

	Document name: Management Standard for Environment-related Substances			Document no. 10000-0162	
	Dept.: CE	Author: SC Wang	Date: 2018.11.12	Page:	1 of 26 Rev.:25.1

CONTENTS

1. PURPOSE	2
2. SCOPE	2
3. OPERATIONAL PROCEDURE	2
4. DEFINITIONS OF TERMS	3
5. MANAGEMENT STANDARDS FOR ENVIRONMENT-RELATED SUBSTANCES	5
5-1. Delta Mandatory Banned Substances	5
5-2. Restrictions for Batteries	11
5-3. Chemical Substances Information –REACH Requirement	12
6. OTHER DESIGN REQUIREMENTS	13
7. REQUIREMENTS FOR TEST REPORT	13
8. SUBSTANCES TABLE	14
9. REFERENCES	25

	Document name: Management Standard for Environment-related Substances			Document no. 10000-0162	
	Dept.: CE	Author: SC Wang	Date: 2018.11.12	Page:	2 of 26 Rev.:25.1

1. PURPOSE

The purposes of this Technical Standard are as follows:

- To clarify the banned substances included in the parts and devices constituting Delta products, or in regard to the environment-related ones used when Delta products are manufactured.
- To thoroughly notify the above-mentioned matters to both the whole Delta and parts/ devices suppliers.
- To improve the environmental quality of the products.

2. SCOPE

This Technical Standard applies to the following parts/ devices constituting Delta products: electrical parts, mechanical parts, semiconductor devices, printed wiring boards (PWBs), and packaging materials/ packaging parts.

- Including assemblies such as functional units, modules, and board assemblies.
- Including attachments such as the accessories procured as parts.
- Including composing materials such as the subsidiary parts and materials managed by parts specifications.
- Including the substances used in the production processes of parts.
- Including repair parts.

Regarding the substances or their applications whose uses are banned by regional or country laws and ordinances or customers, the laws and ordinances or standard of customers must be followed even though the substances or their purposes are not clearly regulated in this specification.

3. OPERATIONAL PROCEDURE

- Deliberations and decisions on matters regarding this Standard shall be made by the “Technical Committee for Environment-related Substances.” The matters thus deliberated and decided shall be approved by the head of the division promoting the company-wide standardization of technology.
- When this Standard requires revising or abolishing, please apply to the Technical Committee for Environment-related Substances for the revisions or abolishment. The Committee shall deliberate the applied contents and decide the revisions or abolishment.

This Management Standard will be entered into enforcement 30 days after being published officially, unless elsewhere be stated its enforced date.

	Document name: Management Standard for Environment-related Substances			Document no. 10000-0162	
	Dept.: CE	Author: SC Wang	Date: 2018.11.12	Page:	3 of 26 Rev.:25.1

4. DEFINITIONS OF TERMS

In this Standard, terms are defined as follows:

- **Environment-related Substances:**

Among the substances included in the parts and devices (refer to the SCOPE) or the ones used at the time of manufacturing, environment-related substances are the ones that are said to have serious environmental effects on overall global environment and that are specified by Delta.

- **Homogeneous Materials:**

Homogeneous materials are defined as materials that cannot be mechanically disjointed into different materials and are **“of uniform composition throughout.”** Examples are plastics, laminates, alloys, molding compounds, finishes, ceramics, plating materials, etc. that are presented in the finished parts and products.

- **Contained:**

"Contained" means that a substance remains in parts, devices, or their materials because of addition, filling, blending, or adhesion, whether intended or not. When a substance is unintentionally contained in, or added to a product in a processing process, this situation is also regarded as **"Contained."** Dopants (Doping Agents) for production of semiconductor devices, etc. are not treated as "Intentionally added" if present in the devices in a very small amount.

- **Intentionally added:**

"Intentionally added" means a situation where a substance is contained in the parts, devices, or their materials because of deliberate addition, filling, blending, or adhesion, in order to provide a specific characteristic, appearance, property, attribute or equality. (One contained in a natural material, which cannot be completely removed by in a refining process by adequate technical means (i.e. natural impurities); and one generated in a synthesis process, which cannot be completely removed by adequate technical means.)

- **Banned Substances:**

Among the substances included in the parts and devices (refer to the SCOPE) or the ones used at the time of manufacturing, banned substances are those hazardous substances that are not allowed to be added intentionally and to be contaminated accidentally. The threshold limits of those banned substances are specified in any applicable test methods that are regulated in any related regulations and laws.

- **MDL: Method Detection Limit.**

	Document name: Management Standard for Environment-related Substances			Document no. 10000-0162	
	Dept.: CE	Author: SC Wang	Date: 2018.11.12	Page:	4 of 26 Rev.:25.1

- N.D.: Not detected/ not detectable.
- PPM, ppm: Parts per million, unit of measurement for weight percentage.
- Threshold limit:

The maximum concentration threshold of the regulated environment-related substance is allowed to be contained in homogenous level of the parts or materials constituting to Delta products due to technically irremovability of the regulated substance.

- Packaging:

Materials used to protect products from damage due to storage or transportation (e.g., boxes, shipping supplies, cushioning & foam, bags, shrink wrap, tape/ adhesives), including inks and dyes used to label packages. Reusable or returnable packaging under the control of traders or suppliers is out of this scope.

- Mechanical Plastic Part:

Plastic parts that do not internally carry an electrical signal such as housings, brackets, bezels, latches, etc. that form the basic structure of the product and/ or have mechanical functions.

- Battery:

Battery means any source of electrical energy generated by direct conversion of chemical energy and consisting of one or more primary battery cells (non-rechargeable) or consisting of one or more secondary battery cell (rechargeable).

- Battery Pack:

Battery pack means any set of batteries that are connected together and/or encapsulated within an outer casing so as to form a complete unit that the end-user is not intended to split up or open.

- Coin Cell:

Coin cell means any small round portable battery whose diameter is greater than its height and which is used for special purposes such as hearing aids, watches, small portable equipment and back-up power system.

5. MANAGEMENT STANDARDS FOR ENVIRONMENT-RELATED SUBSTANCES

5-1. Delta Mandatory Banned Substances

The following restrictions are applicable to all parts, components, materials that are in scopes, except for the listed exemptions.

