
# Darn Tough Vermont
# Restricted Substances List (RSL)

**April 2023**

# Table of Contents

# Introduction

Darn Tough Vermont has had an unconditional guarantee since we knit our first sock. To consumers, that guarantee speaks to the comfort, durability, and fit they expect from our product. But to us it's something more: it's a commitment to our community and the environment.

That commitment is reflected in our chemicals management program, which is designed to protect customers, workers, and the environment by eliminating toxic chemical substances from our value chain, manufacturing processes, products, and packaging.

There are thousands of chemicals used in the textile industry alone. Hundreds of those chemicals and their combinations are particularly hazardous, and many have yet to be tested for consumer health or environmental safety. Addressing issues that can arise from the intentional use or the unintentional presence of these chemicals is made difficult by textile supply chains, which are complex, global, and opaque. Those conditions – and the need to meet continuously evolving regulations and customer expectations – demand good chemical management, information sharing, transparency, and collaboration with partners throughout our value chain in a shared effort to support our commitment.

We recognize that chemistry plays an essential role in the creation of comfortable, durable products, and we intend to use the most benign, responsibly managed chemicals throughout our entire value chain. To support that objective, our RSL is aligned with bluesign® to standardize the chemical management expectations required of all suppliers as a prerequisite of doing business with Darn Tough Vermont.

The most recent version of the Darn Tough Vermont RSL can be found on our website at: https://www.darntough.com/restricted-substances-list.

Thank you for your continued partnership and cooperation in ensuring that Darn Tough Vermont products meet the high expectations we set for ourselves, and the expectations of our customers.

# Contact Information

For questions, comments, or support in meeting expectations outlined in this Restricted Substances List, please contact sustainability@darntough.com.

## Supplier Responsibilities & Requirements

Darn Tough Vermont's policy for chemicals management requires that all suppliers comply with the responsibilities noted below. These responsibilities are a prerequisite of doing business with Darn Tough Vermont.

1. Review the Darn Tough Vermont RSL on an annual basis. Suppliers are responsible for securing the most recent version of our RSL, which is always available upon request and on our website (https://www.darntough.com/restricted-substances-list).
2. Ensure that all materials, components, and products supplied to Darn Tough Vermont meet the requirements set forth in this document.
3. Adhere to all applicable legal requirements regardless of whether they are referenced in this document.
4. Inform all material suppliers and subcontractors – including dye mills, chemical suppliers, etc. – of Darn Tough Vermont's requirements.
5. Maintain a chemical inventory and a valid Safety Data Sheet (SDS) for each processing chemical stored and used on site.
6. Maintain adequate systems to control quality, safety, and chemical use, utilizing safety and environmental programs, documented procedures, training, and protective equipment to prevent chemical exposure. Information about hazards associated with chemicals must be clearly posted in all storage and use areas.
7. Test applicable materials and products annually for compliance with the RSL. *Note: Suppliers are responsible for all costs associated with analytical testing. Should a supplier demonstrate a test failure, Darn Tough Vermont reserves the right to increase the frequency of testing required of the supplier for one year from the date of the test or until the supplier demonstrates that the issue has been properly addressed and resolved*.
8. Maintain records of compliance and production documents for a minimum of 5 years from the date or production.
9. Upon request, all suppliers must
    a. Provide the contact information of the person(s) responsible for chemical management and restricted substances testing.
    b. Furnish Darn Tough Vermont with compliance and certification documentation, 3rd party laboratory test results, lot tracking and production information, or any information necessary to demonstrate compliance.
    c. Disclose the identity and functional use of each chemical used in materials and products for Darn Tough Vermont, and distinguish process chemicals from those intended to remain in the final material, product, or component. Disclosure may require furnishing Darn Tough Vermont with Safety Data Sheets for all substances and preparations (dyes, colorants, solvents, chemicals, etc.) used in the production of a specific order.
    d. Disclose the identity and contact information for upstream suppliers and sub-contractors used to make materials and products sold to Darn Tough Vermont.
10. Immediately notify Darn Tough Vermont if any materials, components, or products cannot meet the requirements of the RSL. Suppliers are responsible for documenting all RSL and product/material safety failures and remedial actions using the *Failure Remediation Form* (see Addendum 2).
11. Allow an authorized representative of Darn Tough Vermont to inspect the manufacturing facility – including facilities of sub-contractors – during normal business hours where materials, products, and components are developed, manufactured, and stored for Darn Tough Vermont.

The authorized representative may take samples of products or materials during such inspections.

12. Complete and return the *Supplier Acknowledgement of Receipt and Understanding* (see Addendum 1) as confirmation of accepting these terms.

*Please note: Materials and products that contain suspected or actual defects that result in RSL or product safety violations may not be sold or transferred to Darn Tough Vermont. Suppliers will be held responsible for all losses and damages incurred by Darn Tough Vermont for materials and products that fail to meet these requirements*.

Darn Tough Vermont reserves the right to cancel orders and terminate a business relationship if the supplier fails to meet these requirements. Compliance with the RSL is mandatory and must be met in its entirety for every order placed by Darn Tough Vermont.

## Regulatory Requirements

All suppliers of materials, products, components, and packaging to Darn Tough Vermont must adhere to all legal requirements, whether they're referenced in this document or not. Darn Tough Vermont may update this RSL to capture new regulatory requirements, however, failure of Darn Tough Vermont to inform suppliers of regulatory changes does not release suppliers from their responsibility to monitor and comply with all relevant legal requirements.

### Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)

REACH Regulation (EC) No 1907/2006 of the European Parliament came into force on June 1, 2007 and was adopted to protect human and environmental health from risks associated with all chemical substances. REACH Annex XVII came into force on June 1, 2009 and contains restrictions on manufacturing, use, and bringing to market dangerous substances, mixtures, and articles.

Suppliers must continuously monitor updates to REACH, ANNEX XVII, and the Candidate List of Substances of Very High Concern (SVHC) and ensure that materials, products, and components supplied to Darn Tough Vermont comply with all REACH requirements, regardless of whether the substances are listed in the RSL.

Suppliers shall evaluate the sourcing and processing of raw materials, components, chemicals, other ingredients, products, and packaging, and immediately inform Darn Tough Vermont of any cases where an SVHC candidate is present at or in excess of 0.1% concentration by weight. This requirement applies to any item supplied to Darn Tough Vermont. In the case of items comprised of multiple materials, the limit applies to each homogenous part or component.

Darn Tough Vermont may require random testing for SVHC in materials and finished products to demonstrate compliance.

Additional information:

- REACH: https://echa.europa.eu/regulations/reach/understanding-reach.
- Annex XVII: https://eur-lex.europa.eu/legal-content/en/TXT/HTML/?uri=CELEX:02006R1907-20210101#tocId307
- Most recent Annex XVII amendment from October 10, 2018: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018R1513.

- Candidate List of substances of very high concern for authorisation (SVHC): https://echa.europa.eu/web/guest/candidate-list-table

## California Proposition 65

Proposition 65, also known as the Safe Drinking Water and Toxic Enforcement Act of 1986, was enacted to protect drinking water sources from chemicals known to cause cancer, birth defects, or reproductive harm. Proposition 65 requires that businesses inform consumers about exposures to such chemicals if any listed chemical's exposure is equal to or greater than the safe harbor level.

Suppliers must inform Darn Tough Vermont if any listed chemical is intentionally added to or present as a contaminant in any material, component, trim, or product provided to Darn Tough Vermont.

