



Requirements for Documenting Environmental Related Substances in Full Material Declaration

1. SCOPE

1.1. Purpose

This standard defines the requirements and process for documenting Product Environmental Compliance (PEC) related substances in a Full Material Declaration (FMD) for all raw materials and purchased components that may end in TE Connectivity (TE) products. FMD supports calculation of PEC conclusions which indicate the status of hazardous substances that may be present in TE products, to comply with global PEC legislations and industrial requirements. It also provides guidance for data validation checks on received FMD. This document supplements PEC Specification TEC-138-702 Supplier Requirements for Product Environmental Compliance.

1.2. Application

All material, parts, components and/or products supplied to TE, whether finished or semi-finished shall be subject to the requirements specified herein.

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2. APPLICABLE DOCUMENTS

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

2.1. Policies, Specifications and Standards

- A. [TEC-138-702](#) Supplier Requirements for Product Environmental Compliance

2.2. Forms

- A. [5081-2](#) Environmental Related Substances
B. [6097](#) TE Banned Substance List

2.3. Laws, Regulations (including all amendments) and Industry Standards

- A. IPC1752A Materials Declaration Management Standard
B. ISO 1043-1 Plastics — Symbols and abbreviated terms — Part 1: Basic polymers and their special characteristics
C. ISO 1043-4 Plastics — Symbols and abbreviated terms — Part 4: Flame retardants
D. ISO 1629 Rubber and latices — Nomenclature
E. ISO 18064:2014 Thermoplastic elastomers — Nomenclature and abbreviated terms

2.4. Web Sites

- A. TE Supplier Portal: <https://supplier.te.com/web/supplier-portal/home>
B. Assent FMDComplete Tool: <http://www.assentcompliance.com/fmdcomplete>

3. FMD REQUIREMENTS

3.1. Basic Requirements

An FMD shall disclose all weights and contents (100%) of the homogeneous materials that are found in the supplied materials/parts and all weights and contents (100%) of the substances that are contained in each homogeneous material. 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.

Unintentionally added substances (trace or residual substances) shall be reported for each homogeneous material, if known or reasonably expected to be known, regardless of the concentration/(ppm) or percent threshold level. If the trace level values exceed detectable limits, they must be reported.

All substances shall be declared by CAS Registry Number.

3.2. Declaration Requirements on Proprietary Substances

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 Declarable Substances.

Declarable substances are hazardous substances listed on TE Environmental Related Substances List (Form 5081-2) which are currently regulated, future at risk or industrial concerned, and must be declared at the homogeneous material level if detectable limits are exceeded whether intentionally added or not. These hazardous substances include for example POPs, ODS, RoHS, REACH SVHC, REACH Annex XVII, GADSL, etc.

Proprietary substances which are determined by the supplier not to be declared by CAS Registry Number shall NOT be more than 10% of the composition of the homogeneous material. A proprietary substance shall NOT contain (or be) a declarable substance (as defined above). Trace or residual declarable substances shall be listed where known. Any amount (no matter how small) of a known declarable substance MUST be listed.

Enter CAS Number as “**TE5081-2-mmyy**” (mmyy shall always stand for the latest version, for example TE5081-2-0320 refers to Mar 2020 version of TE Form 5081-2) to represent a Proprietary Substance that is not a Declarable Substance on the latest revision of TE Form 5081-2. See Annex B for acceptable halogen declarations based on TE5081-2-xx where xx represents the halogen chemical symbol. See Annex E for practical guidance on how to enter proprietary substances. **Examples of declarations against CAS number TE5081-2-mmyy that are not acceptable include: NO-CAS-REFERENCE; PROPRIETARY-DATA; NOT TO DECLARE; UNKNOWN.**

Supplier could also use ISO codes to represent a Proprietary Substance, please refer to 3.3.

i NOTE

Form 5081-2 is not an exhaustive list of all compounds that could be found within each category. In cases where a CAS number “Various” is shown along with a description including Other (e.g. Any other substance containing lead or a lead compound) this would include all other substances falling into this category even though not listed specifically in 5081-2.

