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1 OBJECTIVES / PURPOSE

This standard defines Nexperia requirements for the control of hazardous substances in products and packaging to ensure compliance with applicable legal, regulatory, environmental, and customer-specific requirements.

Hazardous substances are managed in accordance with national and international regulations and relevant customer specifications. Substances covered by this standard are classified into three control categories, corresponding to Tables A, B and 2:

- Prohibited substances (Table A): shall not be intentionally used in Nexperia products or packaging. For technically unavoidable impurities or trace residues, the maximum concentration limit (MCL) is either "not used" (no detectable amount permitted) or a defined numerical value, as specified per substance in Table A.
- Restricted substances (Tables B1 and B2): may be used only in the specific applications and under the conditions defined in this standard, and only up to the specified MCL.
- Declarable substances (Table 2): shall be disclosed when present at or above the applicable reporting threshold. All prohibited and restricted substances are also declarable.

This standard supports communication of substance requirements to Nexperia suppliers and customers and forms the basis for material compliance evaluation and declaration.

2 SCOPE

This standard applies to all materials, parts, (semi-)finished goods, subassemblies, and packaging materials supplied for use in Nexperia products, including integrated circuits, discrete devices, and modules. It covers items intended for market release as well as materials used for evaluation, qualification, or development purposes, including evaluation boards.

The requirements of this standard apply to all Nexperia suppliers providing such materials and to Nexperia products delivered to customers worldwide, unless otherwise contractually agreed or where specific legal requirements impose stricter controls.

This standard addresses substances contained in products and packaging. Chemicals and substances used solely within manufacturing processes, and operating materials such as heat-transfer fluids in chillers and similar equipment, are controlled through NDS-00175, Chemicals Management Standard, and the Nexperia Restricted Process Chemicals List (NDS-00132) issued under it, which cover Nexperia manufacturing and supporting processes, including manufacturing steps carried out by external subcontractors on behalf of Nexperia.

3 RESPONSIBILITIES AND RISKS

3.1 Responsibility Assignment Matrix

The basic responsibilities are shown in the RACI matrix in Table 1. A more detailed process description can be found in the internal document NDS-00197.

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Table 1: RACI matrix for the main tasks during environmental compliance review; R: Responsible; A: Accountable; C: Consulted, I: Informed; MDM: Master Data Management; PDM: Package Data Management; PLM: Product Lifecycle Mgmt;

Task	Suppliers and external manufacturing partners	ECO-Products	Quality	MDM / PDM	Business Groups
Maintain and update hazardous substance requirements	I	A/R	C	I	C
Request required compliance documentation from suppliers and external manufacturing partners	I	C	C	I	A/R
Provide complete and accurate material declarations during qualification	R	I	C	I	A
Perform compliance review of materials during qualification	I	R	C	I	A
Decide on material qualification in case of compliance deviations	I	C	C	I	A/R
Set up and maintain environmental compliance status and attributes in PLM system according to ECO review outcome	I	C	C	R	A
Fulfil environmental compliance requirements for products and packaging over the entire product lifecycle	R	C	C	I	A/R
Confirm product compliance to customers and ensure required documentation is made available	C	R	C	I	A
Identify and notify internal or supplier-related environmental non-compliance	R	C	I	I	A
Manage customer-reported environmental non-compliance in accordance with NDS-00103, including containment and communication	C	C	R	I	A
Perform environmental compliance reviews (periodic / event-driven)	C	R	C	I	A
Maintain environmental compliance records and regulatory interpretations	I	A/R	C	I	I

3.2 Risks

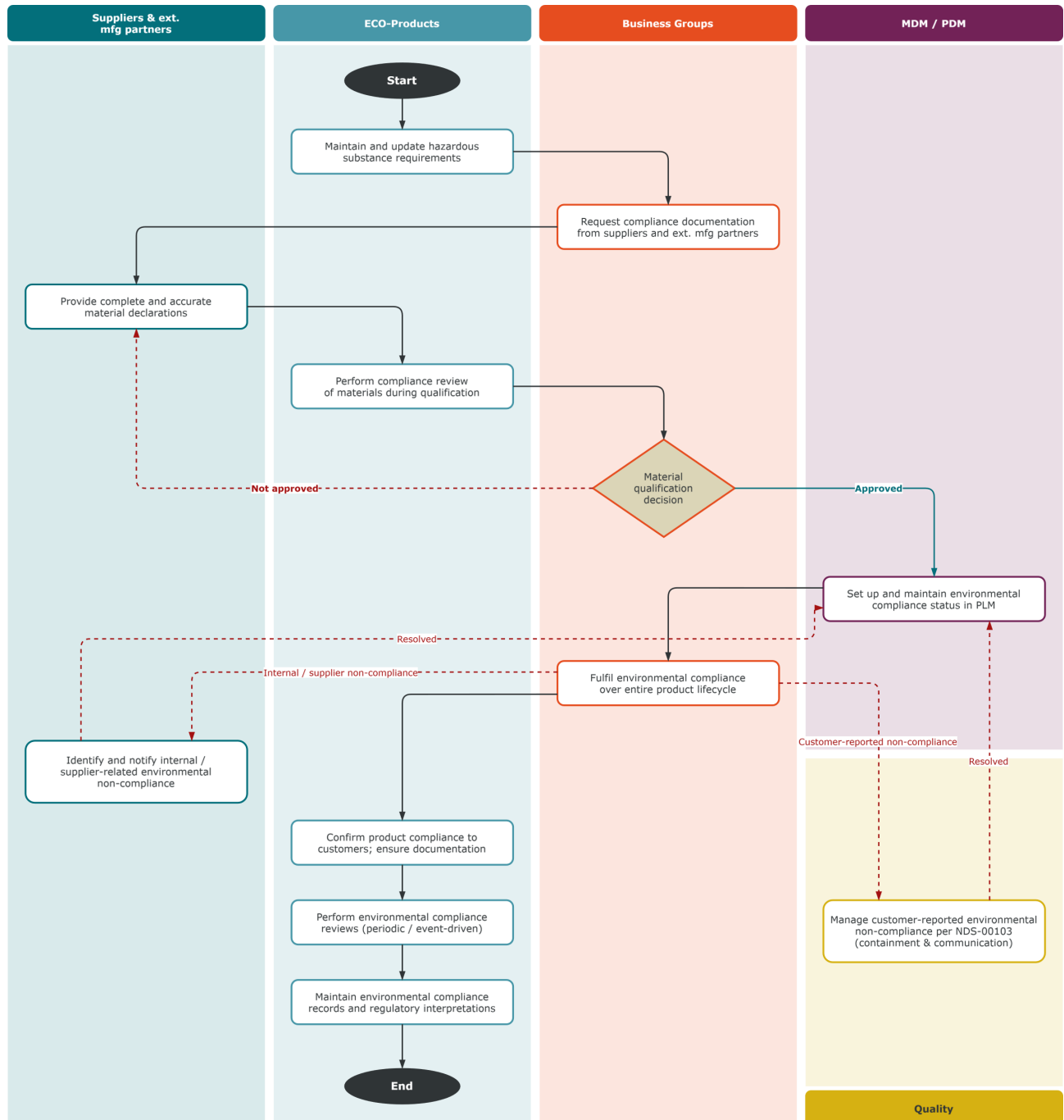
Non-compliance with applicable legal, regulatory, and customer-specific requirements related to hazardous substances in Nexperia's products and packaging poses significant financial, legal, and reputational risks to the company.