Additional information:

- Proposition 65: https://oehha.ca.gov/proposition-65
- Safe Harbor Levels (No Significant Risk Levels – NSRLs, and Maximum Allowable Dose Levels – MADLs): https://oehha.ca.gov/proposition-65/general-info/current-proposition-65-no-significant-risk-levels-nsrls-maximum

## US State Level Reporting Regulations

Maine, Oregon, Vermont, and Washington require manufacturers and importers to notify relevant authorities of the presence of Chemicals of High Concern to Children (CHCC) or Priority Chemicals (PC) in children's products.

Suppliers must inform Darn Tough Vermont if any CHCCs or PCs are intentionally added or present as a contaminant in any material, component, trim, or product provided to Darn Tough Vermont.

Additional information:

- Maine – *Toxic Chemicals In Children's Products*: https://www.maine.gov/dep/safechem/childrens-products/index.html
- Oregon – *Toxic-Free Kids Act*: https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/HEALTHYNEIGHBORHOODS/TOXICSUBSTANCES/Pages/Toxic-Free-Kids.aspx
- Vermont – *Chemical Disclosure Program for Children's Products*: https://www.healthvermont.gov/environment/children/chemical-disclosure-program-childrens-products-manufacturers
- Washington – *Children's Safe Products Act*: https://ecology.wa.gov/Waste-Toxics/Reducing-toxic-chemicals/Childrens-Safe-Products-Act

## Consumer Product Safety Improvement Act (CPSIA), Canada Consumer Product Safety Act (CCPSA)

All youth category products require annual lead testing to satisfy requirements of the CPSIA in the United States and the CCPSA in Canada.

To fulfill applicable safety requirements, suppliers are responsible for ensuring that all materials, components, trims, and products are compliant with CPSIA and CCPSA. Compliance includes but may not

be limited to furnishing 3rd party analytical testing reports for lead, phthalates, and flammability where applicable.

Additional information:

- CPSIA: https://www.cpsc.gov/Regulations-Laws--Standards/Statutes/The-Consumer-Product-Safety-Improvement-Act/
- CCPSA: https://www.canada.ca/en/health-canada/services/consumer-product-safety/legislation-guidelines/acts-regulations/canada-consumer-product-safety-act.html
- CPSC-accepted testing laboratories: https://www.cpsc.gov/cgi-bin/LabSearch/

### Biocides and Pesticides

Biocides include chemicals used to suppress pests, molds, and bacterial that cause odor, damage materials, or harm human or animal health.

Any material, component, or product provided to Darn Tough Vermont containing a biocide or pesticide must be bluesign®-certified and must comply with the Biocidal Products Regulation (EU No 528/2012. BPR) and U.S. EPA regulations. All biocide and pesticide substances must be approved for use by the European Chemicals Agency (ECHA) and the U.S. EPA prior to production.

Labeling must be done in accordance with these regulations for products and packaging if there is a claim that the treated article has biocidal properties (e.g., "antimicrobial," "anti-stink," etc.). Additionally, the name of the biocide must be noted, including the name of all nanomaterials contained in the biocidal product.

Information on the EU BPR can be found here: https://echa.europa.eu/regulations/biocidal-products-regulation/understanding-bpr

## Resources

### bluesign®

bluesign® provides a comprehensive, independent system for managing and approving chemicals, processes, materials, and products that are safe for the environment and people alike. While the bluesign® system is optimized to address each step in the textile supply chain, the system's approach is more broadly applicable to finished materials. As such, we believe bluesign® provides the best available approach for meeting Darn Tough Vermont's sustainable chemistry goals, which is why their standards are the basis for our Restricted Substances List.

Darn Tough Vermont's RSL is a subset of testable substances derived from the bluesign® System Substances List (BSSL), a comprehensive list of global substance restrictions that have been verified based on a scientific full-risk assessment. The noted limits in our RSL adhere to those set forth in the BSSL, however, our limits may be more precautionary for select substances (e.g., PFAS and BPA).

Additional information:

- bluesign®: https://www.bluesign.com
- bluesign® System Substances List (BSSL, July 2022): https://www.bluesign.com/downloads/bssl/2022/bssl_v13.0.pdf

- bluesign® FINDER (web-based search engine for finding blusign® approved chemical products and supplier information): https://finder.bluesign.com/index.html
- bluesign® system black limits (BSBL, July 2022): https://www.bluesign.com/downloads/bsbl/2022/bsbl_v40.pdf

### Chemicals Management Guide

Darn Tough Vermont is a member of the Outdoor Industry Association (OIA). The OIA has created a publicly available Chemicals Management Guide, and we encourage manufacturing suppliers to utilize this guide and the corresponding templates and training content to support their chemistry management policies and processes.

Outdoor Industry Association, *Chemicals Management Guide & Training for Manufacturers*: https://outdoorindustry.org/sustainable-business/cm-docs

### Chemical Inventory List (CIL) and Safety Data Sheets (SDS)

Suppliers must maintain a chemical inventory list for all chemicals present at their facilities, as well as corresponding, comprehensive, and current safety data sheets for each processing chemical present at their facilities.

The OIA's aforementioned *Chemicals Management Guide & training for Manufacturers* contains a downloadable CIL template, and a similar *Chemical Register Form* is included in Addendum 3 of this document. Suppliers must include the following information in their CIL:

1. Chemical product name
2. Chemical supplier (name, location, contact person)
3. Primary use (e.g., dye, flame retardant)
4. Chemical ingredients (name, CAS numbers, percentage, contents)
5. Quantity on site
6. bluesign® certification number, if applicable

## Restricted Substances List

Darn Tough Vermont has adopted the bluesign® RSL, which is a subset of testable substances extracted from the bluesign® System Substances List (BSSL). The BSSL is a larger, more comprehensive list that includes all global substance restrictions beyond finished products.

The Darn Tough Vermont RSL applies to all raw materials, trims, components, parts, products, hardware, chemicals, mixtures, coatings, and other items that are supplied to Darn Tough Vermont and/or used in the manufacture of goods and packaging for Darn Tough Vermont.

We require supply chain partners to implement input-stream chemical management systems to know and address chemical inputs, sourcing, sampling, and testing associated with materials, products, packaging, and other items provided to Darn Tough Vermont to meet the requirements of the RSL. Suppliers must impose these requirements on their vendors and sub-suppliers to ensure alignment throughout the entire supply chain.

Furthermore, supply chain partners involved with the use of auxiliaries and dyes must adhere to the bluesign® system black limits (BSBL), which specifies threshold limits for chemical substances in finished

chemical products. Suppliers are strongly encouraged to utilize bluesign® FINDER, which is a positive list of commercially available chemical products that have passed the bluesign® chemical assessment and comply with the BSBL limits. Links for the BSBL and the aforementioned BSSL can be found in the Resources section above.

Please note that the RSL and the BSSL are updated regularly to keep pace with emerging regulations and our corporate goals that may go beyond regulatory requirements. As a result, suppliers will need resources available to continually meet all requirements. We recognize the challenges this presents, and while it is the responsibility of suppliers to ensure that products and packaging provided to Darn Tough Vermont comply with all global regulations, we view compliance through the lens of the partnerships we've established and can provide assistance with select services and education upon request.

## Definitions

**Article**: An object which during production is given a special shape, surface or design, which determines its function to a greater degree than does its chemical composition (fibers, textile fabrics, buttons, zippers, etc.).