i NOTE

By not reporting the actual CAS number, the FMD will need to be updated as the Declarable list (5081-2) changes. Some industries/customers may require additional documentation for items declared proprietary.

i NOTE

If using Assent FMDComplete tool, by not reporting the actual CAS number, supplier will get a WARNING message like “The value: XXX entered in the CAS field is not a valid CAS Number but may be accepted by the requester. Click “Continue” to proceed with this value or “Edit” to return and change the value”, for entries of “TE5081-2-mmyy” or ISO codes, click “Continue” to proceed. If using another tool to generate the FMD, ensure that only “TE5081-2-mmyy” or valid ISO 1043 codes per Annex B are entered as the CAS number for a Proprietary Substance. And mmyy shall always stand for the latest version of TE Form 5081-2.

3.3. Declaration Requirements on ISO Codes

Supplier could also use ISO 1043, ISO 1629 or ISO 18064 codes (including three TE dummy halogen codes) to represent a Proprietary Substance **which is NOT a Declarable Substance listed in TE Form 5081-2.**

ISO codes (and the three TE dummy halogen codes) MUST NOT contain any Declarable Substance listed in TE Form 5081-2!

Any listed substances on the 5081-2 must not be hidden in any ISO code especially the 1043-4 codes or TE dummy halogen codes!

TE allows supplier to use ISO codes to declare base polymer (1043-1) and flame retardant (1043-4), for example “1043-1-ABS Acrylonitrile-butadiene-styrene plastic - ISO 1043-1 Term ABS” and use TE dummy halogen codes to declare non-flame retardant halogenated compounds. For the example list of TE allowed ISO codes and dummy halogen codes, please refer to Annex B.

i NOTE

ISO codes are NOT preferred and should be avoided if possible by providing the actual CAS numbers. Additionally, substances that fall under more than one ISO 1043 code should be broken out where possible. ISO codes are not counted in the 10% proprietary substance allowable quota per homogeneous material.