Table 5-1 List of Delta banned substances

Banned substances	CAS No.	Scope	Threshold Limit	Exemptions	References
Cadmium and cadmium compounds	Various	•Plastics, rubbers, paints and inks	N.D.	EU RoHS exemptions	
		•Solders	20 ppm		
		•Other homogeneous materials	50 ppm		
Lead and lead compounds	Various	•Plastics, rubbers, paints and inks	50 ppm	EU RoHS exemptions Expiry date : 21 July 2021	Directive 2011/65/EU Directive (EU) 2018/736 Directive (EU) 2018/737 Directive (EU) 2018/738 Directive (EU) 2018/739 Directive (EU) 2018/740 Directive (EU) 2018/741 Directive (EU) 2018/742
		•Other homogeneous materials	800 ppm		
Mercury and mercury compounds	Various	•All parts	N.D.	EU RoHS exemptions	
Hexavalent chromium compounds	Various	•Metallic parts	N.D.	EU RoHS exemptions	
		•Other homogeneous materials	100 ppm		
Sum of cadmium/lead/mercury/ hexavalent chromium compounds	Various	Package material	100 ppm		Directive 94/62/EC
Polybrominated biphenyls (PBBs)	See Table 2	All parts	100 ppm		Directive 2011/65/EU
Polybrominated diphenyl ethers (PBDEs)	See Table 3	All parts	100 ppm		Directive 2011/65/EU
Bis (2-ethylhexyl) phthalate(DEHP) Diocetyl phthalate(DOP)	117-81-7	All parts	1000 ppm		Directive(EU)2015/863
Benzylbutyl Phthalate (BBP)	85-68-7	All parts	1000 ppm		Directive (EU) 2015/863
Dibutyl Phthalate (DBP)	84-74-2	All parts	1000 ppm		Directive (EU) 2015/863
Di-iso-butyl Phthalate (DIBP)	84-69-5	All parts	1000 ppm		Directive (EU) 2015/863

Banned substances	CAS No.	Scope	Threshold Limit	Exemptions	References
Antimony	7440-36-0	Halogen-free part See 10000-2003	1000 ppm as antimony	<ul style="list-style-type: none"> Additives in for ceramic or glass in components. Solder used in pin attach or integrate circuits. Antimony trioxide used as flame retardant. 	Delta policy
Antimony trioxide	1309-64-4				
Arsenic	7440-38-2	•Solder and metal alloy	300 ppm	Arsenic and its compounds used for semiconductors, magnet filters and battery cells.	Delta policy
		•Packaging material (include woods)	50 ppm		
		•Other homogeneous materials	50 ppm		
Asbestos	1332-21-4 and others	All parts	Not present		EU REACH Annex XVII
Bisphenol A	80-05-7	External plastics parts	Not present		EU REACH Annex XVII Proposition 65
Benzenamine, N-phenyl-, Reaction Products with Styrene and 2,4,4-Trimethylpentene (BNST)	68921-45-9	All parts	Not used, not intentionally added		Canadian Environmental Protection Act, 1999: Prohibition of Certain Toxic Substances Regulations, 2012
Benzidine-Based Dyes	See Table 4	All parts	Not present		U.S. TSCA 40 CFR 721.1660
Beryllium	7440-41-7	All parts	1000 ppm	<ul style="list-style-type: none"> Ceramics in electronic components. Beryllium copper alloy used for electrical contacts, such as connectors, springs or EMI gaskets. 	Delta policy
Beryllium oxide	1304-56-9	All parts	100 ppm		Delta policy
Brominated Flame Retardants Chlorinated flame retardant	Various	Enclosed plastic for new design adaptors.	Not used	Effective date: 2019/01/01	Delta policy
Brominated Flame Retardants Chlorinated flame retardant	Various	All enclosed plastic for adaptors. (Exclude wall mount models)	Not used	Effective date: 2018/12/31.	Delta policy

Banned substances	CAS No.	Scope	Threshold Limit	Exemptions	References
Chlorinated paraffin (Short-chain) (C ₁₀₋₁₃ , Cl≥50 wt%) (SCCPs)	Various	All parts	Not used		EU REACH Annex XVII; Stockholm Convention
Chlorinated paraffin (Medium-chain) (C ₁₄₋₁₇ , Cl≥50 wt%) (MCCPs)	Various	All parts	Not used		Delta policy
Cobalt dichloride	7646-79-9 7791-13-1	Package material (Desiccant)	Not used		EU REACH Annex XVII
Diarsenic trioxide	1327-53-3	All parts	1000ppm		EU REACH Annex XIV
Diarsenic pentaoxide	1303-28-2	All parts	1000ppm		EU REACH Annex XIV
Dibutyltin (DBT) compounds	See Table 5	All parts	1000 ppm by weight of tin		EU REACH Annex XVII
Bis (2-propylheptyl) phthalate	<u>53306-54-0</u>	All parts	1000 ppm		Delta policy
Bis(2-methoxyethyl) phthalate	117-82-8	All parts	1000 ppm		EU REACH Annex XIV
Dicyclohexyl Phthalate (DCHP)	84-61-7	All parts	1000 ppm		Delta policy
Diethyl phthalate (DEP)	84-66-2	All parts	1000 ppm		Delta policy
Diisodecyl Phthalate (DIDP)	26761-40-0 68515-49-1	All parts	1000 ppm		EU REACH Annex XVII
Diisononyl Phthalate (DINP)	28553-12-0 68518-48-0	All parts	1000 ppm		EU REACH Annex XVII
Diisooctyl Phthalate(DIOP)	27554-26-3	All parts	1000 ppm		EU REACH Annex XVII
Diisopentyl phthalate	605-50-5	All parts	1000 ppm		EU REACH Annex XIV
Dimethyl Phthalate (DMP)	131-11-3	All parts	1000 ppm		Delta policy
Di-n-Octyl Phthalate (DnOP)	117-84-0	All parts	1000 ppm		Delta policy
Dinheptyl Phthalate	3648-21-3	All parts	1000 ppm		Delta policy
Di-n-hexyl phthalate (DnHP)	84-75-3	All parts	1000 ppm		Delta policy
Dinonyl Phthalate (DNP)	84-76-4	All parts	1000 ppm		Delta policy
Dipentyl phthalate (DPP)	131-18-0	All parts	1000 ppm		EU REACH Annex XIV