Failure to comply may result in shipment blockages, product recalls, withdrawal of market access, administrative fines, civil or criminal liability, suspension of certifications, or other regulatory enforcement actions. In addition, non-compliance can lead to negative publicity, loss of customer trust, and loss of business opportunities.

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Such consequences may have substantial operational and financial impact on Nexperia and therefore must be systematically prevented through effective governance, clear accountability, and robust compliance processes.

4 FLOWCHART



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5 PROCEDURE

This section defines the operational requirements for the identification, assessment, and control of hazardous substances in Nexperia products and packaging.

Substance groups addressed by this standard may either consist of closed and explicitly defined lists, such as those governed by REACH Annex XIV at a specific point in time, or open groups defined by substance characteristics, such as per- and polyfluoroalkyl substances (PFAS), which may encompass an evolving and potentially unlimited number of substances. NDS-00989 provides detailed lists for closed substance groups and representative examples for open substance groups.

Unless otherwise specified, all maximum concentration limits (MCLs) defined in this standard apply at the homogeneous material level. Where multiple legal, regulatory, or customer requirements impose concentration limits or restrictions on a substance, the most stringent applicable limit shall prevail.

For example, a metallic product-related material containing lead may be subject to multiple restriction criteria:

- Lead is restricted in metals at 500 ppm (Table B1).
- Lead is classified as Reproductive Toxicant Category 1A, with a restriction threshold of 1000 ppm (Table B1).

In such cases, the applicable MCL for lead in metallic materials is 500 ppm, as it represents the most stringent restriction.

Declarability and reporting requirements are defined separately in Section 5.4.

5.1 Legal and Regulatory Background

This standard is continuously being updated to meet the following requirements:

1. California: Proposition 65
2. Canada: Prohibition of Certain Toxic Substances Regulations, 2025 (SOR/2025-270)
3. China: MIIT Order No. 32 – Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products ("China RoHS")
4. EU: REACH Regulation (EC 1907/2006), specifically Annexes XIV and XVII, including Appendices 1–6, and the SVHC list published in accordance with Article 59(10)
5. EU: RoHS Directive (EU 2011/65)
6. EU: ELV Directive (EC 2000/53)
7. EU: PPW Directive (EC 94/62)¹
8. EU: PPW Regulation (EU 2025/40)
9. EU: POP Regulation (EU 2019/1021)
10. EU: ODS Regulation (EU 2024/590)
11. EU: Fluorinated Greenhouse Gases Regulation (EU 2024/573)
12. EU: Critical Raw Materials Regulation (EU 2024/1252)
13. EU: ECHA publications/assessments on PBT/vPvB and PMT/vPvM substances

¹ PPWR Art. 70 repeals PPWD with effect from 12th Aug 2026, with certain existing mechanisms and criteria remaining to be temporarily applicable during the PPWR transition phase.

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14. France: Decree No. 2020-105 on the 'Fight Against Waste and the Circular Economy'
15. France: PE List Order
16. Japan: Chemical Substances Control Law (CSCL)
17. Switzerland: Chemical Risk Reduction Ordinance (ORRChem)
18. USA: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals under TSCA Section 6(h)
19. Washington: List of chemicals of high concern to children (CHCC list)

5.2 Prohibited Substances

Substances and substance groups listed in Table A shall not be intentionally used in Nexperia products or packaging within the scope of this standard.

The presence of such substances is permitted only where they occur as technically unavoidable impurities in naturally occurring materials or as residual trace amounts resulting from manufacturing processes. In all cases, applicable regulatory limits and any defined MCLs shall not be exceeded.

Table A: List of prohibited substances and substance groups together with their MCLs. MCLs apply to all applications. Footnotes are given [below](#). ind: per individual substance; sum: summed across the group.