3.4. Other Requirements

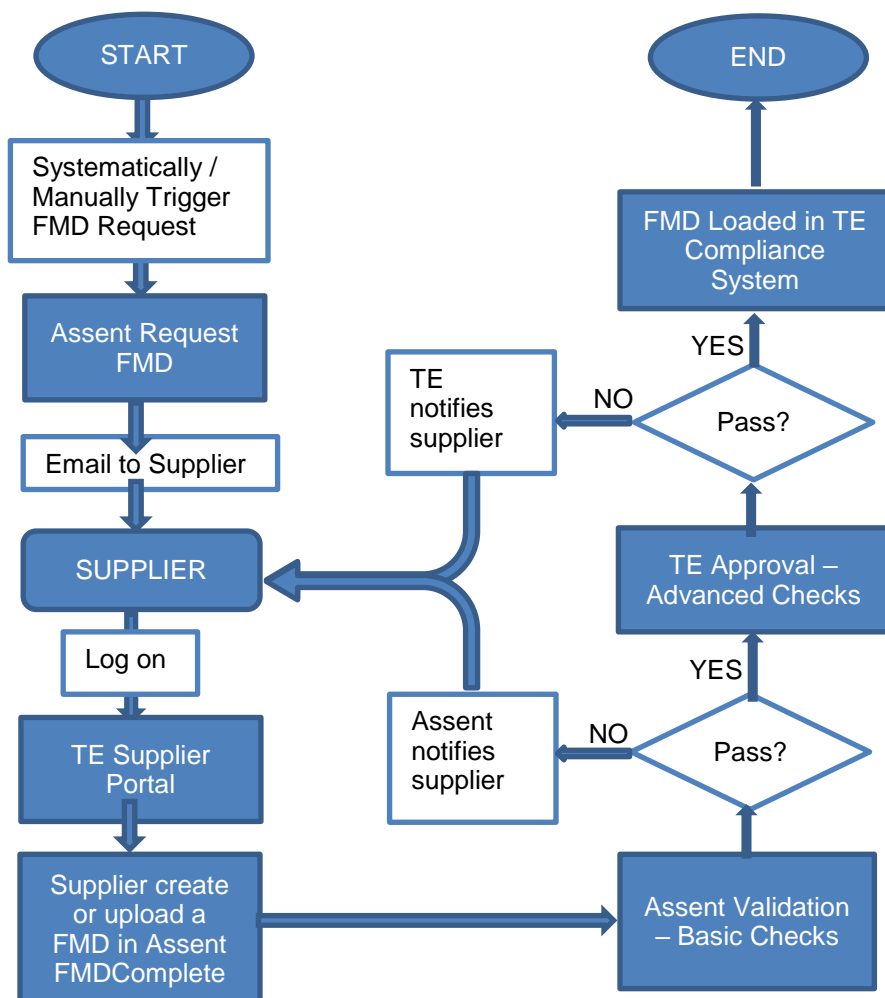
- A. The Declarable substances in the material shall be reported as a maximum amount (worst case) that would be found in the material. All other substances shall be reported as nominal. In order to ensure that the sum of the products equals 100%, the last substance to be recorded should be the substances that include the material's major constituent (e.g.: basic polymer, filler material, etc.). It should be calculated as 100 minus all other ingredient substances.
- B. A substance should be declared as it exists in the final product state delivered to TE, i.e. only those substances that are or are anticipated to be present in the final part should be declared (e.g.: substance(s) become part of the final plating, lubricant solids, a hardened adhesive, etc.). If a declaration is to be made in a different stage and further changes could take place on substance ingredients (e.g.: reactants before chemical reaction such as uncured silicone or epoxy, or volatile solvent that will evaporate and not remain in final product state), it will be rejected by TE after data validation.
- C. **After submission, if there is any change to the materials and/or mass of a product's components, e.g. as a result of an engineering change, or if any hidden proprietary substance becomes a regulatory banned or restricted or declarable substance (such as RoHS and REACH SVHC), requires that supplier immediately updates the information provided previously to TE and got written approval.** Follow 5.4 Change Procedure of TEC-138-702.

4. FMD TOOL AND PROCESS

To comply with the above requirements of this document, standard tools have been provided to complete this task and a process has been developed to facilitate gathering this information.

TE requires suppliers to submit an FMD in the format of IPC1752 standard and using Assent Materials Declaration Tool. Supplier could either create an FMD online using Materials Declaration tool or upload an existing IPC1752 xml file generated by other tools used by supplier.

Below process is followed to gather an FMD from a supplier:



5. FMD VALIDATION CHECKS

As indicated in FMD Process Flowchart, Basic Checks will take place in Assent FMDComplete application, while Advanced Checks will take place in TE compliance systems. Detail check rules are described below for both suppliers and TE internal reviewers reference:

5.1. Basic Check Rules

- A. 100% Check: whether weights of all homogeneous materials add up to 100% of the supplied materials/parts; and whether weights of all substances add up to 100% of each homogeneous material. If the total weight of all the substances/materials does not match the declared weight of the part, within a specified tolerance, an error message is displayed.
- B. XML Schema Check: The XML file is checked against the corresponding schema (IPC-1752A or IPC-1752B) If mandatory XML elements or attributes are missing or out of order, or contain data in an unexpected format, the submitted file will be rejected and must be corrected and resubmitted.
- C. CAS Accuracy Check: Substances will be checked for having correct CAS numbers following a standard calculation formula: <https://www.cas.org/content/chemical-substances/checkdig>

NOTE

The only exceptions for an “Unreal” CAS Number are either “TE5081-2-mmyy” or ISO codes.

- D. 10% Check: Substances not declared by a real CAS Number shall add up to less than 10% per homogeneous material (except for ISO 1043-1, 1043-4, 1629, 18024 and “dummy” halogen codes).