**BSSL**: bluesign® System Substances List (BSSL) Consumer safety limits. A list that specifies consumer safety limits for chemical substances in articles. It also defines usage bans for chemical substances prohibited from the manufacturing of articles.

**CAS**: CAS registry numbers are unique numerical identifiers for chemical elements, compounds, polymers, biological sequences, mixtures and alloys. Chemical Abstracts Service (CAS), a division of the American Chemical Society, assigns these identifiers to every chemical that has been described in the literature. The intention is to make database searches more convenient, as chemicals often have many names. Almost all molecule databases today allow searching by CAS number.

**Chemical substance**: A chemical substance is a chemical element and its compounds with constant composition and properties. It is defined by the CAS number.

**Component**: A part of an article that can be distinguished according to the material composition, the functionality and/or the color and is easily, mechanically separated from the other components.

**Detection limit (DL)**: The detection limit is the lowest quantity of a substance that can be distinguished from the absence of that substance following a prescribed analytical method.

**Limit value**: Limit values are defined for single substances or substance groups. The limit value is the maximum amount of a chemical substance or substance group permitted in articles for the usage ranges A, B and C.

**Member**: This term describes a member of a group of restricted substances. It can be a chemical substance or a subgroup of substances.

**Mixture**: A chemical product composed of two or more substances. It can be, for example, a colorant or an auxiliary.

**Monitoring**: For some chemical substances toxicological and/or ecological properties are not yet well defined. Therefore, the risk assessment is not complete. For some substances sufficient information on possible/typical contamination of articles and chemical products is not available now. Those substances

are under observation. Exact restrictions will be defined as soon as more information exists. In cases where monitoring status is accompanied by a limit value, the limit value should be the goal.

**Several**: Several means that the whole substance group is restricted although not all substances that are restricted are explicitly listed. The listed examples represent those substances which should be considered if the substance group is intended for testing.

**Traces**: A residual amount of a substance that may be contained in a product from a non-intended source. Trace amounts may be specified for a chemical substance with a usage ban, in which case a limit is defined to minimize these currently unavoidable traces.

**Usage ban**: A usage ban is defined as a prohibition of the use of a chemical or group of chemicals in a particular manufacturing process, application, material, component, or product. Chemical products used in manufacturing must not intentionally contain substances or substance groups subject to a usage ban.

**Usage range**: Usage ranges classify consumer goods according to their consumer safety relevance. Three usage ranges (A, B, C) are defined, with A being the most stringent category concerning limit values/bans.

- Usage Range A: Next to skin use and baby-safe (0-3 years)
- Usage Range B: Occasional skin contact
- Usage Range C: No skin contact

The table below lists common consumer goods and allocates usage ranges.

| Consumer goods | Usage Range A | Usage Range B | Usage Range C | Comment |
|---|---|---|---|---|
| Accessories (belts, key chains, wallets, etc.) | | | X | |
| Baby wear and textile articles (0-3 years) | X | | | |
| Backpacks (and similar bags) | | | X | Straps, harness, and backrest that have contact with skin are usage range A |
| Bed linen | X | | | |
| Furnishing fabric | | X | | e.g., seat cover |
| Headwear | X | | | |
| Insoles | X | | | |
| Jacket | | X | | |
| Pants | | X | | |
| Pullover | | X | | |
| Scarf | X | | | |
| Shirt (all kinds) | X | | | |
| Socks | X | | | |
| Sweatshirt | | X | | |
| Towel | | X | | |

## Scope

This document specifies restrictions (limits and bans) for chemical substances in all material products supplied to Darn Tough Vermont, including raw materials supplied for use in manufacturing socks, as well as other items such as apparel, accessories, components, equipment, packaging, and other products.

## Testing Methods

The test methods specified in the rightmost column of the Restricted Substances List are the recommended ones. The testing methods column consists of two entries: sample preparation (e.g., extraction, digestion, derivatization) and test method (that is, the actual measurement, e.g., GCMS, LC-MS). Depending on their availability, international or national standards are also given for several substances and these methods may be applied. Other accredited methods can only be applied if it can be verified that equivalent results are obtained.

Details of the respective sample preparation methods can be found in the table below:

| Sample Preparation | Solvent(s) | Temperature (°C) | Time (min) | Other requirements |
|---|---|---|---|---|
| Extraction with KOH | Potassium Hydroxide (1M) | 90 | 12-15h | Derivatization with Acetic anhydride |
| Extraction with MeOH | Methanol | 70 | 60 | Ultrasonic bath |
| Extraction with THF | Tetrahydrofuran | 40 | 60 | |
| Extraction with DCM | Dichloromethane | 40 | 60 | Ultrasonic bath |
| Extraction with MTBE | Methyl tert-butyl ether | 60 | 60 | Ultrasonic bath |
| Extraction with water | Deionized water | | | |
| Extraction with MeOH/Acetonitrile | Methanol / Acetonitrile (1:1) | 70 | 30 | Ultrasonic bath |
| Extraction with Potassium carbonate solution | Potassium carbonate solution | Room temp. | 60 | Ultrasonic bath |
| Extraction with THF/Acetone | Tetrahydrofuran / Acetone | 60 | 60 | Ultrasonic bath, derivatization with Acetonitrile |
| Extraction with Acetone | Acetone | 70 | 60 | Ultrasonic bath |
| Extraction with Hexane/Dichloroethane | Hexane / Dichloroethane | 70 | 60 | |
| ASE - Accelerated Solvent Extraction | Acetone / Hexane (1:1) | 100 | - | |
| ASE - Accelerated Solvent Extraction | Ethyl acetate | 40 | - | |
| Soxhlet Extraction | Acetone / Hexane (1:1) | - | 480 | |
| Headspace | - | 120 | 45 | Purge & trap is recommended |
| DIN EN ISO 105-E04 (2013) | Acidic sweat solution | 37 | 60 | Textile to liquor ratio 1:50 |

## Material Testing Matrix

The following matrix provides guidance on where restricted substances may occur based on material substrate and is based on the bluesign® Testing Matrix version 9.0 (July 2018). It is recommended that suppliers use this matrix as a starting point for understanding what chemicals are of greatest concern for materials supplied to Darn Tough Vermont. When evaluating a textile blend, suppliers are to combine requirements for both natural and synthetic fibers. Please contact Darn Tough Vermont for materials not explicitly noted in the matrix.

See the Restricted Substances Table and Annexes for chemical or chemical group specific CAS numbers, limits, and testing methods.