Banned substances	CAS No.	Scope	Threshold Limit	Exemptions	References
Diphenyl Phthalate	84-62-8	All parts	1000 ppm		Delta policy
Di-propyl Phthalate	131-16-8	All parts	1000 ppm		Delta policy
DEHP+DBP +BBP		Toys	500 ppm		Directive 2005/84/EC
DINP+DIDP+DnOP		Toys	500 ppm		Directive 2005/84/EC
Dimethylfumarate (DMF)	624-49-7	All parts	0.1 ppm		EU 2009/251/EC; EU REACH Annex XVII
Formaldehyde	50-00-0	Hardwood plywood (HWPW) Particleboard (PB)	0.05 ppm 0.09 ppm		Airborne Toxic Control Measure (ATCM)
Monomethyldibromodiphenyl methane (DBBT)	99688-47-8	All parts	Not used		EU REACH Annex XVII
Musk Xylene	81-15-2	All parts	Not used		EU REACH Annex XIV
Musk Ketone	81-14-1	All parts	Not used		Delta policy
Musk lactone	3391-83-1	All parts	Not used		Delta policy
Nickel and its compounds	Various	External chassis/ case and parts frequently handled by the user.	0.5µg/cm ² /week	Nickel in stainless steel.	EU REACH Annex XVII
Natural rubber or natural latex	NA	External mechanical parts	Not used		Delta policy
Perchlorate	14797-73-0	All parts	0.006 ppm		Delta policy
Perfluorooctane sulfonates (PFOS) and PFOS salts	See Table 6	All parts	Not used	<ul style="list-style-type: none"> Photographic coatings applied to films, papers or plates. 	EU Regulation 850/2004 (Amended by 757/2010) Canada Regulation SOR/2008-177
Perfluorooctanoic acid (PFOA) and esters	See Table 6	All parts	1000 ppm	<ul style="list-style-type: none"> For anti-fog in the electroplating system (not for decoration). 	Norway Product reg 922 of 2004, 550, 2013
		Coatings	1 µg/m ²	<ul style="list-style-type: none"> For semiconductor applications. (E.g. photoresist or anti-reflective coatings for photolithography process.) 	

 Delta Electronics Group	Document name: Management Standard for Environment-related Substances			Document no. 10000-0162	
	Dept.: CE	Author: SC Wang	Date: 2018.11.12	Page:	9 of 26 Rev.:25.1

Banned substances	CAS No.	Scope	Threshold Limit	Exemptions	References
Polychlorinated terphenyls (PCTs)	26140-60-3 & Various	All parts	Not used		EU REACH Annex XVII
Polycyclic Aromatic Hydrocarbons (PAHs)	See table 7	Plastic and rubber material used for external mechanical parts	1 ppm (Sum of 18 PAHs)	Parts that do not contact human skins continuously.	EU REACH Annex XVII
Polyvinyl chloride (PVC) and PVC blends	9002-86-2 & Various	All parts	Not used	<ul style="list-style-type: none"> Safety certified wire and cable assemblies. Plastic parts less than 25 grams. 	Delta policy
Persistent Organic Pollutants (POPs)	See Table 8	All parts	Not used		Stockholm Convention EU Regulation 850/2004
Specific benzotriazole (UV-320)	3846-71-7	All parts	Not used		Japan CSCL EU REACH Annex XVII
Substances depleting the ozone layer (ODS)	See Table 9	All parts and manufacturing process material	Not used		Annexes A, B, C, E of Montreal Protocol
Radioactive materials	Various	All parts	Not above background levels		Delta policy
Red phosphorous	7723-14-0	Used as plastic flame retardants	1000 ppm		Delta policy
Selenium and its compounds	Various	All parts	Not used		Delta policy
Specific azo dyes	See Table 4	All parts	Not present		EU REACH Annex XVII
Tetrabromobisphenol A (TBBPA)	79-94-7	All parts	Not used	Used as reactive flame retardant.	Delta policy
Tributyltin oxide (TBTO)	56-35-9	All parts	Not used		EU REACH Annex XVII
Triphenyltin compounds (TPT)	See Table 5	All parts	Not used		EU REACH Annex XVII
Tris(2-chloroethyl) phosphate (TCEP)	115-96-8	Used as plastic flame retardants	1000 ppm		EU REACH Annex XIV
Trixylenyl phosphate (TXP)	25155-23-1	Used as plastic flame retardants	1000 ppm		Delta policy
Tris(2,3-dibromopropyl) phosphate (TDBPP)	126-72-7	Used as plastic flame retardants	1000 ppm		Delta policy

Banned substances	CAS No.	Scope	Threshold Limit	Exemptions	References
Tri-1-aziridinylphosphine oxide (TEPA)	545-55-1	Used as plastic flame retardants	1000 ppm		Delta policy
1,3-Dichloro-2-propanol phosphate (TDCPP)	13674-87-8	Used as plastic flame retardants	1000 ppm		Delta policy
Triphenyl phosphate (TPP)	115-86-6	Used as plastic flame retardants	1000 ppm		Delta policy
Tris (1-chloro-2-propyl) phosphate (TCPP)	13674-84-5	Used as plastic flame retardants	1000 ppm		Delta policy
Triethyl arsenate	15606-95-8	All parts	Not used		EU REACH Annex XVII
Ugilec 121	81161-70-8	All parts	Not used		EU REACH Annex XVII
Ugilec 141	76253-60-6	All parts	Not used		EU REACH Annex XVII

DELTA DOC CENTER

	Document name: Management Standard for Environment-related Substances			Document no. 10000-0162	
	Dept.: CE	Author: SC Wang	Date: 2018.11.12	Page:	11 of 26 Rev.:25.1

5-2. Restrictions for Batteries

Restrictions on Content of Batteries Used in Products		
	Targets	Implement date
Cadmium	<ul style="list-style-type: none"> Batteries and battery packs whose cadmium content, in proportion to each unit weight, is 0.002% or more. 	Banned immediately
Lead	<ul style="list-style-type: none"> Batteries and battery packs whose lead content, in proportion to each unit weight, is 0.4% or more. 	Banned immediately
	<ul style="list-style-type: none"> Built-in Batteries and built-in battery packs whose lead content, in proportion to each unit weight, is 0.4% or more. 	
	<ul style="list-style-type: none"> Zinc carbon batteries and button cell batteries whose lead content, in proportion to their weight, is 0.1% or more. 	
	<ul style="list-style-type: none"> Alkaline batteries whose lead content, in proportion to their weight, is 0.004% or more. 	
	<ul style="list-style-type: none"> Non-alkaline batteries whose lead content, in proportion to their weight, is 0.002% or more. 	
Mercury	<ul style="list-style-type: none"> Coin cell batteries mercury content in proportion to their weight, is 2% or more. 	Banned immediately
	<ul style="list-style-type: none"> Zinc carbon batteries alkaline and non-alkaline zinc batteries and nickel hydrogen (NiMH) rechargeable batteries whose mercury content, in proportion to their weight, is 0.0001% or more. 	
	<ul style="list-style-type: none"> All other battery types whose mercury content, in proportion to their weight, is 0.0005% or more. 	

	Document name: Management Standard for Environment-related Substances			Document no. 10000-0162	
	Dept.: CE	Author: SC Wang	Date: 2018.11.12	Page:	12 of 26 Rev.:25.1

5-3. Chemical substances information –REACH requirement

Based on REACH (Registration, Evaluation, Authorization and restriction of Chemicals EC 1907/2006), suppliers must have communication of information about substances identified by the European Chemical Agency (ECHA) known as the list of Substance of Very High Concern (SVHC).