5.2. Advanced Check Rules

- A. Simplicity Check: whether 100% declared by only one substance.
- B. Duplicate Substances in a Material: The same substance may not be reported more than once within a given homogeneous material. Multiple substances must have their weights summed and reported one time in the material.
- C. Substance Classification Check: whether all declared substances are in existing TE substances pool which have been correctly classified; otherwise will trigger classification review of new substance entry.
- D. CAS Validity Check: whether the declared CAS Number has a preferred CAS Number or replaced by another valid CAS Number.
- E. Banned/Restricted Substances Check: whether any of the Banned Substances or Restricted Substances are declared per TEC-138-702.
- F. Brominated/Chlorinated Flame Retardant Check: if any Brominated or Chlorinated compound is declared, check whether it is added as a Flame Retardant.

ANNEX A – DEFINITIONS

- A. **Banned Substance** - Substances whose intentional use is not permitted in any quantity for all indicated applications are defined as “Banned Substance”. 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) of TEC-138-702 identifies the Banned Substances (classified as “B”), with reference to Form 6097 that contains the list of substances banned globally by TE in all applications; and substances banned for specific applications as indicated in Table 2.

- B. **Declarable Substance** – Hazardous Substances listed on TE Form 5081-2 which are currently regulated, future at risk or industrial concerned, must be declared at the homogeneous material level. These hazardous substances include for example POPs, ODS, RoHS, REACH SVHC, REACH Annex XVII, GADSL, etc. Trace or residual substances should be listed where known. Any amount (no matter how small) of a known declarable substance **MUST** be listed.
- C. **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.

- D. **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”.

- E. **ISO Codes**

The abbreviated terms are primarily intended to be a convenient shorthand for chemical names in publications and other written matter, for example indicating the type of basic polymer in materials and products, e.g. ABS molding material, PA film, PE sheeting and PVC pipe.

For the example list of TE allowed ISO codes, please refer to Annex B.

The use of an ISO code indicates that there are no Declarable Substances (on 5081-2 list) included in the percentage for this code.

ISO 1043 Codes -- ISO 1043 refers to a series of International Standards “Plastics – Symbols and abbreviated terms –

Part 1: Basic polymers and their special characteristics

Part 4: Flame retardants”

ISO 1629 Codes – ISO 1629 refers to the International Standards “Rubber and lattices – Nomenclature”

ISO 18064 Codes – ISO 18064 Codes refers to the International Standards “Thermoplastic elastomers - Nomenclature and abbreviated terms”

- F. **Material** - Chemical compounds and preparations that are supplied for the production of parts. Examples of “Materials” are: plastics/resins, metals, coatings, paint, adhesives, etc.
- G. **Part** - Mechanical parts, electrical devices or assemblies (including sub-parts), and components and/or products which are supplied to TE for use in their applications.

REACH refers to these as *Articles*.

- H. **Preparation** - means a mixture or solution composed of two or more substances.
- I. **Proprietary Substances** - Substances which are determined by the supplier to be proprietary substances should not be more than 10% of the composition of the homogeneous material. A proprietary substance may not contain (or be) a declarable substance (as defined above). Note that by not reporting the actual CAS number this Environmental Disclosure will need to be updated as the Declarable list changes. Some industries/customers may require additional documentation for items declared proprietary.
- J. **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) of TEC-138-702 identifies the Restricted Substances (classified as “R”), the indicated applications and the thresholds.

- K. **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.

Most substances will have a unique Chemical Abstracts Service (CAS) Registry Number assigned to it. CAS numbers are a unique identifier assigned to substances to eliminate the confusion and ambiguity of having more than one scientific or common name for a substance. Known organic and inorganic substances have CAS numbers.

- L. **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 Declarable Substances on the Environmental Related Substances List (Form 5081-2). Follow TEC-238-41 Requirements for Documenting Environmental Related Substance in Full Material Declaration.

Note that the list of Declarable Substances included in the Environmental Related Substances List is a more extensive list than those indicated in TE Hazardous Substance List (Table 2) of TEC-138-702.

- M. **Trace or Residual Substance** – Substances not intentionally added during the manufacturing process, also known as impurities.

