Supplier Requirements for Product Environmental Compliance

1. SCOPE

1.1. Content

This specification covers the applicable documents, definitions and requirements for supplier product environmental compliance.

1.2. Overview

The supplier requirements specified cover: 1) the elimination of “Banned Substances”, 2) the controlled usage of “Restricted Substances”, 3) the notification on the use/non use of certain “Substances of Concern”, and 4) the disclosure of material content information.

1.3. Application

All material, parts, components and/or products (including packaging materials where indicated) supplied to TE Connectivity (TE), whether finished or semi-finished shall be subject to the requirements specified herein.

The scope of products required to be compliant with a particular Compliance Definition may vary by Business Units. Furthermore, there may be additional Business Unit specific requirements on product environmental compliance. Given these factors, each Business Unit may develop and use supporting specifications and / or procedures to ensure compliance with this specification and any additional Business Unit or industry requirements; however, such documentation shall not conflict with or supersede this specification.

2. TABLE OF CONTENTS

Table 1

| Indicates Change

3. APPLICABLE DOCUMENTS

The following documents constitute a part of this specification to the extent specified herein. Unless otherwise specified, the latest edition of the document applies.

3.1. Specifications and Standards

NOTE
Available on the TE Supplier Portal referenced in Paragraph 3.4.

A.	100 Series	Material Specifications, as applicable
B.	112 Series	Finish Specifications, as applicable
C.	TEC-112-65	Plating, Tin (Whisker Mitigated, Lead-Free), Electrodeposited
D.	TEC-207-14	Recycling Symbols and Codes for Packaging Material
E.	TEC-1005	TE Total Quality Management Requirements for Suppliers

3.2. Form

5081-2	Environmental Related Substances, which is a compilation list of banned, restricted and declarable substances under global legislations as well as relevant electronic industry lists.

3.3. Laws and Regulations (including all amendments)

TE's requirements for suppliers are based on the following laws and certain additional industry and customer requirements.

NOTE
The following references do not form an exhaustive list and may be located on the applicable website identified in Paragraph 3.4.

A. International Treaty

1. Montreal Protocol on Substances that Deplete the Ozone Layer, ISBN 92-807-1888-6
2. OSPAR: Oslo-Paris Convention For The Protection Of The Marine Environment Of The North-East Atlantic
3. ISPM-15: Global details of import and export regulations
4. Stockholm Convention on Persistent Organic Pollutants (POPs) by United Nations Environment Program (UNEP)

B. European Union

1. Austria BGB I 1990/194: Formaldehydverordnung, §2, 12/2/1990
2. Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation
3. Directive 2000/53/EC: ELV (End of Life Vehicle)
4. Directive 2011/65/EU: RoHS (Restrictions on the Use of Certain Hazardous Substances in electrical and electronic equipment) recast

NOTE
RoHS recast was published by the European Parliament and the Council of the European Union on 8 June 2011. EEE Product scope under RoHS recast is broadened from 8 to 11 categories, including the progressive introduction of 3 new categories towards July 2019. RoHS recast continues to restrict the same hazardous substances with same thresholds as RoHS, however, DEHP, DBP, BBP and HBCDD have been prioritized to be reviewed for possible inclusion in near future. RoHS recast becomes a CE marking directive, requiring finished EEE shipped to EU to bear the CE mark, and the obligation for the manufacturer to keep a Declaration of Conformity and technical files to document conformity to the directive. All these new requirements may trigger more demands for test reports and systematic management in the supply chain.

5. Directive 2012/19/EU: WEEE (Waste Electrical and Electronic Equipment)
6. Directive 2006/66/EC: On batteries and accumulators and waste batteries and accumulators
7. Directive 2009/251/EC: Restricting Use of Dimethyl Fumarate (DMF)
8. Directive 94/62/EC: Packaging and Packaging Waste
9. FLG No II 447/2002: Ordinance by the Federal Minister for Agriculture, Forestry, Environment and Water: Management on Bans and Restrictions for Partly Fluorinated and Fully Fluorinated Hydrocarbons and Sulphur Hexafluoride
10. Regulation (EC)1907/2006: Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) and establishing a European Chemicals Agency
11. Regulation (EC)1005/2009: Substances that Deplete the Ozone Layer
12. Regulation (EC) No 1107/2009 of the European Parliament and of the Council of 21 October 2009 concerning the placing of plant protection products on the market and repealing Council Directives 79/117/EEC and 91/414/EEC
13. Regulation (EU) No 517/2014 of the European Parliament and of the Council of 16 April 2014 on fluorinated greenhouse gases and repealing Regulation (EC) No 842/2006.
14. Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC (PCBs).
15. Regulation (EU) No 757/2010 of 24 August 2010 amending Regulation (EC) No 850/2004 of the European Parliament and of the Council on persistent organic pollutants as regards Annexes I and III Text with EEA relevance (PFOS).
16. Regulation (EU) No 519/2012 of 19 June 2012 amending Regulation (EC) No 850/2004 of the European Parliament and of the Council on persistent organic pollutants as regards Annex I.
17. Swiss Ordinance on Reduction of Risk from Chemical Products.
18. Switzerland Ordinance on Substances: Switzerland Chemikalien Rest Risiko Verordnung from 1 July, 2005.
19. Regulation (EU) No 722/2012 of 8 August 2012 concerning particular requirements as regards the requirements laid down in Council Directives 90/385/EEC and 93/42/EEC with respect to active implantable medical devices and medical devices manufactured utilizing tissues of animal origin.
20. Commission 2010/571/EU amending, for the purposes of adapting to scientific and technical progress, the Annex to Directive 2002/95/EC of the European Parliament and of the Council as regards exemptions for applications containing lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers
21. Directive 93/465/EC: Council Decision of 22 July 1993 concerning the modules for the various phases of the conformity assessment procedures and the rules for the affixing and use of the CE conformity marking, which are intended to be used in the technical harmonization directives.
22. Norwegian Regulation No. 550 amending Product Regulation No. 922 of 2004 with restriction on consumer products that contain perfluorooctanoic acid (PFOA), 27 May 2013.
23. Austria: Batteries Ordinance 159/2008 - Amendment - (on end of exemptions, removing waste batteries etc.) Ordinance 109/2015.

C. Asia Pacific

1. China RoHS (2007 No.39): Measures for Administration of Prevention and Control of Pollution by Electronic Information Products
2. China RoHS Voluntary Cert: People's Republic of China Circular on Issuing the Opinions on the Implementation of Unified Voluntary Certification Program for Electronic Information Products Subject to Pollution Control G.R.Z.L. No. 28 (2010)
3. China RoHS Voluntary Cert: Implementation Rules for Voluntary Certification in Controlling Pollution from Electronic Information Products Uniformly Promoted by the State (CNCA-RoHS-0101:2011)
4. GB 18455-2001: Packaging Recycling Marks
5. Japan: Law Concerning the Protection of the Ozone Layer through the Control of Specified Substances and others
6. Japan: Laws for the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors, 1986
7. Japan: The Law Concerning the Examination and Regulation of Manufacture etc. of Chemical Substances
8. Japan: Preventive measures against health impairment due to asbestos, 2007
9. Japan: Chemical Substance Control Law (Kashin-ho, Japan REACH)
10. GB/T 26572-2011: Requirements of Concentration Limits for Certain Restricted Substances in Electrical and Electronic Products
11. SJ-T 11364-2014: Marking for the restriction of the use of hazardous substances in electronic and electrical product.
12. GB/T26125-2011: Electrical and electronic products – Determination of six regulated substances (lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, polybrominated diphenyl ethers)
13. SJ/T 11388-2009: General Guidelines of Environment-friendly Use Period of Electronic Information Products

D. North America

1. California Prop 65: The Safe Drinking Water and Toxic Enforcement Act of 1986
2. California Assembly Bill No 3025: Solid Waste: polystyrene loosefill packaging
3. Canada Health Notice on Identification of Medical Devices Containing DEHP or BPA
4. Canada: Canadian Environmental Protection Act (SOR/SOR/2008-178)
5. Canada: Prohibition of Certain Toxic Substances Regulations
6. Canada: Products Containing Mercury Regulations
7. US: TSCA; 29 CFR 1910.1001-1052
8. US: Clean Air Act
9. US: Toxics in Packaging Clearinghouse (TPCH) of 1992
10. US: Mercury-Containing and Rechargeable Battery Management Act (PUBLIC LAW 104–142—MAY 13, 1996)

E. Industry Standards

1.	IEC 62321:	Electrotechnical Products – Determination of Levels of Six Regulated Substances (Lead, Mercury, Cadmium, Hexavalent Chromium, Polybrominated Biphenyls, Polybrominated Diphenyl Ethers)
2.	IEC 62474:	Material Declaration for Products of and for the Electrotechnical Industry
3.	IECQ QC080000:	Electrical and Electronic Components and Products Hazardous Substance Process Management System Requirements
4.	JESD201:	Environmental Acceptance Requirements for Tin Whisker Susceptibility on Tin and Tin Alloy Surface Finishes
5.	JESD22A121.01:	Test Method for Measuring Whisker Growth on Tin and Tin Alloy Surface Finishes
6.	JP002:	Current Tin Whiskers Theory and Mitigation Practice Guidelines
7.	JIG-101:	Joint Industry Guide (JIG) Material Composition Declaration for Electrotechnical Products
8.	JIG-201:	Joint Industry Guide (JIG) Material Composition Declaration for Packaging of Electrotechnical Products
9.	German GS Mark:	GS (Geprüfte Sicherheit) safety testing product certification, which includes Polyaromatic Hydrocarbons (PAHs) tests
10.	EN50581	Guiding Standard for Compliance with RoHS2 Technical Documentation Requirements

3.4. Web Sites

A.	http://europa.eu/	Europa - The European Union On-Line
B.	http://echa.europa.eu/	ECHA (European Chemicals Agency)
C.	https://supplierportal.te.com	TE Supplier Portal
D.	http://www.miit.gov.cn	Ministry of Industry and Information Technology of the People's Republic of China
E.	http://www.jedec.org	JEDEC

4. DEFINITIONS

A. **Banned Substance** - Substances whose intentional use is not permitted in any quantity for all indicated applications are defined as "Banned Substances". If a threshold value is indicated, it applies only to impurities (not intentionally added) and the amount of the impurity of the substance must be less than the threshold value.

TE Hazardous Substance List (Table 2) identifies the Banned Substances (classified as "B") and the indicated applications.

B. **Homogeneous Material** - means one material of uniform composition throughout or a material, consisting of a combination of materials, that cannot be disjointed or separated into different materials by mechanical actions such as unscrewing, cutting, crushing, grinding and abrasive processes;

Examples include individual types of plastics, ceramics, glass, metals, alloys, paper, plating layer, board, resins and coatings. Consider the following:

1. A plastic component is a "Homogeneous Material" assuming it is of uniform composition throughout and is neither coated with nor has any other material attached to it which can be mechanically disjointed or separated.