Matrix Key:

- ● Testing is required if not a bluesign® partner or material
- ○ Testing is recommended if not a bluesign® partner or material
- – Not relevant (substances or group of substances with high probability of not being relevant)

| Test item | Textiles from natural fibers | Textiles from synthetic fibers | Additional testing for coated or printed textiles | Leather | Plastics and other synthetic materials (PU, PVC, Rubber, TPU, TPR, EVA, synthetic leather, etc.) | Metal Parts |
|---|---|---|---|---|---|---|
| pH Value | ● | ● | – | ● | – | – |
| Odor | ● | ● | – | ● | ● | – |
| **Color Fastness Properties** | | | | | | |
| Fastness to perspiration | ● | ● | – | ● | – | – |
| Color fastness to saliva and perspiration (baby, mouthing) | ● | ● | – | ● | ● | – |
| **Extractable Heavy Metals** | | | | | | |
| Antimony | – | **PES** ● | – | ○ | ○ | – |
| Arsenic | ○ | – | – | ○ | ○ | – |
| Cadmium | – | ○ | ● | – | ● | ○ |
| Chromium, total | **Wool** ● **Other** ○ | **PA** ● **Other** ○ | – | – | ○ | – |
| Chromium VI | ○ | ○ | – | ○ | ○ | – |
| Cobalt | ○ | ○ | – | ○ | ○ | – |
| Copper | ○ | ○ | – | ○ | ○ | – |
| Lead | ● | ● | – | ● | ● | ○ |
| Mercury | ○ | ○ | – | ○ | ○ | – |
| Nickel | ○ | ○ | ○ Contact with skin | ○ | ○ | ○ Contact with skin |
| **Heavy Metals (total content)** | | | | | | |
| Total Lead | ● | ● | ● | ● | ● | ● |
| Total Cadmium | ● | ● | – | ● | ● | ● |
| **Heavy Metals (release)** | | | | | | |
| Nickel | – | – | – | – | – | ● |
| **Aldehydes** | | | | | | |
| Formaldehyde | ● | ● | – | ● | – | – |
| Alkylphenols and Alkylphenol ethoxylates | ● | ● | – | ● | ○ | – |
| Aniline | ○ | ○ | – | – | – | – |
| Arylamines | ● | ● | – | ● | – | – |
| Asbestos | – | – | – | – | – | – |
| Chlorinated Benzenes and Toluenes | – | ● | – | ○ | – | – |
| Chlorinated Phenols | ● | ● | – | ● | – | – |
| **Colorants** | | | | | | |
| with carcinogenic potential | ● | ● | – | ● | – | – |
| with allergenic potential | ○ | ● | – | ○ | – | – |
| banned for other reasons | ● | ● | – | ● | – | – |
| Dioxins and Furans | – | – | – | – | – | – |
| Flame Retardants (Required if sample declared with functional finishing) | ○ | ○ | – | – | ○ | – |
| Paraffin, C10-C13, chlorinated (SCCP) | – | – | – | ● | – | – |
| Fluorinated Greenhouse Gases | – | – | – | – | – | – |

| Material Testing Matrix (continued) | | | | | | |
|---|---|---|---|---|---|---|
| **Test item** | **Textiles from natural fibers** | **Textiles from synthetic fibers** | **Additional testing for coated or printed textiles** | **Leather** | **Plastics and other synthetic materials (PU, PVC, Rubber, TPU, TPR, EVA, synthetic leather, etc.)** | **Metal Parts** |
| **Fluorinated Substances** | | | | | | |
| Perfluorooctane sulfonic acid / Perfluorooctane sulfonate (PFOS) | O | O | – | O | – | – |
| Perfluorocarboxylic acids and salts [PFHxA, PFOA] | O | O | – | O | – | – |
| PFOA-related substances | O | O | – | O | – | – |
| Glycols | – | – | – | – | – | – |
| Halogenated Biphenyls, Terphenyls and Naphthalenes | O | O | – | O | O | – |
| Halogenated Diarylalkanes | O | O | – | – | O | – |
| Isocyanates (Required for PU and for relevant functional finishes) | O | O | **PU ●** | – | **PU ●** | – |
| **Monomers** | | | | | | |
| Acrylamide | O | O | – | – | O | – |
| **Other Chemical Substances** | | | | | | |
| Acetophenone | – | – | – | – | **EVA●** | – |
| Bisphenol A | O | O | – | – | ● | – |
| Cresol, all isomers | O | O | – | O | – | – |
| Dimethylfumarate (required if the product is packaged with any form of anti-mold agent) | O | O | – | O | O | – |
| Formamide | – | – | – | – | **EVA ●** | – |
| o-Phenylphenol | O | O | – | ● | – | – |
| 2-Phenyl-2-propanol | – | – | – | – | **EVA●** | – |
| Quinoline | – | ● | – | – | – | – |
| Ozone Depleting Substances | – | – | – | – | – | – |
| Pesticides | O | – | – | O | – | – |
| Plasticizers | – | – | ● | – | ● | – |
| Polyaromatic Hydrocarbons (PAHs) incl. Benzo(a)pyrene | – | – | ● | – | ● | – |
| **Polymers** | | | | | | |
| Polyvinylchloride (PVC) | – | – | ● | – | ● | – |
| **Solvents** | | | | | | |
| N, N-Dimethylacetamide (DMAc) | – | O | O | O | O | – |
| N, N-Dimethylformamide (DMF) | – | – | ● | ● | O | – |
| N-Ethyl-2-pyrrolidone (NEP) | O | O | – | O | O | – |
| N-Methylpyrrolidone (NMP) | O | O | – | O | O | – |
| Tetrachloroethylene | O | O | – | O | O | – |
| Toluene | – | – | ● | ● | ● | – |
| Trichloroethylene | O | O | – | ● | O | – |
| Tin Organic Compounds | O | O | ● | ● | ● | – |
| **UV stabilizer** | – | – | O (for coated) | – | O | – |

## Restricted Parameters

| Parameter | Limit | Test Method / Sample Preparation |
|---|---|---|
| pH | Non-leather products: 4.0 – 7.5 | ISO 3071 (2020) |
| | Leather products: 3.2 – 4.5 | ISO 4045 (2018) |
| Odor | No unpleasant odor shall be emitted from the products | SNV 195 651 |
| **Color Fastness Properties** | | |
| Color fastness to perspiration | Textiles dyed with disperse or metal complex dyes: at least 3-4 (the goal is >4) | ISO 105-E04 (2013) |
| Color fastness to saliva and perspiration | Fast (corresponds to a level 5 of 5-step grey scale described in ISO 105-A02 (1993) | §64 LFGB BVL B 82.10-1 in combination with DIN 53160-1 and -2 (2010) |

## Restricted Substances Table & Appendices

| Chemical Name | CAS Number | Sector of Use | Limit Type | Usage Range | | | Unit | Test Method // Sample Preparation | Comment |
|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | C | | | |
| **Aldehydes** | | | | | | | | | |
| Formaldehyde | 50-00-0 | Leather | Usage ban | 15 | 75 | 300 | mg/kg | ISO 17226-1 (2019)<br>ISO 17226-2 (2019) | Darn Tough Vermont limit is 15ppm for textiles<br><br>Composite wood materials must comply with California and US emission requirements (40 CFR 770) |
| | | Textiles<br>Metal parts<br>Polymer parts<br>Down/feather articles | Limitation | 15 | 75 | 300 | mg/kg | ISO 14184-1 (2011)<br>Wood: EN 717-3<br>Paper: EN 645 and EN 1541 | |
| **Alkylphenolethoxylates (APEOs)** | | | | | | | | | |
| **Nonylphenol ethoxylates (NPEO)** | Several | Textiles<br>Metal parts<br>Polymer parts<br>Down/feather articles | Usage ban | 100 | | | mg/kg | EN ISO 18254-1 (2016) | For sum of all allocated Members/Substances<br><br>(if traces above 10 ppm are detected the source of the contamination has to be identified and phased out) |
| | | Leather | Usage ban | 100 | | | mg/kg | EN ISO 18254-1 (2016)<br>EN ISO 18218-1 (2015) | |
| **Octylphenol ethoxylates (OPEO)** | Several | Leather | Usage ban | 100 | | | mg/kg | EN ISO 18254-1 (2016)<br>EN ISO 18218-1 (2015) | |
| | | Textiles<br>Metal parts<br>Polymer parts<br>Down/feather articles | Usage ban | 100 | | | mg/kg | EN ISO 18254-1 (2016) | |
| **Alkylphenols (APs)** | | | | | | | | | |
| **Nonylphenol (NP), mixed isomers** | Several | Textiles<br>Leather | Usage ban | 10 | | | mg/kg | EN ISO 21084 (2019) | For sum of all allocated Members/Substances |
| | | Metal parts<br>Polymer parts<br>Down/feather articles | Usage ban | 10 | | | mg/kg | EN ISO 21084 (2019), modified // 1g sample / 20ml THF with Sonication for 60 min at 70°C | |
| **Octylphenol (OP), mixed isomers** | Several | Textiles<br>Leather | Usage ban | 10 | | | mg/kg | EN ISO 21084 (2019) | For sum of all allocated Members/Substances |
| | | Metal parts<br>Polymer parts<br>Down/feather articles | Usage ban | 10 | | | mg/kg | EN ISO 21084 (2019), modified // 1g sample / 20ml THF with Sonication for 60 min at 70°C | |

