



# Cisco Environmental Compliance Specification

**EDCS-26032533**

## Abstract

This document sets forth environmental compliance requirements for all materials, parts, components, finished products, batteries and packaging supplied to Cisco or to third parties on Cisco's behalf. These requirements affect the material selection, design, labeling, and other aspects.

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## 1. **PURPOSE**

As a global leader in electronic equipment, Cisco is committed to the responsible management of materials throughout the lifecycle of our products, packaging, and associated components. Driven by evolving global environmental regulations and our corporate sustainability objectives, we aim to minimize the environmental footprint of our supply chain through proactive stewardship.

This specification establishes Cisco's mandatory environmental requirements for substance usage, material selection, design, labeling, and reporting to ensure full compliance. This document applies to all products and packaging provided to Cisco customers.

For battery-specific environmental requirements, please refer to the dedicated battery specification linked within this document.

A majority of this specification is based on current regulatory requirements and is subject to periodic revision. In the event of new or amended regulations not yet reflected in this document, the regulatory requirements take precedence until such time as this specification is updated. The latest version of this document can be found by searching for EDCS-26032533.

## 2. **SCOPE**

This specification applies globally to all materials, parts, components, finished products, batteries, and packaging supplied to Cisco or to third parties on Cisco's behalf, as well as the manufacturing processes associated with these items. This scope encompasses all items, whether designed internally by Cisco, designed by third parties, or supplied by OEM/ODM/JDM, EMS, logistics, service, reverse logistics, remarketing, and demo depot partners.

This document does not constitute an exhaustive list of all chemicals of concern. Cisco suppliers are expected to proactively evaluate the human health and environmental impacts of all chemicals utilized in their manufacturing processes and present in materials, parts, and/or packaging supplied to Cisco. Suppliers must work to reduce or eliminate the use of the chemicals listed herein while ensuring full compliance with all applicable global regulations. Furthermore, suppliers are required to demonstrate compliance through the submission of necessary documentation, including test data, Full Material Disclosure (FMD), and/or reportable substance disclosures. Suppliers must also maintain robust management systems to ensure policy compliance for themselves and their sub-tier suppliers and provide timely notification to Cisco regarding any changes to the formulation of materials or parts.

For the purposes of this document, packaging is defined as all material of any nature used for the containment, protection, handling, delivery, and presentation of goods, including tangible deliverables such as digital media and documentation. This applies to primary, secondary, and tertiary packaging, and includes ancillary elements integrated into or attached to the packaging. Ancillary elements hung directly on or attached to a product that performs a packaging function are considered packaging unless they are an integral part of the product and intended to be consumed or disposed of together. This specification defines mandatory packaging labeling requirements and protocols for documentation and compliance verification.

While this specification governs general environmental requirements, specific technical requirements for batteries are detailed in the Cisco Compliance Specification for Batteries and Products Containing Batteries.

### 3. RELATED DOCUMENTS & REFERENCES

#### 3.1. Cisco Documentation

| Document/Reference Name                                                                                                                           | Document/Reference ID or Link                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Compliance Specification for Batteries and Products Containing Batteries                                                                          | EDCS-627058                                                                                                                                                                                           |
| Cisco Protective Packaging Materials Workmanship Specification                                                                                    | EDCS-661823                                                                                                                                                                                           |
| OEM/ODM/JDM Packaging Specification                                                                                                               | 95-6048-01 (or latest revision)                                                                                                                                                                       |
| Design for Distribution Specification                                                                                                             | EDCS-188266                                                                                                                                                                                           |
| ISO Packaging Collection Form                                                                                                                     | EDCS-357309                                                                                                                                                                                           |
| Cisco Packaging Engineering Supplier Requirements                                                                                                 | EDCS-1422964                                                                                                                                                                                          |
| General Guidelines for Circular Design                                                                                                            | EDCS-140384                                                                                                                                                                                           |
| Cisco's Chemical Management Expectations for Suppliers Policy                                                                                     | <a href="https://www.cisco.com/c/dam/en_us/about/supplier/processchemicalEN.pdf?dtid=ossdc000283">https://www.cisco.com/c/dam/en_us/about/supplier/processchemicalEN.pdf?dtid=ossdc000283</a>         |
| Cisco's Supplier Code of Conduct                                                                                                                  | <a href="https://www.cisco.com/c/en/us/about/csr/impact/environment/supplier-code-of-conduct.html">https://www.cisco.com/c/en/us/about/csr/impact/environment/supplier-code-of-conduct.html</a>       |
| Cisco's Supplier Guide: Sustainability, Risk and Security                                                                                         | <a href="https://www.cisco.com/c/en/us/about/supply-chain-sustainability.html#~policies-publications">https://www.cisco.com/c/en/us/about/supply-chain-sustainability.html#~policies-publications</a> |
| Product Compliance Marking Specification for Waste of Electronic and Electrical Equipment Directive (WEEE)                                        | EDCS-454992                                                                                                                                                                                           |
| Product Compliance Marking Specification for Chinese Management Methods for Controlling Pollution by Electronic Information Products (China RoHS) | EDCS-561395                                                                                                                                                                                           |
| Services & Logistics (Services) – Cross Dock and Storage Packaging Procedure                                                                      | EDCS-11761052                                                                                                                                                                                         |

#### 3.2. External Documentation

| Document/Reference Name                                                                                                                                                                                   | Document/Reference ID or Link                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EU Ozone Depleting Substances Regulation                                                                                                                                                                  | EC 1005/2009                                                                                                                                                                                  |
| EU Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) Regulation                                                                                                                | <a href="http://echa.europa.eu/web/guest/regulations/reach/legislation">http://echa.europa.eu/web/guest/regulations/reach/legislation</a>                                                     |
| REACH Substances of Very High Concern (SVHC) Candidate List                                                                                                                                               | <a href="http://echa.europa.eu/web/guest/regulations/reach/candidate-list-substances-in-articles">http://echa.europa.eu/web/guest/regulations/reach/candidate-list-substances-in-articles</a> |
| European Harmonized Standard EN IEC 63000:2018 "Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances (IEC 63000:2016) | <a href="https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020D0659&amp;from=EN">https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020D0659&amp;from=EN</a>       |
| International Standard IEC 63000:2016 "Technical documentation for the assessment of electrical and electronic                                                                                            | <a href="https://webstore.iec.ch/publication/25985">https://webstore.iec.ch/publication/25985</a>                                                                                             |

| Document/Reference Name                                                                                                                                                                      | Document/Reference ID or Link                                                                                                                                                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| products with respect to the restriction of hazardous substances” (and its amendments)                                                                                                       |                                                                                                                                                                                                                                                             |
| IEC 62474 - Material Declaration for Products of and for the Electrotechnical Industry & Database of declarable substance groups and declarable substances                                   | <a href="http://std.iec.ch/iec62474">http://std.iec.ch/iec62474</a>                                                                                                                                                                                         |
| IPC 1752A - Materials Declaration Management Standard                                                                                                                                        | <a href="http://www.suppliersdeclarationdataexchange.com/standards/homepage">Suppliers Declaration Data Exchange Standards Homepage   electronics.org</a>                                                                                                   |
| Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (and its amendments or measures that supersede it)                            | <a href="https://ec.europa.eu/environment/topics/waste-and-recycling/rohs-directive_en">https://ec.europa.eu/environment/topics/waste-and-recycling/rohs-directive_en</a>                                                                                   |
| Packaging - Requirements for the use of European Standards in the field of packaging and packaging waste <sup>1</sup>                                                                        | CEN 13427                                                                                                                                                                                                                                                   |
| Packaging- Requirements specific to manufacturing and composition-Prevention by source reduction <sup>1</sup>                                                                                | CEN 13428                                                                                                                                                                                                                                                   |
| Packaging – Reuse <sup>1</sup>                                                                                                                                                               | CEN 13429                                                                                                                                                                                                                                                   |
| Packaging - Requirements for packaging recoverable by material recycling <sup>1</sup>                                                                                                        | CEN 13430                                                                                                                                                                                                                                                   |
| Packaging - Requirements for packaging recoverable in the form of energy recovery, including specification of minimum inferior calorific value <sup>1</sup>                                  | CEN 13431                                                                                                                                                                                                                                                   |
| Packaging - Requirements for packaging recoverable through composting and biodegradation - Test scheme and evaluation criteria for the final acceptance of packaging <sup>1</sup>            | CEN 13432                                                                                                                                                                                                                                                   |
| Packaging – Requirements for measuring and verifying the four heavy metals and other dangerous substances present in packaging, and their release into the environment – Part 1 <sup>1</sup> | CR 13695-1                                                                                                                                                                                                                                                  |
| Packaging – Requirements for measuring and verifying the four heavy metals and other dangerous substances present in packaging, and their release into the environment – Part 2 <sup>1</sup> | CR 13695-2                                                                                                                                                                                                                                                  |
| International Standard for Phytosanitary Measures (ISPM) 15: Regulation of Wood Packaging Material in International Trade                                                                    | <a href="https://www.ippc.int/en/publications/640/">https://www.ippc.int/en/publications/640/</a>                                                                                                                                                           |
| Plastics: Symbols and abbreviated terms – Part 1: Basic polymers and their special characteristics                                                                                           | ISO 1043-1                                                                                                                                                                                                                                                  |
| Plastics — Generic identification and marking of plastics products                                                                                                                           | ISO 11469                                                                                                                                                                                                                                                   |
| China Packaging Recycling Marking, National Standard of the People’s Republic of China                                                                                                       | GB/T 18455-2022                                                                                                                                                                                                                                             |
| Taiwan Waste Disposal Act as amended to date                                                                                                                                                 |                                                                                                                                                                                                                                                             |
| California’s Rigid Plastic Packaging Container (RPPC) law                                                                                                                                    | <a href="http://www.calrecycle.ca.gov/plastics/rppc/">http://www.calrecycle.ca.gov/plastics/rppc/</a>                                                                                                                                                       |
| US Federal Trade Commission (FTC) “Green Guides”: Guides for the Use of Environmental Marketing Claims                                                                                       | <a href="http://www.ftc.gov/enforcement/rules/rulemaking-regulatory-reform-proceedings/guides-useenvironmental-marketing-claims">http://www.ftc.gov/enforcement/rules/rulemaking-regulatory-reform-proceedings/guides-useenvironmental-marketing-claims</a> |
| Korea: Act on the Promotion of Saving and Recycling of Resources as amended to date                                                                                                          |                                                                                                                                                                                                                                                             |

| Document/Reference Name                                                                                                                                                                                        | Document/Reference ID or Link                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Korea: Presidential Enforcement Decree of the Act on the Promotion of Saving and Recycling of Resources as amended to date                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Korea: Electric Appliances Safety Control Act                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Korean Ministry of Environment Decree #No. 2010-139                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Japan: Promotion of Effective Utilization of Resources and related Ordinances                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| India Plastic Waste Management (Amendment) Rules, 2018                                                                                                                                                         | <a href="https://cpcb.nic.in/displaypdf.php?id=cGxhc3RpY3dhc3RlL1BXTV9HYXpldHRlLnBkZg==">https://cpcb.nic.in/displaypdf.php?id=cGxhc3RpY3dhc3RlL1BXTV9HYXpldHRlLnBkZg==</a>                                                                                                                                                                                                                                                                                           |
| EU Deforestation Regulation                                                                                                                                                                                    | (EU) 2023/1115, as amended from time to time                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), December 18, 2006 (and its amendments) | <a href="https://echa.europa.eu/regulations/reach/legislation">https://echa.europa.eu/regulations/reach/legislation</a>                                                                                                                                                                                                                                                                                                                                               |
| Regulation (EU) No 528/2012 of the European Parliament and of the Council concerning the making available on the market and use of biocidal products, May 22, 2012 (and its amendments)                        | <a href="http://echa.europa.eu/regulations/biocidal-products-regulation/legislation">http://echa.europa.eu/regulations/biocidal-products-regulation/legislation</a>                                                                                                                                                                                                                                                                                                   |
| Commission Recommendation 2011/696/EU on the definition of nanomaterial, October 18, 2011 (and measures that amend or supersede it)                                                                            | <a href="http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:275:0038:0040:EN:PDF">http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:275:0038:0040:EN:PDF</a>                                                                                                                                                                                                                                                                               |
| Electronic Product Environmental Assessment Tool and applicable standards                                                                                                                                      | <a href="https://www.epeat.net/">https://www.epeat.net/</a>                                                                                                                                                                                                                                                                                                                                                                                                           |
| Commission Regulation (EU) 2019/2021 laying down ecodesign requirements for electronic displays, October 1, 2019 (and its amendments)                                                                          | <a href="https://ec.europa.eu/info/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/energy-label-and-ecodesign/energy-efficient-products/televisions_en#ecodesign-requirements">https://ec.europa.eu/info/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/energy-label-and-ecodesign/energy-efficient-products/televisions_en#ecodesign-requirements</a> |
| RBA Validated Assessment Program (VAP)                                                                                                                                                                         | <a href="http://www.responsiblebusiness.org/vap/about-vap/">http://www.responsiblebusiness.org/vap/about-vap/</a>                                                                                                                                                                                                                                                                                                                                                     |
| The Toxic Substances Control Act (TSCA) / 15 U.S. Code Chapter 53 - Toxic Substances Control (and its amendments)                                                                                              | <a href="https://uscode.house.gov/view.xhtml?path=/prelim@title15/chapter53&amp;edition=prelim">https://uscode.house.gov/view.xhtml?path=/prelim@title15/chapter53&amp;edition=prelim</a>                                                                                                                                                                                                                                                                             |

<sup>1</sup>CEN Standards: The European Union's (EU) Packaging and Packaging Waste Regulation (PPWR) (EU 2025/40), as amended from time to time, establishes detailed requirements for all packaging placed on the EU market, including specific provisions for packaging design, recyclability, reuse, recycled content and waste reduction targets. The European Committee for Standardization (CEN) develops harmonized standards under the mandate of the PPWR, and compliance with these standards once published and in force, will provide a presumption of conformity with the Regulation's requirements throughout the EU.