2. An electrical component such as a resistor would consist of a variety of “Homogeneous Materials“ that could include ceramic, the lead-frame alloy and any plating applied to the lead-frame. Each of these must be treated as a separate “Homogeneous Material“.
3. TE requires that each plating layer or substrate metal is treated as an individual homogeneous material by TE suppliers.

C. **Intentionally Added** - The deliberate use of a substance in the formulation of a material/part where the continued presence of it is desired to provide a specific characteristic, appearance or quality, or in the manufacturing process to achieve certain functions. If a material is “Intentionally Added” at any point in the supply chain, it must be consistently treated as “Intentionally Added” through the final product assembly.

Any catalysts or processing aids that are introduced during the manufacturing process and remain as part of the product are always considered “Intentionally Added”.

D. **Material** - Chemical compounds and preparations that are supplied for the production of parts. Examples of “Materials” are: plastics/resins, metals, coatings, paint, adhesives, etc.

E. **Part** - Mechanical parts, electrical devices or assembles (including sub-parts), and components and/or products which are supplied to TE for use in their applications.

REACH refers to these as *Articles*.

F. **Preparation** - means a mixture or solution composed of two or more substances.

G. **Restricted Substance** - Substances that are prohibited for intentional use unless expressly stipulated otherwise in a regulatory exemption or by written approval from TE (such as in a TE specification or a Purchase Order). If a threshold value is indicated, it applies only to impurities (not intentionally added) and the amount of the impurity of the substance must be less than the threshold value.

TE Hazardous Substance List (Table 2) identifies the Restricted Substances (classified as “R”), the indicated applications and the thresholds; Table 3 identifies the valid RoHS exemptions.

H. **Substance** - means a chemical element and its compounds in the natural state or obtained by any manufacturing process, including any additive necessary to preserve its stability and any impurity deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition. A substance is either a material or a constituent of a material. Each substance will have a unique Chemical Abstracts Service (CAS) Registry Number assigned to it.

I. **Substance of Concern** - Certain substances in specific materials/parts supplied to TE that are required to be declared if present and whose use may be prohibited by TE due to Industry / Business Unit specific requirements; e.g., Halogens to support industry Low-Halogen initiatives, a stricter threshold for certain heavy metals than the RoHS threshold to satisfy Business Unit requirements or contains no REACH SvHC above threshold to support specific Business Unit expectation.

These substances are allowed unless explicitly restricted by TE via specification or Purchase Order.

In anticipation of future restrictions, TE may request suppliers to eliminate usage of these substances following the *Change Procedure* outlined herein.

TE Hazardous Substance List (Table 2) identifies the Substances of Concern (classified as “C”), the indicated applications and the thresholds.

J. **Supplier Material Declaration** - A Material Declaration discloses all (100%) of the homogeneous materials that are found in the supplied materials/parts and all (100%) of the substances that are contained in those materials. Materials or substances (whether “Intentionally Added” or not) contained in materials/parts purchased by a supplier (and in turn incorporated into supplier’s products) must be disclosed.

It is recognized that in certain situations, 100% disclosure by CAS Registry Number may not be feasible due to confidentiality or proprietary nature of the information. TE allows for a portion of the disclosure to be considered confidential, but requires that suppliers in those situations indicate the "non-use" of any Substances on the Environmental Related Substances List (Form 5081-2).

Note that the list of substances included in the Environmental Related Substances List is a more extensive list than those indicated in TE Hazardous Substance List (Table 2) herein.

K. **Type A Part** – TE purchased part / material, for which ALL materials / substances are neither "completely provided" nor "precisely specified" by TE (see Type B Part definition for the ONLY four scenarios of what constitutes "completely provided" or "precisely specified").

Type A Part is commonly referred to as "commercial items" or "off-the-shelf items".
In certain cases, TE may "provide" or "precisely specify" ONLY a PORTION of the materials / substances of the part / material being supplied and the supplier specifies or purchases the remainder of the part. For purposes of this specification, the part / material being supplied in these cases is considered to be a Type A part and the requirements for Type A part herein would apply to those portions of the part which are not "provided" or "precisely specified" via TE specification.
An example of this would be cable assemblies; where TE might provide certain components (such as connectors), where-as other components of the assembly (cable. etc.) would not be provided. The cable assemblies in these cases would be considered a Type A Part and the requirements for Type A part herein applies to the components not "provided" or "precisely specified" by TE.

L. **Type B Part** - TE purchased part / material, within which ALL materials / substances are either "completely provided" or "precisely specified" by TE. There are only four scenarios where a part / material could claim to be a Type B Part.

1. TE supplies ALL the materials for the purchased item - This would typically be an assembler where ALL components of assembly are provided to Supplier. The supplier adds nothing to the part that would impact the material content or compliance.
2. Purchased part is a molded component (e.g., housing) - Where TE specifies the exact resin by its trade name, supplier, grade, colorant, regrind, etc., and typically by a TE part number.
3. Purchased part is a stamped or formed metal (e.g., contact) - Where TE exactly specifies the metal content by a 100 Series Material Specification.
4. Purchased part is a plated metal component (e.g., contact) - Where TE either provides the unplated component or exactly specifies the metal content per 100 Series Material Specification **and** the plating deposit is exactly specified by a 112 Series Finish Specification.

NOTE
Certain parts provided by a Supplier may be Type A Part while other parts supplied by the same Supplier may be Type B Part. It is important that suppliers understand which Type(s) of parts/materials being provided to TE and conform to the requirements for that Type(s).

5. REQUIREMENTS

5.1. For Type A Parts ONLY

A. All materials/parts supplied to TE shall comply with the requirements listed in TE Hazardous Substance List (Table 2).

B. Suppliers of materials/parts to TE shall:

1. Provide a statement in a manner prescribed by TE certifying that supplied materials/parts are in compliance with the requirements listed in TE Hazardous Substance List (Table 2).
    a. It is also the responsibility of the supplier to update this compliance information if the stated compliance status must be changed; either because of an erroneous initial

assessment or due to product changes that have been approved by TE in accordance with the *Change Procedure* stated herein.

b. Suppliers shall, upon request from TE, provide documentation to demonstrate the basis for the compliance statement provided to TE.

An example of this documentation may be the physical test results of the material in accordance with the *Product/Material Test* requirements stated herein.

2. Complete a Supplier Material Declaration in a manner prescribed by TE upon request.

a. It is also the responsibility of the supplier to update material declaration(s) if any information previously reported is changed or new information becomes available to make the declaration more accurate in accordance with the *Change Procedure* stated herein.

b. Suppliers shall, upon request from TE, provide documentation to demonstrate the basis for the Material Declaration supplied.

An example of this documentation may be the physical test results of the material in accordance with the *Product/Material Test* requirements stated herein.

NOTE
It is the responsibility of the direct supplier (Tier 1) to TE to ensure compliance to Table 2. The direct supplier is responsible for declaring the compliance of any materials/parts provided regardless of where the intentional additions or trace amounts were introduced into the supply chain, through and including the raw material supplier. The direct supplier is also responsible for providing the material content information of such materials/parts when TE requests full material disclosure (Supplier Material Declaration).

5.2. For Type B Parts ONLY

A. All materials/parts supplied to TE shall be in conformance to the applicable TE specification(s) specifying material content and compliance requirements.

Suppliers are required to supply product that is in conformance with the Requirements defined on the Purchase Order and the Terms and Conditions of the Purchase Order. There may be numerous specifications associated with a Purchase Order.

B. Suppliers of materials/parts to TE shall provide a statement in a manner prescribed by TE certifying supplied materials/parts exactly conform to TE specification, and that no substances have been added during any manufacturing process that are banned or restricted per TE Hazardous Substance List (Table 2) without the written approval of TE.

NOTE
Requirements in 5.1 and 5.2 apply to Type A Parts ONLY and Type B Parts ONLY respectively. Requirements from 5.3 to 5.10 apply to both Type A and Type B Parts.

5.3. Tin Whisker Mitigation

A. All suppliers of materials/parts that are Tin electroplated shall employ Tin whisker mitigation practices in accordance with JEDEC Specifications JESD201, JESD22A121.01 and JP002, unless specified otherwise by TE.

B. TE Procurement may request appropriate test data to support a claim of adequate whisker mitigation in accordance with Finish Specifications (eg: TEC-112-65).

5.4. Change Procedure

A. No Supplier of materials/parts to TE shall effect any change that will alter compliance to the requirements listed in TE Hazardous Substance List (Table 2) without express written approval from TE.

1. If such a change is approved in writing by TE, the supplier may be required to issue a new part number for the re-formulated material/part and, for Type A Parts only, provide a new Supplier Material Declaration, as requested.
2. In addition, where TE has specified a particular manufacturer and/or specific material composition, any deviation requires approval in writing.

NOTE
This would include the substitution of reground or recycled material for "virgin".

5.5. Product/Material Test

A. Although TE does not require physical test results to be supplied for all materials/parts, suppliers may be requested to provide:

1. Results of the materials/parts testing to demonstrate the basis for the Compliance Statement provided to TE.
2. Results of the materials/parts testing to demonstrate the basis for the Material Declaration provided to TE.
3. Test data to support a claim of adequate whisker mitigation, where suppliers are providing materials/parts that are Tin electroplated.
4. Test data to support a claim of compliance with all regulations concerning radioactive substances in metals, specifically regarding stainless steels or other nickel bearing alloy contamination of Cobalt 60.

B. Suppliers are responsible for assuring the validity of the provided test report and all tests shall meet the following requirements:

1. Contents: All test reports should have below contents:
    1) Date of test report, name of tester and location of test laboratory;
    2) Supplier Part Number of test sample with a serial number and revision or version, lot, or batch number;
    3) Description of test sample as well as actual tested part;
    4) The analytical test method used for each sample;
    5) Test results should include actual measured amount and TE limits specified in TEC-138-702. The test results should indicate pass or fail (or inconclusive for XRF only). Test method detection limit and calibration to the substance tested should also been shown;
    6) A photograph highlighting the actual tested part of the sample is recommended.
2. Test Methods: Materials tested should be as homogeneous as possible. All tests should be performed using methods referenced in industrial standards as recommended below:

RoHS restricted substances:	IEC 62321
Low Halogen compounds:	EN 14582:2007, EPA SW-846 5050/9056

NOTE
TE requires that each plating layer or substrate metal is treated as an individual homogeneous material by TE suppliers whenever handling TE test request.

3. Test Laboratory: All tests shall be performed in a nationally or internationally certified laboratory with ISO 17025 certification, whose accredited testing scope includes the subject tested substances, or other TE approved laboratory.

NOTE
When Business Units have special testing requirements, these requirements will be communicated to suppliers and may be in addition to those listed above.

4. Test Report Validity: Test reports may be requested to be updated periodically.

C. Verification Testing

1. TE has a Verification Testing program to audit products for compliance.

   The program uses certain types of testing, such as X-Ray Fluorescence (XRF) technology followed up with chemical testing, as needed.

2. It is TE's expectation that our Suppliers implement a similar program to routinely test and audit their supply chain for the products that TE purchases. This would ensure that no discrepancies are discovered at TE, and that all subsequent consequences can be avoided. TE reserves the right to request verifications from suppliers detailing their ongoing testing and auditing of supply base to ensure compliance with this specification.