Article 67 of REACH stated that a substance on its own, in a preparation or in an article, for which Annex XVII contains a restriction shall not be manufactured, placed on the market or used unless it complies with the conditions of that restrictions.

In order to fulfill REACH obligations for article suppliers, it's required to communicate with Delta's representatives if suppliers delivered to Delta contain any regulated chemical substance that is over the report threshold of 1000 ppm (substance weight/ article weight) in weight. There are several required information for communication: a) substance name, b) CAS number, c) weight of substance, and d) concentration of substance.

Please visit the website for the latest information about REACH regulated substances.

- SVHC <https://echa.europa.eu/candidate-list-table>
- ANNEX XVII <https://echa.europa.eu/substances-restricted-under-reach>

	Document name: Management Standard for Environment-related Substances			Document no. 10000-0162	
	Dept.: CE	Author: SC Wang	Date: 2018.11.12	Page:	13 of 26 Rev.:25.1

6. OTHER DESIGN REQUIREMENTS

- Gluing / soldering of different material had better to be avoided.
- Plastic materials in covers / housing had better not be surface coated.
- All the thermoplastic parts $\geq 25\text{g}$ or $\geq 200\text{ mm}^2$ and packaging material, have to be marked in accordance to ISO 11469, and ISO 1043 -1, -2, -3, -4.

7. REQUIREMENT FOR TEST REPORT

7-1. Items to be stated in Reports

- 1.) Pre-treatment method
Please be sure to indicate for all pre-treatment the fact that the sample has been totally digested and dissolved by entering "Totally dissolved." If this entry is not made, Delta will ask you to submit the new report. Delta will not accept any "in-house" pre-treatment.
- 2.) Test method
- 3.) Name of analysis institution and corresponding signature.
- 4.) The test must be done by 3rd part test labs and have its own test lab with ISO 17025 certification. When customers have requirements for reports tested by specific test laboratories, Delta will ask you to resubmit the report again if the report is tested by other laboratories.
- 5.) Test date
- 6.) Test result (must state the detection limit)
- 7.) Test flowchart
- 8.) Photographs of the samples
- 9.) Accepted test methods

Banned substances	Test methods
Cadmium and cadmium compounds	IEC 62321
Lead and lead compounds	IEC 62321
Mercury and mercury compounds	IEC 62321
Hexavalent chromium compounds	IEC 62321
Polybrominated biphenyls (PBBs)	IEC 62321
Polybrominated diphenyl ethers (PBDEs)	IEC 62321
Phthalates	IEC 62321
Polycyclic Aromatic Hydrocarbons (PAHs)	AfPS GS 2014:01 PAK
BFR&CFR (As bromine and chlorine)	BS EN 14582
Nickel and its compounds	EN 1811
Red phosphorous	Pyrolyzer-GC/MS

8. SUBSTANCES TABLE

Table 2. List of Polybrominated biphenyls (PBBs)

Substances	CAS No.
Bromobiphenyl Ether	101-55-3
Dibromobiphenyl Ether	2050-47-7
Tribromobiphenyl	64258-03-3
Tetrabromobiphenyl	40088-45-7
Pentabromobiphenyl	563070-79-0; 67888-97-5
Hexabromobiphenyl	59080-40-9, 36355-01-8, 67774-32-7
Heptabromobiphenyl	6355-01-8
Octabromobiphenyl	61288-13-9
Nonabromobiphenyl	27753-52-2
Decabromobiphenyl	13654-09-6

Table 3. List of Polybrominated diphenyl ethers (PBDEs)

Substances	CAS No.
Bromobiphenyl Ether	101-55-3
Dibromobiphenyl Ether	2050-47-7
Tribromobiphenyl Ether	49690-94-0
Tetrabromobiphenyl Ether	40088-47-9
Pentabromobiphenyl Ether	32534-81-9
Hexabromobiphenyl Ether	36483-60-0
Heptabromobiphenyl Ether	68928-80-3
Octabromobiphenyl Ether	32536-52-0
Nonabromobiphenyl Ether	63936-56-1
Decabromobiphenyl Ether	1163-19-5

	Document name: Management Standard for Environment-related Substances			Document no. 10000-0162	
	Dept.: CE	Author: SC Wang	Date: 2018.11.12	Page:	15 of 26 Rev.:25.1

Table 4. List of banned Specific azo and Benzidine-based compounds

Substances	CAS No.
4-aminodiphenyl and its chlorides	92-67-1
4-chloro-o-toluidine	95-69-2
2-naphthylamine and its chlorides	91-59-8
o-aminoazotoluene	97-56-3
2-amino-4-nitrotoluene	99-55-8
p-chloroaniline	106-47-8
2, 4-diaminoanisole	615-05-4
4, 4'-diaminodiphenylmethane; 4,4'-methylenebisbenzeneamine	101-77-9
3, 3'-dichlorobenzidine	91-94-1
3, 3'-dimethylbenzidine;	119-90-4
3, 3'-dimethylbenzidine;	119-93-7
3,3'-dimethyl-4,4'-diaminodiphenylmethane	838-88-0
p-cresidine	120-71-8
4, 4'-methylene-bis- (2-chloro aniline);	101-14-4
4, 4'-oxideaniline	101-80-4
4, 4'-thiodianiline	139-65-1
o-toluidine	95-53-4
2, 4-tolluenediamine	95-80-7
2, 4, 5-trimethylaniline	137-17-7
4-aminoazobenzene	60-09-3
4-chloro-2-methylaniline	95-69-2
5-Nitro-ortho-toluidine	99-55-8
4-methoxy-m-phenyldiamine	615-05-4
o-Dianisidine	119-90-4
4,4'-Methylene-bis(2-methylaniline)	838-88-0
5-Methyl-o-Anisidine	120-71-8
4,4'-Methylenebis-(2-Chlorobenzenamine)	101-14-4
4,4'-thiobisbenzenamine	139-65-1
Toluene-2,4-Diamine	95-80-7
2,4,5-Trimethylaniline	137-17-7
o-Anisidine	90-04-0
1,3-Naphthalenedi-sulfonic acid, 7-hydroxy-8-[2-[4'-[2-(4-hydroxyphenyl) diazenyl]][1,1'-biphenyl]-4-yl]diazenyl]-	117-33-9
1,3,6-Naphthalenetri-sulfonic acid, 8-hydroxy-7-[2-[4'-[2-(2-hydroxy-1-naphthalenyl) diazenyl]][1,1'-biphenyl]-4-yl]diazenyl]-, lithium salt (1:3)	65150-87-0
2,7-Naphthalenedi-sulfonic acid,5-amino-3-[2-[4'-[2-(7-amino-1-hydroxy-3-sulfo-2-naphthalenyl) diazenyl]][1,1'- biphenyl]-4-yl]diazenyl]-4-hydroxy-, sodium salt (1:2)	68214-82-4