Until new harmonized standards are developed and published under the mandate of the PPWR, suppliers shall demonstrate compliance through adherence to the following European harmonized standards, originally developed under the EU Packaging and Packaging Waste Directive (94/62/EC), where applicable.

Upon the publication and entry into force of new harmonized standards developed under the PPWR, suppliers shall transition to and ensure compliance with these new standards. Suppliers are responsible for monitoring the development and adoption of these new standards and for ensuring their packaging designs and materials meet the most current applicable EU requirements.

## 4. TERMS & DEFINITIONS

| Terms   | Definition                                                                                        |
|---------|---------------------------------------------------------------------------------------------------|
| CE      | European Conformity                                                                               |
| EU      | European Union                                                                                    |
| RoHS    | Restriction of Hazardous Substances Directive                                                     |
| REACH   | Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 |
| BPR     | Biocidal Products Regulation (EU) No 528/2012                                                     |
| CMRs    | Substances that are carcinogenic, mutagenic or toxic for reproduction                             |
| PBTs    | Substances that are Persistent, Bioaccumulative or Toxic for the Environment                      |
| vPvBs   | Substances that are very Persistent and very Bioaccumulative                                      |
| PCN     | Product Change Notification                                                                       |
| AVL     | Approved Vendor List                                                                              |
| ECO     | Engineering Change Order                                                                          |
| MCV     | Maximum Concentration Value                                                                       |
| MPN     | Manufacturer Part Number                                                                          |
| OEM     | Original Equipment Manufacturer                                                                   |
| ODM     | Original Design Manufacturer                                                                      |
| EMS     | Electronic Manufacturing Services                                                                 |
| DoC     | Declaration of Conformity                                                                         |
| GWP     | Global Warming Potential                                                                          |
| CAS     | Chemical Abstract Service. Please refer to the Appendices for substance lists with CAS numbers.   |
| IEC     | International Electrotechnical Commission                                                         |
| EPEAT   | Electronic Product Environmental Assessment Tool                                                  |
| RBA     | Responsible Business Alliance                                                                     |
| TBD     | To Be Determined                                                                                  |
| TSCA    | Toxic Substances Control Act                                                                      |
| JDM     | Joint Design Manufacturer                                                                         |
| FTC     | Federal Trade Commission                                                                          |
| EU PPWR | European Union Packaging and Packaging Waste Regulation                                           |
| SSC     | Service Supply Chain                                                                              |

## 5. PRODUCT REQUIREMENTS

### 5.1. Substances Restricted in Products

Unless otherwise specified, the intentional addition of substances listed in Table-1a below, or their presence above the Maximum Concentration Value (MCV) in Table-1a at the homogeneous material level, is restricted.

If a substance exceeds the MCV, a valid applicable exemption must be utilized. Unless otherwise specified, utilized exemptions shall be strictly limited to those listed in Table-1b, and conform to the numberings and descriptions therein.

Prior to the applicable Cisco Date, suppliers using restricted substances and/or exemptions must complete Cisco's qualification process for all affected Manufacturer Part Numbers (MPNs), and) and cease shipment of products claiming restricted substances and/or exemptions. Affected MPNs shall not be shipped past their Cisco Date.

**Table-1a: Restricted Substance List**

| No. | Substances                                    | CAS Number     | Threshold <sup>1</sup>                                                                                                                                                                       | Requirement / Application | Scope                                                                                                                                                           |
|-----|-----------------------------------------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | Cadmium (Cd) and its compounds                | See Appendix A | 100 PPM                                                                                                                                                                                      | Restricted <sup>2</sup>   | All                                                                                                                                                             |
| 2.  | Hexavalent Chromium (Cr VI) and its compounds | See Appendix A | 1000 PPM                                                                                                                                                                                     | Restricted                | All                                                                                                                                                             |
| 3.  | Lead (Pb) and its compounds                   | See Appendix A | 300 PPM                                                                                                                                                                                      | Restricted <sup>2</sup>   | Restriction applies to lead and compounds in cable jacketing material of frequently handled external cable as well as ear contact parts of headphones, headsets |
|     |                                               |                | 1000 PPM                                                                                                                                                                                     | Restricted <sup>2</sup>   | All Other                                                                                                                                                       |
| 4.  | Mercury (Hg) and its compounds                | See Appendix A | 1000 PPM                                                                                                                                                                                     | Restricted                | All                                                                                                                                                             |
| 5.  | Polybrominated Biphenyls (PBBs)               | See Appendix A | Not intentionally added <sup>3</sup> ; 1000 PPM                                                                                                                                              | Restricted                | All                                                                                                                                                             |
| 6.  | Polybrominated Diphenyl Ethers (PBDEs)        | See Appendix A | Not intentionally added <sup>3</sup> ; 1000 PPM                                                                                                                                              | Restricted                | All                                                                                                                                                             |
| 7.  | Asbestos and Asbestos materials               | See Appendix A | Not Present                                                                                                                                                                                  | Banned                    | All                                                                                                                                                             |
| 8.  | Azocolourants and Azodyes                     | See Appendix A | 30 PPM                                                                                                                                                                                       | Restricted                | All                                                                                                                                                             |
| 9.  | Formaldehyde                                  | 50-00-0        | Not Present                                                                                                                                                                                  | Banned                    | Composite wood products or components (pallets/wood packaging excluded)                                                                                         |
| 10. | Nickel and its compounds                      | See Appendix A | 0.5 µg/cm <sup>2</sup> /week                                                                                                                                                                 | Restricted                | Where direct and prolonged skin contact is intended                                                                                                             |
| 11. | Ozone Depleting Substances (ODS)              | See Appendix C | Not Present                                                                                                                                                                                  | Banned                    | All                                                                                                                                                             |
| 12. | Persistent organic Pollutants (POPs)          | See Appendix A | Intentionally added <sup>3</sup><br>Regarding Perfluorooctanoic acid (PFOA) and its salts, 25 PPB of PFOA including its salts or 1000 PPB of one or a combination of PFOA-related substances | Restricted                | All                                                                                                                                                             |
| 13. | Polychlorinated Terphenyls (PCTs)             | 61788-33-8     | 50 PPM                                                                                                                                                                                       | Restricted                | All                                                                                                                                                             |

| No. | Substances                                                                                                                                      | CAS Number     | Threshold <sup>1</sup>                                                                      | Requirement / Application                                 | Scope                                                                                                                                                                                                      |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14. | Polycyclic Aromatic Hydrocarbons (PAHs)                                                                                                         | See Appendix A | 1ppm per PAH                                                                                | Restricted                                                | Restriction should only apply to those parts of articles that come into direct as well as prolonged or short-term repetitive contact with the human skin under normal or reasonably foreseeable conditions |
| 15. | Radioactive Substances                                                                                                                          | See Appendix A | Not Present                                                                                 | Banned                                                    | All                                                                                                                                                                                                        |
| 16. | Organostannic (Organotin) compounds                                                                                                             | See Appendix A | 1000 ppm by weight of tin                                                                   | Restricted                                                | All                                                                                                                                                                                                        |
| 17. | Phenol,2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl) (2-benzotriazol-2-yl)4,6-di-tertbutylphenol, (UV-320))                               | 3846-71-7      | Not Present                                                                                 | Banned                                                    | All                                                                                                                                                                                                        |
| 18. | Biocidal active substances                                                                                                                      | See Appendix A | Detectable levels.<br>Treated articles must use biocides that are approved or under review. | Restricted                                                | All                                                                                                                                                                                                        |
| 19. | Fluorinated greenhouse gases (GHG) with a GWP ≥ 150                                                                                             | See Appendix A | Not Present                                                                                 | Banned                                                    | All                                                                                                                                                                                                        |
| 20. | Tris(2-chloroethyl)phosphate (TCEP)                                                                                                             | 115-96-8       | 1000 PPM                                                                                    | Restricted                                                | All                                                                                                                                                                                                        |
| 21. | Tris(1,3-dichloro-2-propyl) phosphate (TDCPP)                                                                                                   | 13674-87-8     | 1000 PPM                                                                                    | Restricted                                                | All                                                                                                                                                                                                        |
| 22. | Substances listed in the most recent version of REACH's Annex XIV Authorization List (other than those listed separately in this specification) | See Appendix A | 1000 PPM per Article                                                                        | Restricted 18 months after inclusion in REACH's Annex XIV | All                                                                                                                                                                                                        |
| 23. | Benzyl butyl phthalate (BBP)                                                                                                                    | 85-68-7        | 1000 PPM                                                                                    | Restricted                                                | All                                                                                                                                                                                                        |
| 24. | Bis (2-ethyl(hexyl)phthalate) (DEHP)                                                                                                            | 117-81-7       | 1000 PPM                                                                                    | Restricted                                                | All                                                                                                                                                                                                        |
| 25. | Dibutyl phthalate (DBP)                                                                                                                         | 84-74-2        | 1000 PPM                                                                                    | Restricted                                                | All                                                                                                                                                                                                        |
| 26. | Diisobutyl phthalate (DIBP)                                                                                                                     | 84-69-5        | 1000 PPM                                                                                    | Restricted                                                | All                                                                                                                                                                                                        |

| No. | Substances                                                                                                                       | CAS Number              | Threshold <sup>1</sup>                                                                                                                                                                                                                        | Requirement / Application                                                           | Scope                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----|----------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 27. | Bromine and Chlorine                                                                                                             | See Appendix A          | Plastic parts exceeding 25 g shall not contain greater than 1000 ppm chlorine or greater than 1000 ppm bromine.<br><br>Parts that exceed 25% postconsumer recycled content shall contain a maximum of 5000 ppm chlorine and 5000 ppm bromine. | Restricted                                                                          | Restriction applies in plastic parts exceeding 25 g for Cisco products designated by Cisco (specified on engineering drawing) to be registered under the Electronic Product Environmental Assessment Tool (EPEAT)<br><br>(The following exceptions apply:<br>— printed circuit boards, cables and wiring, fans and electronic components.<br>— parts for which the supplier has performed an alternative assessment on the substance(s) responsible for exceeding the bromine and chlorine levels and demonstrates that the substance was determined to be safer than, or as safe as, the available alternatives. |
| 28. | Phenol Isopropylated Phosphate (3:1) (PIP (3:1))                                                                                 | 68937-41-7              | Not Present                                                                                                                                                                                                                                   | Banned                                                                              | All                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 29. | Decabromodiphenyl ethane (DBDPE)                                                                                                 | 84852-53-9              | 500 PPM (trace contamination)                                                                                                                                                                                                                 | Restricted<br>CISCO DATE: July 1, 2036                                              | All                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 30. | Halogenated Flame Retardants (HFRs)                                                                                              | See Appendix A          | The determined value for HFRs identified in RoHS shall not exceed the relevant threshold defined in RoHS. For other HFRs, the determined value for any homogenous material shall not exceed 1000 PPM (0,1 % by weight) of halogen content.    | Restricted                                                                          | Restricted in the enclosure and stand of electronic displays as defined in the electronic displays Ecodesign Regulation (EU) 2019/2021, as amended                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 31. | Substances under US TSCA Section 6 (15 U.S.C. 2605) promulgated rules (other than those listed separately in this specification) | See Appendix A          | Intentionally added <sup>3</sup>                                                                                                                                                                                                              | Restricted                                                                          | All                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 32. | Arsenic compounds                                                                                                                | See Appendix B, #4      | Not present                                                                                                                                                                                                                                   | Banned                                                                              | Preservation of wood.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 33. | REACH Annex XVII list. (other than those listed separately in this specification)                                                | See Appendix A          | Per REACH Annex XVII                                                                                                                                                                                                                          | Per REACH Annex XVII. Meet requirement 6 months prior to dates in REACH Annex XVII. | All, as applicable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 34. | Nonylphenol and Nonylphenol ethoxylates                                                                                          | 25154-52-3<br>9016-45-9 | 1000 PPM                                                                                                                                                                                                                                      | Restricted                                                                          | Restricted in textile, leather, metal, pulp and paper parts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

<sup>1</sup>Homogeneous level unless otherwise specified.

<sup>2</sup>Exemptions can be found in Table-1b.

<sup>3</sup>“Intentionally added” shall mean the deliberate use of a substance to create a specific characteristic and that this substance remains present in the product after manufacture.