5.6. Product Labeling / Marking

A. EU RoHS Labeling

1. TE may require that certain materials/parts with corresponding requirements in TE Hazardous Substance List (Table 2) are labeled to indicate RoHS restricted substance compliance status. If required, the need for labeling will be communicated via specification or expressly included in Purchase Order instructions.

The format would be as defined herein, or per another mutually agreeable labeling standard.

1. Label Content

   Directive 2011/65/EU (RoHS recast) restricted substance compliant products, components and materials shall be identified by the application of one of the following labels: "2011/65/EU substance comp" or "Directive 2011/65/EU Substance Compliant".

2. Label Format

   a. The label shall be applied on the product label – either printed as an integral part of the label or as a sticker applied to the label.

NOTE
Labeling on inner unit package is encouraged wherever feasible; at a minimum, this identification shall be placed on the outer shipping container.

   b. The label should be printed in reverse color printing.

B. EU RoHS CE Marking

1. For certain supplier products which fall "in scope" of Directive 2011/65/EU (RoHS recast), or certain materials/parts that TE uses to build into products "in scope" of RoHS recast, TE may require that the CE Marking be applied to the product in accordance with EU Council Decision 93/465/EC. If required, the need for CE Marking will be communicated via drawing, specification or expressly included in Purchase Order instructions

   a. If the CE conformity marking is reduced or enlarged the proportions given in the Figure 1 below must be respected. Where the directive concerned does not impose specific dimensions, the CE marking must have a height of at least 5 mm. CE Marking shall be affixed visibly, legibly and indelibly on the product without specific color requirements. Wherever feasible, CE Marking should be on the product, such as by molding; at a minimum, this identification shall be placed on the shipping container for all saleable products, whether subassemblies or finished product, either printed as an integral part of the label or as a sticker applied to the label.

CE

NOTE
Suppliers may be legally obligated to provide EU RoHS CE Marking whether or not TE has so indicated; reference EU Council Decision 93/465/EC.

C. China RoHS Labeling

1. For certain materials/parts, TE may require that the China RoHS label (composed of a recycling symbol for Environmental Protection Use Period (EPUP) and an RoHS Hazardous Substances chart) be provided as part of product label. For materials/parts with all six hazardous substances below their respective threshold in accordance with GB/T 26572-2011, the EPUP symbol in Figure 2 shall be used; otherwise (including cases when exemptions are applied), the EPUP symbol in Figure 3 shall be used (Figure 3 depicts an EPUP symbol with a value of 50 years as the example. For the numbering rule to determine the EPUP value, reference SJ/T 11388-2009). If required, the need for China RoHS label will be communicated via drawing, specification or expressly included in Purchase Order instructions.

NOTE
Suppliers may be legally obligated to provide China RoHS label whether or not TE has so indicated; reference China Standard SJ-T 11364-2006.

a. Requirements are described in the People's Republic of China Electronic Industry Standard SJ-T 11364-2006.

Suppliers shall be aware of and follow this specification, as applicable.

b. The China RoHS label shall be applied on the product label – either printed as an integral part of the label or as a sticker applied to the label.

Figure 2

Figure 3

D. EU Waste Electrical and Electronic Equipment (WEEE) Marking

1. Suppliers shall be aware of and comply with EU Directive 2012/19/EU (WEEE), as applicable. Any finished EEE in scope of WEEE shall bear a marking indicating separate collection for EEE. The marking consists of the crossed-out wheeled bin, as shown below in Figure 4. The marking must be printed visibly, legibly and indelibly.

a. In certain cases where Suppliers have no legal requirement under WEEE, TE may request that the product be marked with the WEEE logo in accordance with the Directive.

NOTE
This would be required where TE is the importer or reseller of the WEEE relevant product into the EU.

Figure 4

5.7. Packaging

A. Restricted Substances

1. Restricted Substance requirements for packaging materials apply to all packaging materials supplied to TE, as well as all packaging materials used to ship parts/materials to TE or directly to TE's customer.

2. All packaging shall conform to Packaging Requirements as described in TE Hazardous Substance List (Table 2) (such as heavy metals, DMF and REACH SvHC, etc).

B. Recycling Labeling

1. Recycling Labeling requirements apply to suppliers that provide TE packaging materials and suppliers whose packaging materials are used to supply products/materials to TE that could ultimately reach TE customers.

a. TE will advise suppliers if packaging materials are required to conform via specification or Purchase Order.

NOTE
Suppliers may be legally obligated to label packaging materials for recycling whether or not TE has so indicated; e.g., reference China Standard GB 18455-2001 (Packaging Recycling Marks).

The Recycling Labeling requirements are per Packaging Standard TEC-207-14.

5.8. Product Certification

A. China RoHS

For certain materials/parts, TE may require that the China RoHS Voluntary Certificate be provided. If required, the need for China RoHS Voluntary Certificate will be communicated via drawing, specification or expressly included in Purchase Order instructions.

a. Requirements are described in the People's Republic of China Circular on Issuing the Opinions on the Implementation of Unified Voluntary Certification Program for Electronic Information Products Subject to Pollution Control G.R.Z.L. No. 28 (2010) and Implementation Rules for Voluntary Certification in Controlling Pollution from Electronic Information Products Uniformly Promoted by the State (CNCA-RoHS-0101:2011). Suppliers shall be aware of and follow these requirements, as applicable.

B. EU RoHS recast

For certain supplier products which fall "in scope" of RoHS recast, TE may require that Technical Files be provided to support TE's preparation of a Declaration of Conformity. If required, the need for Technical File will be communicated via drawing, specification or expressly included in Purchase Order instructions.

a. Guidance on Technical Files is described in the EN50581 Guiding Standard for Compliance with RoHS2 Technical Documentation Requirements or TE equivalent guidance and template. Suppliers shall be aware of and follow this guidance, as applicable.

5.9. Legal/Notification Requirements

A. In addition to requirements referenced in this document, all suppliers shall comply with:

1. Any other legal and regulatory requirements applicable to any products provided to TE.

2. Any additional legal, regulatory or customer requirements (of which supplier is aware) when such requirements would apply to products sold by TE and into which supplier's products are incorporated.

Suppliers shall notify TE of any such additional requirements (of which supplier is aware).

5.10. Hazardous Substance Management System and Record Retention

A. All suppliers shall comply with the requirements stated in Quality Specification TEC-1005 or a TE Business Unit equivalent.

B. All suppliers shall maintain a system such as IECQ QC080000 that controls and/or restricts and/or eliminates the use of hazardous substances from materials/parts and processes to meet regulatory and industrial / Business Unit compliance requirements.

C. The supplier shall permit access to representatives and customers of TE and applicable regulatory agencies to the supplier's premises (and the premises of the supplier's subcontractors and suppliers) for the purpose of evaluating the supplier's facilities, processes, goods, hazardous substance management system and records

D. The supplier is responsible for maintaining records (in accordance with Quality Specification TEC-1005 or an equivalent) for each of the materials/parts supplied.

E. The supplier is responsible for notifying TE if nonconforming part / material has been shipped to TE and take necessary actions according to TEC-1005 or a TE Business Unit equivalent.

NOTE
Any exceptions require specific exemptions to be negotiated.

ANNEX A TE HAZARDOUS SUBSTANCE LIST

A.1 General Information

a) All materials/parts supplied to TE shall conform to the requirements of the TE Hazardous Substance List (Table 2) except where covered by valid exemption(s) in the RoHS Exemption List (Table 3). Specifically, suppliers shall conform to the requirements applicable to the Substance Classifications as set forth in paragraphs 3. (DEFINITIONS) and A.1.f below.

b) When a substance is listed in Table 2 with a CAS number, then the requirement applies to the substance with that specific CAS number only. For substances without a specific CAS number, refer to Environmental Related Substances (5081-2) to find individual substances within that substance category.

NOTE
Go to the TE Supplier Portal at https://supplierportal.te.com, click "Documents" on top menu, search for KEYWORD 5081-2.

c) The Environmental Related Substances (5081-2) is not an exhaustive (complete) list of all compounds that could be found within each category. In cases where a CAS number of “Various” is shown along with a description including Other (e.g. Various – Other Brominated Compounds) this would include all other substances falling into this category even though not listed specifically in 5081-2.

d) Threshold limit values are shown as either “Intentionally Added”, ppm (parts per million) by weight per Homogeneous Material (e.g. RoHS) or ppm by weight of product (e.g. REACH) as specified in the table.

e) The formula for ppm calculation is 1,000,000 x mass substance/mass Homogeneous Material. The formula for ppb calculation is 1,000,000,000 x mass substance/mass Homogeneous Material.

f) Substance Classifications

B (Banned): Prohibited in all listed applications.

R (Restricted): Prohibited unless explicitly permitted by TE.

C (Substance of Concern): Required to be declared if present and allowed unless explicitly prohibited by TE to address Industry/ Business Unit specific requirements.

g) Last three sub-tables (Restricted Halogen Elements and Compounds, Specific Industry / Business Unit Restrictions on RoHS substances and Misc. Specific Industry / Business Unit Restrictions) identify certain substances in specific materials/parts supplied to TE that are required to be declared if present and whose use may be prohibited by TE due to Industry / Business Unit specific requirements; e.g., Halogens to support industry Low-Halogen initiatives, a stricter threshold for certain heavy metals than the RoHS threshold to satisfy Business Unit requirements. If these substances are restricted by certain Business Units in TE, the requirements will be explicitly communicated via product drawing, specification or Purchase Order instructions. In anticipation of future restrictions, TE may request suppliers to eliminate usage of these substances following the *Change Procedure* outlined in 5,4.

NOTE
When Substances with classification of Substance of Concern (C) in Table 2 are restricted by certain Business Units, these restrictions are in addition to the basic requirements defined under classification of Restricted Substance (R). For example, basic requirement for Lead / Lead Compounds in parts and materials are 1000ppm per homogeneous material; while certain Business Units may require 100ppm per plastic material.