	Document name: Management Standard for Environment-related Substances			Document no. 10000-0162	
	Dept.: CE	Author: SC Wang	Date: 2018.11.12	Page:	16 of 26 Rev.:25.1

Substances	CAS No.
2,7-Naphthalenedi-sulfonic acid, 4-amino-5-hydroxy-3-[2-[4'- [2-[2-hydroxy-4- [(2- methylphenyl)amino] phenyl]diazanyl][1,1'-biphenyl]-4-yl]diazanyl]-6-(2- phenyldiazanyl)-	72379-45-4
2,7-Naphthalenedi-sulfonic acid, 4-amino-5-hydroxy [[[substituted phenylamino]] substituted phenylazo] diphenyl]azo-, phenylazo-, disodium salt.	Accession No. 21808 CAS No. CBI (NA)
4-(Substituted naphthalenyl)azo diphenyl azo-substituted carbopolycycle azo benzene-sulfonic acid, sodium salt	Accession No. 24921 CAS No. CBI (NA)
4-(Substituted phenyl)azo biphenyl azo-substituted carbopolycycloazo benzene-sulfonic acid, sodium salt	Accession No. 26256 CAS No. CBI (NA)
4-(Substituted phenyl)azo biphenyl azo—substituted carbo- polycycle azo benzene-sulfonic acid, sodium salt	Accession No. 26267 CAS No. CBI (NA)
Phenylazoamino-hydroxynaphthalenylazobiphenylazo substituted benzene sodium sulfonate	Accession No. 26701 CAS No. CBI (NA)
[1,1'-Biphenyl]-4,4'-diamine	92-87-5
[1,1'-Biphenyl]-4,4'-diamine, dihydrochloride	531-85-1
C.I. Direct Red 28	573-58-0
C.I. Direct Black 38	1937-37-7
C.I. Direct Red 44	2302-97-8
C.I. Direct Blue 2	2429-73-4
C.I. Direct Orange 8	2429-79-0
C.I. Direct Brown 31	2429-81-4
C.I. Direct Brown 2	2429-82-5
Direct Black 4	2429-83-6
C.I. Direct Red 1	2429-84-7
C.I. Direct Brown 1:2	2586-58-5
C.I. Direct Blue 6	2602-46-2
C.I. Direct Brown 6	2893-80-3
C.I. Direct Red 37	3530-19-6
C.I. Acid Red 85	3567-65-5
C.I. Direct Green 1	3626-28-6
C.I. Direct Brown 1	3811-71-0
C.I. Direct Green 6	4335-09-5
C.I. Acid Black 94	6358-80-1
C.I. Direct Brown 27	6360-29-8
C.I. Direct Brown 154	6360-54-9
C.I. Direct Brown 74	8014-91-3
C.I. Direct Brown 95	16071-86-6

Table 5. list of banned Organiostannic (organotin) compounds

Substances	CAS No.
Tributyl tin bromide	1461-23-0
Triphenyl tin	668-34-8
Triphenyl tin bromide	1461-23-0
Triphenyl tin chloride	639-58-7
Triphenyl tin hydroxide	76-87-9
Triphenyl tin N,N-Dimethyldithiocarbamate	1803-12-9
Triphenyl tin fluoride(fentin fluoride)	379-52-2
Triphenyl tin acetate (fentin acetate)	900-95-8
Triphenyl tin fatty acid salts	18380-71-7
Triphenyl tin chloroacetate	7094-94-2
Triphenyl tin methacrylate	2155-70-6
Bis(tributyl tin) fumarate	6454-35-9
Triphenyl tin fluoride	1983-10-4
Bis(tributyl tin)2,3-dibromosuccinate	31732-71-5
Triphenyl tin acetate	56-36-0
Triphenyl tin laurate	3090-36-6
Trioctyltin chloride	2587-76-0
Triethyltin hydroxide	994-32-1
Triethyltin chloride	994-31-0
Diocyltin oxide	870-08-6
Diocyltin dichloride	3542-36-7
Diocyltin maleate	16091-18-2
Dibutyltin oxide	818-08-6
Dibutyltin dichloride;	683-18-1
Di- μ -oxo-di-n-butylstanniohydroxyborane (DBB)	75113-37-0
Tributyl tin bromide	1461-23-0

Table 6. List of banned PFOS and PFOA compounds (including salts and PFOA esters)

Substances	CAS No.
Perfluorooctane sulfonates (PFOS)	1763-23-1
PFOS Ion	45298-90-6
PFOS Potassium Salt	2795-39-3
PFOS Lithium Salt	29457-72-5
PFOS Tetraethylammonium Salt	56773-42-3
PFOS Triphenylsulfonium Salt	144089-15-6
PFOS Sodium Salt	4021-47-0
PFOS Ammonium Salt	29081-56-9
PFOS Amide	754-91-6
Perfluorooctanesulfonyl fluoride	307-35-7
C8F17SO2X (X=OH, metal salt, halide, amide and other derivatives including polymers)	Various
Compounds that contain C8F17SO2, C8F17SO3 or C8F17SO2N moieties	Various
Perfluorooctanoic acid (PFOA)	335-67-1
PFOA Ammonium Salt	3825-26-1
PFOA Sodium Salt	335-95-5
PFOA Potassium Salt	2395-00-8
PFOA Silver Salt	335-93-3
Perfluorooctanoyl fluoride	335-66-0
Methyl PFOA	376-27-2
Ethyl PFOA	3108-24-5

Table 7. List of banned Polychlorinated terphenyls (PCTs) and polychlorinated naphthalenes (PCNs)

Substance	CAS No.
PCTs, poly chlorinated terphenyls	26140-60-3 and others
Polychlorinated naphthalene	Various
Trichloronaphthalene	1321-65-9
Tetrachloronaphthalene	1335-88-2
Pentachloronaphthalene	1321-64-8
Octachloronaphthalene	2234-13-1

Table 8. List of banned PAHs

Substances	CAS No.
Naphthalene	91-20-3
Acenaphthylene	208-96-8
Acenaphthene	83-32-9
Fluorene	86-73-7
Phenanthrene	85-1-8
Anthracene	120-12-7
Fluoranthene	206-44-0
Pyrene	129-00-0
Chrysene	218-01-9
Benzo[a]anthracene	56-55-3
Benzo[b]fluoranthene	205-99-2
Benzo[j]fluoranthene	205-82-3
Benzo[k]fluoranthene	207-08-9
Benzo[a]pyrene	50-32-8
Benzo[e]pyrene	192-97-2
Dibenzo[a,h]anthracene	53-70-3
Indeno[1,2,3-c,d]pyrene	193-39-5
Benzo[g,h,i]perylene	191-24-2