#	Substance/Substance Group	MCL ppm (mg/kg)	Applies to
A1	Asbestos	not used	ind
A2	Biocides	0.01	ind
A3	Cadmium (Cd) and its compounds ²	5	sum Cd
A4	Chlorinated hydrocarbons (CHCs), aliphatic, < C ₁₀	900	sum
A5	Chlorinated paraffins (CPs), ≥ C ₁₀ including short-chain chlorinated paraffins (SCCPs, C ₁₀ —C ₁₃), medium-chain chlorinated paraffins (MCCPs, C ₁₄ —C ₁₇), and long-chain chlorinated paraffins (LCCPs, >C ₁₇)	100	sum
A6	Chlorofluorocarbons (CFCs)	1	sum
A7	Creosotes (tar oils)	5	sum
A8	Chemical Substances Control Law (CSCL), Section I and II substances	5	ind
A9	Endangered species of flora and fauna according to CITES	not used	ind
A10	Expanded polystyrene (EPS)	not used	ind
A11	Glycol ethers	1	sum
A12	Halogenated benzenes	50	sum
A13	Halogenated dibenzo- <i>p</i> -dioxins and dibenzofurans including polybrominated dibenzo- <i>p</i> -dioxins (PBDDs), polybrominated dibenzofurans (PBDFs), polychlorinated dibenzo- <i>p</i> -dioxins (PCDDs), and polychlorinated dibenzofurans (PCDFs)	0.005	sum
A14	Halogenated diphenylmethanes, benzyltoluenes, and diarylalkanes	10	sum
A15	Halons	1	sum
A16	Hexavalent chromium (Cr ⁶⁺) compounds ²	100	sum Cr ⁶⁺

² Sum of Cd, Hg, Cr(VI), and Pb shall not exceed the limit of 100 ppm (0.01 %) in packaging material. PPWR Art. 5(4).

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#	Substance/Substance Group	MCL ppm (mg/kg)	Applies to
A17	Hydrofluorocarbons (HFCs), hydrobromofluorocarbons (HBFCs), hydrochlorofluorocarbons (HCFCs), hydrofluoroethers (HFEs), and hydrofluoroolefins (HFOs)	1	ind
A18	Isocyanates	100	sum
A19	Mercury (Hg) and its compounds ²	2	sum Hg
A20	Metal carbonyls	100	ind
A21	Monomers	5	sum
A22	Nitro and nitroso compounds	100	sum
A23	Nonylphenols (NPs), octylphenols (OPs), and their ethoxylates (NPEs, OPEs)	50	ind
A24	Organotin compounds <i>intentional use of diorganotin catalysts in condensation-cure silicones is permitted only under entry B8</i>	5	sum Sn
A25	Ozone-Depleting Substances (ODS) as defined by Regulation 2024/590/EU, Annexes I and II	1	sum
A26	Pentachlorophenol (PCP) and its salts and esters	5	ind
A27	Perchloric acid and its salts (perchlorates)	0.006	ind
A28	Per- and polyfluoroalkyl substances (PFAS) including fluorotelomers, perfluorocarboxylic acids (PFCAs) and perfluorosulfonic acids (PFSAs) with the following exceptions:	50	sum
A28a	Perfluorocarbons (PFCs)	1	sum
A28b	Perfluorooctanesulfonic acid (PFOS), its salts and related substances	0.025	sum
A28c	Perfluorohexanoic acid (PFHxA) and its salts	0.025	sum
A28d	Perfluorohexanesulfonic acid (PFHxS) and its salts	0.025	sum
A28e	Perfluorooctanoic acid (PFOA) and its salts	0.025	sum
A28f	PFHxA-related substances	1	sum
A28g	PFHxS-related substances	1	sum
A28h	PFOA-related substances	1	sum
A28i	C ₉ -C ₂₁ PFCAs and their salts ³	0.025	sum
A28j	Substances related to C ₉ -C ₂₁ PFCAs	0.26	sum
A29	PBT (persistent, bioaccumulative, and toxic), vPvB (very persistent and very bioaccumulative), vPvM (very persistent and very mobile), and PMT (persistent, mobile, and toxic) substances per ECHA	1000	ind
A30	Persistent Organic Pollutants per EU 2019/1021	not used	ind
A31	Phthalates, including their salts and esters	100	ind
A32	Polybrominated biphenyls (PBBs)	10	sum
A33	Polychlorinated biphenyls (PCBs)	0.2	sum
A34	Polybrominated diphenyl ethers (PBDEs)	10	sum

³ The PCTSR sets restrictions on PFCAs of molecular formula C_nF_{2n+1}COOH in which 8 ≤ n ≤ 20. Within this document, these PFCAs are described as "C₉-C₂₁ PFCAs", thus including the carboxylic acid carbon atom.

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#	Substance/Substance Group	MCL ppm (mg/kg)	Applies to
A35	Polychlorinated naphthalenes (PCNs)	5	sum
A36	Polychlorinated terphenyls (PCTs)	5	sum
A37	Radioactive elements	background radiation	sum
A38	REACH Annex XIV substances (Authorization List)	not used	ind
A39	Selenium (Se) and its compounds	100	sum Se
A40	Triorganophosphates	1000	sum
A41	TSCA Section 6(h)-covered substances	not used	ind

5.3 Restricted Substances

The intentional use of restricted substances or substance groups listed in this section is permitted only for the specific applications and under the conditions explicitly defined in this standard.

Use outside the defined applications, conditions, or specified concentration limits is prohibited.

The presence of such substances as unavoidable impurities in naturally occurring materials or as technically unavoidable trace amounts resulting from manufacturing processes is permitted, provided that applicable regulatory limits and any defined MCLs are not exceeded.