A.2 TE Hazardous Substance List – Table 2

Compliance Definition: RoHS Restricted Substances in Parts and Materials (Note 1 and Table 3 for RoHS exemptions)			
Substance Category	**Classification**	**Threshold Level**	**Application(s)**
Cadmium/Cadmium Compounds	R	100ppm per homogeneous materials	All except packaging and batteries
Chromium VI Compounds	R	1000ppm per homogeneous materials	
Mercury /Mercury Compounds	R	1000ppm per homogeneous materials	
Polybrominated Biphenyls (PBB)	R	1000ppm per homogeneous materials	All
Polybrominated Diphenyl Ethers (PBDE)	R	1000ppm per homogeneous materials	All
Lead/Lead Compounds	R	1000ppm per homogeneous materials	All except - packaging - batteries - surface contact layer of cables or cords with thermoset or thermoplastic coatings
Lead/Lead Compounds	R	300ppm by weight of surface coating (US CA Props 65 Prohibition)	surface contact layer of cables or cords with thermoset or thermoplastic coatings

Compliance Definition: REACH Annex XIV Substances of Very High Concerns (SvHCs) in Parts and Materials (Note 2)			
Restricted Substance: SvHCs that have entered Annex XIV and after sunset dates			
Substance Category	**Classification**	**Threshold Level**	**Application(s)**
5-Tert-Butyl-2,4,6-Trinitro-m-Xylene (Musk Xylene) (CAS No 81-15-2)	R	1000ppm by weight of product	All
Diamino-Diphenyl-Methane (4,4 - Diaminodi-Phenylmethane) (CAS No 101-77-9)	R	1000ppm by weight of product	All
Dibutylphthalate (DBP) (CAS No 84-74-2)	R	1000ppm by weight of product	All
Bis(2-ethylhexyl) phthalate (DEHP), Di-sec-octyl Phthalate (CAS No 117-81-7)	R	1000ppm by weight of product	All
Butyl Benzyl Phthalate (BBP) (CAS No 85-68-7)	R	1000ppm by weight of product	All
Diarsenic Pentaoxide (CAS No 1303-28-2)	R	1000ppm by weight of product	All
Diarsenic Trioxide (CAS No 1327-53-3)	R	1000ppm by weight of product	All
Hexabromocyclododecane (HBCDD) and all Major Diastereoisomers identified (α – HBCDD, β-HBCDD, γ-HBCDD)	R	Intentionally Added	All
2,4-Dinitrotoluene (CAS No 121-14-2)	R	1000ppm by weight of product	All
Diisobutyl phthalate (CAS No 84-69-5)	R	1000ppm by weight of product	All
Lead chromate (CAS No 7758-97-6)	R	1000ppm by weight of product	All
Lead chromate molybdate sulphate red (C.I. Pigment Red 104) (CAS No 12656-85-8)	R	1000ppm by weight of product	All
Lead sulfochromate yellow (C.I. Pigment Yellow 34) (CAS No 1344-37-2)	R	1000ppm by weight of product	All
Tris(2-chloroethyl)phosphate (CAS No 115-96-8)	R	1000ppm by weight of product	All

SvHCs known to be used in hardware products and electrical and electronic Equipments (Note 2)				
SvHC List	**Substance Category**	**Classification**	**Threshold Level**	**Application(s)**
Oct 2008	Triethyl Arsenate (CAS No 15606-95-8)	C	1000ppm by weight of product	All
Oct 2008	Sodium Dichromate	C	1000ppm by weight of product	All
Oct 2008	Cobalt Dichloride (CAS No 7646-79-9)	C	1000ppm by weight of product	All
Oct 2008	Lead Hydrogen Arsenate (CAS No 7784-40-9)	C	1000ppm by weight of product	All
Oct 2008	Shortchain Chlorinated Paraffins (C10-13)	C	1000ppm by weight of product	All
June 2011	2-ethoxyethyl acetate (CAS No 111-15-9)	C	1000ppm by weight of product	All
June 2011	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP) (CAS No 68515-42-4)	C	1000ppm by weight of product	All
June 2011	1-methyl-2-pyrrolidone (CAS No 872-50-4)	C	1000ppm by weight of product	All
June 2011	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP) (CAS No 71888-89-6)	C	1000ppm by weight of product	All
June 2011	Cobalt dichloride (CAS No: 7646-79-9)	C	1000ppm by weight of product	All
Dec 2011	2,2'-dichloro-4,4'-methylenedianiline (MOCA) (CAS No: 101-14-4)	C	1000ppm by weight of product	All
Dec 2011	N,N-dimethylacetamide (DMAC) (CAS No: 127-19-5)	C	1000ppm by weight of product	All
Dec 2011	bis(2-methoxyethyl) ether (CAS No 111-96-6)	C	1000ppm by weight of product	All
Dec 2011	1,2-Dichloroethane (CAS No: 107-06-2)	C	1000ppm by weight of product	All
Dec 2011	Bis(2-methoxyethyl) phthalate (DMEP) (CAS No: 117-82-8)	C	1000ppm by weight of product	All
Dec 2011	Formaldehyde, oligomeric reaction products with aniline (PMDA) (CAS No: 25214-70-4)	C	1000ppm by weight of product	All
June 2012	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme) (CAS No: 112-49-2)	C	1000ppm by weight of product	All
June 2012	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME) (CAS No: 110-71-4)	C	1000ppm by weight of product	All
June 2012	Diboron trioxide (CAS No: 1303-86-2)	C	1000ppm by weight of product	All
June 2012	Formamide (CAS No: 75-12-7)	C	1000ppm by weight of product	All
June 2012	1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC) (CAS No: 2451-62-9)	C	1000ppm by weight of product	All
June 2012	1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (β-TGIC) (CAS No: 59653-74-6)	C	1000ppm by weight of product	All
June 2012	4,4'-bis(dimethylamino)benzophenone (Michler's ketone) (CAS No: 90-94-8)	C	1000ppm by weight of product	All
June 2012	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base) (CAS No: 101-61-1)	C	1000ppm by weight of product	All
June 2012	[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)] (CAS No: 548-62-9)	C	1000ppm by weight of product	All
June 2012	[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)] (CAS No: 2580-56-5)	C	1000ppm by weight of product	All

SvHCs known to be used in hardware products and electrical and electronic Equipments (Note 2)				
SvHC List	**Substance Category**	**Classification**	**Threshold Level**	**Application(s)**
June 2012	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)] (CAS No: 6786-83-0)	C	1000ppm by weight of product	All
June 2012	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)] (CAS No: 561-41-1)	C	1000ppm by weight of product	All
Dec 2012	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] (CAS No: 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9)	C	1000ppm by weight of product	All
Dec 2012	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] (CAS No: 85-42-7, 13149-00-3, 14166-21-3)	C	1000ppm by weight of product	All
Dec 2012	Pyrochlore, antimony lead yellow (CAS No: 8012-00-8)	C	1000ppm by weight of product	All
Dec 2012	Henicosafluoroundecanoic acid (CAS No: 2058-94-8)	C	1000ppm by weight of product	All
Dec 2012	4-Aminoazobenzene (CAS No: 60-09-3)	C	1000ppm by weight of product	All
Dec 2012	Lead titanium zirconium oxide (CAS No : 12626-81-2)	C	1000ppm by weight of product	All
Dec 2012	Lead monoxide (lead oxide) (CAS No: 1317-36-8)	C	1000ppm by weight of product	All
Dec 2012	o-Toluidine (CAS No: 95-53-4)	C	1000ppm by weight of product	All
Dec 2012	Dibutyltin dichloride (DBTC) (CAS No: 683-18-1)	C	1000ppm by weight of product	All
Dec 2012	Lead bis(tetrafluoroborate) (CAS No: 13814-96-5)	C	1000ppm by weight of product	All
Dec 2012	Lead dinitrate (CAS No: 10099-74-8)	C	1000ppm by weight of product	All
Dec 2012	Trilead bis(carbonate)dihydroxide (CAS No: 1319-46-6)	C	1000ppm by weight of product	All
Dec 2012	N,N-dimethylformamide (CAS No: 68-12-2)	C	1000ppm by weight of product	All
Dec 2012	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues] (CAS No examples: 2315-67-5, 2315-61-9, 9002-93-1, 2497-59-8, 9036-19-5, 140-66-9, etc.)	C	1000ppm by weight of product	All
Dec 2012	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] (CAS No examples: 84852-15-3, 26543-97-5, 17404-66-9, 30784-30-6, 52427-13-1, 186825-36-5, 142731-63-3, 7311-27-5, 20427-84-3	C	1000ppm by weight of product	All

SvHCs known to be used in hardware products and electrical and electronic Equipments (Note 2)				
SvHC List	**Substance Category**	**Classification**	**Threshold Level**	**Application(s)**
Dec 2012	104-35-8, 93894-08-7, 85480-75-7, 74230-03-8, 26027-38-3, 104-40-5, 127087-87-0, etc.)			
Dec 2012	Lead oxide sulfate (CAS No: 12036-76-9)	C	1000ppm by weight of product	All
Dec 2012	Lead titanium trioxide (CAS No: 12060-00-3)	C	1000ppm by weight of product	All
Dec 2012	Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE) (CAS No: 1163-19-5)	C	1000ppm by weight of product	All
Dec 2012	1,2-Diethoxyethane (CAS No: 629-14-1)	C	1000ppm by weight of product	All
Dec 2012	Tetralead trioxide sulphate (CAS No: 12202-17-4)	C	1000ppm by weight of product	All
Dec 2012	[Phthalato(2-)]dioxotrilead (CAS No: 69011-06-9)	C	1000ppm by weight of product	All
Dec 2012	N-pentyl-isopentylphthalate (CAS No: 776297-69-9)	C	1000ppm by weight of product	All
Dec 2012	Pentalead tetraoxide sulphate (CAS No: 12065-90-6)	C	1000ppm by weight of product	All
Dec 2012	Heptacosafluorotetradecanoic acid (CAS No: 376-06-7)	C	1000ppm by weight of product	All
Dec 2012	Tricosafluorododecanoic acid (CAS No: 307-55-1)	C	1000ppm by weight of product	All
Dec 2012	Dioxobis(stearato)trilead (CAS No: 12578-12-0)	C	1000ppm by weight of product	All
Dec 2012	Pentacosafluorotridecanoic acid (CAS No: 72629-94-8)	C	1000ppm by weight of product	All
Dec 2012	Methoxyacetic acid (CAS No: 625-45-6)	C	1000ppm by weight of product	All
Dec 2012	Methyloxirane (Propylene oxide) (CAS No: 75-56-9)	C	1000ppm by weight of product	All
Dec 2012	Trilead dioxide phosphonate (CAS No: 12141-20-7)	C	1000ppm by weight of product	All
Dec 2012	Diisopentylphthalate (CAS No: 605-50-5)	C	1000ppm by weight of product	All
Dec 2012	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear (CAS No: 84777-06-0)	C	1000ppm by weight of product	All
Dec 2012	Fatty acids, C16-18, lead salts (CAS No: 91031-62-8)	C	1000ppm by weight of product	All
Dec 2012	Orange lead (lead tetroxide) (CAS No: 1314-41-6)	C	1000ppm by weight of product	All
Dec 2012	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide)) (CAS No : 123-77-3)	C	1000ppm by weight of product	All
Dec 2012	Sulfurous acid, lead salt, dibasic (CAS No: 62229-08-7)	C	1000ppm by weight of product	All
Dec 2012	Lead cyanamidate (CAS No: 20837-86-9)	C	1000ppm by weight of product	All
June 2013	Cadmium (CAS No: 7440-43-9)	C	1000ppm by weight of product	All
June 2013	Cadmium oxide (CAS No: 1306-19-0)	C	1000ppm by weight of product	All
June 2013	Ammonium pentadecafluorooctanoate (APFO) (CAS No: 3825-26-1)	C	1000ppm by weight of product	All
June 2013	Pentadecafluorooctanoic acid (PFOA) (CAS No: 335-67-1)	C	1000ppm by weight of product	All
June 2013	Dipentyl phthalate (DPP) (CAS No: 131-18-0)	C	1000ppm by weight of product	All