ANNEX B – EXAMPLES OF ISO CODES

Any listed substances on 5081-2 MUST NOT be hidden in any ISO code or TE dummy halogen code

Substance Category	ISO Codes	Code Description
Base Polymer	1043-1-ABS	Acrylonitrile-butadiene-styrene plastic - ISO 1043-1 Term ABS
Base Polymer	1043-1-ASA	Acrylonitrile-styrene-acrylate plastic - ISO 1043-1 Term ASA
Base Polymer	1043-1-PBT	Poly(butylene terephthalate) - ISO 1043-1 Term PBT
Base Polymer	1043-1-PA66	Polyamide 66 - ISO 1043-1 Term PA66
Base Polymer	1043-1-PPA	Polyphthalamide (Polyamide copolymer) - ISO 1043-1 Term PPA
Base Polymer	1043-1-PP	Polypropylene - ISO 1043-1 Term PP
Base Polymer	1629-Q	Silicone rubber - ISO 1629 Term Q
Base Polymer	1629-FMQ	Fluorosilicone rubber- ISO 1629 Term FMQ
Base Polymer	18064-TPU-ARES	Thermoplastic polyurethane(aromatic hard segment, polyester soft segment) - ISO 18064 Term TPU-ARES
Base Polymer	18064-TPS-SEBS	Polystyrene-poly(ethylene-butylene)-polystyrene- ISO 18064 Term TPS-SEBS
Chlorinated Flame Retardants	1043-4-FR10	Aliphatic/Alicyclic Chlorinated flame retardant - ISO 1043-4 code #FR(10) NOTE: <i>Tris(2-chloroethyl)phosphate (TCEP) (CAS No 115-96-8) must not be hidden by this ISO code.</i>
Chlorinated Flame Retardants	1043-4-FR11	Aliphatic/Alicyclic Chlorinated flame retardant with Antimony - ISO 1043-4 code #FR(11) NOTE: <i>Tris(2-chloroethyl)phosphate (TCEP) (CAS No 115-96-8) must not be hidden by this ISO code.</i>
Chlorinated Flame Retardants	1043-4-FR12	Aromatic Chlorinated flame retardant - ISO 1043-4 code #FR(12)
Chlorinated Flame Retardants	1043-4-FR13	Aromatic Chlorinated flame retardant with Antimony - ISO 1043-4 code #FR(13)
Chlorinated Flame Retardants	1043-4-FR22	Aliphatic/Alicyclic Chlorinated and Brominated flame retardant - ISO 1043-4 code #FR(22)
Chlorinated Flame Retardants	1043-4-FR41	Chlorinated organic phosphorus flame retardant - ISO 1043-4 code #FR(41) NOTE: <i>Tris(2-chloroethyl)phosphate (TCEP) (CAS No 115-96-8) must not be hidden by this ISO code.</i>
Antimony/Antimony Compounds	1043-4-FR11	Aliphatic/Alicyclic Chlorinated flame retardant with Antimony - ISO 1043-4 code #FR(11)
Antimony/Antimony Compounds	1043-4-FR13	Aromatic Chlorinated flame retardant with Antimony - ISO 1043-4 code #FR(13)
Antimony/Antimony Compounds	1043-4-FR15	Aliphatic/Alicyclic Brominated flame retardant with Antimony - ISO 1043-4 code #FR(15) NOTE: <i>Hexabromocyclododecane (HBCDD) and all Major Diastereoisomers identified (α – HBCDD, β-HBCDD, γ-HBCDD) must not be hidden by this ISO code. HBCDDs are also Banned by TE per TEC-138-702.</i>
Antimony/Antimony Compounds	1043-4-FR17	Aromatic Brominated flame retardant with Antimony - ISO 1043-4 code #FR(17)
Antimony/Antimony Compounds	1043-4-FR62	Antimony(III) Oxide flame retardant - ISO 1043-4 code #FR(62)
Antimony/Antimony Compounds	1043-4-FR63	Alkali-Metal Antimonate flame retardant - ISO 1043-4 code #FR(63)
Brominated Flame Retardants (other than PBBs, PBDEs or HBCDDs)	1043-4-FR14	Aliphatic/Alicyclic Brominated flame retardant (excluding hexabromocyclododecane) - ISO 1043-4 code #FR(14) NOTE: <i>Hexabromocyclododecane (HBCDD) and all Major Diastereoisomers identified (α – HBCDD, β-HBCDD, γ-HBCDD) must not be hidden by this ISO code. HBCDDs are also Banned by TE per TEC-138-702.</i>
Brominated Flame Retardants (other than PBBs, PBDEs or HBCDDs)	1043-4-FR15	Aliphatic/Alicyclic Brominated flame retardant (excluding hexabromocyclododecane) with Antimony - ISO 1043-4 code #FR(15)