Where a regulation applicable to a substance listed in Table B1 or Table B2 sets a limit lower than the MCL stated in the table, or expresses the restriction in a form the table does not — a release rate, a condition of use, or a prohibition on placing on the market — the regulatory requirement prevails. This applies to intentional use, to unavoidable impurities and to technically unavoidable trace amounts alike.

5.3.1 General

Table B1: List of restricted substances and substance groups together with their restricted applications and MCLs. Footnotes are given [below](#). ind: per individual substance; sum: summed across the group.

#	Substance/Substance Group	Restricted Application(s)	MCL ppm (mg/kg)	Applies to
B1a	Formaldehyde ⁴	Wooden packaging materials	0.062 mg/m ³	emission
B1b		Product-related materials and other packaging	0.08 mg/m ³	emission
B2	Anilines (including benzidines and phenylenediamines) and their salts	Direct and prolonged skin contact	30	sum
B3a	Arsenic (As) and its compounds	All metals	300	sum As
B3b		All non-metals, except as dopant in semiconductor dies	25	
B4	Azo compounds and their salts	Direct and prolonged skin contact	30	ind

⁴ Under the test conditions of REACH Annex XVII entry 77 Appendix 14. The B1a limit is equivalent to ≤ 0.05 ppm by ASTM E1333, the form in which US EPA TSCA Title VI and CARB Phase 2 state it. Both are emission limits in chamber air, not homogeneous-material content limits.

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#	Substance/Substance Group	Restricted Application(s)	MCL ppm (mg/kg)	Applies to
B5	Beryllium (Be) and its compounds	All, except as dopant in gold wires	1000	sum Be
B6	Brominated flame retardants (BFRs)	New materials and products	not used	ind
B7	Carcinogenic, mutagenic, or toxic for reproduction (CMR) substances, cat. 1 A and 1 B according to REACH (Appendices 1 to 6)	All, except PAH impurities from carbon black pigment and lead in RoHS or ELV-exempted applications; for Co in moisture indicators, entry B20 applies.	1000	ind
B8	Diorganotin compounds, including dibutyltin (DBT) and dioctyltin (DOT) species	Catalysts in condensation-cure silicones	100	sum Sn
B9a	Lead (Pb) and its compounds ²	All metals, except for applications exempted by RoHS or ELV	500	sum Pb
B9b		All non-metals, except for applications exempted by RoHS or ELV	50	
B10	Mineral and ceramic fibres	All, except in GRPs in PCBs and as crystalline silica in mold compounds and adhesives	10	sum
B11	Mineral Oil Aromatic Hydrocarbons (MOAH), 1–2 aromatic rings	Inks	1000	sum
B12	MOAH, 3–7 aromatic rings	Inks	1	sum
B13	Mineral Oil Saturated Hydrocarbons (MOSH), C ₁₆ –C ₃₅	Inks	1000	sum
B14	Natural rubber (latex)	Direct and prolonged skin contact	100	sum
B15	Phenols, their salts, and related substances	Direct and prolonged skin contact	50	sum
B16a	Polycyclic aromatic hydrocarbons (PAHs)	Direct and prolonged skin contact	0.5	ind
B16b			10	sum
B17	Polyvinylchloride (PVC) and PVC blends	All, except PVC tubes/rails for semiconductor packaging	5	sum
B18	Skin sensitizers of category 1 per CLP — <i>including, but not limited to:</i> - Cobalt (Co) and its compounds - Nickel (Ni) and its compounds ⁵	Direct and prolonged skin contact and laminates of PCBs	1000	ind
B19	REACH Annex XVII substances (Restriction List)	All, except i) As as dopant in semiconductor dies; ii) Ni in non-direct/prolonged skin contact applications; iii) azodyes in non-direct/prolonged skin contact applications; iv) Pb in applications exempted by RoHS or ELV;	1000 ⁶	ind

⁵ For nickel in surface preparations of products intended to come into direct and prolonged contact with the skin: Nickel ion release <0.5 µg/cm²/week using test method EN1811:2011.

⁶ Each Annex XVII entry applies as that entry states it: where it sets a lower limit, prohibits the substance in the application concerned, or states its requirement other than as a content limit, that requirement prevails. This MCL applies only where the applicable entry permits the substance in that application and states no limit of its own.

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#	Substance/Substance Group	Restricted Application(s)	MCL ppm (mg/kg)	Applies to
B20	Cobalt (Co) and its compounds	Moisture indicators in desiccants, humidity indicator cards and other packing materials	not used	ind

5.3.2 Halogen-Free Products Only

The requirements defined in Table B2 shall apply to all homogeneous materials in Nexperia products that are declared or marketed as meeting Nexperia's Halogen-Free definition in accordance with NDS-00094. Products designated as Halogen-Free shall comply with the specified concentration limits for all relevant substances at the homogeneous material level.

Table B2: List of restricted substances/substance groups for products designated to meet Nexperia's Halogen-Free definition. Footnotes are given [below](#). ind: per individual substance; sum: summed across the group.

Substance/Substance Group	Restricted Application(s)	MCL ppm (mg/kg)	Applies to
Antimony oxides	Any product-related h.m. of a product to meet Nexperia's Halogen-Free definition	900	sum
Chlorine and bromine content	Any product-related h.m. of a product to meet Nexperia's Halogen-Free definition	900	sum

5.4 Declarable Substances

All substances listed as prohibited (Table A) or restricted (Tables B1 and B2) shall also be treated as declarable substances under this standard. For these substances, the applicable reporting threshold is the MCL specified in the respective table; where the MCL is stated as "not used", the reporting threshold is the limit of detection.