**Table-1b: Restricted Substance Exemptions**

| Exemptions |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                  |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| No.        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Cisco Date <sup>4</sup>                                                                                          |
| 6(a)-I     | Lead as an alloying element in steel for machining purposes containing up to 0.35% lead by weight                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 6(a)-II    | Lead as an Alloying element in batch hot-dip galvanized steel components containing up to 0,2% lead by weight.                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 6(b)-I     | Lead as an alloying element in aluminum containing up to 0.4 % lead by weight, provided it stems from lead-bearing aluminum scrap recycling                                                                                                                                                                                                                                                                                                                                                                                                                                             | CISCO DATE: 11-Jun-2026                                                                                          |
| 6(b)-III   | Lead as an Alloying element in aluminum casting Alloys containing up to 0,3% lead by weight provided it stems from lead-bearing aluminum scrap recycling.                                                                                                                                                                                                                                                                                                                                                                                                                               | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 6(c)       | Copper alloy containing up to 4% lead by weight                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 7(a)       | Lead in high melting temperature type solders (i.e., lead-based alloys containing 85% by weight or more lead) (except applications covered by No. 24)                                                                                                                                                                                                                                                                                                                                                                                                                                   | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 7(a)-1     | Lead in high melting temperature type solders (i.e., lead-based Alloys containing 85% by weight or more lead)<br><br>For internal interconnections for attaching die, or other components along with a die in semiconductor assembly with steady state or transient/impulse currents of 0.1 A or greater or blocking voltages beyond 10 V, or die edge sizes larger than 0.3 mm x 0.3 mm.                                                                                                                                                                                               | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 7(a)-II    | Lead in high melting temperature type solders (i.e., lead-based Alloys containing 85% by weight or more lead)<br><br>For integral (meaning internal and external) connections of die attach in electrical and electronic components, if all the following conditions are met:<br><ul style="list-style-type: none"> <li>■ The thermal conductivity of the cured/sintered die attach material is &gt;35W/(m*K)</li> <li>■ The electrical conductivity of the cured/sintered die attach material is &gt;4.7MS/m ,</li> <li>■ Solidus melting temperature is higher than 260°C.</li> </ul> | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 7(a)-III   | Lead in high melting temperature type solders (i.e., lead-based Alloys containing 85% by weight or more lead)<br><br>In first level solder joints (internal or integral connections - meaning internal and external) for manufacturing components so that subsequent mounting of electronic components onto subassemblies (i.e. modules, sub-circuit boards, substrates, or point-to-point soldering) with a secondary solder does not reflow the first level solder. This sub-entry excludes die attach applications and hermetic sealings.                                            | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 7(a)-IV    | Lead in high melting temperature type solders (i.e., lead-based Alloys containing 85% by weight or more lead)<br><br>In second level solder joints for the attachment of components to printed circuit board or lead frames:<br><ol style="list-style-type: none"> <li>1. In solder balls for the attachment of ceramic ball grid-array (BGA)</li> <li>2. In high temperature plastic overmouldings (&gt; 220 °C)</li> </ol>                                                                                                                                                            | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |

| Exemptions |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                  |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| No.        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Cisco Date <sup>4</sup>                                                                                          |
| 7(a)-V     | Lead in high melting temperature type solders (i.e., lead-based Alloys containing 85% by weight or more lead)<br><br>As a hermetic sealing material between:<br>1. A ceramic package or plug and a metal case,<br>2. Component terminations and internal sub-part.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 7(a)-VI    | Lead in high melting temperature type solders (i.e., lead-based Alloys containing 85% by weight or more lead)<br><br>For establishing electrical connections between lamp components in incandescent reflector lamps for infrared heating, high intensity discharge lamps, or oven lamps.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 7(a)-VII   | Lead in high melting temperature type solders (i.e., lead-based Alloys containing 85% by weight or more lead)<br><br>For audio transducers where the peak operating temperature exceeds 200°C.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 7(c)-I     | Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectric devices, or in a glass or ceramic matrix compound (except applications covered under No. 34)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 7(c)-II    | Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher (Does not apply to applications covered by No. 7(c)-I and 7(c)-IV)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 7(c)-V     | Electrical and electronic components containing lead in a glass or glass matrix compound that fulfils any of the following functions:<br>(1) for protection and electrical insulation in glass beads of high-voltage diodes and glass layers for wafers;<br>(2) for hermetic sealing between ceramic, metal and/or glass parts;<br>(3) for bonding purposes in a process parameter window for < 500 °C combined with a viscosity of 1 013,3 dPas ('glass-transition temperature');<br>(4) for use as a resistive material such as ink, with a resistivity range from 1 ohm/square to 100 megohm/square, excluding trimmer potentiometers;<br>(5) for use in chemically modified glass surfaces for microchannel plates (MCPs), channel electron multipliers (CEMs) and resistive glass products (RGPs). | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 7(c)-VI    | Electrical and electronic components containing lead in a ceramic that fulfils any of the following functions:<br>(1) for use in piezoelectric lead zirconium titanate (PZT) ceramics;<br>(2) for providing ceramics with a positive temperature coefficient (PTC).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 8(b)-I     | Cadmium and its compounds in electrical contacts used in:<br>- circuit breakers;<br>- thermal sensing controls;<br>- thermal motor protectors (excluding hermetic thermal motor protectors);<br>- AC switches rated at:<br>A. 6 A and more at 250 V AC and more; or<br>B. 12 A and more at 125 V AC and more;<br>- DC switches rated at 20 A and more at 18 V DC and more; and<br>- switches for use at voltage supply frequency ≥ 200 Hz                                                                                                                                                                                                                                                                                                                                                               | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 13(a)      | Lead in white glasses used for optical applications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 13(b)-(I)  | Lead in ion colored optical filter glass types                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 13(b)-(II) | Cadmium in striking optical filter glass types                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |

| Exemptions  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                  |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| No.         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Cisco Date <sup>4</sup>                                                                                          |
| 13(b)-(III) | Cadmium and lead in glazes used for reflectance standards                                                                                                                                                                                                                                                                                                                                                                                                                                   | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 15(a)       | Lead in solders to complete a viable electrical connection between the semiconductor die and the carrier within integrated circuit flip chip packages where at least one of the following criteria applies:<br>- A semiconductor technology node of 90 nm or larger;<br>- A single die of 300 mm <sup>2</sup> or larger in any semiconductor technology node;<br>- Stacked die packages with die of 300 mm <sup>2</sup> or larger, or silicon interposers of 300 mm <sup>2</sup> or larger. | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 24          | Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors                                                                                                                                                                                                                                                                                                                                                                         | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 29          | Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC                                                                                                                                                                                                                                                                                                                                                                                | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |
| 34          | Lead in cermet-based trimmer potentiometer elements                                                                                                                                                                                                                                                                                                                                                                                                                                         | Requested for renewal to the EU by Global Industry. Expires 6 months prior to date determined by EU Regulations. |

<sup>4</sup> Cisco Dates apply to products under the scope of listed exemptions except those for which by the applicable Cisco date:

- i. substitution will be scientifically or technically impracticable; and/or
- ii. the reliability of substitutes will not be ensured; and/or
- iii. the negative environmental, health and consumer safety impacts of substitution will outweigh benefits thereof.

Cisco will update the exemptions' numbering, description and Cisco date in due course to account for new developments by regulatory agencies and/or the scientific community, new findings on feasibility of substitution and/or business objectives, as applicable. This process will be run in close cooperation with suppliers.

## 5.2. Assessment Substances

Table 2 lists substances that are not currently restricted in products but are monitored to ensure supply chain compliance and environmental responsibility. Upon request, suppliers must provide full material disclosure at the homogeneous level for the manufacturing part number (MPN). Suppliers are expected to proactively identify and adopt viable alternatives for these substances. As these materials may face future regulatory or Cisco-mandated restrictions, suppliers should monitor emerging requirements and phase out these substances as feasible alternatives become available.

**Table-2: Assessment Substances List**

| No. | Substance/Category                                                                                              | CAS Number     | Threshold |
|-----|-----------------------------------------------------------------------------------------------------------------|----------------|-----------|
| 1.  | Phthalates, Category 1A or 1B CMRs (other than those listed separately in this specification)                   | See Appendix B | 1000 PPM  |
| 2.  | Brominated and Chlorinated Flame Retardant Materials (other than those listed separately in this specification) | See Appendix B | 1000 PPM  |
| 3.  | Tetrabromobisphenol-A (TBBPA)                                                                                   | 79-94-7        | 1000 PPM  |
| 4.  | Arsenic and its compounds (other than those listed separately in this specification)                            | See Appendix B | 1000 PPM  |
| 5.  | Bisphenol A (BPA)                                                                                               | 80-05-7        | 1000 PPM  |
| 6.  | Polyvinyl Chloride (PVC)                                                                                        | 9002-86-2      | Not Used  |

| No. | Substance/Category                                                                                                                                     | CAS Number                                                                                                 | Threshold                                  |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| 7.  | Beryllium and its compounds                                                                                                                            | See Appendix B                                                                                             | 1000 PPM                                   |
| 8.  | Substances listed in the most recent version of REACH's Annex XIV Authorization List (other than those listed separately in this specification)        | See Appendix B                                                                                             | Intentionally added                        |
| 9.  | Substances proposed for potential restriction under RoHS (other than those listed separately in this specification)                                    | Substances for which a RoHS Annex II Dossier has been submitted                                            | 1000 PPM                                   |
| 10. | IEC 62474 Declarable substance groups and declarable substances                                                                                        | See Appendix B                                                                                             | Reporting thresholds in IEC 62474 database |
| 11. | All substances listed in the most recent candidate list for inclusion in Annex XIV of REACH (other than those listed separately in this specification) | See Appendix B                                                                                             | 1000 PPM per Article                       |
| 12. | Cobalt dichloride and cobalt sulphate                                                                                                                  | 7646-79-9<br>10124-43-3                                                                                    | 1000 PPM                                   |
| 13. | per- and polyfluoroalkyl substances (PFAS) (other than those listed separately in this specification)                                                  | Substances that contain at least one aliphatic -CF <sub>2</sub> - or -CF <sub>3</sub> element              | Intentionally added                        |
| 14. | Substances under US TSCA Section 6 (15 U.S.C. 2605) proposed rules (other than those listed separately in this specification)                          | See Appendix B                                                                                             | Intentionally added                        |
| 15. | Nanomaterials                                                                                                                                          | See Definition of Nanomaterial in 2011/696/EU                                                              | 2011/696/EU                                |
| 16. | Antimony and its compounds (other than those listed separately in this specification)                                                                  | See Appendix B                                                                                             | 1000 PPM                                   |
| 17. | Nickel and its compounds (other than those listed separately in this specification)                                                                    | See Appendix B                                                                                             | 1000 PPM                                   |
| 18. | CMRs, PBTs, vPvBs and other substances of equivalent concern (other than those listed separately in this specification)                                | CMRs, PBTs, vPvBs and other substances of equivalent concern (such as endocrine disruptors or sensitizers) | Intentionally added                        |
| 19. | Organobromines and Organochlorines (other than those listed separately in this specification)                                                          | See Appendix B                                                                                             | 1000 PPM                                   |
| 20. | EU Critical/Strategic Raw Materials (other than those listed separately in this specification)                                                         | See Appendix B                                                                                             | Intentionally added                        |

### 5.3. Manufacturing Controlled Substances & Consumable Materials

At a minimum, suppliers must follow Environmental, Occupational Health and Safety requirements<sup>5</sup> in their manufacturing operations. Moreover, manufacturing consumables<sup>6</sup> must meet the requirements defined in such Regulations and this specification. Furthermore, in accordance with Cisco's Chemical Management Expectations for Suppliers Policy, Cisco requires suppliers to stop the use of certain chemical ingredients within specified timeframes. For additional details, please refer to Cisco's Chemical Management Expectations for Suppliers Policy.

<sup>5</sup>Examples of requirements for substances used in manufacturing of products include: Ozone Depleting Substances (ODS) (Montreal Protocol), Persistent organic Pollutants (POPs) (Stockholm Convention), Volatile Organic Compounds (VOCs), Mercury (Minamata Convention), Greenhouse Gases (GHGs), etc...

<sup>6</sup>Manufacturing Consumables are bulk materials/process chemicals used by contract manufacturers, Original Design Manufacturer/Original Equipment Manufacturer (ODM/OEM) suppliers and component suppliers to manufacture, assemble and/or package products, and which remain in products. These materials are typically not called out on the bill of materials, but they are inclusive of the Electronic Manufacturing Services (EMS) service contract. Some examples of manufacturing consumables are solders, solder paste, flux, adhesive tape, solder bar, wave solder cleansing agent, cleaning wipes, cloths, tapes, thermal compounds etc...

## 5.4. Conformance Verification

Compliance with Cisco Environmental Specification is required. Conformance to this specification is part of Cisco's qualification process. It is the responsibility of Suppliers to conform to this specification, and to provide complete and accurate information to verify conformance when requested.

### 5.4.1. Documentation

Suppliers shall keep documented evidence of conformance to the requirements in this specification in line with European Harmonized Standard EN IEC 63000:2018 and International Standard IEC 63000:2016, and/or effective controls subject to assessment through due diligence inquiry leveraging resources and tools supported by the industry, including the RBA Validated Assessment Program, including with measures that amend or supersede those, as applicable.

Regarding Parts for Cisco products designated by Cisco to be registered under EPEAT, suppliers shall also keep documented evidence of conformance to the applicable requirements in this specification in line with EPEAT's Verification requirements as specified in the relevant applicable standard or other mutually agreed specifications.

Furthermore, suppliers are required to demonstrate compliance through the submission of necessary documentation, including test data, Full Material Disclosure (FMD), and/or reportable substance disclosures. Where applicable, suppliers shall also draw up and keep formal EU Declarations of Conformity (EU DoCs) referencing adherence to EN IEC 63000:2018 and following the model structure and contents specified in RoHS.

Within 5 business days of receipt of a request by Cisco, suppliers shall make available all applicable documented evidence.

Documented evidence shall be kept readily available to Cisco for at least the period prescribed under applicable legislation or other mutually agreed specifications. For products bearing the CE marking, all documented evidence and formal EU DoCs shall be kept readily available to Cisco for at least 10 years beyond the date of end of sale.

Cisco reserves the right to collect updated documented evidence from time to time due to changes to requirements driven by updated market access conditions, acquisitions and/or divestiture of product line or product recalls.

## 5.5. Waivers

### 5.5.1. Repair and Refurbishment

Parts used for the repair/refurbishment, updating functionalities, or upgrading capacity of products may be exempt from restricted substances and/or exemptions requirements in Section 6.1 (Tables-1a and 1b) due to the reuse of products previously placed on the market prior to restrictions being levied. Specific instructions are provided in the "GSLO Approved Manufacturer List (AML) Qualification Status Definitions" (EDCS-592657). Additional repair and refurbishment specifications may also be provided by a Cisco Services representative on a case-by-case basis via Engineering Change Orders (ECOs) or Product Change Notification (PCN).