Substance Category	ISO Codes	Code Description
Brominated Flame Retardants (other than PBBs, PBDEs or HBCDDs)	1043-4-FR16	Aromatic Brominated flame retardant (excluding brominated diphenyl ether and biphenyls) - ISO 1043-4 code #FR(16)
Brominated Flame Retardants (other than PBBs, PBDEs or HBCDDs)	1043-4-FR17	Aromatic Brominated flame retardant (excluding brominated diphenyl ether and biphenyls) with Antimony - ISO 1043-4 code #FR(17)
Brominated Flame Retardants (other than PBBs, PBDEs or HBCDDs)	1043-4-FR22	Aliphatic/Alicyclic Chlorinated and Brominated flame retardant - ISO 1043-4 code #FR(22)
Brominated Flame Retardants (other than PBBs, PBDEs or HBCDDs)	1043-4-FR42	Brominated Organic Phosphorus flame retardant - ISO 1043-4 code #FR(42)
Flame Retardants (containing phosphorus)	1043-4-FR40	Halogen-free organic phosphorus flame retardant - ISO 1043-4 code #FR(40) NOTE: Trixylyl phosphate (TXP) (CAS No: 25155-23-1) must not be hidden by this ISO code.
Flame Retardants (containing phosphorus)	1043-4-FR50	Ammonium Orthophosphate flame retardant - ISO 1043-4 code #FR(50)
Flame Retardants (containing phosphorus)	1043-4-FR51	Ammonium Polyphosphate flame retardant - ISO 1043-4 code #FR(51)
Flame Retardants (non halogen)	1043-4-FR30	Nitrogen compounds - ISO 1043-4 code #FR(30)
Flame Retardants (non halogen)	1043-4-FR60	Aluminum Hydroxide flame retardant - ISO 1043-4 code #FR(60)
Flame Retardants (non halogen)	1043-4-FR61	Magnesium Hydroxide flame retardant - ISO 1043-4 code #FR(61)
Flame Retardants (non halogen)	1043-4-FR64	Magnesium/calcium Carbonate Hydrate flame retardant - ISO 1043-4 code #FR(64)
Flame Retardants (non halogen)	1043-4-FR70	Inorganic Boron flame retardant - ISO 1043-4 code #FR(70) NOTE: Diboron trioxide (CAS No: 1303-86-2) must not be hidden by this ISO code.
Flame Retardants (non halogen)	1043-4-FR71	Organic Boron flame retardant - ISO 1043-4 code #FR(71)
Flame Retardants (non halogen)	1043-4-FR72	Zinc Borate flame retardant - ISO 1043-4 code #FR(72)
Flame Retardants (non halogen)	1043-4-FR73	Organic Zinc flame retardant - ISO 1043-4 code #FR(73)
Flame Retardants (non halogen)	1043-4-FR75	Inorganic Silica flame retardant - ISO 1043-4 code #FR(75)
Flame Retardants (non halogen)	1043-4-FR76	Organic Silica flame retardant - ISO 1043-4 code #FR(76)
Flame Retardants (non halogen)	1043-4-FR80	Graphite flame retardant - ISO 1043-4 code #FR(80)
Fluorinated Flame Retardants	1043-4-FR25	Aliphatic Fluorinated flame retardant - ISO 1043-4 code #FR(25) NOTE: Perfluorobutane sulfonic acid (PFBS) and its salts must not be hidden by this ISO code.
Chlorine Compounds (other than flame retardants)	TE5081-2-Cl	Proprietary chlorinated substance not used as a flame retardant, contains No Reportable TE5081-2 Substances
Brominated Compounds (other than flame retardants)	TE5081-2-Br	Proprietary brominated substance not used as a flame retardant, contains No Reportable TE5081-2 Substances
Fluorinated Compounds (other than flame retardants)	TE5081-2-F	Proprietary fluorinated substance not used as a flame retardant, contains No Reportable TE5081-2 Substances