Substances defined as declarable shall be disclosed when present at or above the applicable reporting threshold specified in Table 2. Reporting thresholds may be expressed as a concentration value (including values below 100 ppm), as "detectable", or as "intentional use", depending on the regulatory basis or customer requirement applicable to the respective substance group. Unless otherwise specified, reporting thresholds apply at the homogeneous material level.

The reporting thresholds defined in Table 2 shall govern declarability under this standard. Stricter thresholds shall apply only where explicitly required by applicable law or by specific customer contractual agreement.

Declarability under this section serves both regulatory compliance and transparency objectives. In addition to substances regulated due to hazardous properties, certain substances may be designated as declarable to support regulatory reporting obligations, supply chain due diligence, sustainability transparency, or customer information requirements. This includes substances identified as critical raw materials by relevant authorities.

Accordingly, substances belonging to one or more of the following groups are declarable as specified in Table 2.

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Table 2: Declarable Substances and Applicable Reporting Thresholds

Substance/Substance Group	Reporting Threshold / ppm if applicable
Elements and their compounds	
Aluminum (Al) and its compounds ⁷	100
Antimony (Sb) and its compounds ⁸	100
Barium (Ba) and its compounds ⁸	100
Bismuth (Bi) and its compounds ⁸	100
Boron (B) and its compounds ⁸	100
Copper (Cu) and its compounds ⁸	100
Chromium (Cr) and its compounds	100
Gallium (Ga) and its compounds ⁸	100
Germanium (Ge) and its compounds ⁸	100
Gold (Au) and its compounds	100
Hafnium (Hf) and its compounds ⁸	100
Indium (In) and its compounds	100
Lithium (Li) and its compounds ⁸	100
Magnesium (Mg) and its compounds ⁸	100
Manganese (Mn) and its compounds ⁸	100
Niobium (Nb) and its compounds ⁸	100
Phosphorus (P) and its compounds ⁸	100
Platinum group elements ⁸ and their compounds ⁸	100
Rare earth elements ⁹ and their compounds ⁸	100
Silver (Ag) and its compounds	100
Silicon (Si) and its compounds ⁸	100
Strontium (Sr) and its compounds ⁸	100
Tantalum (Ta) and its compounds ⁸	100
Tellurium (Te) and its compounds	100
Thallium (Tl) and its compounds	100
Tin (Sn) and its compounds	100
Titanium (Ti) and its compounds ⁸	100
Tungsten (W) and its compounds ⁸	100
Vanadium (V) and its compounds ⁸	100
Zinc (Zn) and its compounds	100
Declarable substances required by legislation	
California Proposition 65 substances	detectable
CSCL: Monitoring and Priority Assessment Chemical Substances (PACS)	100

⁷ Part of Annex II of Regulation (EU) 2024/1252, either directly or indirectly.

⁸ Platinum group elements are ruthenium, osmium, rhodium, iridium, palladium, and platinum.

⁹ Rare earth elements include lanthanides (lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, lutetium), yttrium, and scandium

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Substance/Substance Group	Reporting Threshold / ppm if applicable
Substances of Very High Concern (SVHCs) per REACH Article 59(10)	100
Washington list of chemicals of high concern to children (CHCC list)	intentional use
Declarable substances required by industry standards	
Global Automotive Declarable Substances List (GADSL) including GADSL Critical Raw Materials (CRM) list	100
IEC 62474 Declarable Substances List	100
Individual substance classes	
Chemical warfare agents	100
Cyanogenic compounds and inorganic cyanides	100
Epoxy compounds	100
Flame retardants	intentional use
Graphite ⁸	100
Halogenated organic compounds, salts with halogenated ions, and inorganic halides	100
Nanomaterials	100
Nitrites	100
Optical brighteners / fluorescent whitening agents (FWAs)	100
PFAS (nonpolymeric)	intentional use
	0.025
PFAS (polymeric)	intentional use
	50
Photoinitiators	100
Plasticizers	100
Polyamines	100
Polymeric resins	100
UV stabilizers	100

Substances listed as declarable in Table 2 shall be declared when present at or above the applicable reporting threshold defined therein, whether intentionally added or unintentionally present.

Nexperia recognizes that minor variations in chemical composition between production lots may occur. However, declared concentrations shall represent typical and representative substance levels for the respective homogeneous material. The use of open ranges or unspecified deviations is not permitted. Declared values are considered binding for compliance assessment and reporting purposes.

The use of generic or non-specific substance identifiers (e.g., "trade secret" or similar wildcards) is discouraged and shall only be applied where legally justified. In such cases, the responsible party shall ensure continuous alignment with Nexperia's hazardous substance requirements and applicable legal and customer requirements. The total concentration of wildcard substances shall not exceed 10 % of the respective homogeneous material.

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5.5 Interpretation Guidelines

5.5.1 Prohibited Substances

Substance/Substance Group	MCL ppm (mg/kg)	Applies to
Triorganophosphates	1000	sum
TSCA Section 6(h)-covered substances	not used	ind

For triorganophosphates:

Application	Intentional addition allowed?	Concentration limit for incidental /unavoidable traces
Product-related materials	No	≤ 1000 ppm (0.10 %)
Packaging	No	≤ 1000 ppm (0.10 %)

For "TSCA Section 6(h)-covered substances":

Application	Intentional addition allowed?	Concentration limit for incidental /unavoidable traces
Product-related materials	No	None <i>any detectable amount is non-compliant</i>
Packaging	No	None <i>any detectable amount is non-compliant</i>

5.5.2 Restricted Substances

Substance/Substance Group	Restricted Application(s)	MCL ppm (mg/kg)	Applies to
Arsenic (As) and its compounds	All metals	300	sum As
	All non-metals, except as dopant in semiconductor dies	25	

Material class	Is <i>intentional</i> addition of As allowed?	Concentration limit for incidental /unavoidable traces
Metals and metal alloys, whether in the product or in packaging	No	≤ 300 ppm (0.03 %) total As in the homogeneous material
Non-metals, whether in the product or in packaging	No , except as a dopant in the semiconductor die (see the row below).	≤ 25 ppm (0.0025 %) total As in the homogeneous material
Arsenic as a dopant in the semiconductor die	Yes . Deliberate doping is permitted.	No numerical limit; doping concentrations are set by device performance.