## 5.6. Substances Restricted in Products

Cisco may allow specific waivers from restricted substances and/or exemptions of requirements in Section 6.1 (Tables-1a and 1b) for in-scope products based on valid market access conditions. Further, no waiver from the Cisco Dates in Table- 1b is required for products under the scope of listed exemptions for which by the applicable Cisco date:

- i. substitution will be scientifically or technically impracticable; and/or
- ii. the reliability of substitutes will not be ensured; and/or
- iii. the negative environmental, health and consumer safety impacts of substitution will outweigh benefits thereof.

Cisco will update the exemptions' numbering, description and Cisco date in due course to account for new developments by regulatory agencies and/or the scientific community, new findings on feasibility of substitution and/or business objectives, as applicable.

### 5.6.1. Assessment Substances

Assessment Substances do not require waivers when used. However, Cisco requires certain action, and/or information upon request, as specified in Section 6.2.

### 5.6.2. Market Access Restrictions

If global market access restrictions impact the requirements detailed in this specification, Cisco reserves the right to adopt these additional requirements until the next revision of this specification.

## 6. PACKAGING REQUIREMENTS

### 6.1. Material Content Requirements

Packaging material must meet the following material content requirements.

1. **Heavy metals:** Cadmium, lead, mercury, and hexavalent chromium must not be intentionally added to any packaging material. The combined concentration of these four heavy metals must not exceed 100 ppm in any packaging component. For compliance methodology for testing and/or calculating heavy metal content, see CEN Report 13695-1.
2. **Ozone Depleting Substances:** Class I and Class II Ozone Depleting Substances are prohibited in all packaging materials.
3. **REACH Substances:** Supplied packaging must adhere to applicable substance restrictions identified in REACH's Annex XVII. In addition, upon request Cisco may require a declaration of REACH Candidate List Substances of Very High Concern (SVHCs).
4. **Polyvinyl chloride (PVC):** PVC should not be used in packaging components when alternatives are available. Tamper evident labels and protective tape covers are examples of applications in which viable alternatives may not yet exist, so PVC may be used in these applications.
5. **Cobalt Dichloride and Dimethyl fumarate (DMF):** Cobalt dichloride or DMF in desiccants is prohibited.

6. **Wood:** Packaging materials must not contain any illegally sourced wood material. Illegally sourced wood material includes but is not limited to wood products made from illegally harvested lumber, materials stolen from parks or other protected areas, and wood material exported in violation of export bans. Biocides or chemical treatments, such as creosote impregnation or arsenic and mercury compounds, are prohibited.

Wood packaging must meet the following requirements:

- a. Non-manufactured wood packaging must be treated in accordance with ISPM-15. Requirements of the ISPM-15 standard include heat treatment and use of debarked wood. See <https://www.ippc.int/en/publications/640/> for more information.
  - b. Manufactured wood packaging is exempt from ISPM-15.
7. **Rigid Plastic Packaging Containers (RPPCs):** An RPPC is a plastic packaging container that is: made entirely of plastic (except for incidental portions of the packaging), has a relatively inflexible shape or form, has a minimum capacity or volume of eight (8) ounces (or 0.24 L) up to a maximum capacity or volume of five (5) gallons (or 18.92 L), is capable of at least one closure (including closure during the manufacturing process), and holds a product that is sold or offered for sale in California (see <http://www.calrecycle.ca.gov/plastics/rppc/> for further details on RPPC definition). Packaging meeting this definition must comply with California's RPPC regulation, either by using 25% post-consumer recycled content or through other compliance options specified. Cisco packaging should avoid using RPPCs. Contact Cisco ([pkginquiry@external.cisco.com](mailto:pkginquiry@external.cisco.com)) if product packaging meets California's definition of RPPC.
8. **Recycled Content in Fiber Based Packaging:** Fiber-based packaging must contain a minimum of 50% post-consumer recycled content fiber (by weight). This requirement applies, but is not limited, to corrugated board, paperboard, kraft, glassine, or other papers, and molded pulp. Avoid coatings or finishes which will hinder the ability to recycle fiber-based packaging in recycling waste streams.
9. **Chlorine in Fiber Based Packaging:** Elemental chlorine shall not be used as a bleaching agent to bleach virgin or recovered content fibers used in paper-based product packaging. Product packaging must be made with Elemental Chlorine Free (ECF), Total Chlorine Free (TCF), or Processed Chlorine Free (PCF) materials. Recycled content that may have been previously bleached with chlorine or chlorine derivatives meets the requirements of this criterion.
- Elemental Chlorine Free (ECF): Packaging material produced with pulp from virgin content that has been bleached using a chlorine derivative such as chlorine dioxide (ClO<sub>2</sub>), but without the use of elemental chlorine (Cl).
- Totally Chlorine Free (TCF): Packaging material produced with pulp from virgin content that has been bleached without any type of chlorine, or that has not been bleached at all.
  - Processed Chlorine Free (PCF): Packaging material produced with pulp from virgin and/or recycled content that has been bleached without any type of chlorine, or that has not been bleached at all. Recycled content may have originally been bleached with chlorine or chlorine derivatives.
10. **Dunnage:** Unless otherwise specified in the Cisco-released 62-level pack out drawing or Bill of Materials (BOM), only paper dunnage (per pictures below with green checkmarks) shall be used to fill void space within shipping containers.

Example of Common Dunnage materials:



11. **Plastic Bags:** Plastic bags (e.g., containment bags) shall have a minimum thickness of 50 microns (2 mil) per the applicable requirements of the India Plastic Waste Management (Amendment) Rules, 2018. This applies to all plastic bags, including bags not structured within the Bill-Of-Materials but shipped with a given product. Suppliers are encouraged to minimize the use of plastic containment bags that are not required for product protection. Containing a plastic bag inside of another plastic bag should be avoided if possible. Single membrane plastic bags should be made with a minimum of 50% post-consumer recycled content. For anti-static and electrostatic shielding bags, the best practice is to provide the highest recycled content available.

## 6.2. Packaging Design Requirements

Packaging must meet the design requirements below. These requirements shall be applied during the packaging design and development stage.

1. **Environmental Design (Source Reduction):** For all packaging components, packaging designers must:
  - a. Ensure minimum packaging material is used to achieve required product protection levels: make packaging as small and light as possible without compromising safety or performance of the product.
  - b. Determine limiting factors: the reasons why the packaging cannot be made any smaller or lighter.
  - c. Document limiting factors in Packaging Collection Form (PCF). Select ONE and document the most appropriate of the following:
    - i. Product protection
    - ii. Product presentation and marketing
    - iii. Safety
    - iv. Packaging manufacturing process
    - v. Legislation

Note: See CEN 13428 and (EU) 2025/40 for more information on Source Reduction

2. **Plastic Packaging Reduction:** All packaging shall use the minimum amount of plastic packaging needed for product protection.
  - a. Prioritize the use of fiber-based packaging components over plastic components when possible.
  - b. Choose alternatives to expanded foam, especially for less fragile products. If foam packaging is required for protection, choose recycled foam when available.
  - c. Avoid use of plastic containment bags solely for purposes of inventory control (e.g., to contain a barcode)
  - d. Avoid using nested plastic containment bags.

**3. Design for Recycling:**

- a. Avoid permanently affixing (e.g., adhesives) or mixing packaging material types such as gluing expanded foams to corrugated materials.
- b. When packaging design uses packaging, components made of different materials ensure they are easily separated to ensure compatibility with recycling systems.
- c. Avoid using chemical additives in packaging components which hinder the ability of infrared material identification in recycling sortation technology

**4. Recovery Requirements:** All packaging components must meet the criteria of one of three recovery methods: Material Recovery (by recycling), Energy Recovery (by incineration), or Organic Recovery (by composting) as described in (EU) 2025/40), CEN 13427, CEN 13430, CEN 13431, and CEN 13432. Cisco packaging should meet the requirements for Material Recovery or Organic Recovery, with the exception mentioned in the Energy Recovery section below.

- a. **Material Recovery:** If this method is chosen, the packaging designer must ensure the packaging meets the requirements of CEN 13430, including:
  - i. Determine that an available infrastructure for recycling the packaging component exists in most or all countries worldwide
  - ii. Ensure the functional unit is recyclable as follows:
    - 1. Determine if the packaging, as a functional unit, meets the recovery standards – labels or other parts that cannot be removed from the functional unit should not create problems in the collection, sorting, or recycling of the unit
    - 2. Ensure the packaging allows for effective emptying so that the package can be recycled
- b. **Energy Recovery:** If this method is chosen, the packaging designer must ensure the packaging meets the requirements of CEN 13431, including:
  - i. Determine the minimum net calorific value, a measure of the energy released on combustion of packaging components, using the assessment method outlined; and
  - ii. Ensure the minimum net calorific value exceeds 5 MJ/kg for the packaging component. In general, the net calorific value for packaging components composed of more than 50% organic content (wood, cardboard, paper, plastics) is expected to exceed 5 MJ/kg and thus qualify for energy recovery. Other packaging components may qualify depending on the outcome of calculations.

Note: This recovery method should only be used when alternatives are unavailable, for example electrostatic discharge (ESD) bags.

- c. **Organic Recovery:** If this method chosen, the packaging designer must ensure the packaging meets the requirements of CEN 13432, including:
  - i. Characterization: identification of packaging constituents and materials, determination of the presence of hazardous substances such as heavy metals, determination of the packaging content used for testing;
  - ii. Biodegradability: laboratory tests must show each packaging component to be biodegradable per the levels specified;
  - iii. Disintegration: biological treatment process testing must show each packaging component to disintegrate per the criteria specified;

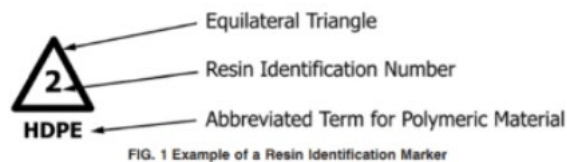
- iv. Compost quality: biological treatment process testing must show each packaging component does not negatively affect the quality of resulting compost;
- v. Recognizability: packaging components must be recognizable by the end user as compostable; and meet documentation requirements

### 6.3. Marking/Labeling

Suppliers who provide packaging materials to Cisco have the obligation of marking and/or labeling package components as defined in this section.

#### 1. ASTM Resin Identification Codes for Packaging:

For rigid plastic packaging containers with volume > 8 oz., the ASTM D7611/D7611M-20 Resin Identification Codes (RIC) must be embossed or molded into the base of the container and should be between 0.5-1.0 inches in size (not including the letter code underneath the symbol) depending on the size of the container. The image below is for illustration only:



Use the appropriate number and code for the plastic type. The meaning of the numbers and abbreviations used for Resin Identification Codes (RIC) can be found in Table 3 below or referenced at American Society for Testing and Materials (ASTM) <https://blog.ansi.org/ansi/resin-identification-codes-rics-astm-d7611/>

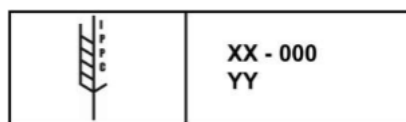
**Table-3: Resin Identification Codes**

| Resin Identification Number | Resin                         | Resin Identification Code –Option A                                                          | Resin Identification Code –Option B                                                          |
|-----------------------------|-------------------------------|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 1                           | Poly (ethylene terephthalate) | <br>PETE    | <br>PET   |
| 2                           | High density polyethylene     | <br>HDPE    | <br>PE-HD |
| 3                           | Poly (vinyl chloride)         | <br>V       | <br>PVC   |
| 4                           | Low density polyethylene      | <br>LDPE    | <br>PE-LD |
| 5                           | Polypropylene                 | <br>PP      | <br>PP    |
| 6                           | Polystyrene                   | <br>PS     | <br>PS   |
| 7                           | Other resins                  | <br>OTHER | <br>O   |

## 2. Wood Packaging Requirements

Non-Manufactured Wood Packaging must meet the treatment, certification and marking requirements of the International Standards for Phytosanitary Measures in accordance with ISPM-15, “Regulation of wood packaging material in international trade.” The use of Methyl Bromide is authorized as a phytosanitary treatment method for wood packaging but should be avoided and should be phased out where possible. Markings must be placed on two (2) opposite exterior vertical faces of the packaging.

The image below is for illustration only. Details on ISPM 15 treatment, certification and marking, including legibility requirements, can be found at <https://www.ippc.int/en/publications/640/>.



### 3. Korea “Separate Discharge” Mark for Packaging

The Korean “Separate Discharge” marks are required for certain types of plastic packaging described below. only when used to package power adapters and power supplies, cables/cords, set-top boxes, audio-video equipment and video phones. Many Cisco products do not fall into these categories in which case these marks do not apply. If supplier is unsure whether this mark applies to a packaging component, please consult Cisco at [pkginquiry@external.cisco.com](mailto:pkginquiry@external.cisco.com).

This marking requirement applies to cushioning materials made of synthetic (plastic) resin such as foam buffers and plastic sheets or film. Exceptions to the requirement include any one of the following:

- Buffers with surface area less than 50 cm<sup>2</sup>;
- Plastic film with surface area less than 100 cm<sup>2</sup>, or thickness less than 20 µm;
- Packaging component capacity less than 30 ml or 30 g;
- Packaging material on which it is technically difficult to print the mark or to attach a label; or
- Packaging material on which no other label or mark appears.

The mark should be at least 8 mm by 8 mm. Details regarding marking specifications can be found at [www.epr.or.kr](http://www.epr.or.kr). The image below is for illustration only. Use the correct marking for the packaging material and defer to official artwork provided by the Korean government via the website <https://portal.budamgum.or.kr/cmb/>.



### 4. China Packaging Recycling Mark

External packaging and secondary packaging components must be marked with the appropriate recycling marks per the National Standard of the People’s Republic of China GB/T 18455-2022 and per Cisco’s corporate artwork specification. For paper packaging, including cardboard, consult GB/T 18455-2022 and Cisco’s Packaging Artwork Specification 56-3296-XX. The image below is for illustration only.