| Chemical Name | CAS Number | Sector of Use | Limit Type | Usage Range | | | Unit | Test Method // Sample Preparation | Comment |
|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | C | | | |
| **Amines** | | | | | | | | | |
| Aniline - free content | 62-53-3 | Leather | Usage ban | 30 | | | mg/kg | EN ISO 17234-1 (2015) | In case aniline is detected the test needs to be repeated without addition of sodium dithionite. |
| | | Textiles Polymer parts | Usage ban | 30 | | | mg/kg | EN ISO 14362-1 (2017) | |
| **Arylamines** | | | | | | | | | |
| **Arylamines (including corresponding salts)** | Several | Leather | Usage ban | 20 each | | | mg/kg | EN ISO 17234-1 (2015)<br>EN ISO 17234-2 (2011) //<br>for azo colorants which may release 4-Aminoazobenzene | Single substances listed in Annex (as substance for example in PU, and as decomposition product of azo colorants which, by reductive cleavage of one or more azo groups, may release one or more of the aromatic amines) |
| | | Textiles<br>Metal parts<br>Polymer parts<br>Down/feather articles | Usage ban | 20 each | | | mg/kg | EN ISO 14362-1 (2017)<br>EN ISO 14362-3 (2017) //<br>for azo colorants which may release 4-Aminoazobenzene | |
| **Biocides** | | | | | | | | | |
| Dimethylfumarate | 624-49-7 | All | Usage ban | 0.1 | | | mg/kg | ISO 16186 (2021) | |
| ***o-Phenylphenol and its salts*** | Several | Leather | Limitation | 50 | 100 | 200 | mg/kg | DIN 50009 (2021) | |
| | | Textiles | Limitation | 50 | | | mg/kg | DIN 50009 (2021) | |
| **Chlorinated Benzenes and Toluenes** | | | | | | | | | |
| **Chlorinated Benzenes and Toluenes** | Several | All | Usage ban | 5 | | | mg/kg | EN 17137 (2018) | For sum of all allocated chlorinated benzenes and toluenes // additional regulation for each allocated Member/Substance - Usage ban 1.0mg/kg<br><br>Single substances listed in Annex |

| Chemical Name | CAS Number | Sector of Use | Limit Type | Usage Range | | | Unit | Test Method // Sample Preparation | Comment |
|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | C | | | |
| **Chlorinated Phenols** | | | | | | | | | |
| **Chlorinated Phenols** | Several | All | Usage ban | See limits of substance groups below | | | | DIN 50009 (2021) | Usage ban for every allocated Member/Substance<br>Single substances listed in Annex |
| *Pentachlorophenol, its salts, esters and compounds* | Several | All | Usage ban | 0.05 | 0.5 | 0.5 | mg/kg | | For sum of all allocated PCPs |
| *Tetrachlorophenol, its salts and compounds* | 25167-83-3 | All | Usage ban | 0.05 | 0.5 | 0.5 | mg/kg | | For sum of all allocated TeCPs |
| *Trichlorophenol, all isomers* | 25167-82-2 | All | Usage ban | 0.05 | 0.5 | 0.5 | mg/kg | | For sum of all allocated TriCPs |
| ***Mono- and Dichlorophenols*** | Several | All | Usage ban | 1.0 | | | mg/kg | | For sum of all allocated Mono- and DiCPs |
| **Colorants** | | | | | | | | | |
| ***Colorants banned for other reasons*** | Several | All | Usage ban | 20 each | | | mg/kg | DIN 54231 (2005) | Single substances listed in Annex |
| ***Colorants with allergenic potential*** | Several | All | Usage ban | 20 each | | | mg/kg | DIN 54231 (2005) | |
| ***Colorants with carcinogenic potential*** | Several | All | Usage ban | 20 each | | | mg/kg | DIN 54231 (2005) | |
| **Dioxins and Furans** | | | | | | | | | |
| ***Dioxins and Furans – Group 1 and 2*** | Several | All | Usage ban | 5.0 | | | µg/kg | EPA 8290A | For sum of all allocated Members/Substances to Group 1 and 2<br><br>Single substances listed in Annex |
| *Dioxins and Furans - Group 1* | Several | All | Usage ban | 1.0 | | | µg/kg | | For sum of all allocated Members/Substances to Group 1<br><br>Single substances listed in Annex |

| Chemical Name | CAS Number | Sector of Use | Limit Type | Usage Range | | | Unit | Test Method // Sample Preparation | Comment |
|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | C | | | |
| **Dioxins and Furans (continued)** | | | | | | | | | |
| *Dioxins and Furans - Group 3* | Several | All | Usage ban | 95 | | | µg/kg | EPA 8290A | For sum of all allocated Members/Substances to Group 3 - official regulation for sum of all allocated Members/Substances to Group 1, 2 and 3 - 100 µg/kg<br><br>Single substances listed in Annex |
| ***Dioxins and Furans – Group 4 and 5*** | Several | All | Usage ban | 5.0 | | | µg/kg | | For sum of all allocated Members/Substances to Group 4 and 5<br><br>Single substances listed in Annex |
| *Dioxins and Furans - Group 4* | Several | All | Usage ban | 1.0 | | | µg/kg | | For sum of all allocated Members/Substances to Group 4<br><br>Single substances listed in Annex |
| **Fibers** | | | | | | | | | |
| ***Asbestos*** | Several | All | Usage ban | Not detected | | | | REM/EDX BGI 505-46<br>U.S. EPA/600/R-93/116 | Single substances listed in Annex |
| **Flame retardants** | | | | | | | | | |
| **Flame retardants** | Several | All | Usage ban | 5.0 each | | | mg/kg | EN ISO 17881-1 (2016) for brominated flame retardants<br>EN ISO 17881-2 (2016) for phosphorus flame retardants | Single substances listed in Annex |
| ***Chlorinated Paraffins, all chain lengths*** | Several | Textiles<br>Metal parts<br>Polymer parts<br>Down/feather articles | Usage ban | 5.0 each | | | mg/kg | ISO 22818 (2021) | Single substances listed in Annex |
| | | Leather | Usage ban | 100 each | | | mg/kg | ISO 18219 (2021) | |
| **Fluorinated Greenhouse Gases** | | | | | | | | | |
| Fluorinated greenhouse gases | Several | All | Usage ban | 0.1 | | | mg/kg | GC-MS // Headspace | Single substances listed in Annex |