SvHCs known to be used in hardware products and electrical and electronic Equipments (Note 2)				
SvHC List	**Substance Category**	**Classification**	**Threshold Level**	**Application(s)**
June 2013	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] (CAS No examples: 26027-38-3, 7311-27-5, 20427-84-3, 34166-38-6, 27942-27-4, 14409-72-4, 9016-45-9, 27986-36-3, 68412-54-4, 127087-87-0, etc.)	C	1000ppm by weight of product	All
Dec 2013	Cadmium sulphide (CAS No: 1306-23-6)	C	1000ppm by weight of product	All
Dec 2013	Lead di(acetate) (CAS No: 301-04-2)	C	1000ppm by weight of product	All
Dec 2013	Dihexyl phthalate (DnHP) (CAS No: 84-75-3)	C	1000ppm by weight of product	All
Dec 2013	Imidazolidine-2-thione; 2-imidazoline-2-thiol (ETU) (CAS No: 96-45-7)	C	1000ppm by weight of product	All
Dec 2013	Trixylyl phosphate (TXP) (CAS No: 25155-23-1)	C	1000ppm by weight of product	All
Dec 2013	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28) (CAS No 573-58-0)	C	1000ppm by weight of product	All
Dec 2013	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) (CAS No 1937-37-7)	C	1000ppm by weight of product	All
June 2014	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear (CAS No 68515-50-4)	C	1000ppm by weight of product	All
Dec 2014	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320) (CAS No 3846-71-7)	C	1000ppm by weight of product	All
Dec 2014	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) (CAS No 25973-55-1)	C	1000ppm by weight of product	All
Dec 2014	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE) (CAS No 15571-58-1)	C	1000ppm by weight of product	All
Dec 2014	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)	C	1000ppm by weight of product	All
June 2015	1,2-Benzenedicarboxylic acid, di-C6-10-alkyl esters (CAS No 68515-51-5)	C	1000ppm by weight of product	All
June 2015	1,2-Benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters (CAS No 68648-93-1)	C	1000ppm by weight of product	All
Various	Any other SvHC not listed above (Note 2)	C	1000ppm by weight of product	All

Compliance Definition: REACH Annex XVII Restriction Items in Parts and Materials			
Substance Category	**Classification**	**Threshold Level**	**Application(s)**
1. Polychlorinated Biphenyls (PCB) and Polychlorinated Terphenyls (PCT), selected	B	Intentionally added	All
5. Benzene (CAS No 71-43-2)	B	5ppm by weight of product	All
6. Asbestos	B	1000ppm by weight of product	All
12. 2-Naphthylamine and its salts (91-59-8 and various)	B	1000ppm by weight of product	preparations
13. Benzidine and its salts	B	1000ppm by weight of product	preparations
14. 4-Nitrobiphenyl (CAS No 92-93-3)	B	1000ppm by weight of product	preparations
15. 4-Aminobiphenyl xenylamine and its salts (92-67-1 and various)	B	1000ppm by weight of product	preparations
19. Arsenic/Arsenic Compounds	B	Intentionally added	wood and wooden materials
20. Tri-substituted Organostannic Compounds Note: Such as Tributyl Tin (TBT), Triphenyl Tin (TPT), Tricyclohexyl Tin, Triethyl Tin, Trihexyl Tin, Trimethyl Tin, Trioctyl Tin, Tripentyl Tin, Triphenyl Tin, Tripropyl Tin	B	Intentionally added	All
20. Tributyl Tin Oxide (TBTO) (CAS No 56-35-9)	B	Intentionally added	All
20. Dibutyltin (DBT) compounds	B	1000ppm per homogeneous materials	All
20. Dioctyltin (DOT) compounds	R	1000ppm per homogeneous materials	All
22. Pentachlorophenol and its salts and esters (87-86-5 and various)	B	1000ppm by weight of product	preparations
24. Monomethyl — tetrachlorodiphenyl methane, Trade name: Ugilec 141 (CAS No 76253-60-6)	B	Intentionally added	All
25. Monomethyl-dichloro-diphenyl methane Trade name: Ugilec 121 Ugilec 21 (CAS No 81161-70-8)	B	Intentionally added	All
26. Monomethyl-dibromo-diphenyl methane bromobenzylbromotoluene, mixture of isomers Trade name: DBBT (CAS No 99688-47-8)	B	Intentionally added	All
27. Nickel/Nickel Compounds **(Notes 3 and 4)**	C	Intentionally added	All, where prolonged skin contact is expected
28. Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as carcinogen category 1A or 1B (Table 3.1) or carcinogen category 1 or 2 (Table 3.2)	C	Intentionally added	All **(Note 5)**
29. Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as germ cell mutagen category 1A or 1B (Table 3.1) or mutagen category 1 or 2 (Table 3.2)	C	Intentionally added	All **(Note 5)**
30. Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as toxic to reproduction category 1A or 1B (Table 3.1) or toxic to reproduction category 1 or 2 (Table 3.2)	C	Intentionally added	All **(Note 5)**
31. Tar oils and creosotes	B	Intentionally added	wood and wooden materials
32. Chloroform (CAS No 67-66-3)	B	1000ppm by weight of product	Cleaning agent
33. Carbon tetrachloridetetrachloromethane (CAS No 56-23-5)	B	1000ppm by weight of product	Cleaning agent
34. 1,1,2-Trichloroethane (CAS No 79-00-5)	B	1000ppm by weight of product	Cleaning agent
35. 1,1,2,2-Tetrachloroethane (CAS No 79-34-5)	B	1000ppm by weight of product	Cleaning agent
36. 1,1,1,2-Tetrachloroethane (CAS No 630-20-6)	B	1000ppm by weight of product	Cleaning agent
37. Pentachloroethane (CAS No 76-01-7)	B	1000ppm by weight of product	Cleaning agent
38. 1,1-Dichloroethene (CAS No 75-35-4)	B	1000ppm by weight of product	Cleaning agent
43. Azocolourants and azodyes which form certain aromatic amines, selected **(Note 6)**	B	30ppm by weight of finished textile/leather article	Textiles and leather
46. Nonylphenol and Nonylphenol ethoxylates	B	1000ppm by weight of product	Cleaning agent
48. Toluene (CAS No 108-88-3)	C	1000ppm by weight of product	adhesives or spray paints
49. 1,2,4-Trichlorobenzene (CAS No 120-82-1)	R	Intentionally added	All
50. Polycyclic Aromatic Hydrocarbons (PAH) **(Note 7)**	B	Intentionally added **(Note 7)**	All

Compliance Definition: REACH Annex XVII Restriction Items in Parts and Materials			
Substance Category	**Classification**	**Threshold Level**	**Application(s)**
51. Selected Phthalates Group 1 (BBP CAS No 85-68-7 DBP CAS No 84-74-2 DEHP CAS No 117-81-7)	C	1000ppm per homogeneous materials	All
52. Selected Phthalates Group 2 (DIDP CAS No 26761-40-0 and 68515-49-1 DINP CAS No 28553-12-0 and 68515-48-0 DNOP CAS No 117-84-0)	C	1000ppm per homogeneous materials	All
54. 2-(2-methoxyethoxy)ethanol (DEGME) (CAS No 111-77-3)	C	1000ppm by weight of product	paints, paint strippers, cleaning agents, self-shining emulsions
55. 2-(2-butoxyethoxy)ethanol (DEGBE) (CAS No 112-34-5)	C	3% by weight of product	spray paints or spray cleaners in aerosol dispensers
56. Methylenediphenyl diisocyanate (MDI) (CAS No 26447-40-5)	C	1000ppm by weight of product	preparations
57. Cyclohexane (CAS No 110-82-7)	C	1000ppm by weight of product	neoprene-based contact adhesives
59. Dichloromethane (CAS No 75-09-2)	B	1000ppm by weight of product	paint strippers
61. Dimethyl Fumarate (DMF) (CAS No 624-49-7)	B	0.1ppm by weight of product	All

Compliance Definition: Restrictions in Packaging Materials			
Substance Category	**Classification**	**Threshold Level**	**Application(s)**
Heavy Metals (Lead, Cadmium, Chromium VI and Mercury)	R	100ppm combined by weight	Packaging or packaging components
Expanded polystyrene (EPS) (CAS No 9003-53-6), loosefill only **(Note 8)**	R	Intentionally added	
Dimethyl Fumarate (DMF) (CAS No 624-49-7)	R	0.1ppm by weight of product	
See REACH SvHC	C	1000ppm by weight of product	
Methyl bromide (CAS No 74-83-9)	R	Intentionally added	
Any biocides used in treatment of wood packaging or transport material not approved In EU Biocides Directive or other local legislation	B	Intentionally added	
Formaldehyde (CAS No 50-00-0)	B	Intentionally added **(Note 3)**	Composite Wood products or components
		75ppm by weight of textile product	Textiles
Arsenic/Arsenic Compounds	B	Intentionally added	wood and wooden materials
Tar oils and creosotes	B	Intentionally added	wood and wooden materials

Compliance Definition: Restricted Substances in Batteries (Note 9)			
Substance Category	**Classification**	**Threshold Level**	**Application(s)**
Cadmium/Cadmium Compounds	R	5ppm by weight of battery	All batteries
Lead/Lead Compounds	R	40ppm by weight of battery	All batteries
Mercury /Mercury Compounds	R	5ppm per homogenous materials	All batteries

Compliance Definition: Canada Prohibition of Certain Toxic Substances			
Substance Category	**Classification**	**Threshold Level**	**Application(s)**
Dodecachloropentacyclo 1, 3, 4-Metheno-1H-cyclobuta(cd)pentalene, Mirex (CAS No 2385-85-5)	B	Intentionally added	All
Hexachlorobenzene (CAS No 118-74-1)	B	Intentionally added	All
2-Methoxyethanol (CAS No 109-86-4)	B	Intentionally added	All
N-Nitrosodimethylamine (CAS No 62-75-9)	B	Intentionally added	All
Pentachlorobenzene (CAS No 608-93-5)	B	Intentionally added	All
Tetrachlorobenzene	B	Intentionally added	All
Benzenamine, N-phenyl-, reaction products with styrene and 2,4,4-trimethylpentene (BNST) (CAS No 68921-45-9)	B	Intentionally added	All except for additive in rubber
Hexachlorobutadiene (CAS No 87-68-3)	B	Intentionally added	All

Compliance Definition: Banned Substances in Manufacturing			
Substance Category	**Classification**	**Threshold Level**	**Application(s)**
Ozone Depleting Substances (CFC, Halon, HBFC, HCFC & others)	B	Intentionally added	Manufacturing process
Hexachloroethane (CAS No 67-72-1)	B	Intentionally added	Manufacturing process of nonferrous metals
Polychlorinated Naphthalenes	B	Intentionally added	Manufacturing process
Perfluorooctane Sulfonate, C8F17SO2X (X = OH, Metal salt, halide, amide, and other derivatives including polymers) (PFOS)	B	Intentionally added	Manufacturing process
Sulfur fluoride (SF6) (CAS No 2551-62-4)	B	Intentionally added	Manufacturing process of magnesium die-casting