## 6.4. Environmental Packaging Claims

“Environmental claims” are words and/or symbols that indicate packaging is made of recycled content or can be recycled. Environmental claims should not be used without prior consultation and agreement from [pkginquiry@external.cisco.com](mailto:pkginquiry@external.cisco.com).

Examples of environmental claims include the word “recyclable,” the phrase “made with X% recycled content,” and display of the graphics such as the Mobius loop (chasing arrows in a triangle graphic). The US Federal Trade

Commission and similar government bodies in other countries have rules regarding environmental claims. Broadly, the use of such claims must be substantiated and must not be deceptive.

## 6.5. Supplier Documentation Requirements

All suppliers whose deliverables to Cisco include packaging materials, irrespective of its original source or delivery context, must provide the following documentation to Cisco:

- Certify compliance with Cisco's Environmental Packaging Specification using Cisco's click-to-acknowledge process.
- Complete Cisco's Packaging Collection Form (PCF) for all product packaging components that have a Cisco part number (CPN) and are used in Cisco customer shipments.
- On request, provide appropriate documentation verifying compliance with restricted substances including heavy metals, PFAS, and SVHCs under REACH. This may include but is not limited to material composition declarations, certificates of analysis (CoAs), test reports, supplier declarations, certificates for per- and polyfluoroalkyl substances (PFAS) content in packaging (see section 7.1.1).
- On request, provide appropriate documentation verifying compliance with recycled content requirements. This may include, but is not limited to, supplier recycled-content declarations, production batch records mass-balance calculations, documentation demonstrating independent third-party verification for chemical recycling, as applicable (see section 7.1.7 and 7.1.8).
- On request, provide appropriate documentation verifying that all packaging components supplied to Cisco meet one of the Recovery methods (see section 7.2.4).
- On request, provide appropriate documentation verifying that non-manufactured wood packaging components comply with ISPM-15 (see section 7.1.6).
- On request, provide a declaration of REACH's Candidate List Substances of Very High Concern (SVHCs) (see section 7.1.3).
- On request, provide full traceability of wood materials used in packaging to confirm they are not associated with forest degradation or deforestation. Packaging materials must be sourced in accordance with recognized certification schemes or equivalent due diligence processes to prevent deforestation and forest degradation.
- On request, provide relevant evidence of compliance within 5 business days of receipt of a request from Cisco to support Cisco's compliance reporting and verification obligations.

## 6.6. Cisco Documentation Requirements

Cisco must meet the following documentation requirements:

- Ensure suppliers of any deliverables to Cisco that include packaging to certify compliance with Cisco's Environmental Specification using Cisco's click-to-acknowledge process.
- Ensure suppliers complete Cisco's Packaging Collection Form (PCF) for all packaging components delivered to Cisco, and/or complete PCF as needed.
- Ensure suppliers of any deliverables to Cisco that include packaging to certify compliance with Cisco's Environmental Specification and prove evidence of compliance with (see section 7.5).
- Cisco to retain data collected in PCFs and any other form of evidence of compliance for a minimum of 5 years for single-use packaging and 10 years for reusable packaging, counted from the date of market placement, in the PLM Database, evidence library and/or equivalent after the product or packaging system is last sold.
- On request, provide a declaration of conformity and/or any relevant evidence of compliance within 10 business-days of receipt of a reasoned request from a regional and/or national regulatory authority.

## 6.7. Specification Compliance

### Compliance Measurement

Compliance with this document is required. Compliance to this specification is verified through various methods, including but not limited to supplier acceptance of this document via Cisco's click-to-acknowledge process, information collected through Cisco's Packaging Collection Form, and internal verification.

### Exceptions

Any exception to this specification must be approved by Cisco via [pkginquiry@external.cisco.com](mailto:pkginquiry@external.cisco.com).

### Non-Compliance

Deviations or non-compliance with this specification, including attempts to circumvent the stated specification by bypassing or knowingly manipulating the process, system, or data is not permitted and constitutes a violation of Cisco policy and may result in either internal and/or externally appropriate disciplinary action.

## 7. BATTERY REQUIREMENTS

Applicable requirements for batteries and products containing batteries can be found in the Cisco Compliance Specification for Batteries and Products Containing Batteries on the [Cisco Supplier Web Portal](#) under [Additional Policies for Hardware Suppliers](#).

## APPENDIX A - TABLE-1A RESTRICTED SUBSTANCES REFERENCES

Below are the lists of substance compounds referenced in Table-1a. These lists are not comprehensive; they represent examples of chemicals with known CAS numbers.

**Note:** Table numbers correspond to the substance numbers in Table-1a.

### 1 — Cadmium/Cadmium Compounds

| Cadmium/Cadmium Compounds | CAS Numbers |
|---------------------------|-------------|
| Cadmium                   | 7440-43-9   |
| Cadmium oxide             | 1306-19-0   |
| Cadmium sulfide           | 1306-23-6   |
| Cadmium chloride          | 10108-64-2  |
| Cadmium sulfate           | 10124-36-4  |
| Other cadmium compounds   | -           |

### 2 — Hexavalent Chromium (Cr VI) and its Compounds

| Chromium VI Compounds                | CAS Numbers |
|--------------------------------------|-------------|
| Chromium (VI) oxide                  | 1333-82-0   |
| Barium chromate                      | 10294-40-3  |
| Calcium chromate                     | 13765-19-0  |
| Chromium trioxide                    | 1333-82-0   |
| Lead (II) chromate                   | 7758-97-6   |
| Lead chromate molybdate sulphate red | 12656-85-8  |
| Lead sulfochromate yellow            | 1344-37-2   |
| Sodium chromate                      | 7775-11-3   |
| Sodium dichromate                    | 10588-01-9  |
| Strontium chromate                   | 7789-06-2   |
| Potassium dichromate                 | 7778-50-9   |
| Potassium chromate                   | 7789-00-6   |
| Zinc chromate                        | 13530-65-9  |
| Other hexavalent chromium compounds  | -           |

### 3 — Lead/lead Compounds

| Lead/lead Compounds                  | CAS Numbers |
|--------------------------------------|-------------|
| Lead                                 | 7439-92-1   |
| Lead (II) sulfate                    | 7446-14-2   |
| Lead (II) carbonate                  | 598-63-0    |
| Lead chromate molybdate sulphate red | 12656-85-8  |
| Lead hydrocarbonate                  | 1319-46-6   |
| Lead acetate                         | 301-04-2    |
| Lead (II) acetate, trihydrate        | 6080-56-4   |
| Lead phosphate                       | 7446-27-7   |
| Lead selenide                        | 12069-00-0  |
| Lead (IV) oxide                      | 1309-60-0   |
| Lead (II,IV) oxide                   | 1314-41-6   |
| Lead (II) sulfide                    | 1314-87-0   |
| Lead (II) oxide                      | 1317-36-8   |
| Lead (II) carbonate basic            | 1319-46-6   |

|                                         |            |
|-----------------------------------------|------------|
| Lead hydroxidcarbonate                  | 1344-36-1  |
| Lead (II) phosphate                     | 7446-27-7  |
| Lead (II) chromate                      | 7758-97-6  |
| Lead sulfochromate yellow               | 1344-37-2  |
| Lead (II) titanate                      | 12060-00-3 |
| Lead sulfate, sulphuric acid, lead salt | 15739-80-7 |
| Lead sulphate, tribasic                 | 12202-17-4 |
| Lead stearate                           | 1072-35-1  |
| Other lead compounds                    | -          |

#### 4 — Mercury /Mercury Compounds

| <b>Mercury /Mercury Compounds</b> | <b>CAS Numbers</b> |
|-----------------------------------|--------------------|
| Mercury                           | 7439-97-6          |
| Mercuric chloride                 | 33631-63-9         |
| Mercury (II) chloride             | 7487-94-7          |
| Mercuric sulfate                  | 7783-35-9          |
| Mercuric nitrate                  | 10045-94-0         |
| Mercuric (II) oxide               | 21908-53-2         |
| Mercuric sulfide                  | 1344-48-5          |
| Other mercury compounds           | -                  |

#### 5 — Polybrominated Biphenyls (PBBs)

| <b>Polybrominated Biphenyls (PBBs)</b> | <b>CAS Numbers</b> |
|----------------------------------------|--------------------|
| Polybrominated Biphenyls               | 59536-65-1         |
| Dibromobiphenyl                        | 92-86-4            |
| 2-Bromobiphenyl                        | 2052-07-5          |
| 3-Bromobiphenyl                        | 2113-57-7          |
| 4-Bromobiphenyl                        | 92-66-0            |
| Tribromobiphenyl                       | 59080-34-1         |
| Tetrabromobiphenyl                     | 40088-45-7         |
| Pentabromobiphenyl                     | 56307-79-0         |
| Hexabromobiphenyl                      | 59080-40-9         |
| hexabromo-1,1-biphenyl                 | 36355-01-8         |
| Firemaster FF-1                        | 67774-32-7         |
| Heptabromobiphenyl                     | 35194-78-6         |
| Octabromobiphenyl                      | 61288-13-9         |
| Nonabromobiphenyl                      | 27753-52-2         |
| Decabromobiphenyl                      | 13654-09-6         |
| Other Polybrominated Biphenyls         | -                  |

#### 6 — Polybrominated Diphenyl Ethers (PBDEs)\*

| <b>Polybrominated Diphenyl Ethers (PBDEs)</b> | <b>CAS Numbers</b> |
|-----------------------------------------------|--------------------|
| Bromodiphenyl ether                           | 101-55-3           |
| Dibromodiphenyl ethers                        | 2050-47-7          |
| Tribromodiphenyl ether                        | 49690-94-0         |
| Tetrabromodiphenyl ethers                     | 40088-47-9         |
| Octabromodiphenyl ether                       | 32536-52-0         |
| Nonabromodiphenylether                        | 63936-56-1         |
| Other Polybrominated Diphenyl Ethers          | -                  |

**7 – Asbestos and Asbestos materials**

| <b>Asbestos</b>          | <b>CAS Numbers</b> |
|--------------------------|--------------------|
| Asbestos                 | 1332-21-4          |
| Actinolite               | 77536-66-4         |
| Amosite (Grunerite)      | 12172-73-5         |
| Anthophyllite            | 77536-67-5         |
| Chrysotile               | 12001-29-5         |
| Crocidolite              | 12001-28-4         |
| Tremolite                | 77536-68-6         |
| Other Asbestos Materials | -                  |

**8— Azocolourants and Azodyes**

| <b>Aromatic Amines</b>              | <b>CAS Numbers</b> |
|-------------------------------------|--------------------|
| biphenyl-4-ylamine                  | 92-67-1            |
| Benzidine                           | 92-87-5            |
| 4-chloro-o-toluidine                | 95-69-2            |
| 2-naphthylamine                     | 91-59-8            |
| o-aminoazotoluene                   | 97-56-3            |
| 5-nitro-o-toluidine                 | 99-55-8            |
| 4-chloroaniline                     | 106-47-8           |
| 4-methoxy-m-phenylenediamine        | 615-05-4           |
| 4,4'-methylenedianiline             | 101-77-9           |
| 3,3'-dichlorobenzidine              | 91-94-1            |
| 3,3'-dimethoxybenzidine             | 119-90-4           |
| 3,3'-dimethylbenzidine              | 119-93-7           |
| 4,4'-methylenedi-o-toluidine        | 838-88-0           |
| 6-methoxy-m-toluidine               | 120-71-8           |
| 4,4'-methylene-bis(2-chloroaniline) | 101-14-4           |
| 4,4'-oxydianiline                   | 101-80-4           |
| 4,4'-thiodianiline                  | 139-65-1           |
| o-toluidine                         | 95-53-4            |
| 4-methyl-m-phenylenediamine         | 95-80-7            |
| 2,4,5-trimethylaniline              | 137-17-7           |
| o-anisidine                         | 90-04-0            |
| 4-amino azobenzene                  | 60 09 3            |
| Other Azo-based Chemicals           | -                  |

**10 — Nickel and its compounds (Ni)**

| <b>Nickel and its compounds (Ni)</b>     | <b>CAS Numbers</b>       |
|------------------------------------------|--------------------------|
| Nickel                                   | 7440-02-0                |
| Nickel carbonate                         | 3333-67-3                |
| Nickel dioxide                           | 12035-36-8               |
| Nickel hydroxide                         | 11113-74-9               |
| Nickel monoxide                          | 1313-99-1                |
| Nickel subsulphide, trinickel disulphide | 12035-72-2               |
| Nickel sulphate                          | 7786-81-4                |
| Nickel sulphide                          | 11113-75-0<br>12137-12-1 |

|                        |            |
|------------------------|------------|
| Nickel tetracarbonyl   | 13463-39-3 |
| Nickel (II) hydroxide  | 12054-48-7 |
| Other Nickel Compounds | -          |

## 12 — Persistent organic Pollutants (POPs)

|                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Persistent organic Pollutants (POPs)</b>                                                                                                                                                                                                                                                                                                                             |
| List of substances subject to POPs:<br><a href="http://chm.pops.int/TheConvention/ThePOPs/AllPOPs/tabid/2509/Default.aspx">http://chm.pops.int/TheConvention/ThePOPs/AllPOPs/tabid/2509/Default.aspx</a> and<br><a href="https://echa.europa.eu/list-of-substances-subject-to-pops-regulation">https://echa.europa.eu/list-of-substances-subject-to-pops-regulation</a> |