| Chemical Name | CAS Number | Sector of Use | Limit Type | Usage Range | | | Unit | Test Method // Sample Preparation | Comment |
|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | C | | | |
| **Glycols** | | | | | | | | | |
| 2-Ethoxyethanol | 110-80-5 | Plastic article | Usage ban | 5.0 | | | mg/kg | GC-MS // 2-Step extraction with THF and Methanol | |
| | | Textiles<br>Metal parts<br>Rubber articles<br>Down/feather articles<br>Leather | Usage ban | 5.0 | | | mg/kg | GC-MS // Extraction with Methanol | |
| 2-Ethoxyethyl acetate | 111-15-9 | Textiles<br>Metal parts<br>Rubber articles<br>Down/feather articles<br>Leather | Usage ban | 5.0 | | | mg/kg | GC-MS // Extraction with Methanol | |
| | | Plastic article | Usage ban | 5.0 | | | mg/kg | GC-MS // 2-Step extraction with THF and Methanol | |
| 2-Methoxy-1-propanol | 1589-47-5 | Textiles<br>Metal parts<br>Rubber articles<br>Down/feather articles<br>Leather | Usage ban | 5.0 | | | mg/kg | GC-MS // Extraction with Methanol | |
| | | Plastic article | Usage ban | 5.0 | | | mg/kg | GC-MS // 2-Step extraction with THF and Methanol | |
| 2-Methoxyethanol | 109-86-4 | Textiles<br>Metal parts<br>Rubber articles<br>Down/feather articles<br>Leather | Usage ban | 5.0 | | | mg/kg | GC-MS // Extraction with Methanol | |
| | | Plastic article | Usage ban | 5.0 | | | mg/kg | GC-MS // 2-Step extraction with THF and Methanol | |
| 2-Methoxyethyl acetate | 110-49-6 | Textiles<br>Metal parts<br>Rubber articles<br>Down/feather articles<br>Leather | Usage ban | 5.0 | | | mg/kg | GC-MS // Extraction with Methanol | |
| | | Plastic article | Usage ban | 5.0 | | | mg/kg | GC-MS // 2-Step extraction with THF and Methanol | |

| Chemical Name | CAS Number | Sector of Use | Limit Type | Usage Range | | | Unit | Test Method // Sample Preparation | Comment |
|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | C | | | |
| **Glycols (continued)** | | | | | | | | | |
| 2-Methoxypropyl acetate | 70657-70-4 | Plastic article | Usage ban | 5.0 | | | mg/kg | GC-MS // 2-Step extraction with THF and Methanol | |
| | | Textiles<br>Metal parts<br>Rubber articles<br>Down/feather articles<br>Leather | Usage ban | 5.0 | | | mg/kg | GC-MS // Extraction with Methanol | |
| Bis(2-methoxyethyl) ether | 111-96-6 | Plastic article | Usage ban | 5.0 | | | mg/kg | GC-MS // 2-Step extraction with THF and Methanol | |
| | | Textiles<br>Metal parts<br>Rubber articles<br>Down/feather articles<br>Leather | Usage ban | 5.0 | | | mg/kg | GC-MS // Extraction with Methanol | |
| Ethylene glycol dimethyl ether | 110-71-4 | Textiles<br>Metal parts<br>Rubber articles<br>Down/feather articles<br>Leather | Usage ban | 5.0 | | | mg/kg | GC-MS // Extraction with Methanol | |
| | | Plastic article | Usage ban | 5.0 | | | mg/kg | GC-MS // 2-Step extraction with THF and Methanol | |
| Triethylene glycol dimethyl ether | 112-49-2 | Plastic article | Usage ban | 5.0 | | | mg/kg | GC-MS // 2-Step extraction with THF and Methanol | |
| | | Textiles<br>Metal parts<br>Rubber articles<br>Down/feather articles<br>Leather | Usage ban | 5.0 | | | mg/kg | GC-MS // Extraction with Methanol | |

| Chemical Name | CAS Number | Sector of Use | Limit Type | Usage Range | | | Unit | Test Method // Sample Preparation | Comment |
|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | C | | | |
| **Halogenated Biphenyls, halogenated Terphenyls and halogenated Naphthalenes** | | | | | | | | | |
| ***Polybrominated Biphenyls*** | 59536-65-1 | All | Usage ban | 5.0 | | | mg/kg | EN ISO 17881-1 (2016) for brominated compounds<br>ISO/TR 17881-3 (2018) for chlorinated compounds | For sum of all allocated Members/Substances |
| ***Polybrominated Naphthalenes*** | Several | All | Usage ban | 1.0 | | | mg/kg | | For sum of all allocated Members/Substances |
| ***Polybrominated Terphenyls*** | Several | All | Usage ban | 1.0 | | | mg/kg | | For sum of all allocated Members/Substances |
| ***Polychlorinated Biphenyls*** | 1336-36-3 | All | Usage ban | 1.0 | | | mg/kg | | For sum of all allocated Members/Substances |
| ***Polychlorinated Naphthalenes*** | Several | All | Usage ban | 1.0 each | | | mg/kg | | Usage ban 1.0 mg/kg for every allocated Member/Substance |
| ***Polychlorinated Terphenyls*** | 61788-33-8 | All | Usage ban | 1.0 | | | mg/kg | | For sum of all allocated Members/Substances |
| **Halogenated Diarylalkanes** | | | | | | | | | |
| **Halogenated Diarylalkanes** | Several | All | Usage ban | 1.0 each | | | mg/kg | GC-MS // Extraction following DIN EN 62321-6 (2016) | Single substances listed in Annex |
| **Isocyanates** | | | | | | | | | |
| **Isocyanates** | Several | All | Limitation | 1.0 | | | mg/kg | EN 13130-8 (2004) | Free content applies to sum of all allocated isocyanates<br>Single substances listed in Annex |
| **Metals** | | | | | | | | | |
| **Antimony, its salts and compounds** | Several | Leather | Limitation | 5 | 10 | 10 | mg/kg | EN ISO 17072-1 (2019) // Acidic sweat solution | As extractable metal content // Usage as flame retardant: bluesign®<br><br>CRITERIA for flame retardants have to be followed |
| | | Textiles | Limitation | 5 | 10 | 10 | mg/kg | DIN EN 16711-2 (2016) // Acidic sweat solution | |
| | | Metal parts<br>Polymer parts<br>Down/feather articles | Limitation | 60 | | | mg/kg | DIN EN ISO 11885 (2009)<br>EN 71-3 (2019) // Acidic solution migration simulating gastric juices<br>DIN EN ISO 17294-2 (2017) | |
| | | Fibers/yarn | Limitation | 260 | | | mg/kg | DIN EN 16711-1 (2016) // Total content | As total metal content // valid for Polyester raw fiber |