Compliance Definition: Misc. Banned & Restricted Substances in Parts & Materials			
Substance Category	**Classification**	**Threshold Level**	**Application(s)**
Chlorinated or Brominated Dioxins or Furans	B	Intentionally added	All
Fluorinated Greenhouse Gases Compounds , selected (except for SF6)	B	Intentionally added	All
Sulfur fluoride (SF6) (CAS No 2551-62-4)	R	Intentionally added	All
Halogenated Aromatic Substances (HAS)	B	500ppm for mono-halogenated or 50ppm for poly-halogenated aromatic substances per homogeneous materials of the components.	Capacitors and Transformers
Ozone Depleting Substances (CFC, Halon, HBFC, HCFC & others)	B	Intentionally added	All
Perchlorate Compounds	B	6ppb by weight of product	All
Perfluorooctane Sulfonate, C8F17SO2X (X = OH, Metal salt, halide, amide, and other derivatives including polymers) (PFOS)	B	Intentionally added	All
Perfluorooctanoic acid and salts and esters (CAS No examples: 335-67-1, 68141-02-6, 33496-48-9, 45285-51-6, 3108-24-5, 2395-00-8, 335-93-3, 335-95-5, 376-27-2, 3825-26-1, 335-66-0)	B	1000ppm per homogeneous materials	All
Phenol, 2-(2H-benzotriazol-2-yl)- 4,6-bis(1,1-dimethlethyl) (CAS No 3846-71-7)	B	Intentionally added	All
Polychlorinated Naphthalenes	B	Intentionally added	All
Radioactive Substances	B	Intentionally added **(Note 3)**	All
Formaldehyde (CAS No 50-00-0)	B	Intentionally added **(Note 3)**	Composite Wood products or components
		75ppm by weight of textile product	Textiles
2,4,6-Tri-t-Butylphenol (CAS No 732-26-3)	B	Intentionally added	Antioxidant and lubricating and fuel oils

Compliance Definition: Misc. Banned & Restricted Substances in Parts & Materials			
Substance Category	**Classification**	**Threshold Level**	**Application(s)**
N,N'-ditolyl-p-phenylenediamin (CAS No 27417-40-9), Ntolyl-N'-xylyl-p-phenylenediamine (CAS No 28726-30-9), N,N'-dixylyl-p-phenylene diamine (CAS No 70290-05-0)	B	Intentionally added	Rubber anti-aging agent and Styrene-butadiene rubber
Short Chain Chlorinated Paraffins (SCCPs)	B	Intentionally added	All

Compliance Definition: Restricted Halogen Elements and Compounds in Parts and Materials (see Note 10)				
Substance Category		**Classification**	**Threshold Level**	**Application(s)**
Bromine	Brominated Flame Retardants (other than PBBs, PBDEs or HBCDDs)	C	900ppm per homogeneous materials	All
	Brominated Compounds (other than flame retardants)		900ppm per homogeneous materials	
	Tetrabromobisphenol A, TBBPA (CAS No 79-94-7)		Intentionally Added	
Chlorine	Chlorinated Flame Retardants	C	900ppm per homogeneous materials	All
	Chlorine Compounds (other than flame retardants)			
	Polyvinylchloride (PVC), its Mixtures, its Copolymers (CAS No 9002-86-2)		Intentionally Added	
Total Bromine and Chlorine (Br+Cl)		C	1500ppm per homogeneous materials	All
Fluorine	Fluorinated Flame Retardants	C	900ppm per homogeneous materials	All
	Fluorine Compounds (other than flame retardants)			
	Perfluorochemicals (PFC, PFAS, PFHS) except for PFOA		Intentionally Added	
Iodine	Iodine Compounds	C	900ppm per homogeneous materials	All

Compliance Definition: Specific Industry / Business Unit Restrictions on RoHS substances in Parts and Materials			
Substance Category	**Classification**	**Threshold Level**	**Application(s)**
Cadmium/Cadmium Compounds	C	2ppm per homogeneous materials	wood and wooden materials
		5ppm per homogeneous materials	Plastic, rubber, ink, pigment, paint, dyes
		20ppm per homogeneous materials	Solder materials, plating, surface coating
		50ppm per homogeneous materials	Metal materials
Chromium VI Compounds	C	Intentionally added or 500ppm per homogeneous materials **(Note 11)**	All except packaging and batteries
Lead/Lead Compounds	C	90ppm per homogeneous materials	wood and wooden materials; paint
		100ppm per homogeneous materials	Plastic, rubber, ink, pigment, dyes, non-metallic and non-ceramic coatings
		500ppm per homogeneous materials	Solder materials, Metal materials
Mercury/Mercury Compounds	C	Intentionally added or 50ppm per homogeneous materials **(Note 11)**	All except packaging and batteries
Polybrominated Biphenyls (PBB)	C	Intentionally added or 50ppm per homogeneous materials **(Note 11)**	All except packaging and batteries

Polybrominated Diphenyl Ethers (PBDE)	C	Intentionally added or 50ppm per homogeneous materials **(Note 11)**	All except packaging and batteries

Compliance Definition: Misc. Specific Industry / Business Unit Restrictions in Parts and Materials			
Substance Category	**Classification**	**Threshold Level**	**Application(s)**
Latex	C	Intentionally added	All
BPA (Bisphenol A) (CAS No 80-05-7)	C	Intentionally added	All
Animal Byproducts **(Note 12)**	C	Intentionally added	All
Organo Compounds in Nickel/Nickel Compounds	C	Intentionally added	All
Phthalates	C	1000ppm per homogeneous materials	All
Arsenic/Arsenic Compounds	C	1000ppm per homogeneous materials	All except semiconductors and metal alloys
Antimony/Antimony compounds	C	1000ppm per homogeneous materials	All
Beryllium/Beryllium Compounds	C	1000ppm per homogeneous materials	All
Flame Retardants (containing phosphorus), selected	C	1000ppm per homogeneous materials	All
Formaldehyde (CAS No 50-00-0)	C	Intentionally added	detergents, cleaning agents and polishes
Chlorinated Organic Solvents	C	Intentionally added	detergents, cleaning agents, degreaser, adhesive
Expanded polystyrene (EPS) (CAS No 9003-53-6)	C	Intentionally added	Packaging or packaging components
Red Phosphorous (CAS No 7723-14-0)	C	Intentionally added	All
Any other substances not listed in this specification, but covered by TE 5081-2 Declarable List	C	1ppm per homogeneous materials	All

Table 2 (end)

NOTES

1. RoHS exemptions - RoHS threshold levels apply to all materials and parts (except packaging and batteries) unless valid exemption(s) can be applied per the RoHS Exemption List (Table 3).

   Areas of particular concern for RoHS compliance *(note this is not an exhaustive list of risk areas)*

   a. Cadmium in metals, especially Zinc containing metals (e.g. free cutting Brass, Zinc die-cast, hot dip Zinc). Use of recycled metal material significantly increases the risk of contamination with non-compliant materials and should be used with caution.

   b. Cadmium and Lead are frequently used as colorants in plastics. Use of plastic regrind significantly increases the risk of contamination with non-compliant materials.

   c. Lead and Cadmium could be found in electroless Nickel and Gold plating. Care should be taken to verify that Lead and Cadmium-free formulations are used.

   d. Lead is routinely used as a stabilizer in PVC.

2. Authorization list – SvHCs that have entered Annex XIV are subject to ECHA authorization after below listed sunset dates. If Annex XIV SvHCs are present in parts and materials supplied to TE, suppliers should take proactive actions and target the substitution of these SvHCs to ensure that these SVHCs are removed from the parts and materials supplied to TE before their respective sunset dates, as TE will request suppliers to phase out usage of these SvHCs gradually in the future following the *Change Procedure* outlined in 5,4.

   According to article 56 of REACH regulation, any SvHC that have entered Annex XIV and has passed below listed sunset dates shall not be used, imported, manufactured or placed on the market for a use by a manufacturer, importer or downstream user unless get authorization from ECHA. Articles that contain these SVHCs are so far still allowed to be imported to EU, as long as article 33 communication obligation and article 7(2) notification obligation are met. Further details please refer to REACH regulation. Therefore, TE has upgraded these SvHCs from classification C to R; HBCDD has been added to Stockholm Convention on Persistent Organic Pollutants (POPs) list and therefore is upgraded from class C to R. By default supplier can no longer intentionally add Restricted Substance to all materials/parts supplied to TE unless exempted by regulation or excepted by TE in written approval in advance.

SN	SvHC Name (CAS No)	Date of Inclusion	Sunset Date
1	5-Tert-Butyl-2,4,6-Trinitro-m-Xylene (Musk Xylene) (CAS No 81-15-2)	2011-02-17	2014-08-21
2	Diamino-Diphenyl-Methane (4,4 - Diaminodi-Phenylmethane) (CAS No 101-77-9)	2011-02-17	2014-08-21
3	Dibutylphthalate (DBP) (CAS No 84-74-2)	2011-02-17	2015-02-21
4	Bis(2-ethylhexyl) phthalate (DEHP), Di-sec-octyl Phthalate (CAS No 117-81-7)	2011-02-17	2015-02-21
5	Butyl Benzyl Phthalate (BBP) (CAS No 85-68-7)	2011-02-17	2015-02-21
6	Hexabromocyclododecane (HBCDD) and all Major Diastereoisomers identified (α – HBCDD, β-HBCDD, γ-HBCDD)	2011-02-17	2015-08-21
7	Diarsenic Pentaoxide (CAS No 1303-28-2)	2012-02-14	2015-05-21
8	Diarsenic Trioxide (CAS No 1327-53-3)	2012-02-14	2015-05-21
9	2,4-Dinitrotoluene (CAS No 121-14-2)	2012-02-14	2015-08-21
10	Diisobutyl phthalate (CAS No 84-69-5)	2012-02-14	2015-02-21
11	Lead chromate (CAS No 7758-97-6)	2012-02-14	2015-05-21
12	Lead chromate molybdate sulphate red (C.I. Pigment Red 104) (CAS No 12656-85-8)	2012-02-14	2015-05-21
13	Lead sulfochromate yellow (C.I. Pigment Yellow 34) (CAS No 1344-37-2)	2012-02-14	2015-05-21
14	Tris(2-chloroethyl)phosphate (CAS No 115-96-8)	2012-02-14	2015-08-21
15	Ammonium dichromate (CAS No 7789-09-5)	2013-04-17	2017-09-21
16	Potassium chromate (CAS No 7789-00-6)	2013-04-17	2017-09-21
17	Acids generated from chromium trioxide and their oligomers: Chromic acid (CAS No 7738-94-5) Dichromic acid (CAS No 13530-68-2) Oligomers of chromic acid and dichromic acid	2013-04-17	2017-09-21
18	Chromium trioxide (CAS No 1333-82-0)	2013-04-17	2017-09-21
19	Potassium dichromate (CAS No 7778-50-9)	2013-04-17	2017-09-21
20	Sodium chromate (CAS No 7775-11-3)	2013-04-17	2017-09-21
21	Sodium dichromate	2013-04-17	2017-09-21
22	Trichloroethylene (CAS No 79-01-6)	2013-04-17	2016-04-21
23	Strontium chromate (CAS No 7789-06-2)	2014-08-19	2019-01-22
24	2,2'-dichloro-4,4'-methylenedianiline (MOCA) (CAS No 101-14-4)	2014-08-19	2017-11-22
25	Arsenic acid (CAS No 7778-39-4)	2014-08-19	2017-08-22
26	bis(2-methoxyethyl) ether (CAS No 111-96-6)	2014-08-19	2017-08-22
27	1,2-Dichloroethane (CAS No 107-06-2)	2014-08-19	2017-11-22
28	Formaldehyde, oligomeric reaction products with aniline (technical MDA) (CAS No 25214-70-4)	2014-08-19	2017-08-22
29	Pentazinc chromate octahydroxide (CAS No 49663-84-5)	2014-08-19	2019-01-22
30	Potassium hydroxyoctaoxodizincatedichromate (CAS No 11103-86-9)	2014-08-19	2019-01-22
31	Dichromium tris(chromate) (CAS No 24613-89-6)	2014-08-19	2019-01-22