## 14 — Polycyclic Aromatic Hydrocarbons (PAHs)

| Polycyclic Aromatic Hydrocarbons (PAHs)                  | CAS Numbers |
|----------------------------------------------------------|-------------|
| Tetracene Benzo[a]anthracene                             | 56-55-3     |
| Chrysene                                                 | 218-01-9    |
| Benzo[b]fluoranthene                                     | 205-99-2    |
| Benzo[j]fluoranthene                                     | 205-82-3    |
| Benzo[k]fluoranthene                                     | 207-08-9    |
| Benzo[a]pyrene                                           | 50-32-8     |
| Benzo[e]pyrene                                           | 192-97-2    |
| Benzo[ghi]perylene                                       | 191-24-2    |
| Coronene Superbenzene                                    | 191-07-1    |
| Dibenz(a,h)anthracene(C <sub>20</sub> H <sub>14</sub> ), | 53-70-3     |
| Indeno(1,2,3-cd)pyrene                                   | 193-39-5    |
| Ovalene                                                  | 190-26-1    |
| Other Polycyclic Aromatic Hydrocarbons                   | -           |

## 15 — Radioactive Substances

| Radioactive Substances                | CAS Numbers                                 |
|---------------------------------------|---------------------------------------------|
| Uranium-238                           | 7440-61-1                                   |
| Radon                                 | 10043-92-2                                  |
| Americium-241                         | 14596-10-2                                  |
| Thorium-232                           | 7440-29-1                                   |
| Cesium (Radioactive Isotopes only)    | 7440-46-2<br>(Cs-137 010045-97-3)           |
| Strontium (Radioactive Isotopes only) | (elemental 7440-29-6)<br>(Sr-90 10098-97-2) |
| Other radioactive substances          | -                                           |

## 16 — Organostannic (Organotin) Compounds

| Tributyl Tin, Triphenyl Tin               | CAS Numbers |
|-------------------------------------------|-------------|
| Triphenyltin=N, N-dimethyldithiocarbamate | 1803-12-9   |
| Triphenyltinfluoride                      | 379-52-2    |
| Triphenyltinacetate                       | 900-95-8    |
| Triphenyltinchloride                      | 639-58-7    |
| Triphenyltinhydroxide                     | 76-87-9     |

|                                                                                                           |                                                      |
|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| Triphenyltin fattyacid((9-11)salt)                                                                        | 18380-71-7<br>18380-72-8<br>47672-31-1<br>94850-90-5 |
| Triphenyltinchloroacetate                                                                                 | 7094-94-2                                            |
| Tributyltinmethacrylate                                                                                   | 2155-70-6                                            |
| Bis(tributyltin)fumalate                                                                                  | 6454-35-9                                            |
| Tributyltinfluoride                                                                                       | 1983-10-4                                            |
| Bis(tributyltin)2,3-dibromosuccinate                                                                      | 31732-71-5                                           |
| Tributyltinacetate                                                                                        | 56-36-0                                              |
| Tributyltinlaurate                                                                                        | 3090-36-6                                            |
| Bis(tributyltin)phthalate                                                                                 | 4782-29-0                                            |
| Copolymer of alkyl(c=8) acrylate,methyl methacrylate and tributyltin methacrylate                         | 67772-01-4                                           |
| Tributyltinsulfamate                                                                                      | 6517-25-5                                            |
| Bis(tributyltin)maleate                                                                                   | 14275-57-1                                           |
| Tributyltinchloride                                                                                       | 1461-22-9<br>7342-38-3                               |
| Tributyltin cyclopentane carbonate=mixture                                                                | 5409-17-2                                            |
| Tributyltin-1, 2,3,4,4a, 4b, 5,6,10,10a-decahydro-7-isopropyl-1, 4a-dimethyl-1-phenanthrenecarboxylatemix | 26239-64-5                                           |
| Tributyltin Oxide (TBTO)                                                                                  | 56-35-9                                              |
| Triphenyltin Oxide (TPTO)                                                                                 | -                                                    |
| Dibutyltin oxide                                                                                          | 818-08-6                                             |
| Dibutyltin chloride                                                                                       | 683-18-1                                             |
| Dibutyltin diacetate                                                                                      | 1067-33-0                                            |
| Dibutyltin dilaurate                                                                                      | 77-58-7                                              |
| Dibutyltin hydrogen borate                                                                                | 75113-37-0                                           |
| Dibutyltin maleate                                                                                        | 78-04-6                                              |
| Other organostannic compounds                                                                             | -                                                    |

## 18 - Biocidal Active Substances

**Biocidal active substances not included in the list drawn up in accordance with Article 9(2) of the Biocidal Products Regulation (EU) No 528/2012, for the relevant product-type and use, or in Annex I, or not used in accordance with any conditions or restrictions specified therein**

The European Commission includes approved active substances in the Union list of approved active substances. Companies can consult this list to identify active substances for use in biocidal products and treated articles. European Commission decisions on approval and non-approval are published in the Official Journal of the European Union (OJEU).

<http://echa.europa.eu/web/guest/information-on-chemicals/biocidal-active-substances>

## 19 – Fluorinated Greenhouse Gases Substances

| Industrial designation                                   | Chemical name<br>(Common name)                  | Chemical formula                                                | Global warming potential (GWP) <sup>1</sup> |
|----------------------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------|
| <b>Hydrofluorocarbons (HFCs)</b>                         |                                                 |                                                                 |                                             |
| HFC-23                                                   | trifluoromethane<br>(fluoroform)                | CHF <sub>3</sub>                                                | 14800                                       |
| HFC-32                                                   | Difluoromethane                                 | CH <sub>2</sub> F <sub>2</sub>                                  | 675                                         |
| HFC-125                                                  | Pentafluoroethane                               | CHF <sub>2</sub> CF <sub>3</sub>                                | 3 500                                       |
| HFC-134                                                  | 1,1,2,2-tetrafluoroethane                       | CHF <sub>2</sub> CHF <sub>2</sub>                               | 1 100                                       |
| HFC-134a                                                 | 1,1,1,2-tetrafluoroethane                       | CH <sub>2</sub> FCF <sub>3</sub>                                | 1 430                                       |
| HFC-143                                                  | 1,1,2-trifluoroethane                           | CH <sub>2</sub> FCHF <sub>2</sub>                               | 353                                         |
| HFC-143a                                                 | 1,1,1-trifluoroethane                           | CH <sub>3</sub> CF <sub>3</sub>                                 | 4 470                                       |
| HFC-227ea                                                | 1,1,1,2,3,3,3-heptafluoropropane                | CF <sub>3</sub> CHFCF <sub>3</sub>                              | 3 220                                       |
| HFC-236cb                                                | 1,1,1,2,2,3-hexafluoropropane                   | CH <sub>2</sub> FCF <sub>2</sub> CF <sub>3</sub>                | 1 340                                       |
| HFC-236ea                                                | 1,1,1,2,3,3-hexafluoropropane                   | CHF <sub>2</sub> CHFCF <sub>3</sub>                             | 1 370                                       |
| HFC-236fa                                                | 1,1,1,3,3,3-hexafluoropropane                   | CF <sub>3</sub> CH <sub>2</sub> CF <sub>3</sub>                 | 9 810                                       |
| HFC-245ca                                                | 1,1,2,2,3-pentafluoropropane                    | CH <sub>2</sub> FCF <sub>2</sub> CHF <sub>2</sub>               | 693                                         |
| HFC-245fa                                                | 1,1,1,3,3-pentafluoropropane                    | CHF <sub>2</sub> CH <sub>2</sub> CF <sub>3</sub>                | 1 030                                       |
| HFC-365 mfc                                              | 1,1,1,3,3-pentafluorobutane                     | CF <sub>3</sub> CH <sub>2</sub> CF <sub>2</sub> CH <sub>3</sub> | 794                                         |
| HFC-43-10 mee                                            | 1,1,1,2,2,3,4,5,5,5-decafluoropentane           | CF <sub>3</sub> CHFCHFCF <sub>2</sub> CF <sub>3</sub>           | 1 640                                       |
| <b>Perfluorocarbons (PFCs)</b>                           |                                                 |                                                                 |                                             |
| PFC-14                                                   | perfluoromethane (carbon tetrafluoride)         | CF <sub>4</sub>                                                 | 7 390                                       |
| PFC-116                                                  | hexafluoroethane<br>(perfluoroethane)           | C <sub>2</sub> F <sub>6</sub>                                   | 12 200                                      |
| PFC-218                                                  | octafluoropropane<br>(perfluoropropane)         | C <sub>3</sub> F <sub>8</sub>                                   | 8 830                                       |
| PFC-3-1-10<br>(R-31-10)                                  | decafluorobutane<br>(perfluorobutane)           | C <sub>4</sub> F <sub>10</sub>                                  | 8 860                                       |
| PFC-4-1-12<br>(R-41-12)                                  | dodecafluoropentane<br>(perfluoropentane)       | C <sub>5</sub> F <sub>12</sub>                                  | 9 160                                       |
| PFC-5-1-14<br>(R-51-14)                                  | tetradecafluorohexane<br>(perfluorohexane)      | C <sub>6</sub> F <sub>14</sub>                                  | 9 300                                       |
| PFC-c-318                                                | octafluorocyclobutane<br>(perfluorocyclobutane) | c-C <sub>4</sub> F <sub>8</sub>                                 | 10 300                                      |
| <b>Other perfluorinated compounds</b>                    |                                                 |                                                                 |                                             |
|                                                          | sulphur hexafluoride                            | SF <sub>6</sub>                                                 | 22 800                                      |
| <b>Other Fluorinated Greenhouse gases with GWP ≥ 150</b> |                                                 |                                                                 |                                             |

<sup>1</sup> Based on the Fourth Assessment Report adopted by the Intergovernmental Panel on Climate Change, unless otherwise indicated.

## 22 - Substances in REACH's Annex XIV Authorization List

|                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Substances listed in the most recent version of REACH's Annex XIV Authorization List 18 months after inclusion in Annex XIV (other than those listed separately in this specification)</b>                                                                                                                                                    |
| List of substances included in Annex XIV of REACH ("Authorisation List"):<br><a href="https://echa.europa.eu/authorisation-list">https://echa.europa.eu/authorisation-list</a>                                                                                                                                                                   |
| In order to identify potentially applicable substances, suppliers may pre-screen the Authorisation List using the IEC 62474 Material Declaration for Products of and for the Electrotechnical Industry Database of declarable substance groups and declarable substances:<br><a href="http://std.iec.ch/iec62474">http://std.iec.ch/iec62474</a> |

## 27 — Bromine and Chlorine

| <b>Brominated/Chlorinated Flame Retardants/Additives (other than those listed separately in this specification)</b>                                                                                              | <b>CAS Numbers</b>         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(14) [Aliphatic/alicyclic brominated compounds]                                                                                | -                          |
| Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(15) [Aliphatic/alicyclic brominated compounds in combination with antimony compounds]                                         | -                          |
| Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(16) [Aromatic brominated compounds excluding brominated diphenyl ether and biphenyls]                                         | -                          |
| Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(17) [Aromatic brominated compounds excluding brominated diphenyl ether and biphenyls] in combination with antimony compounds] | -                          |
| Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(22) [Aliphatic/alicyclic chlorinated and brominated compounds]                                                                | -                          |
| Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(42) [Brominated organic phosphorus compounds]                                                                                 | -                          |
| Poly(2,6-dibromo-phenylene oxide)                                                                                                                                                                                | 69882-11-7                 |
| Tetra-decabromo-diphenoxy-benzene                                                                                                                                                                                | 58965-66-5                 |
| 1,2-Bis(2,4,6-tribromo-phenoxy) ethane                                                                                                                                                                           | 37853-59-1                 |
| TBBA, unspecified                                                                                                                                                                                                | 30496-13-0                 |
| TBBA-epichlorhydrin oligomer                                                                                                                                                                                     | 40039-93-8                 |
| TBBA-TBBA-diglycidyl-ether oligomer                                                                                                                                                                              | 70682-74-5                 |
| TBBA carbonate oligomer                                                                                                                                                                                          | 28906-13-0                 |
| TBBA carbonate oligomer, phenoxy end capped                                                                                                                                                                      | 94334-64-2                 |
| TBBA carbonate oligomer, 2,4,6-tribromo-phenol terminated                                                                                                                                                        | 71342-77-3                 |
| TBBA-bisphenol A-phosgene polymer                                                                                                                                                                                | 32844-27-2                 |
| Brominated epoxy resin end-capped with tribromophenol                                                                                                                                                            | 139638-58-7<br>135229-48-0 |
| TBBA-(2,3-dibromo-propyl-ether)                                                                                                                                                                                  | 21850-44-2                 |
| TBBA bis-(2-hydroxy-ethyl-ether)                                                                                                                                                                                 | 4162-45-2                  |
| TBBA-bis-(allyl-ether)                                                                                                                                                                                           | 25327-89-3                 |
| TBBA-dimethyl-ether                                                                                                                                                                                              | 37853-61-5                 |
| Tetrabromo-bisphenol S                                                                                                                                                                                           | 39635-79-5                 |
| TBBS-bis-(2,3-dibromo-propyl-ether)                                                                                                                                                                              | 42757-55-1                 |
| 2,4-Dibromo-phenol                                                                                                                                                                                               | 615-58-7                   |
| 2,4,6-tribromo-phenol                                                                                                                                                                                            | 118-79-6                   |
| Pentabromo-phenol                                                                                                                                                                                                | 608-71-9                   |
| 2,4,6-Tribromo-phenyl-allyl-ether                                                                                                                                                                                | 3278-89-5                  |