| Chemical Name | CAS Number | Sector of Use | Limit Type | Usage Range | | | Unit | Test Method // Sample Preparation | Comment |
|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | C | | | |
| **Metals (continued)** | | | | | | | | | |
| ***Arsenic, its salts and compounds*** | | Textiles<br>Metal parts<br>Polymer parts<br>Down/feather articles | Usage ban | 0.2 | | | mg/kg | DIN EN 16711-2 (2016) //<br>Acidic sweat solution | As extractable metal content |
| | | Leather | Usage ban | 0.2 | | | mg/kg | EN ISO 17072-1 (2019) //<br>Acidic sweat solution | |
| ***Cadmium, its salts and compounds*** | Several | Textiles<br>Polymer parts<br>Down/feather articles | Usage ban | 0.1 | | | mg/kg | DIN EN 16711-2 (2016) //<br>Acidic sweat solution | As extractable metal content |
| | | Leather | Usage ban | 0.1 | | | mg/kg | EN ISO 17072-1 (2019) //<br>Acidic sweat solution | |
| | | Textiles<br>Polymer parts<br>Down/feather articles<br>Metal parts | Usage ban | 40 | | | mg/kg | DIN EN 16711-1 (2016) //<br>Total content | As total metal content |
| | | Leather | Usage ban | 40 | | | mg/kg | EN ISO 17072-2 (2019) //<br>Total content | |
| ***Chromium VI, its salts and compounds*** | Several | Textiles<br>Metal parts<br>Polymer parts<br>Down/feather articles | Usage ban | 0.5 | | | mg/kg | EN ISO 17075-1 (2017) | As extractable metal content |
| | | Metal parts | Usage ban | 0.5 | | | mg/kg | EN 62321-7-1 (2016) | |
| | | Leather | Usage ban | 3.0 | | | mg/kg | EN ISO 17075-1 (2017)<br>EN ISO 17075-2 (2017)<br>DIN EN ISO 4044 (2017) | |

| Chemical Name | CAS Number | Sector of Use | Limit Type | Usage Range | | | Unit | Test Method // Sample Preparation | Comment |
|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | C | | | |
| **Metals (continued)** | | | | | | | | | |
| ***Chromium, its salts and compounds*** | Several | Metal parts<br>Polymer parts<br>Down/feather articles | Limitation | 60 | | | mg/kg | DIN EN ISO 11885 (2009)<br>EN 71-3 (2019) // Acidic solution migration simulating gastric juices<br>DIN EN ISO 17294-2 (2017) | If products are covered with a metal layer, including a chromium layer, coating must be constantly in good condition // as extractable metal content |
| | | Textiles | Limitation | 0.5 | | | mg/kg | DIN EN 16711-2 (2016) // Acidic sweat solution | As extractable metal content // for textiles dyed with chromium containing metal complex dyes<br>A: 1.0 // B: 2.0 // C: 2.0 mg/kg |
| ***Cobalt, its salts and compounds*** | Several | Leather | Limitation | 1.0 | | | mg/kg | EN ISO 17072-1 (2019) // Acidic sweat solution | As extractable metal content // for textiles and leather dyed with cobalt containing metal complex dyes<br>A: 1.0 // B: 4.0 // C: 4.0 mg/kg |
| | | Textiles | Limitation | 1.0 | | | mg/kg | DIN EN 16711-2 (2016) // Acidic sweat solution | |
| | | Metal parts<br>Polymer parts<br>Down/feather articles | Limitation | 1.0 | 4.0 | 4.0 | mg/kg | DIN EN 16711-2 (2016) // Acidic sweat solution | As extractable metal content |
| ***Copper, its salts and compounds*** | Several | Textiles | Limitation | 25 | 50 | 50 | mg/kg | DIN EN 16711-2 (2016) // Acidic sweat solution | As extractable metal content |
| | | Leather | Limitation | 25 | 50 | 50 | mg/kg | EN ISO 17072-1 (2019) // Acidic sweat solution | |

| Chemical Name | CAS Number | Sector of Use | Limit Type | Usage Range | | | Unit | Test Method // Sample Preparation | Comment |
|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | C | | | |
| **Metals (continued)** | | | | | | | | | |
| ***Lead, its salts and compounds*** | Several | Metal parts | Usage ban | 90 | | | mg/kg | DIN EN 16711-1 (2016) // Total content | As total metal content |
| | | Leather | Usage ban | 40 | | | mg/kg | EN ISO 17072-2 (2019) // Total content | |
| | | Textiles<br>Polymer parts<br>Down/feather articles | Usage ban | 40 | | | mg/kg | DIN EN 16711-1 (2016) // Total content | |
| | | Leather | Usage ban | 0.2 | 1 | 1 | mg/kg | EN ISO 17072-1 (2019) // Acidic sweat solution | As extractable metal content |
| | | Textiles<br>Polymer parts<br>Down/feather articles | Usage ban | 0.2 | 1 | 1 | mg/kg | DIN EN 16711-2 (2016) // Acidic sweat solution | |
| ***Mercury, its salts and compounds*** | Several | Metal parts | Usage ban | 60 | | | mg/kg | EN 71-3 (2019) // Acidic solution migration simulating gastric juices EN ISO 12846 (2012) | As extractable metal content |
| | | Leather | Usage ban | 0.02 | | | mg/kg | EN ISO 17072-1 (2019) // Acidic sweat solution | |
| | | Textiles<br>Polymer parts<br>Down/feather articles | Usage ban | 0.02 | | | mg/kg | DIN EN 16711-2 (2016) // Acidic sweat solution | |
| ***Nickel, its salts and compounds*** | Several | Textiles | Limitation | 1.0 | | | mg/kg | DIN EN 16711-2 (2016) // Acidic sweat solution | As extractable metal content // for textiles dyed with nickel containing metal complex dyes<br>A: 1.0 // B: 4.0 // C: 4.0 mg/kg |
| | | Leather | Limitation | 1.0 | | | mg/kg | EN ISO 17072-1 (2019) // Acidic sweat solution | As extractable metal content // for leather dyed with nickel containing metal complex dyes<br>A: 1.0 // B: 4.0 // C: 4.0 mg/kg |
| | | Metal parts<br>Polymer parts<br>Down/feather articles | Usage ban for A and B | 0.5 | 0.5 | - | µg/cm²/week | EN 1811 (2011) + A1 (2015) // Release EN 12472 (2020) | As released metal content |

| Chemical Name | CAS Number | Sector of Use | Limit Type | Usage Range | | | Unit | Test Method // Sample Preparation | Comment |
|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | C | | | |
| **Monomers** | | | | | | | | | |
| Acrylamide | 79-06-1 | All | Usage ban | 1.0 | | | mg/kg | CEN/TS 13130-10 (2005) | |
| **Other Chemical Substances** | | | | | | | | | |
| 2-Phenyl-2-propanol | 617-94-7 | All | Limitation | 10 | 50 | 50 | mg/kg | GC-MS // Extraction with Methanol | |
| Acetophenone | 98-86-2 | All | Limitation | 20 | | | mg/kg | GC-MS // Extraction with Methanol | |
| Azodicarbonamide (ADCA) | 123-77-3 | All | Limitation | 100 | 200 | 200 | mg/kg | Solvent Extraction // GC-MS or LC-MS or LC-DAD | |
| Benzyl Chloride | 100-44-7 | All | Usage ban | 1.0 | | | mg/kg | GC-MS // Extraction with Dichloromethane | |
| Bisphenol A | 80-05-7 | All | Usage ban | **Not detected** | | | mg/kg | EN ISO 18857-2 (2012) // Extraction with Methanol<br>EN ISO 18857-2 (2012) // Extraction with THF | bluesign® usage range is 1.0 mg/kg |
| ***Cresol, all isomers*** | 1319-77-3 | All | Usage ban | See isomers | | | | BVL B 82.02-8 (2001) // Extraction with KOH<br>DIN EN ISO 17070 (2015) // Extraction with KOH | 10 mg/kg for each isomer |
| m-Cresol | 108-39-4 | All | Usage ban | 10 | | | mg/kg | | |
| o-Cresol | 95-48-7 | All | Usage ban | 10 | | | mg/kg | | |
| p-Cresol | 106-44-5 | All | Usage ban | 10 | | | mg/kg | | |
| Formamide | 75-12-7 | Textiles | Usage ban | 50 | 50 | 100 | mg/kg | EN 17131 (2019) | |
| | | Metal parts<br>Polymer parts<br>Down/feather articles<br>Leather | Usage ban | 50 | 50 | 100 | mg/kg | CEN ISO/TS 16189 (2013) | |
| Isoquinoline | 119-65-3 | All | Usage ban | 50 | | | mg/kg | LC-MS/MS // Extraction with Methanol<br>LC-DAD // Extraction with THF<br>LC-DAD // Extraction with Methanol<br>LC-MS/MS // Extraction with THF | |