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5.6 Non-Conformance

Suppliers shall promptly address any actual or suspected non-conformance with the requirements defined in this standard.

The responsible Nexperia Sourcing Manager and ECO-Products (eco-products@nexperia.com) shall be informed immediately upon identification or suspicion of a non-conformance. Immediate containment measures shall be implemented, where applicable, to prevent further distribution of affected materials or products.

The existence and scope of the non-conformance shall be verified using appropriate and documented verification methods. Following root cause analysis, the supplier shall provide a documented corrective action plan to Nexperia, including defined timelines and preventive measures.

After implementation of corrective actions, suitable objective evidence shall be provided to demonstrate that the non-conformance has been effectively eliminated.

In cases where a Nexperia customer reports a potential non-conformance with agreed requirements, the procedure defined in NDS-00103, Customer Complaint Handling Procedure, shall apply.

6 RECORDS

Compliance with this procedure shall be demonstrated and documented through the Full Material Declaration (FMD) process as defined in NDS-00197. For incoming materials and products, the relevant documentation shall be provided using form NEX-ECO-MDF or its successor document.

Where required, compliance shall be verified by third-party analytical test reports in accordance with Nexperia's test requirements defined in NDS-00045. The corresponding analytical verification process is described in NDS-00266.

All documentation received from suppliers, including material declarations, supporting evidence, analytical reports, and corrective action documentation, shall be retained and maintained for traceability purposes at the material level within the PLM system.

Document retention shall be performed in accordance with NDS-00822, Document and Record Retention Policy.

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7 TERMS, ACRONYMS, AND DEFINITIONS

Acronym / Term	Definition
Background radiation	Nexperia defines background radiation as 0.2 µSv/h and/or 50 Bq/g maximum at 10 cm distance.
BFR	Brominated flame retardant
CFC	Chlorofluorocarbons
CHC	Chlorinated hydrocarbon
CHCC List	List of chemicals of high concern to children
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora (see section 8)
CLP	Classification, labelling and packaging of substances and mixtures (see section 8)
CMR	Carcinogenic, mutagenic, or reproductive toxicant
CP	Chlorinated paraffin
CSCL	Chemical Substances Control Law (see section 8)
ECHA	European Chemicals Agency
ELV	End-of-life vehicles (see section 8)
EPS	Expanded polystyrene
FWA	Fluorescent whitening agent
GRP	Glass-reinforced plastics
h.m.	Homogeneous material. A material of uniform composition throughout or a material, consisting of a combination of materials that cannot be disjointed or separated into varied materials by mechanical actions such as unscrewing, cutting, crushing, grinding, and abrasive processes.
HBFC	Hydrobromofluorocarbon
HCFC	Hydrochlorofluorocarbon
HFC	Hydrofluorocarbon
HFE	Hydrofluoroether
HFO	Hydrofluoroolefin
Impurity	An impurity is a trace amount of a substance that is present in raw materials and is not removed during the production process. These substances can include contaminants found in recycled materials or naturally occurring elements in raw materials, such as ore. Additionally, impurities encompass residual substances that remain in a homogeneous material after processing by the supplier. These residuals can include unreacted constituent substances (e.g., monomers, pre-polymers, base materials, antioxidants, and catalysts), solvents, reaction byproducts formed during production, and decomposition products.

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Acronym / Term	Definition
ind	Per individual substance (see also: sum)
Intentionally added	A substance that is deliberately incorporated into a material or product to perform a specific function or purpose in the final product.
LCCP	Long-chain chlorinated paraffin. An unbranched chloroparaffin with a carbon chain length of more than 17 atoms.
MCCP	Medium-chain chlorinated paraffin. An unbranched chloroparaffin $C_xH_{2x-y+2}Cl_y$, where $x = 14-17$ and $y = 1-17$.
MCL	Maximum concentration limit
MOAH	Mineral oil aromatic hydrocarbon
MOSH	Mineral oil saturated hydrocarbon
n.d.	Not detectable. Nexperia considers amounts of substances below the natural occurrence levels and/or below the detection limit of currently accepted quantitative analytical methods as "not detectable (n.d.)", "not present", "not contained" or "0 ppm".
Nanomaterial	following Commission recommendation 2011/696/EU, a nanomaterial shall be defined as " <i>a natural, incidental or manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and where, for 50 % or more of the particles in the number size distribution, one or more external dimensions is in the size range 1 nm–100 nm.</i> "
Not used	A substance that is not intentionally added during the manufacturing or processing of a material or product.
NPE	Nonylphenol ethoxylate (= ethoxylated nonylphenol)
NP	Nonylphenol
ODS	Ozone-depleting substance
OPE	Octylphenol ethoxylate (= ethoxylated octylphenol)
OP	Octylphenol
Packaging (material)	Please refer to the legal definition set out in PPWR: " <i>any item, irrespective of the material from which it is made, intended by an economic operator for the containment, protection, handling, delivery or presentation of products to another economic operator or to an end user, and distinguishable by format, material and design.</i> " As such, the definition also covers tertiary shipment materials such as pallets to facilitate handling and transport of a number of sales units or grouped packagings.
Packing (material)	Specifically in semiconductor terminology: Materials in direct (primary) or indirect (secondary) contact with the product, such as reel, tape, tube, tray, bag, box, cushion, bag, plug, humidity indicator card, label, ...
PAH	Polycyclic aromatic hydrocarbon
PACS	Priority Assessment Chemical Substances (see CSCL)
PBB	Polybrominated biphenyl