SvHCs that are known to be used in hardware products and electrical and electronic equipments are listed in Table 2. This information represents our current knowledge based on REACH Annex XV, research on uses of chemicals, industry association assessments anddata in material declaration systems. For a complete list of SvHC, please refer to ECHA website: http://echa.europa.eu/web/guest/candidate-list-table

NOTE

TE does not represent that the listing of SvHCs that are known to be used in EEE is comprehensive or complete or that it represents what SvHCs are present or not present in the particular products supplied to TE. This information is also subject to change. IMPORTANT! This information is provided strictly for reference and as a possible starting point for assessment. Supplier is responsible for conducting own assessment of and reporting on the existence or nonexistence of SvHCs in materials/parts supplied to TE.

3. Regulatory thresholds for substances in these applications are based on emission or exposure limits rather than on the concentration in the product. Examples of regulatory limits are:

   Formaldehyde: in hardwood plyboard with veneer core – 0.05 ppm (measured as gaseous emission from product) per California Code of Regulations;

   For Nickel in applications of prolonged skin contact - 0.5 micrograms/sq cm/week per DIN EN 1811;

   Radioactive substances -a dose rate exceeding 1 µSv h–1 at a distance of 0,1 m.

   Because emission and exposure levels cannot be derived from actual concentrations, a threshold level of “intentionally added” is indicated for reporting.

4. Nickel /nickel compounds shall not be intentionally added in articles intended to come into direct and prolonged contact with the skin (e.g., an outer enclosure for a portable electronic product designed to be carried). Use of nickel or nickel contained in components and parts designed to be located inside the outer non-nickel enclosure of a product is allowed, unless the enclosure is sufficient to ensure that the rate of nickel release from those parts coming into direct and prolonged contact with the skin will not exceed 0,5 µg/cm 2 /week for a period of at least two years of normal use of the product.

5. For REACH Annex XVII restriction item 28 ~ 30, these substances could possibly be candidate pool for future SvHC, although current list is much longer than SvHC list. These substances are added to this specification in order to give supplier an early warning and guidance that these are SvHC candidate pool, to raise their awareness and phase out proactively. Also note these lists are dynamic with new substances added, so only the category, directive and table number are mentioned.

6. The European Community's ban applies to azocolourants and azodyes that by reductive cleavage of azo groups may release one of the 22 aromatic amines listed in 5081-2 list under substance category of “Azocolourants and azodyes which form certain aromatic amines”. The threshold level given applies to these amines, not to the azocolourants and azodyes.

7. In addition to 8 Polycyclic Aromatic Hydrocarbons (PAH) compounds banned by Annex XVII, all PAH substances are banned, please refer to 5081-2 for a complete list of PAH substances.

   All PAH substances are banned from “intentionally added”. For impurities, shall not contain benzo(a)pyrene above 20ppm per homogeneous material; sum of all PAHs shall not exceed 200ppm per homogeneous material.

8. This restriction ONLY applies to EPS loosefill (also called EPS peanuts) packaging materials as a fill agent for the packing and shipping of product, NOT to all EPS packaging materials (such as cores for reels or EPS cushioning that is used to pack product).

   The restriction also does NOT apply to expanded polystyrene loosefill packaging materials that comply with the following requirements:

   (1) On and after January 1, 2012, until December 31, 2013, inclusive, it is comprised of at least 60 percent recycled material.

   (2) On and after January 1, 2014, until December 31, 2016, inclusive, it is comprised of at least 80 percent recycled material.

   (3) On and after January 1, 2017, it is comprised of 100 percent recycled material.

9. Supplier shall comply with all applicable environmental laws pertaining to marking, labeling and restricting certain substances in batteries sold to or on behalf of Buyer, including but not limited to:

   - EU Directive 2006/66/EC On batteries and accumulators and waste batteries and accumulators;
   - US EPA Mercury-Containing and Rechargeable Battery Management Act (PUBLIC LAW 104–142—MAY 13, 1996);
   - Chinese Standard GB 24427-2009 “Limitation of mercury, cadmium and lead contents for alkaline and non-alkaline zinc manganese dioxide batteries”;
   - Korea: Law on quality management and control of safety of industrial products Battery regulation;
   - Taiwan Restrictions on the Manufacture, Import, and Sale of Dry Cell Batteries;
   - New York Env Law § 27-0719 Battery Management and Disposal;
   - Swiss Ordinance on Reduction of Risk from Chemical Products;
   - Austria Ordinance 109/2015;
   - Canada: Products Containing Mercury Regulations.

   For example, according to EU Regulation 2006/66/EC, Batteries, accumulators and button cells containing more than 5ppm (0.0005 %) Mercury, more than 20ppm (0.002 %) Cadmium or more than 40ppm (0.004 %) Lead, shall be marked with the chemical symbol for the metal concerned; e.g. Hg, Cd or Pb.

   The battery reporting threshold level is based on the strictest known legal requirement. However, for simplification, the same reporting threshold level is set for all kind of batteries, even if the underlying legal requirement is only applicable for only one specific battery type.

   Batteries exemption - In some unique circumstances, a battery may meet very specific exemption criteria. If exempt, then content above applicable threshold must be labeled on the battery and reported. Supplier must notify TE of the specific exemption being claimed for battery.

10. Halogen elements restriction – the thresholds in this table are counted based on halogenated elements instead of halogenated compounds, such as bromine, chlorine, fluorine and iodine.

11. Chromium (VI) compounds are restricted from “intentionally added” if required by certain Business Units. For impurities, shall not contain Chromium (VI) compounds above 500ppm per homogeneous material.

Mercury/Mercury compounds are restricted from “intentionally added” if required by certain Business Units. For impurities, shall not contain Mercury/Mercury compounds above 50ppm per homogeneous material.

PBB and PBDE are restricted from “intentionally added” if required by certain Business Units. For impurities, shall not contain PBB or PBDE above 50ppm per homogeneous material.

12. Animal byproducts - EU Regulation (EU) No 722/2012 requires notification of devices manufactured utilizing tissues of animal origin, either added as an ingredient to the material and or used in the manufacturing process.

ANNEX B ROHS EXEMPTION LIST

NOTE
Expired exemptions (strikethrough text) are shown for reference only.

NOTE
*Maximum Validity Period**
For exemptions without a specific expiry date in table 3, there is Maximum Validity Period, depending on the categories of products that apply these exemptions, unless renewal is regranted by European Commission which requires industry to raise renewal application at least 18 months before that date. For an overview of Maximum Validity Period for each category, refer to below list:
- categories 1-7, and 10 : 21 July 2016
- medical devices (cat 8) : 22 July 2021
- in vitro diagnostic medical devices (cat 8) : 22 July 2023
- monitoring and control (cat 9) : 22 July 2021
- industrial monitoring and control (cat 9) : 22 July 2024

Ex#	Description	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	Maximum Validity Period*
1(d)	For general lighting purposes ⩾ 150 W: 15 mg	Maximum Validity Period*
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	Maximum Validity Period*
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):~~	Expired
~~2(a)(1)~~	~~Tri-band phosphor with normal lifetime and a tube diameter < 9 mm (e.g. T2): 5 mg~~	Expired 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~~	Expired 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~~	Expired on 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011
~~2(a)(4)~~	~~Tri-band phosphor with normal lifetime and a tube diameter > 28 mm (e.g. T12): 5 mg~~	Expired 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~~	Expired 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~~	Expired 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

Ex#	Description	Scope and dates of applicability
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
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
4(d)	Mercury in High Pressure Mercury (vapour) lamps (HPMV)	Expires on 13 April 2015
4(e)	Mercury in metal halide lamps (MH)	Maximum Validity Period*
4(f)	Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex	Maximum Validity Period*
4(g)	Mercury in hand crafted luminous discharge tubes used for signs, decorative or architectural and specialist lighting and light-artwork, where the mercury content shall be limited as follows: (a) 20 mg per electrode pair + 0,3 mg per tube length in cm, but not more than 80 mg, for outdoor applications and indoor applications exposed to temperatures below 20 °C; (b) 15 mg per electrode pair + 0,24 mg per tube length in cm, but not more than 80 mg, for all other indoor applications.	Expires on 31 December 2018
5(a)	Lead in glass of cathode ray tubes	Maximum Validity Period*

Ex#	Description	Scope and dates of applicability
5(b)	Lead in glass of fluorescent tubes not exceeding 0,2 % by weight	Maximum Validity Period*
6(a)	Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0,35 % lead by weight	Maximum Validity Period*
6(b)	Lead as an alloying element in aluminum containing up to 0.4% lead by weight.	Maximum Validity Period*
6(c)	Copper alloy containing up to 4 % lead by weight	Maximum Validity Period*
7(a)	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85% by weight or more lead)	Maximum Validity Period*
7(b)	Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signaling, transmission, and network management for telecommunications ***NOTE*** *A supplier may claim this exemption only if providing a product that is directly exempted by this legislation; e.g., a server, network, router, etc. This exemption is NOT valid for component parts or materials*	Maximum Validity Period*
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	Maximum Validity Period*
7(c)-II	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	Maximum Validity Period*
~~7(c)-III~~	~~Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC~~	Expired 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'	Expires on 21 July 2016
~~8(a)~~	~~Cadmium and its compounds in one shot pellet type thermal cut-offs~~	Expired 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	Maximum Validity Period*
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.	Maximum Validity Period*
9(b)	Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVACR) applications	Maximum Validity Period*
~~10a~~	~~DecaBDE in polymeric applications.~~	Exemption expired on 1 July 2008.
~~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~~	Expired 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	Maximum Validity Period*
13(b)	Cadmium and lead in filter glasses and glasses used for reflectance standards	Maximum Validity Period*
~~14~~	~~Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80% and less than 85% by weight.~~	Expired on 1 January 2011 and after that date may be used in spare parts for EEE placed on the market before 1 January 2011
15	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages.	Maximum Validity Period*
~~16~~	~~Lead in linear incandescent lamps with silicate coated tubes.~~	Expired on 1 September 2013
17	Lead halide as radiant agent in High Intensity Discharge (HID) lamps used for professional reprography applications.	Maximum Validity Period*