|                                                                                              |             |
|----------------------------------------------------------------------------------------------|-------------|
| Tribromo-phenyl-allyl-ether, unspecified                                                     | 26762-91-4  |
| Bis(methyl)tetrabromo-phthalate                                                              | 55481-60-2  |
| Bis(2-ethylhexyl)tetrabromo-phthalate                                                        | 26040-51-7  |
| 2-Hydroxy-propyl-2-(2-hydroxy-ethoxy)-ethyl-TBP                                              | 20566-35-2  |
| TBPA, glycol-and propylene-oxide esters                                                      | 75790-69-1  |
| N,N'-Ethylene -bis-(tetrabromo-phthalimide)                                                  | 32588-76-4  |
| Ethylene-bis(5,6-dibromo-norbornane-2,3-dicarboximide)                                       | 52907-07-0  |
| 2,3-Dibromo-2-butene-1,4-diol                                                                | 3234-02-4   |
| Dibromo-neopentyl-glycol                                                                     | 3296-90-0   |
| Dibromo-propanol                                                                             | 96-13-9     |
| Tribromo-neopentyl-alcohol                                                                   | 36483-57-5  |
| Poly tribromo-styrene                                                                        | 57137-10-7  |
| Tribromo-styrene                                                                             | 61368-34-1  |
| Dibromo-styrene grafted PP                                                                   | 171091-06-8 |
| Poly-dibromo-styrene                                                                         | 31780-26-4  |
| Bromo-/Chloro-paraffins                                                                      | 68955-41-9  |
| Bromo-/Chloro-alpha-olefin                                                                   | 82600-56-4  |
| Vinylbromide                                                                                 | 593-60-2    |
| Tris-(2,3-dibromo-propyl)-isocyanurate                                                       | 52434-90-9  |
| Tris(2,4-Dibromo-phenyl) phosphate                                                           | 49690-63-3  |
| Tris(tribromo-neopentyl) phosphate                                                           | 19186-97-1  |
| Chlorinated and brominated phosphate ester                                                   | 125997-20-8 |
| Pentabromo-toluene                                                                           | 87-83-2     |
| Pentabromo-benzyl bromide                                                                    | 38521-51-6  |
| 1,3-Butadiene homopolymer, brominated                                                        | 68441-46-3  |
| Pentabromo-benzyl-acrylate, monomer                                                          | 59447-55-1  |
| Pentabromo-benzyl-acrylate, polymer                                                          | 59447-57-3  |
| Decabromo-diphenyl-ethane                                                                    | 84852-53-9  |
| Tribromo-bisphenyl-maleinimide                                                               | 59789-51-4  |
| Brominated trimethylphenyl-lindane                                                           | -           |
| Tetrabromo-cyclo-octane                                                                      | 31454-48-5  |
| 1,2-Dibromo-4-(1,2 dibromo-methyl)-cyclo-hexane                                              | 3322-93-8   |
| TBPA Na salt                                                                                 | 25357-79-3  |
| Tetrabromo phthalic anhydride                                                                | 632-79-1    |
| Other Brominated or Chlorinated Flame Retardants not listed separately in this specification | -           |

### 30 - Halogenated Flame Retardants (HFRs)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Halogenated Flame Retardants (HFRs)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| In order to identify potentially applicable substances, suppliers may pre-screen the IEC 62474 Material Declaration for Products of and for the Electrotechnical Industry Database of declarable substance groups and declarable substances: <a href="http://std.iec.ch/iec62474">http://std.iec.ch/iec62474</a> & the European Commission Guidelines accompanying Commission Regulations (EU) No 2019/2021 & (EU) 2019/2013 Laying down Ecodesign and Energy Labelling Requirements for Electronic Displays: <a href="https://ec.europa.eu/info/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/energy-label-and-ecodesign/energy-efficient-products/televisions_en#ecodesign-requirements">https://ec.europa.eu/info/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/energy-label-and-ecodesign/energy-efficient-products/televisions_en#ecodesign-requirements</a> |

**31 - Substances under US TSCA Section 6 (15 U.S.C. 2605) promulgated rules****Regulation of Chemicals under Section 6(a) of the Toxic Substances Control Act**

<https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/regulation-chemicals-under-section-6a-toxic-substances>

**33 - Substances in REACH Annex XVII**

**Substances listed in the most recent version of REACH's Annex XVII RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, PREPARATIONS AND ARTICLES 18 months after inclusion in Annex XIV (other than those listed separately in this specification)**

List of substances included in Annex XVII of REACH ("Restriction List"):  
[Restriction list - ECHA CHEM](#)

**APPENDIX B – TABLE-2 ASSESSMENT SUBSTANCES REFERENCES**

Below are the lists of substance compounds referenced in Table-2. These lists are not comprehensive; they represent examples of chemicals with known CAS numbers.

**Note:** Table numbers correspond to the substance numbers in Table-2.

**1 – Phthalates, Category 1A or 1B**

| <b>Phthalates, Category 1A or 1B CMRs (other than those listed separately in this specification)</b>                    | <b>CAS Numbers</b> |
|-------------------------------------------------------------------------------------------------------------------------|--------------------|
| Bis(2-methoxyethyl) phthalate                                                                                           | 117-82-8           |
| 1,2-benzenedicarboxylic acid, dipentylester, branched and linear                                                        | 84777-06-0         |
| n-pentyl-isopentylphthalate                                                                                             | -                  |
| Di-n-pentyl phthalate                                                                                                   | 131-18-0           |
| Diisopentylphthalate (DIPP)                                                                                             | 605-50-5           |
| Di(heptyl, nonyl, undecyl) phthalate (DHNUP) (1,2-Benzenedicarboxylic acid, di-C7-11- branched and linear alkyl esters) | 68515-42-4         |
| Diisoheptyl phthalate (DIHP) (1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich)                     | 71888-89-6         |
| Other Phthalates Cat. 1A or 1B CMRs not listed separately in this specification                                         | -                  |

## 2 — Brominated and Chlorinated Flame Retardants (other than those listed separately in this specification)

| Brominated Flame Retardants (other than those listed separately in this specification)                                                                                                                           | CAS Numbers                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| Brominated flame retardant which comes under notation of ISO 1043-4 code                                                                                                                                         | -                          |
| Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(15) [Aliphatic/alicyclic brominated compounds in combination with antimony compounds]                                         | -                          |
| Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(16) [Aromatic brominated compounds excluding brominated diphenyl ether and biphenyls]                                         | -                          |
| Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(17) [Aromatic brominated compounds excluding brominated diphenyl ether and biphenyls] in combination with antimony compounds] | -                          |
| Brominated flame retardant which comes under notation of ISO 1043-4 code                                                                                                                                         | -                          |
| Brominated flame retardant which comes under notation of ISO 1043-4 code                                                                                                                                         | -                          |
| Poly(2,6-dibromo-phenylene oxide)                                                                                                                                                                                | 69882-11-7                 |
| Tetra-decabromo-diphenoxy-benzene                                                                                                                                                                                | 58965-66-5                 |
| 1,2-Bis(2,4,6-tribromo-phenoxy) ethane                                                                                                                                                                           | 37853-59-1                 |
| TBBA, unspecified                                                                                                                                                                                                | 30496-13-0                 |
| TBBA-epichlorhydrin oligomer                                                                                                                                                                                     | 40039-93-8                 |
| TBBA-TBBA-diglycidyl-ether oligomer                                                                                                                                                                              | 70682-74-5                 |
| TBBA carbonate oligomer                                                                                                                                                                                          | 28906-13-0                 |
| TBBA carbonate oligomer, phenoxy end capped                                                                                                                                                                      | 94334-64-2                 |
| TBBA carbonate oligomer, 2,4,6-tribromo-phenol terminated                                                                                                                                                        | 71342-77-3                 |
| TBBA-bisphenol A-phosgene polymer                                                                                                                                                                                | 32844-27-2                 |
| Brominated epoxy resin end-capped with tribromophenol                                                                                                                                                            | 139638-58-7<br>135229-48-0 |
| TBBA-(2,3-dibromo-propyl-ether)                                                                                                                                                                                  | 21850-44-2                 |
| TBBA bis-(2-hydroxy-ethyl-ether)                                                                                                                                                                                 | 4162-45-2                  |
| TBBA-bis-(allyl-ether)                                                                                                                                                                                           | 25327-89-3                 |
| TBBA-dimethyl-ether                                                                                                                                                                                              | 37853-61-5                 |
| Tetrabromo-bisphenol S                                                                                                                                                                                           | 39635-79-5                 |
| TBBS-bis-(2,3-dibromo-propyl-ether)                                                                                                                                                                              | 42757-55-1                 |
| 2,4-Dibromo-phenol                                                                                                                                                                                               | 615-58-7                   |
| 2,4,6-tribromo-phenol                                                                                                                                                                                            | 118-79-6                   |
| Pentabromo-phenol                                                                                                                                                                                                | 608-71-9                   |
| 2,4,6-Tribromo-phenyl-allyl-ether                                                                                                                                                                                | 3278-89-5                  |
| Tribromo-phenyl-allyl-ether, unspecified                                                                                                                                                                         | 26762-91-4                 |
| Bis(methyl)tetrabromo-phthalate                                                                                                                                                                                  | 55481-60-2                 |
| Bis(2-ethylhexyl)tetrabromo-phthalate                                                                                                                                                                            | 26040-51-7                 |
| 2-Hydroxy-propyl-2-(2-hydroxy-ethoxy)-ethyl-TBP                                                                                                                                                                  | 20566-35-2                 |
| TBPA, glycol-and propylene-oxide esters                                                                                                                                                                          | 75790-69-1                 |
| N,N'-Ethylene -bis-(tetrabromo-phthalimide)                                                                                                                                                                      | 32588-76-4                 |
| Ethylene-bis(5,6-dibromo-norbornane-2,3-dicarboximide)                                                                                                                                                           | 52907-07-0                 |
| 2,3-Dibromo-2-butene-1,4-diol                                                                                                                                                                                    | 3234-02-4                  |

|                                                                                              |             |
|----------------------------------------------------------------------------------------------|-------------|
| Dibromo-neopentyl-glycol                                                                     | 3296-90-0   |
| Dibromo-propanol                                                                             | 96-13-9     |
| Tribromo-neopentyl-alcohol                                                                   | 36483-57-5  |
| Poly tribromo-styrene                                                                        | 57137-10-7  |
| Tribromo-styrene                                                                             | 61368-34-1  |
| Dibromo-styrene grafted PP                                                                   | 171091-06-8 |
| Poly-dibromo-styrene                                                                         | 31780-26-4  |
| Bromo-/Chloro-paraffins                                                                      | 68955-41-9  |
| Bromo-/Chloro-alpha-olefin                                                                   | 82600-56-4  |
| Vinylbromide                                                                                 | 593-60-2    |
| Tris-(2,3-dibromo-propyl)-isocyanurate                                                       | 52434-90-9  |
| Tris(2,4-Dibromo-phenyl) phosphate                                                           | 49690-63-3  |
| Tris(tribromo-neopentyl) phosphate                                                           | 19186-97-1  |
| Chlorinated and brominated phosphate ester                                                   | 125997-20-8 |
| Pentabromo-toluene                                                                           | 87-83-2     |
| Pentabromo-benzyl bromide                                                                    | 38521-51-6  |
| 1,3-Butadiene homopolymer, brominated                                                        | 68441-46-3  |
| Pentabromo-benzyl-acrylate, monomer                                                          | 59447-55-1  |
| Pentabromo-benzyl-acrylate, polymer                                                          | 59447-57-3  |
| Tribromo-bisphenyl-maleinimide                                                               | 59789-51-4  |
| Brominated trimethylphenyl-lindane                                                           | -           |
| Tetrabromo-cyclo-octane                                                                      | 31454-48-5  |
| 1,2-Dibromo-4-(1,2 dibromo-methyl)-cyclo-hexane                                              | 3322-93-8   |
| TBPA Na salt                                                                                 | 25357-79-3  |
| Tetrabromo phthalic anhydride                                                                | 632-79-1    |
| Other Brominated or Chlorinated Flame Retardants not listed separately in this specification | -           |

#### 4 — Arsenic and its compounds (As)

| <b>Arsenic and its compounds (As)</b>    | <b>CAS Numbers</b> |
|------------------------------------------|--------------------|
| Arsenic                                  | 7440-38-2          |
| Arsenic acid disodium salt, heptahydrate | 10048-95-0         |
| Arsenic acid, calcium salt               | 7778-44-1          |
| Arsenic acid, copper salt                | 10103-61-4         |
| Arsenic acid, diammonium salt            | 7784-44-3          |
| Arsenic acid, lead salt                  | 7784-40-9          |
| Arsenic acid, magnesium salt             | 10103-50-1         |
| Arsenic pentoxide                        | 1303-28-2          |
| Arsenic trichloride                      | 7784-34-1          |
| Arsenic trihydride                       | 7784-42-1          |
| Arsenic trioxide                         | 1327-53-3          |
| Arsenious acid, copper (II) salt         | 10290-12-7         |
| Arsenious acid, potassium salt           | 10124-50-2         |
| Other arsenic compounds                  | -                  |

## 7 — Beryllium and its compounds

| Beryllium and its compounds                                                     | CAS Numbers |
|---------------------------------------------------------------------------------|-------------|
| Beryllium                                                                       | 7440-41-7   |
| Beryllium carbonate                                                             | 66104-24-3  |
| Beryllium chloride                                                              | 7787-47-5   |
| Beryllium copper and other metal alloys containing greater amounts of Beryllium | -           |
| Beryllium fluoride                                                              | 7787-49-7   |
| Beryllium hydroxide                                                             | 13327-32-7  |
| Beryllium nitrate                                                               | 13597-99-4  |
| Beryllium phosphate                                                             | 13598-15-7  |
| Beryllium sulfate                                                               | 13510-49-1  |
| Beryllium sulfate tetrahydrate                                                  | 7787-56-6   |
| Beryllium – aluminum alloy                                                      | 12770-50-2  |
| Beryllium oxide                                                                 | 1304-56-9   |
| Other beryllium compounds                                                       | -           |

## 8 — Substances in REACH's Annex XIV Authorization List

|                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Substances listed in the most recent version of REACH's Annex XIV Authorization List (other than those listed separately in this specification)</b>                                                                                                                                                                                           |
| List of substances included in Annex XIV of REACH ("Authorisation List"):<br><a href="https://echa.europa.eu/authorisation-list">https://echa.europa.eu/authorisation-list</a>                                                                                                                                                                   |
| In order to identify potentially applicable substances, suppliers may pre-screen the Authorisation List using the IEC 62474 Material Declaration for Products of and for the Electrotechnical Industry Database of declarable substance groups and declarable substances:<br><a href="http://std.iec.ch/iec62474">http://std.iec.ch/iec62474</a> |

