12-19
121	Others	REACH	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]	-	2012-12-19
122	Others	REACH	4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]	-	2012-12-19

No	SEC standard		Substance name	CAS No	Date of inclusion
123	Others	REACH	Diethyl sulphate	64-67-5	2012-12-19
124	Others	REACH	Dimethyl sulphate	77-78-1	2012-12-19
125	Others	REACH	N-methylacetamide	79-16-3	2012-12-19
126	Others	REACH	Dinoseb (6-sec-butyl-2,4-dinitrophenol)	88-85-7	2012-12-19
127	Others	REACH	1,2-Diethoxyethane	629-14-1	2012-12-19
128	Others	REACH	Pentacosafluorotridecanoic acid	72629-94-8	2012-12-19
129	Others	REACH	Tricosafluorododecanoic acid	307-55-1	2012-12-19
130	Others	REACH	Heptacosafluorotetradecanoic acid	376-06-7	2012-12-19
131	Others	REACH	1-bromopropane (n-propyl bromide)	106-94-5	2012-12-19
132	Others	REACH	Methoxyacetic acid	625-45-6	2012-12-19
133	Others	REACH	Methyloxirane (Propylene oxide)	75-56-9	2012-12-19
134	Others	REACH	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	2012-12-19
135	Others	REACH	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	2012-12-19
136	Others	REACH	Cyclohexane-1,2-dicarboxylic anhydride [1], cis-cyclohexane-1,2-dicarboxylic anhydride [2], trans-cyclohexane-1,2-dicarboxylic anhydride [3] [The individual cis- [2] and trans- [3] isomer substances and all possible combinations of the cis- and trans-isomers [1] are covered by this entry]	85-42-7 13149-00-3 14166-21-3	2012-12-19
137	Others	REACH	Henicosafluoroundecanoic acid	2058-94-8	2012-12-19
138	Others	REACH	Hexahydromethylphthalic anhydride [1], Hexahydro-4-methylphthalic anhydride [2], Hexahydro-1-methylphthalic anhydride [3], Hexahydro-3-methylphthalic anhydride [4] [The individual isomers [2], [3] and [4] (including their cis- and trans- stereo isomeric forms) and all possible combinations of the isomers [1] are covered by this entry]	25550-51-0 19438-60-9 48122-14-1 57110-29-9 7440-43-9	2012-12-19
139	Class1	Cd	Cadmium		2013-06-20
140	Class1	Cd	Cadmium oxide	1306-19-0	2013-06-20
141	Class3	Phthalate	Dipentyl phthalate (DPP)	131-18-0	2013-06-20
142	Others	PFOA	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	2013-06-20

No	SEC standard		Substance name	CAS No	Date of inclusion
143	Class2	PFOA	Pentadecafluorooctanoic acid (PFOA)	335-67-1	2013-06-20
144	Others	REACH	4-Nonylphenol, branched and linear, ethoxylated [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxylated covering UVCB- and well-defined substances, polymers and homologues, which include any of the individual isomers and/or combinations thereof]	-	2013-06-20
145	Class1	Cd	Cadmium sulphide	1306-23-6	2013-12-13
146	Others	REACH	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	2013-12-13
147	Others	REACH	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo] -5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	2013-12-13
148	Class3	Phthalate	Dihexyl phthalate	84-75-3	2013-12-13
149	Others	REACH	Imidazolidine-2-thione (2-imidazoline-2-thiol)	96-45-7	2013-12-13
150	Class1	Pb	Lead di(acetate)	301-04-2	2013-12-13
151	Others	REACH	Trixylyl phosphate	25155-23-1	2013-12-13
152	Others	REACH	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	2014-06-16
153	Others	REACH	Sodium perborate; perboric acid, sodium salt	-	2014-06-16
154	Others	REACH	Sodium peroxometaborate	7632-04-04	2014-06-16
155	Class1	Cd	Cadmium chloride	233-296-7	2014-06-16
156	Others	REACH	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate (EC No. 201-559-5)	68515-51-5 68648-93-1	2015-06-15
157	Others	REACH	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual stereoisomers of [1] and [2] or any combination thereof]	-	2015-06-15
158	Others	REACH	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	2014-12-17
159	Others	REACH	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	2014-12-17
160	Others	REACH	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	15571-58-1	2014-12-17
161	Class1	Cd	Cadmium fluoride	7790-79-6	2014-12-17
162	Class1	Cd	Cadmium sulphate	10124-36-4 31119-53-6	2014-12-17
163	Others	REACH	reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)	-	2014-12-17

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