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Acronym / Term	Definition
PBDD	Polybrominated dibenzodioxin
PBDE	Polybrominated diphenyl ether
PBDF	Polybrominated dibenzofuran
PBT	Persistent, bioaccumulative, and toxic
PCB	Printed circuit board or polychlorinated biphenyl
PCDD	Polychlorinated dibenzodioxin
PCDF	Polychlorinated dibenzofuran
PCN	Polychlorinated naphthalene
PCP	Pentachlorophenol
PCT	Polychlorinated terphenyl
PCTSR	Prohibition of Certain Toxic Substances Regulations
PFAS	Per- and polyfluoroalkyl substances. Any substance that contains at least one fully fluorinated methyl ($-\text{CF}_3$) or methylene ($-\text{CF}_2-$) carbon atom (without any H/Cl/Br/I attached to it). A substance that only contains the structural element CF_3-X or $\text{X}-\text{CF}_2-\text{X}'$, where $\text{X} = -\text{OR}$ or $-\text{NRR}'$ and $\text{X}' = \text{methyl } (-\text{CH}_3)$, methylene ($-\text{CH}_2-$), an aromatic group, a carbonyl group ($-\text{C}(\text{O})-$), $-\text{OR}''$, $-\text{SR}''$ or $-\text{NR}''\text{R}'''$, and where $\text{R/R}'/\text{R}''/\text{R}'''$ is a hydrogen ($-\text{H}$), methyl ($-\text{CH}_3$), methylene ($-\text{CH}_2-$), an aromatic group or a carbonyl group ($-\text{C}(\text{O})-$), is excluded from the scope. PFAS are sometimes referred to as per- and polyfluorinated chemicals, abbreviated as "PFCs". This should not be confused with the use of the abbreviation PFC in this document.
PFC	Perfluorocarbon
PFCA	Perfluorocarboxylic acid
PFHxA	Perfluorohexanoic acid
PFHxS	Perfluorohexanesulfonic acid
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctanesulfonic acid
PFSA	Perfluorosulfonic acid
Photoinitiator	Light-absorbing molecules that, when irradiated with 250–450 nm UV/visible light, release radicals or cationic acids that polymerize specialty acrylate, epoxy, or vinyl resins.
Plasticizer	Molecules (e.g., phthalate, adipate, or citrate esters) blended into polymers to lower the glass-transition temperature, making otherwise rigid plastics softer and less brittle.
PMT	Persistent, mobile, and toxic
POP	Persistent organic pollutant (see section 8)

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Acronym / Term	Definition
PPWR	Packaging and Packaging Waste Regulation (see section 8)
PVC	Polyvinyl chloride
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (see section 8)
Related substance of...	A related substance of a given substance is a substance (including polymers) that can release the target substance and thereby act as its precursor. For example, compounds containing the structural element $C_8F_{17}SO_2-$, $C_8F_{17}SO_3-$, or $C_8F_{17}SO_2N-$ are suspected to release perfluorooctane sulfonate (PFOS) and are related substances of PFOS.
RoHS	Restriction on Hazardous Substances (see section 8)
RHF	RoHS and Halogen/Antimony-Free
SCCP	Short-chain chlorinated paraffin. An unbranched chloroparaffin $C_xH_{2x-y+2}Cl_y$, where $x = 10-13$ and $y = 1-13$.
Skin contact, prolonged	Contact with the skin for more than 10 minutes on three or more occasions within two weeks, or for 30 minutes on one or more occasions within two weeks.
sum	Summed across the group (see also: ind)
SVHC	Substance of very high concern
TSCA	Toxic Substances Control Act (see section 8)
UV stabilizer	Additives—such as benzophenone or benzotriazole UV absorbers and HALS free-radical scavengers—blended into plastics, rubbers, and coatings to absorb or deactivate ultraviolet light-induced energy and radicals, thereby preventing embrittlement, discoloration, and loss of mechanical strength and significantly extending service life in sunlight.
vPvB	Very persistent and very bioaccumulative
vPvM	Very persistent and very mobile

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8 REFERENCES

Item	Description
NEX-ECO-MDF	Nexperia Material Declaration Form (public)
NDS-00045	Test Requirements for Hazardous Substances in Products and Packaging (public)
NDS-00094	RHF-2006 Classification for Semiconductor Products (<i>company internal</i>)
NDS-00103	Customer Complaint Handling Procedure (<i>company internal</i>)
NDS-00132	Nexperia Restricted Process Chemicals List
NDS-00175	Chemicals Management Standard
NDS-00197	Environmental Material Compliance Assurance Procedure (<i>company internal</i>)
NDS-00266	Analytical Test Report (ATR) Management Process (<i>company internal</i>)
NDS-00822	Document and Record Retention Policy (<i>company internal</i>)
NDS-00989	List of Controlled Substances in Products and Packaging (public)
CA Prop 65	Safe Drinking Water & Toxic Enforcement Act of 1986 (Proposition 65), CAL. HEALTH & SAFETY CODE §§ 25249.5–25249.14
CHCC List	Wash. Admin. Code (WAC) § 173-334-130 The reporting list of chemicals of high concern to children
China RoHS	MIIT Order No. 32 – Management Methods for the Restriction of Hazardous Substances in Electrical and Electronic Products GB 26572-2025 – Requirements for Restricted Use of Hazardous Substances in Electrical and Electronic Products SJ/T 11364-2024 – Marking for the Restricted Use of Hazardous Substances in Electrical and Electronic Products
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLP	Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures
CRM	Regulation (EU) 2024/1252 of the European Parliament and of the Council of 11 April 2024 establishing a framework for ensuring a secure and sustainable supply of critical raw materials
CSCL	Chemical Substances Control Law, Law No. 117 of 1973
ELV	Directive 2000/53/EC of the European Parliament and of the Council of 18 September 2000 on end-of-life vehicles
EU 2024/573	Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024 on fluorinated greenhouse gases
French Decree No. 2020-105	LAW no. 2020-105 of 10 February 2020 on the fight against waste and the circular economy