## 10 — IEC 62474 Declarable substance groups and declarable substances

|                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>IEC 62474 Declarable substance groups and declarable substances (other than those listed separately in this specification)</b>                                                                                                                                                                                   |
| In order to identify potentially applicable substances, suppliers should pre-screen the IEC 62474 Material Declaration for Products of and for the Electrotechnical Industry Database of declarable substance groups and declarable substances: <a href="http://std.iec.ch/iec62474">http://std.iec.ch/iec62474</a> |

## 11—REACH Candidate List Substances

|                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>All substances listed in the most recent candidate list for inclusion in Annex XIV of REACH (other than those listed separately in this specification)</b>                                                                                                                                                                                |
| Candidate List of substances of very high concern for Authorisation:<br><a href="https://echa.europa.eu/candidate-list-table">https://echa.europa.eu/candidate-list-table</a>                                                                                                                                                                |
| In order to identify potentially applicable substances, suppliers may pre-screen the Candidate List using the IEC 62474 Material Declaration for Products of and for the Electrotechnical Industry Database of declarable substance groups and declarable substances:<br><a href="http://std.iec.ch/iec62474">http://std.iec.ch/iec62474</a> |

**14 - Substances under US TSCA Section 6 (15 U.S.C. 2605) proposed rules**

Substances under US TSCA Section 6 (15 U.S.C. 2605) proposed rules (other than those listed separately in this specification)

Chemicals under the Toxic Substances Control Act (TSCA)

<https://www.epa.gov/chemicals-under-tsca>

**16 — Antimony and its compounds  
(other than those listed separately in this specification)**

| <b>Antimony and its compounds</b>                                    | <b>CAS Numbers</b> |
|----------------------------------------------------------------------|--------------------|
| Antimony (metallic)                                                  | 7440-36-0          |
| Antimony pentoxide                                                   | 1314-60-9          |
| Antimony trichloride                                                 | 10025-91-9         |
| Sodium antimonate                                                    | 15432-85-6         |
| Diantimony trioxide                                                  | 1309-64-4          |
| Other antimony compounds not listed separately in this specification | -                  |

**17 – Nickel and its compounds (other than those listed separately in this specification)**

| <b>Nickel and its compounds (Ni)</b>     | <b>CAS Numbers</b>       |
|------------------------------------------|--------------------------|
| Nickel                                   | 7440-02-0                |
| Nickel carbonate                         | 3333-67-3                |
| Nickel dioxide                           | 12035-36-8               |
| Nickel hydroxide                         | 11113-74-9               |
| Nickel monoxide                          | 1313-99-1                |
| Nickel subsulphide, trinickel disulphide | 12035-72-2               |
| Nickel sulphide                          | 11113-75-0<br>12137-12-1 |
| Nickel tetracarbonyl                     | 13463-39-3               |
| Nickel (II) hydroxide                    | 12054-48-7               |
| Other nickel compounds                   | -                        |

**19 — Organobromines and Organochlorines (other than those listed separately in this specification)**

| <b>Organobromines &amp; Organochlorines</b>                                  | <b>CAS Numbers</b> |
|------------------------------------------------------------------------------|--------------------|
| Organobromines & Organochlorines not listed separately in this specification | -                  |

**20 - EU Critical/Strategic Raw Materials (other than those listed separately in this specification)**

|                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EU Critical/Strategic Raw Materials (other than those listed separately in this specification)                                                                    |
| Raw materials identified as critical and/or strategic in the EU:<br><a href="#">Critical raw materials - Internal Market, Industry, Entrepreneurship and SMEs</a> |

**APPENDIX C – Ozone Depleting Substances (ODS)**

| Halocarbon Number /<br>Common Name | Molecular Formula                           | CAS<br>Number | Name                           |
|------------------------------------|---------------------------------------------|---------------|--------------------------------|
| CFC-11                             | $\text{CCl}_3\text{F}$                      | 75-69-4       | Trichlorofluoromethane         |
| CFC-12                             | $\text{CCl}_2\text{F}_2$                    | 75-71-8       | Dichlorodifluoromethane        |
| CFC-113                            | $\text{C}_2\text{Cl}_3\text{F}_3$           | 76-13-1       | 1,1,2-Trichlorotrifluoroethane |
| CFC-114                            | $\text{C}_2\text{Cl}_2\text{F}_4$           | 76-14-2       | Dichlorotetrafluoroethane      |
| CFC-115                            | $\text{C}_2\text{ClF}_5$                    | 76-15-3       | Monochloropentafluoroethane    |
| Halon 1011                         | $\text{CH}_2\text{BrCl}$                    | 74-97-5       | Bromochloromethane             |
| Halon 1202                         | $\text{CBr}_2\text{F}_2$                    | 75-61-6       | Dibromodifluoromethane         |
| Halon 1211                         | $\text{CF}_2\text{ClBr}$                    | 353-59-3      | Bromochlorodifluoromethane     |
| Halon 1301                         | $\text{CF}_3\text{Br}$                      | 75-63-8       | Bromotrifluoromethane          |
| Halon 2402                         | $\text{C}_2\text{F}_4\text{Br}_2$           | 124-73-2      | Dibromotetrafluoroethane       |
| CFC-13                             | $\text{CClF}_3$                             | 75-72-9       | Chlorotrifluoromethane         |
| CFC-111                            | $\text{C}_2\text{Cl}_5\text{F}$             | 354-56-3      | Pentachlorofluoroethane        |
| CFC-112                            | $\text{C}_2\text{Cl}_4\text{F}_2$           | 76-12-0       | Tetrachlorodifluoroethane      |
| CFC-211                            | $\text{C}_3\text{Cl}_7\text{F}$             | 422-78-6      | Heptachlorofluoropropane       |
| CFC-212                            | $\text{C}_3\text{Cl}_6\text{F}_2$           | 3182-26-1     | Hexachlorodifluoropropane      |
| CFC-213                            | $\text{C}_3\text{Cl}_5\text{F}_3$           | 2354-06-5     | Pentachlorotrifluoropropane    |
| CFC-214                            | $\text{C}_3\text{Cl}_4\text{F}_4$           | 29255-31-0    | Tetrachlorotetrafluoropropane  |
| CFC-215                            | $\text{C}_3\text{Cl}_3\text{F}_5$           | 4259-43-2     | Trichloropentafluoropropane    |
| CFC-216                            | $\text{C}_3\text{Cl}_2\text{F}_6$           | 661-97-2      | Dichlorohexafluoropropane      |
| CFC-217                            | $\text{C}_3\text{ClF}_7$                    | 422-86-6      | Chloroheptafluoropropane       |
| Carbon Tetrachloride               | $\text{CCl}_4$                              | 56-23-5       | Tetrachloromethane             |
| Methyl Chloroform                  | $\text{C}_2\text{H}_3\text{Cl}_3$           | 71-55-6       | 1,1,1 Trichloroethane only     |
| Methyl Bromide                     | $\text{CH}_3\text{Br}$                      | 74-83-9       | Bromomethane                   |
| HBFCs                              | $\text{C}_x\text{H}_x\text{F}_x\text{Br}_x$ | various       | Hydrobromofluorocarbons        |

| HCFC Number | Molecular Formula                           | CAS Number | Name                               |
|-------------|---------------------------------------------|------------|------------------------------------|
| HCFC-21     | $\text{CHFCl}_2$                            | 75-43-4    | Dichlorofluoromethane              |
| HCFC-22     | $\text{CHF}_2\text{Cl}$                     | 75-45-6    | Monochlorodifluoromethane          |
| HCFC-31     | $\text{CH}_2\text{FCl}$                     | 593-70-4   | Monochlorofluoromethane            |
| HCFC-121    | $\text{C}_2\text{HFCl}_4$                   | 354-14-3   | Tetrachlorofluoroethane            |
| HCFC-122    | $\text{C}_2\text{HF}_2\text{Cl}_3$          | 354-21-2   | Trichlorodifluoroethane            |
| HCFC-123    | $\text{C}_2\text{HF}_3\text{Cl}_2$          | 306-83-2   | Dichlorotrifluoroethane            |
| HCFC-123b   | $\text{C}_2\text{HCl}_2\text{F}_3$          | 812-04-4   | 1,1-Dichloro-1,2,2-trifluoroethane |
| HCFC-124    | $\text{C}_2\text{HClF}_4$                   | 2837-89-0  | 2-Chloro-1,1,1,2-tetrafluoroethane |
| HCFC-124a   | $\text{C}_2\text{HClF}_4$                   | 354-25-6   | 1-Chloro-1,1,2,2-tetrafluoroethane |
| HCFC-131    | $\text{C}_2\text{H}_2\text{FCl}_3$          | 359-28-4   | 1-Fluoro-1,2,2-TRICHLOROETHANE     |
| HCFC-132    | $\text{C}_2\text{H}_2\text{F}_2\text{Cl}_2$ | 431-06-1   | 1,2-Dichloro-1,2-DIFLUOROETHANE    |
| HCFC-132b   | $\text{C}_2\text{H}_2\text{F}_2\text{Cl}_2$ | 1649-08-7  | 1,2-Dichloro-1,1-difluoroethane    |
| HCFC-133    | $\text{C}_2\text{H}_2\text{F}_3\text{Cl}$   | 431-07-2   | 1-chloro-1,2,2-trifluoro-ethane    |

|            |                 |             |                                                |
|------------|-----------------|-------------|------------------------------------------------|
| HCFC-133a  | $C_2H_2ClF_3$   | 75-88-7     | 2-Chloro-1,1,1-Trifluoroethane                 |
| HCFC-141   | $C_2H_3FCl_2$   | 430-57-9    | 1,2-DICHLOROFLUOROETHANE                       |
| HCFC-141b  | $C_2FCl_2H_3$   | 1717-00-6   | Dichlorofluoroethane                           |
| HCFC-142   | $C_2H_3F_2Cl$   | 25497-29-4  | 2-chloro-1,1-difluoro-ethane                   |
| HCFC-142b  | $C_2F_2ClH_3$   | 75-68-3     | 1-Chloro-1,1-difluoroethane                    |
| HCFC-151a  | $C_2H_4FCl$     | 1615-75-4   | 1-Chloro-1-fluoroethane                        |
| HCFC-221   | $C_3HFCl_6$     | 422-26-4    | 1,1,1,2,2,3-Hexachloro-3-fluoropropane         |
| HCFC-222   | $C_3HF_2Cl_5$   | 422-49-1    | 1,1,3,3,3-Pentachloro-2,2-difluoropropane      |
| HCFC-223   | $C_3HF_3Cl_4$   | 422-52-6    | 1,1,3,3-Tetrachloro-1,2,2-trifluoropropane     |
| HCFC-224   | $C_3HF_4Cl_3$   | 422-54-8    | 1,3,3-trichloro-1,1,2,2-tetrafluoropropane     |
| HCFC-225   | $C_3HF_5Cl_2$   | 127564-92-5 | 1,2-Dichloro-1,1,3,3,3-                        |
| HCFC-225ca | $C_3F_5HCl_2$   | 422-56-0    | 3,3-Dichloro-1,1,1,2,2-pentafluoropropane      |
| HCFC-225cb | $C_3F_5Cl_2HF$  | 507-55-1    | 1,3-Dichloro-1,1,2,2,3-pentafluoropropane      |
| HCFC-226   | $C_3HF_6Cl$     | 431-87-8    | 2-Chloro-1,1,1,3,3,3-                          |
| HCFC-231   | $C_3H_2Cl_5F$   | 421-94-3    | 1,1,1,2,3-Pentachloro-2-fluoropropane          |
| HCFC-232   | $C_3H_2F_2Cl_4$ | 460-89-9    | <u>1,1,1,3-tetrachloro-3,3-difluoropropane</u> |
| HCFC-233   | $C_3H_2F_3Cl_3$ | 7125-84-0   | 1,1,1-Trichloro-3,3,3-TRIFLUOROPROPANE         |
| HCFC-234   | $C_3H_2F_4Cl_2$ | 425-94-5    | 1,2-Dichloro-1,2,3,3-tetrafluoropropane        |
| HCFC-235   | $C_3H_2F_5Cl$   | 460-92-4    | 1-Chloro-1,1,3,3,3-PENTAFLUOROPROPANE          |
| HCFC-241   | $C_3H_3FCl_4$   | 666-27-3    | <u>1,1,2,3-tetrachloro-1-fluoropropane</u>     |
| HCFC-242   | $C_3H_3F_2Cl_3$ | 460-63-9    | 1,3,3-Trichloro-1,1-DIFLUOROPROPANE            |
| HCFC-243   | $C_3H_3F_3Cl_2$ | 460-69-5    | 3,3-Dichloro-1,1,1-TRIFLUOROPROPANE            |
| HCFC-244   | $C_3H_3F_4Cl$   | 134190-50-4 | Chlorotetrafluoropropane                       |
| HCFC-251   | $C_3H_4FCl_3$   | 421-41-0    | 1,1,2-Trichloro-1-fluoropropane                |
| HCFC-252   | $C_3H_4F_2Cl_2$ | 819-00-1    | 1,3-Dichloro-1,1-DIFLUOROPROPANE               |
| HCFC-253   | $C_3H_4F_3Cl$   | 460-35-5    | 3-Chloro-1,1,1-TRIFLUOROPROPANE                |
| HCFC-261   | $C_3H_5FCl_2$   | 420-97-3    | 1,2-Dichloro-2-FLUOROPROPANE                   |
| HCFC-262   | $C_3H_5F_2Cl$   | 421-02-3    | Propane,1-chloro-1,1-difluoro-                 |
| HCFC-271   | $C_3H_6FCl$     | 430-55-7    | 1-chloro-1-fluoropropane                       |

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