Table 9. List of banned POPs

Substances		CAS No.
Annex A (Elimination)	Aldrin	309-00-2
	Alpha hexachlorocyclohexane	319-84-6
	Beta hexachlorocyclohexane	319-85-7
	Chlordane	57-74-9
	Chlordecone	143-50-0
	Decabromodiphenyl ether (commercial mixture, c-decaBDE)	1163-19-5
	Dieldrin	60-57-1
	Endrin	72-20-8
	Heptachlor	76-44-8
	Hexabromobiphenyl	36355-01-8
	Hexabromocyclododecane (HBCDD)	25637-99-4;3194-55-6; 134237-50-6; 134237-51-7; 134237-52-8
	Hexabromodiphenyl ether and heptabromodiphenyl ether	various
	Hexachlorobenzene (HCB)	118-74-1
	Hexachlorobutadiene	87-68-3
	Lindane	58-89-9
	Mirex	2385-85-5
	Pentachlorobenzene	608-93-5
	Pentachlorophenol and its salts and esters	various
	Polychlorinated biphenyls (PCB)	various
	Polychlorinated naphthalenes (PCNs)	various
Short-chain chlorinated paraffins (SCCPs)	various	
Technical endosulfan and its related isomers	115-29-7;33213-65-9; 959-98-8	
Tetrabromodiphenyl ether and pentabromodiphenyl ether	various	
Toxaphene	8001-35-2	
Annex B (Restriction)	DDT	50-29-3
	Perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride	various
Annex C (Unintentional production)	Hexachlorobenzene (HCB)	118-74-1
	Hexachlorobutadiene (HCBd)	87-68-3
	Pentachlorobenzene	608-93-5
	Polychlorinated biphenyls (PCB)	various
	Polychlorinated dibenzo-p-dioxins (PCDD)	various
	Polychlorinated dibenzofurans (PCDF)	various
	Polychlorinated naphthalenes (PCNs)	various

Table 10. List of banned Substances depleting the ozone layer

Ozone Depleting Chemicals	CAS No.	Ozone Depleting Chemicals	CAS No.
Trichlorofluoromethane (CFC-11)	75-69-4	Dichlorodifluoromethane (CFC-12)	75-71-8
Chlorotrifluoromethane (CFC-13)	75-72-9	Pentachlorofluoroethane (CFC-111)	354-56-3
Tetrachlorodifluoroethane (CFC-112)	76-12-0	1,1,2,2-Tetrachloro-1,2-difluoroethane (CFC-112) 1,1,1,2-Tetrachloro-2,2-difluoroethane (CFC-112a)	76-12-0 76-11-9
Trichlorotrifluoroethane (CFC-113)	76-13-1	1,1,2-Trichloro-1,2,2 trifluoroethane (CFC-113) 1,1,1-Trichloro-2,2,2 trifluoroethane (CFC-113a)	76-13-1 354-58-5
Dichlorotetrafluoroethane (CFC-114)	76-14-2	Monochloropentafluoroethane (CFC-115)	76-15-3
Heptachlorofluoropropane (CFC-211)	422-78-6	1,1,1,2,2,3,3-Heptachloro-3-fluoropropane (CFC-211aa) 1,1,1,2,3,3,3-Heptachloro-2-fluoropropane (CFC-211ba)	135401-87-5 422-78-6 422-81-1
Hexachlorodifluoropropane (CFC-212)	3182-26-1	Pentachlorotrifluoropropane (CFC-213)	2354-06-5; 134237-31-3
Tetrachlorotetrafluoropropane (CFC-214)	29255-31-0	1,2,2,3-Tetrachloro-1,1,3,3-tetrafluoropropane (CFC-214aa) 1,1,1,3-Tetrachloro-2,2,3,3-tetrafluoropropane (CFC-214cb)	2268-46-4 -
Trichloropentafluoropropane (CFC-215)	1599-41-3	1,2,2-Trichloropentafluoropropane (CFC-215aa) 1,2,3-Trichloropentafluoropropane (CFC-215ba) 1,1,2-Trichloropentafluoropropane (CFC-215bb) 1,1,3-Trichloropentafluoropropane (CFC-215ca) 1,1,1-Trichloropentafluoropropane (CFC-215cb)	1599-41-3 76-17-5 - - 4259-43-2
Dichlorohexafluoropropane (CFC-216)	661-97-2	Monochloroheptafluoropropane (CFC-217)	422-86-6;76-18-6
Dibromodifluoromethane (Halon 1202)	75-61-6	Bromochlorodifluoromethane (Halon 1211)	353-59-3
Bromotrifluoromethane (Halon 1301)	75-63-8	Dibromotetrafluoroethane (Halon 2402)	124-73-2
Tetrachloromethane (carbon tetrachloride)	56-23-5	1,1,1-Trichloroethane (methyl chloroform) and its isomers except 1,1,2-trichloroethane	71-55-6
Dibromotrifluoropropane	431-21-0	Bromotetrafluoropropane	679-84-5
Tribromofluoropropane	75372-14-4	Dibromodifluoropropane	460-25-3
Bromotrifluoropropane	421-46-5	Dibromofluoropropane	51584-26-0
Bromodifluoropropane	-	Bromofluoropropane	1871-72-3
Bromochloromethane	74-97-5	Sulfur hexafluoride	2551-62-4
Bromomethane (methyl bromide)	74-83-9	Bromoethane (ethyl bromide)	74-96-4
1-Bromopropane (n-propyl bromide)	106-94-5	Trifluoroiodomethane (trifluoromethyl iodide)	2314-97-8

Ozone Depleting Chemicals	CAS No.
Chloromethane (methyl chloride)	74-87-3
Bromodifluoromethane	1511-62-2
Tetrabromodifluoroethane	306-80-9
Dibromotrifluoroethane	354-04-1
Tribromodifluoroethane	–
Bromotrifluoroethane	421-06-7
Bromodifluoroethane	420-47-3
Hexabromodifluoropropane	–
Tetrabromotrifluoropropane	–
Dibromopentafluoropropane	431-78-7
Pentabromodifluoropropane	–
Tribromotrifluoropropane	–
Bromopentafluoropropane	460-88-8
Tribromodifluoropropane	70192-80-2
Chlorodifluoromethane (HCFC-22)	75-45-6
Tetrachlorodifluoroethane (HCFC-121)	134237-32-4
1,1,1,2-Tetrachloro-2-fluoroethane (HCFC-121a)	354-11-0
1,2,2-Trichloro-1,1-difluoroethane (HCFC-122)	354-21-2
1,1,1-Trichloro-2,2-difluoroethane (HCFC-122b)	354-12-1
Dichloro-1,1,2-trifluoroethane	90454-18-5
1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a)	354-23-4
Chlorotetrafluoroethane (HCFC-124)	63938-10-3
1-chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)	354-25-6
1-Fluoro-1,2,2-trichloroethane	359-28-4
1,1,1-trichloro-2-fluoroethane (HCFC-131b)	2366-36-1
1,2-Dichloro-1,2-difluoroethane (HCFC-132)	431-06-1
1,2-Dichloro-1,1-difluoroethane (HCFC-132b)	1649-08-7
Chlorotrifluoroethane (HCFC-133)	1330-45-6, 431-07-2