Ex#	Description	Scope and dates of applicability
~~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)~~	Expired 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)	Maximum Validity Period*
~~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).~~	~~Expired 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 (LCD).~~	~~Expired 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	Maximum Validity Period*
~~22~~	~~Lead as an impurity in RIG (rare earth garnet) Faraday rotators used for fiber optics communications systems.~~	~~Expired on 31 December 2009.~~
~~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.	Maximum Validity Period*
25	Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring	Maximum Validity Period*
~~26~~	~~Lead oxide in the glass envelope of Black Light Blue lamps.~~	~~Expired 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~~
~~28~~	~~Hexavalent chromium in corrosive preventive coatings of unpainted metal sheeting and fasteners used for corrosion protection and Electromagnetic Interference Shielding in equipment failing under category three of Directive 2002/96/EC (IT and Telecommunications Equipment),~~	~~Exemption expired on 1 July 2007.~~
29	Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3, and 4) of Council Directive 69/493/EEC	Maximum Validity Period*
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.	Maximum Validity Period*
31	Lead in soldering materials in mercury free flat fluorescent lamps (which e.g. are used for liquid crystal displays, design or industrial lighting).	Maximum Validity Period*
32	Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes.	Maximum Validity Period*
33	Lead in solders for the soldering of thin copper wires of 100µm diameter and less in power transformers.	Maximum Validity Period*
34	Lead in cement-based trimmer potentiometer elements.	Maximum Validity Period*
~~35~~	~~Cadmium in photoresistors for optocouplers applied in professional audio equipment.~~	~~Expired on 31 December 2009.~~
~~36~~	~~Mercury used as a cathode sputtering inhibitor in DC plasma displays with a content of 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.	Maximum Validity Period*
38	Cadmium and cadmium oxide in thick film pastes used on aluminum bonded beryllium oxide.	Maximum Validity Period*
~~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~~	Expired on 1 July 2014
~~40~~	~~Cadmium in photoresistors for analogue optocouplers applied in professional audio equipment~~	Expired on 31 December 2013
41	Lead in solders and termination finishes of electrical and electronic components and finishes of printed circuit boards used in ignition modules and other electrical and electronic engine control systems, which for technical reasons must be mounted directly on or in the crankcase or cylinder of hand-held combustion engines (classes SH:1, SH:2, SH:3 of Directive 97/68/EC of the European Parliament and of the Council	Expires on 31 December 2018

Table 3 (end)

REVISION HISTORY

Rev	Date	Revision Description
A	13 Aug, 2009	Initial Release
B	18 Aug, 2009	Corrigendum in Expanded Substance List (Table 4).
C	29 Oct, 2009	Add applicable specifications and standards (2.1); Update definitions for Type A Supplier and Type B Supplier (3); Update applications for lead/lead compounds in batteries (Table 2); Corrigendum in Expanded Substance List (Table 4).
D	23 Dec, 2009	Update Table of Contents to show subsections (1.4); Update definitions for Type A Part and Type B Part (3); Replace Expanded Substance List (Table 4) with Environmental Related Substances (5081-2), add instructions to search 5081-2 from Supplier Portal (5.1); Reformat Hazardous Substance List (Table 2), split table per Compliance Definition; Corrigendum and update of Table 2 due to deletion of Table 4; Add the second SvHC list to Table 2 (Jan 2010 list); Update threshold level for Nickel/Nickel compounds in Table 2.
E	26 Jan, 2010	Add ban of formaldehyde on textiles (Table 2); Corrigendum of Table 2; RoHS exemption 22 and 35 expired (Table 3).
F	21 Mar, 2011	Update company name and logo to TE Connectivity.
G	25 Jun, 2012	Add revision history to show changes between revisions; Business Units may develop additional specifications based on this specification (1.3); Update Applicable Documents (3); Update Definition for “Homogeneous Material”, “Intentionally Added”, “Material”, “Substance”, “Substance of Concern” and “Type A Part”; Add definition for “Preparation” (4); Add a Note under 5.2 Update Tin Whisker Mitigation (5.3.B); Update Product/Material Test requirements (5.5); Add note of RoHS recast to Product Labeling (5.6.A); Add Product Certification requirements (5.8); Add nonconformance notification requirements (5.10.D); Key changes in Hazardous Substance List (Table 2): - Adjust the sequence of sub tables to RoHS, SvHC, Annex XVII, Packaging, Battery, Canada, Manufacturing and Misc Ban; - add REACH Mar2010, June2010, Dec2010, June2011, Dec2011 and June2012 SvHC; - add a Compliance Definition for REACH Annex XVII Restriction items; - add requirements in packaging; - simplify requirements in batteries; - add a Compliance Definition for Canada Prohibitions; - add banned substances in manufacturing process; - add and update notes to Table 2; Update RoHS exemption list, add scope and dates of applicability, add maximum validity period (Table 3); Add Annex A Specific Industry / Business Unit Restrictions (Table 4): - add requirements for Restricted Halogen Elements and Compounds; - add Specific Industry / Business Unit Restrictions on RoHS substances; - add other Specific Industry / Business Unit requirements.
H	22 Jul, 2013	Update Applicable Documents (3); Revise RoHS 2 label text and revise requirement on reverse color printing from “shall” to “should”, add explanation and figures in China RoHS label, add EU RoHS 2 CE Marking, add explanation and figure in EU WEEE label (5.6); Add EU RoHS 2 Technical File preparation (5.8); Integrate Table 2 and Table 4 under Annex A – TE Hazardous Substance List; Key changes in TE Hazardous Substance List (Table 2):

Rev	Date	Revision Description
		- Upgrade HBCDD from Substance of Concern (C) to Restricted Substance (R) due to Stockholm Convention restriction on POPs; - Add REACH Dec2012, June2013 SvHCs; - Revise threshold level for asbestos to 1000ppm by weight of product; - Upgrade Benzenamine, N-phenyl-, reaction products with styrene and 2,4,4-trimethylpentene (CAS No 68921-45-9) from Substance of Concern (C) to Banned Substance (B) with certain exemptions, upgrade Hexachlorobutadiene (CAS No 87-68-3) from Substance of Concern (C) to Banned Substance (B) due to Canada Prohibition regulation update; - Upgrade 2,4,6-Tri-t-Butylphenol (CAS No 732-26-3), N,N'-ditolyl-p-phenylenediamin (CAS No 27417-40-9), Ntolyl-N'-xylyl-p-phenylenediamine (CAS No 28726-30-9), N,N'-dixylyl-p-phenylene diamine (CAS No 70290-05-0) from Substance of Concern (C) to Banned Substance (B) for certain applications due to Japan CSCL Kashin-ho Class I Specified Substance ban in products; - Revise threshold level for BPA from 50ppm to intentionally added; - Update REACH Authorization list from 14 to 22 SvHC in note 2 under Table 2; Make Table 3 Annex B – RoHS Exemption List; - Strikethrough expired exemptions: 2(b) (1), 7(c)-III, 11(a), 11(b), 12 and 23; add expiration date for 7(c)-IV.
J	Jan, 2014	- Add Dec 2013 SvHC list to Table 2.

K	Aug, 2014	- 3.3.B Add reference to Norway PFOA ban;
		- 4.B Refine definition of Homogeneous Material to address TE treats each plating layer or substrate metal as an individual homogeneous material;
		- 4.G Revise definition of Restricted Substance to restrict “Intentionally Add” of restricted substance, and the threshold level limit only applies to impurities (not intentionally added);
		- 5.5.A Add test requirement for radioactive substances in metals;
		- 5.5.C.2 Revise Verification Test requirement;
		- Annex A TE Hazardous Substance List – Table 2
		  - Add REACH June 2014 SvHC List;
		  - Add REACH Annex XVII items 12, 13 and 15 to ban the use in preparations;
		  - Revise REACH Annex XVII item 59 from “C” to “B”, change to Banned Substance;
		  - Add PFOA as Banned Substances;
		- Annex B RoHS Exemption List
		  - Add 1(g), 4(g) and 41 exemptions;
		  - Strikethrough 16, 39 and 40 exemptions as expired exemptions.

L	July, 2015	- 3.3.B update regulation (EU) No 517/2014 to repeal Regulation (EC) No 842/2006; update Regulation (EU) No 722/2012 to replace Directive 2003/32/EC; add Austria: Batteries Ordinance 159/2008;
		- 3.3.D add Canada Products Containing Mercury Regulations;
		- 3.3.E add IEC 62474 Material Declaration for Products of and for the Electrotechnical Industry
		- Annex A TE Hazardous Substance List – Table 2
		  - For any SvHC that have entered Annex XIV Authorization List and has passed corresponding sunset dates, TE has upgraded these SvHCs from classification “C” to “R”;
		  - Replace the complete list of SvHCs by SvHCs known to be used in hardware products and electrical and electronic equipment, with a link to ECHA website for reference to the complete SvHC list. Add relevant Dec 2014 and June 2015 SvHCs.
		  - Update Note 2 under Table 2, update the list of SvHC authorization list, add disclaimer to listing SvHCs known to be used based on TE assessment;
		  - Annex XVII changes:
		  ◆ Item 20, Dibutyltin (DBT) compounds, upgrade classification from “R” to “B”;
		  ◆ Add item 22, Pentachlorophenol and its salts and esters, ban in preparations;
		  ◆ Delete item 39, 1,1,1 Trichloroethane, methylchloroform , as removed from Annex XVII, and already covered by ODS ban;
		  ◆ Delete item 41 Hexachloroethane, as application is not relevant;
		  ◆ Item 42 was deleted by REACH because listed in POPs Regulation (EU) No 519/2012 on 2013-2-13. Move the ban to "Misc. Banned Substances in Parts & Materials" tab. No change in threshold, application and Classification.
		  ◆ Item 46, Nonylphenol and Nonylphenol ethoxylates, change application to "Cleaning agent", change IA to "1000ppm by weight of product".
		  - Mercury/mercury compounds restriction in batteries: change threshold level from IA to 5ppm per homogenous material per Canada Mercury and Austria regulation. Add both Canada Mercury and Austria regulation in Note 9 under table 2.
		  - Canada Prohibition on Benzenamine, N-phenyl-, reaction products with styrene and 2,4,4-trimethylpentene, change application to "All except for additive in rubber". Delete

Rev	Date	Revision Description
		the exemption of BNST used as additives in lubricant as exemption expired on March 14, 2015; - Fluorinated Greenhouse Gases Compounds (HFC, PFC, SF6, etc.) , selected, Exclude SF6 from the general ban. Change SF6 to Restricted Substance; - Add Sulfur fluoride (SF6) as Class “R”; - Add Red Phosphorous as Class “C”, under "Misc. Specific Industry / Business Unit Restrictions in Parts and Materials"; - Add rest 5081-2 declarable substances under "Misc. Specific Industry / Business Unit Restrictions in Parts and Materials" as Class “C”. Annex B RoHS Exemption List - Strikethrough 19, 20, 22, 23, 26, 27, 28, 35 and 36 exemptions as expired