ANNEX C – FMD EXAMPLE

Description of Component	Total Mass of the Item in Grams	Homogenous Material	Substance Name	CAS No.	Substance Content per Homogeneous Material %	Exemption
CONNECTOR HOUSING	2.952606 2.91					
		POLYESTER - PBT-GF30FR(17%)				
			1,4-Benzenedicarboxylic acid, 1,4-dimethyl ester, polymer with 1,4-butanediol	68515-51-5	33.00%	
			Furan, tetrahydro-	109-99-9	1.00%	
			Antimony oxide (Sb ₂ O ₃)	1309-64-4	4.50%	
			Carbon black	1333-86-4	1.00%	
			Glass, oxide, chemicals	65997-17-3	30.00%	
			Carbonic dichloride, polymer with 4,4'-(1-methylethylidene)bis[2,6-dibromophenol] and phenol	94334-64-2	30.00%	
			Contains No Reportable TE5081-2 Substances	TE5081-2-0320	0.50%	
					100.00%	
CONTACT	0.0411					
		Phosphor Bronze				
			Arsenic	7440-38-2	0.02%	
			Zinc	7440-66-6	0.20%	
			Iron	7439-89-6	0.10%	
			Copper	7440-50-8	90.03%	
			Phosphorus	7723-14-0	0.35%	
			Mercury	7439-97-6	0.00%	
			Cobalt	7440-48-4	0.10%	
			Lead	7439-92-1	0.15%	6(c) Pb-Alloy in Copper
			Manganese	7439-96-5	0.02%	
			Beryllium	7440-41-7	0.00%	
			Cadmium	7440-43-9	0.01%	
			Chromium	7440-47-3	0.01%	
			Nickel	7440-02-0	0.10%	
			Antimony	7440-36-0	0.01%	
			Tin	7440-31-5	8.90%	
					100.00%	
CONTACT-Nickel Plating	0.00047					
		Nickel				
			Nickel	7440-02-0	99.95%	
			Lead	7439-92-1	0.05%	
					100.00%	
CONTACT-Tin Plating	0.00091					
		Tin				
			Tin	7440-31-5	99.95%	
			Lead	7439-92-1	0.05%	
					100.00%	
CONTACT-Gold Plating	0.000126					
		Gold				
			Gold	7440-57-5	99.70%	
			Contains No Reportable TE5081-2 Substances	TE5081-2-0320	0.30%	
					100.00%	

REVISION HISTORY

Rev	Date	Revision Description
A	16 Jun, 2017	- Initial Release
B	27 Nov, 2017	- Delete the reference to TE internal standard TEC-238-40 Product Environmental Compliance Definitions. All needed definitions have been covered by Annex A. - Add Revision History.
C	21 Jun, 2018	- 3.3 Add TE dummy halogen codes to Declaration Requirements for ISO1043 codes - 3.4.C Update FMD change notification requirement on proprietary substance - Annex B add an ISO code for filler 1043-2-GF; revise description for codes 1043-4-FR14, 1043-4-FR15, 1043-4-FR16 and 1043-4-FR17; add three new TE dummy halogen codes TE5081-2-Cl, TE5081-2-Br and TE5081-2-F. - Annex D, add a note for TE direct loads needs.
D	22 May, 2019	- Link update for TEC-138-702
E	08 Sep, 2020	- 3.1/3.2 Update FMD requirement. - 3.4.C Update FMD change notification requirement on proprietary substance. Including Form 6097. - Update Annex B and Annex C. - Remove Annex D and Annex E.