Ozone Depleting Chemicals	CAS No.
Dibromodifluoroethane	1868-53-7
Bromodifluoroethane	373-52-4
Tribromodifluoroethane	–
Bromotetrafluoroethane	124-72-1
Dibromodifluoroethane	75-82-1
Dibromodifluoroethane	358-97-4
Bromodifluoroethane	762-49-2
Pentabromodifluoropropane	–
Tribromotetrafluoropropane	–
Bromohexafluoropropane	2252-78-0
Tetrabromodifluoropropane	–
Dibromotetrafluoropropane	–
Tetrabromodifluoropropane	–
Dichlorodifluoroethane (HCFC-21)	75-43-4
Chlorodifluoroethane (HCFC-31)	593-70-4
1,1,2,2-Tetrachloro-1-fluoroethane (HCFC-121)	354-14-3
Trichlorodifluoroethane (HCFC-122)	41834-16-6
1,1,2-Trichloro-1,2-difluoroethane (HCFC-122a)	354-15-4
Dichlorotrifluoroethane (HCFC-123)	34077-87-7
2,2-dichloro-1,1,1-trifluoroethane	306-83-2
1,1-dichloro-1,2,2-trifluoroethane (HCFC-123b)	812-04-4
2-chloro-1,1,1,2-tetrafluoroethane	2837-89-0
Trichlorodifluoroethane (HCFC-131)	27154-33-2, 134237-34-6
1,1,2-Trichloro-1-fluoroethane (HCFC-131a)	811-95-0
Dichlorodifluoroethane (HCFC-132)	25915-78-0
1,1-Dichloro-2,2-difluoroethane (HCFC-132a)	471-43-2
1,1-Dichloro-1,2-difluoroethane (HCFC-132c)	1842-05-3
1-Chloro-1,2,2-trifluoroethane (HCFC-133)	1330-45-6

Ozone Depleting Chemicals	CAS No.
2-Chloro-1,1,1-trifluoroethane (HCFC-133a)	75-88-7
Dichlorofluoroethane (HCFC-141)	25167-88-8
1,1-Dichloro-2-fluoroethane (HCFC-141a)	430-53-5
Chlorodifluoroethane (HCFC-142)	25497-29-4
1-Chloro-1,1-difluoroethane (HCFC-142b)	75-68-3
Chlorofluoroethane (HCFC-151)	110587-14-9
1-Chloro-1-fluoroethane (HCFC-151a)	1615-75-4
1,1,1,2,2,3-Hexachloro-3-fluoropropane (HCFC-221ab)	422-26-4
1,1,1,3,3-pentachloro-2,2-difluoropropane (HCFC-222ca)	422-49-1
Tetrachlorotrifluoropropane (HCFC-223)	134237-37-9
1,1,1,3-Tetrachloro-2,2,3-trifluoropropane (HCFC-223cb)	422-50-4
1,3,3-Trichloro-1,1,2,2-tetrafluoropropane (HCFC-224ca)	422-54-8
1,1,1-Trichloro-2,2,3,3-tetrafluoropropane (HCFC-224cc)	422-51-5
2,2-Dichloro-1,1,1,3,3-pentafluoropropane (HCFC-225aa)	128903-21-9
1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225bb)	422-44-6
1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)	507-55-1
1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC-225da)	431-86-7
1,1-Dichloro-1,2,3,3,3-pentafluoropropane (HCFC-225eb)	111512-56-2
2-Chloro-1,1,1,3,3,3-hexafluoropropane (HCFC-226da)	431-87-8
1,1,1,2,3-pentachloro-2-fluoro-propane (HCFC-231bb)	421-94-3
1,1,1,3-Tetrachloro-3,3-difluoropropane (HCFC-232fc)	460-89-9
1,1,1-Trichloro-3,3,3-trifluoropropane (HCFC-233fb)	7125-84-0 7125-83-9

Ozone Depleting Chemicals	CAS No.
1-Chloro-1,1,2-trifluoroethane (HCFC-133b)	421-04-5
1,2-Dichloro-1-fluoroethane (HCFC-141)	430-57-9
1,1-Dichloro-1-fluoroethane (HCFC-141b)	1717-00-6
2-Chloro-1,1-Difluoroethane (HCFC-142)	338-65-8
1-Chloro-1,2-difluoroethane (HCFC-142a)	338-64-7
1-Chloro-2-fluoroethane (HCFC-151)	762-50-5
Hexachlorofluoropropane (HCFC-221)	134237-35-7, 29470-94-8
Pentachlorodifluoropropane (HCFC-222)	134237-36-8
1,2,2,3,3-pentachloro-1,1-difluoropropane (HCFC-222aa)	422-30-0
1,1,3,3-Tetrachloro-1,2,2-trifluoropropane (HCFC-223ca)	422-52-6
Trichlorotetrafluoropropane (HCFC-224)	134237-38-0
1,1,3-Trichloro-1,2,2,3-tetrafluoropropane (HCFC-224cb)	422-53-7
Dichloropentafluoropropane (HCFC-225)	127564-92-5
2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC-225ba)	422-48-0
3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)	422-56-0
1,1-Dichloro-1,2,2,3,3-pentafluoropropane (HCFC-225cc)	13474-88-9
1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225ea)	136013-79-1
Chlorohexafluoropropane (HCFC-226)	134308-72-8
Pentachlorofluoropropane (HCFC-231)	134190-48-0
Tetrachlorodifluoropropane (HCFC-232)	134237-39-1
Trichlorotrifluoropropane (HCFC-233)	134237-40-4
Dichlorotetrafluoropropane (HCFC-234)	127564-83-4