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Item	Description
GADSL	Global Automotive Declarable Substances List
IEC 62474	Declarable Substances List (DSL) including Reference Substance List (RSL) per "IEC 62474 - Material Declaration for Products of and for the Electrotechnical Industry"
ODS	Regulation (EU) 2024/590 of the European Parliament and of the Council of 7 February 2024 on substances that deplete the ozone layer
ORRChem	Chemikalien-Risikoreduktions-Verordnung Ordinance on the Reduction of Risks relating to the Use of Certain Particularly Dangerous Substances, Preparations and Articles, SR 814.81
PBT/vPvB	The ECHA publishes a PBT assessment list.
PCTSR	Prohibition of Certain Toxic Substances Regulations, 2025 (SOR/2025-270)
PE List Order	Ministerial Order on endocrine-disrupting substances (NOR TREP2323345A JORF, 2023-10-12)
POP	Regulation (EU) 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants
PPWD	European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste
PPWR	Regulation (EU) 2025/40 of the European Parliament and of the Council of 19 December 2024 on packaging and packaging waste
REACH	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
RoHS	Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment
TSCA 6(h)	Toxic Substances Control Act § 6(h), 15 U.S.C. § 2605(h)

9 CHANGELOG

Changes from the previous revision:

- Section 2 (Scope): named the documents that control chemicals used solely within manufacturing processes and operating materials — NDS-00175, Chemicals Management Standard, and the Nexperia Restricted Process Chemicals List (NDS-00132) issued under it — including manufacturing steps carried out by external subcontractors.
- Section 5.1 (Legal and Regulatory Background): corrected the Canadian reference from the proposed 2022 regulations to the Prohibition of Certain Toxic Substances Regulations, 2025 (SOR/2025-270); added the Fluorinated Greenhouse Gases Regulation (EU) 2024/573, the Critical Raw Materials Regulation (EU) 2024/1252 and the ECHA publications on PBT/vPvB and PMT/vPvM substances.
- Table A (Prohibited substances): corrected the legal basis of the heavy-metals packaging-sum footnote from PPWR Art. 5(1) to Art. 5(4).

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- Section 5.3 (Restricted Substances): added a paragraph permitting unavoidable impurities and technically unavoidable trace amounts provided applicable regulatory limits and MCLs are not exceeded; and a closing paragraph stating that where a regulation sets a limit lower than the MCL in Table B1 or B2, or expresses its restriction in a form the table does not — a release rate, a condition of use, or a prohibition on placing on the market — the regulatory requirement prevails, for intentional use and for impurities alike.
- Table B1, B1 (Formaldehyde): split into B1a and B1b and restated as an emission limit in mg/m³ rather than in ppm. B1a, wooden packaging materials, 0.062 mg/m³; B1b, product-related materials and other packaging, 0.08 mg/m³. Implements both limbs of REACH Annex XVII entry 77, where the previous revision implemented only the wood limb. The footnote now states the Appendix 14 test conditions and the ASTM E1333 equivalence used by US EPA TSCA Title VI and CARB Phase 2.
- Table B1, B3 (Arsenic): re-scoped by material class, matching B9. B3a, all metals, 300 ppm; B3b, all non-metals, 25 ppm, both summed as As and both excepting arsenic as a dopant in semiconductor dies. The former limit of 25 ppm for product-related materials is raised to 300 ppm for metals, the 25 ppm now reaches all non-metals, and the separate packaging limit of 10 ppm is withdrawn — packaging is covered by the material class it is made of.
- Table B1, B7 (CMR substances): the exception list now states that entry B20 applies to cobalt in moisture indicators, so a single limit governs that application.
- Table B1, B13 (MOSH): qualified as the C16–C35 fraction, which is the fraction defined by the instrument the entry implements.
- Table B1, B19 (REACH Annex XVII substances): added a footnote stating that each Annex XVII entry applies as that entry states it — where it sets a lower limit, prohibits the substance in the application concerned, or states its requirement other than as a content limit, that requirement prevails. The 1000 ppm MCL applies only where the applicable entry permits the substance in that application and states no limit of its own.
- Table B1, B20 (Cobalt): new entry. Cobalt and its compounds in moisture indicators in desiccants, humidity indicator cards and other packing materials, not used.
- Table 2 (Declarable substances): corrected the critical-raw-materials footnote from the 2023 fifth list to Annex II of Regulation (EU) 2024/1252, and applied it to the affected rows as a footnote reference rather than as a typed marker.
- Section 5.6 (Non-Conformance): stated that the responsible Nexperia Sourcing Manager and ECO-Products shall be informed immediately, and that immediate containment measures shall be implemented where applicable.
- Section 8 (References): added NDS-00132, Nexperia Restricted Process Chemicals List; NDS-00175, Chemicals Management Standard; and the Critical Raw Materials Regulation (EU) 2024/125

Changes related to earlier revisions are stored in the document history in Nexus.

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