Ozone Depleting Chemicals	CAS No.
1,2-Dichloro-1,2,3,3-tetrafluoropropane (HCFC-234db)	425-94-5
1-Chloro-1,1,3,3,3-pentafluoropropane (HCFC-235fa)	460-92-4
1,1,2,3-Tetrachloro-1-fluoropropane (HCFC-241db)	666-27-3
1,3,3,Trichloro-1,1-difluoropropane (HCFC-242fa)	460-63-9
1,1-dichloro-1,2,2-trifluoropropane	7125-99-7
3,3-dichloro-1,1,1-trifluoropropane	460-69-5
3-Chloro-1,1,2,2-tetrafluoropropane (HCFC-244ca)	679-85-6
Trichlorofluoropropane (HCFC-251)	134190-51-5
1,1,2-Trichloro-1-fluoropropane (HCFC-251dc)	421-41-0
1,3-Dichloro-1,1-difluoropropane (HCFC-252fb)	819-00-1
3-chloro-1,1,1-trifluoropropane (HCFC-253fb)	460-35-5
1,1-Dichloro-1-fluoropropane (HCFC-261fc)	7799-56-6
Chlorodifluoropropane (HCFC-262)	134190-53-7
2-Chloro-1,3-difluoropropane (HCFC-262da)	102738-79-4
Chlorofluoropropane (HCFC-271)	134190-54-8
1-Chloro-1-fluoropropane (HCFC-271fb)	430-55-7

Ozone Depleting Chemicals	CAS No.
Chloropentafluoropropane (HCFC-235)	134237-41-5
Tetrachlorofluoropropane (HCFC-241)	134190-49-1
Trichlorodifluoropropane (HCFC-242)	134237-42-6
Dichlorotrifluoropropane (HCFC-243)	134237-43-7
2,3-dichloro-1,1,1-trifluoropropane	338-75-0
Chlorotetrafluoropropane (HCFC-244)	134190-50-4
1-Chloro-1,1,2,2-tetrafluoropropane (HCFC-244cc)	421-75-0
1,1,3-Trichloro-1-fluoropropane (HCFC-251fb)	818-99-5
Dichlorodifluoropropane (HCFC-252)	134190-52-6
Chlorotrifluoropropane (HCFC-253)	134237-44-8
Dichlorofluoropropane (HCFC-261)	134237-45-9
1,2-Dichloro-2-fluoro-propane (HCFC-261ba)	420-97-3
1-Chloro-2,2-difluoropropane (HCFC-262ca)	420-99-5
1-Chloro-1,1-difluoropropane (HCFC-262fc)	421-02-3
2-Chloro-2-fluoropropane (HCFC-271ba)	420-44-0

	Document name: Management Standard for Environment-related Substances			Document no. 10000-0162	
	Dept.: CE	Author: SC Wang	Date: 2018.11.12	Page:	25 of 26 Rev.:25.1

9. REFERENCES

1. Directive 2011/65/EU, restriction of the use of certain hazardous substances (RoHS), amended by Directive 2014/1/EU, Directive (EU) 2015/863, Directive (EU) 2018/736, Directive (EU) 2018/737, Directive (EU) 2018/738, Directive (EU) 2018/739, Directive (EU) 2018/740, Directive (EU) 2018/741, Directive (EU) 2018/742.
2. EN 50581
3. IEC 62321
4. Directive 2006/66/EC, batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC, amended by Directive 2008/12/EC, Directive 2008/103/EC, Directive 2013/56/EU.
5. Directive 94/62/EC on packaging and packaging waste, amending by Directive 2004/12/EC, Directive 2005/20/EC, Regulation (EC) No 219/2009, Directive 2013/2/EU.
6. Regulation (EC) No 1907/2006, Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)
7. Stockholm Convention on Persistent Organic Pollutants.
8. Montreal Protocol on Substances that Deplete the Ozone Layer.
9. REGULATION (EC) No 2037/2000 on substances that deplete the ozone layer.
10. Regulation (EU) No 528/2012, making available on the market and use of biocidal products.
11. Proposition 65, the Safe Drinking Water and Toxic Enforcement Act of 1986.
12. EU Decision 2009/251/EC, requiring Member States to ensure that products containing the biocide dimethylfumarate are not placed or made available on the market.
13. REGULATION (EC) No 842/2006 on certain fluorinated greenhouse gases.
14. EN 1811:2011 European Standard specifying a reference test method for release of nickel from products intended to come into direct and prolonged contact with skin which was approved by the European Committee for Standardization.
15. AfPS GS 2014:01 PAK
16. Toy Safety Directive 2009/48/EC
17. EU phthalates Directive 2005/84/EC.

	Document name: Management Standard for Environment-related Substances			Document no. 10000-0162	
	Dept.: CE	Author: SC Wang	Date: 2018.11.12	Page:	26 of 26 Rev.:25.1

Revision History

REV.	Description	Date
22	<ol style="list-style-type: none"> 1. Revise cadmium, lead, and mercury exemptions according to 2011/534/EU amending Directive. 2. Combined halogen requirements. 3. Revised the layout for some sections. 	10/15/2013
23	<ol style="list-style-type: none"> 1. Add banned substance BNST. 2. Add Banned POPs, integrate biocides, dioxin and furans. 3. Extend implement date of brominated organic compounds and some phthalates. 4. Update PAHs threshold limits. 5. Banned some organophosphate compounds for flame retardants. 6. Change the threshold limit for hexavalent chromium in plastic from N.D to 100 ppm. 	12/26/2014
	<ol style="list-style-type: none"> 1. Modify MDL requirement for cadmium, lead, mercury and hexavalent chromium. (MDL≤5 ppm) 	1/15/2015
24	<ol style="list-style-type: none"> 1. Adapt to meet the latest RoHS regulation. 2. Change PBBs/PBDEs threshold limit to 100 ppm. 3. Add banned phthalates. 4. Change HBCDD threshold limit to 100 ppm. 5. Add banned halogenated diphenyl methane compounds. 5. Add 5-1-14 Halogenated diphenyl methane compounds 	01/23/2017
25	<ol style="list-style-type: none"> 1. Add requirement for enclosed plastic for adapters. 2. Updated RoHS exemptions expiry dates base on Directive (EU) 2018/736, Directive (EU) 2018/737, Directive (EU) 2018/738, Directive (EU) 2018/739, Directive (EU) 2018/740, Directive (EU) 2018/741, and Directive (EU) 2018/742. 3. Renew requirement for formaldehyde in plywood. 4. Move restriction on surfactants, trichloroethylene, and tetrachloroethylene to 10000-2009. 5. Add restriction on Di(2-propylheptyl) phthalate(DPHP). 6. Editorial changes. 	10/05/2018
25.1	<ol style="list-style-type: none"> 1. Typo correction. 2. Modify PVC exemptions. 3. Reorganized POPs substance table. 4. Remove arsenic exemption for copper foils. 5. Modify scope for plastic case halogen free plan to exclude wall mount adapters due to material safety regulation limitation. 	11/12/2018