| Chemical Name | CAS Number | Sector of Use | Limit Type | Usage Range | | | Unit | Test Method // Sample Preparation | Comment |
|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | C | | | |
| **Other Chemical Substances (continued)** | | | | | | | | | |
| Phenol | 108-95-2 | All | Limitation | 10 | 50 | 100 | mg/kg | LC-MS // Extraction with Methanol<br>GC-MS // Extraction with Methanol | |
| Quinoline | 91-22-5 | All | Usage ban | 50 | | | mg/kg | LC-MS/MS // Extraction with Methanol<br>LC-DAD // Extraction with THF or Methanol<br>LC-MS/MS // Extraction with THF | |
| ***Siloxanes*** | Several | All | Usage ban | | | | | GC // with reference to TEGEWA method | Usage ban for every allocated member/substances |
| Octamethyl cyclotetrasiloxane (D4) | 556-67-2 | All | Usage ban | 30 | | | mg/kg | | |
| Decamethyl cyclopentasiloxane (D5) | 541-02-6 | All | Usage ban | 50 | | | mg/kg | | |
| Dodecamethyl cyclohexasiloxane (D6) | 540-97-6 | All | Usage ban | 50 | | | mg/kg | | |
| **Ozone Depleting Substances** | | | | | | | | | |
| ***Ozone depleting substances (CFCs) class I*** | Several | All | Usage ban | 0.1 each | | | mg/kg | GC-MS // Headspace | Usage ban for direct use in manufacturing of articles<br><br>See Regulation (EC) No 1005/2009 for a complete list of single substances |
| ***Ozone depleting substances (CFCs) class II*** | Several | All | Usage ban | 0.1 each | | | mg/kg | GC-MS // Headspace | |
| **Pesticides** | | | | | | | | | |
| **Pesticides** | Several | All | Limitation | 0.5 | | | mg/kg | GC-MS // ASE with Acetone/Hexane<br>LC-MS // ASE with Acetone/Hexane<br>GC-MS // Soxhlet Extraction with Acetone/Hexane<br>LC-MS // Soxhlet Extraction with Acetone/Hexane | Applies to total sum of all allocated members/substances<br><br>Single substances listed in Annex |

| Chemical Name | CAS Number | Sector of Use | Limit Type | Usage Range | | | Unit | Test Method // Sample Preparation | Comment |
|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | C | | | |
| **Perfluoroalkyl sulfonic acids and derivatives – PFSA**<br>**General usage ban for all PFSA/PFCA chemicals. Exceptions only possible for articles, based on C6 chemistry, that are intended for essential use as defined in coming EU regulation** | | | | | | | | | |
| ***Perfluorooctane sulfonic acid and its derivatives*** | Several | Textiles<br>Metal parts<br>Polymer parts<br>Down/feather articles | Usage ban | **Not detected** | | | µg/m² | CEN/TS 15968 (2014) | bluesign® usage range is 1.0 µg/m² |
| | | Leather | Usage ban | **Not detected** | | | µg/m² | EN ISO 23702-1 (2018) | |
| **Perfluoroalkyl carboxylic acids and derivatives – PFCA**<br>**General usage ban for all PFSA/PFCA chemicals. Exceptions only possible for articles, based on C6 chemistry, that are intended for essential use as defined in coming EU regulation** | | | | | | | | | |
| ***Perfluorocarboxylic acids and its salts*** | Several | Leather | Usage ban | **Not detected** | | | mg/kg | EN ISO 23702-1 (2018) | bluesign® usage range is 0.1 mg/kg for the sum of all allocated Members/Substances |
| | | Textiles<br>Metal parts<br>Polymer parts<br>Down/feather articles | Usage ban | **Not detected** | | | mg/kg | CEN/TS 15968 (2014) | |
| *Perfluorohexanoic acid and its salts* | Several | Leather | Usage ban | **Not detected** | | | mg/kg | EN ISO 23702-1 (2018) | bluesign® usage range is 0.05 mg/kg. Single substances listed in Annex |
| | | Textiles<br>Metal parts<br>Polymer parts<br>Down/feather articles | Usage ban | **Not detected** | | | mg/kg | CEN/TS 15968 (2014) | |
| *Perfluorooctanoic acid and its salts* | Several | Textiles<br>Metal parts<br>Polymer parts<br>Down/feather articles | Usage ban | **Not detected** | | | µg/kg | CEN/TS 15968 (2010) | bluesign® usage range is 25 µg/kg. Single substances listed in Annex |
| | | Leather | Usage ban | **Not detected** | | | µg/kg | EN ISO 23702-1 (2018) | |
| ***Perfluorooctanoic acid related substances*** | Several | Textiles<br>Metal parts<br>Polymer parts<br>Down/feather articles | Usage ban | **Not detected** | | | µg/kg | CEN/TS 15968 (2014) | bluesign® usage range is 1000 µg/kg for the sum of PFOA-related substances.<br><br>Single substances listed in Annex |
| | | Leather | Usage ban | **Not detected** | | | µg/kg | EN ISO 23702-1 (2018) | |

| Chemical Name | CAS Number | Sector of Use | Limit Type | Usage Range | | | Unit | Test Method // Sample Preparation | Comment |
|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | C | | | |
| **Plasticizers** | | | | | | | | | |
| ***Phthalic acid esters*** | Several | Textiles | Usage ban | 50 each | | | mg/kg | EN ISO 14389 (2014)<br>CPSC-CH-C1001-09.4 | Single substances listed in Annex |
| | | Metal parts<br>Polymer parts<br>Down/feather articles<br>Leather | Usage ban | 50 each | | | mg/kg | CPSC-CH-C1001-09.4 | |
| **Polyaromatic hydrocarbons (PAHs)** | | | | | | | | | |
| **Polyaromatic hydrocarbons (PAHs)** | Several | All | Usage ban | 10 | | | mg/kg | AfPS GS 2019 | For sum of all allocated PAHs<br><br>PAHs without substance specific limit are listed in Annex |
| Benzo(a)anthracene | 56-55-3 | All | Usage ban | 0.5 | 1.0 | 1.0 | mg/kg | | |
| Benzo(a)pyrene | 50-32-8 | All | Usage ban | 0.2 | | | mg/kg | | |
| Benzo(b)fluoroanthene | 205-99-2 | All | Usage ban | 0.5 | 1.0 | 1.0 | mg/kg | | |
| Benzo(e)pyrene | 192-97-2 | All | Usage ban | 0.5 | 1.0 | 1.0 | mg/kg | | |
| Benzo(j)fluoroanthene | 205-82-3 | All | Usage ban | 0.5 | 1.0 | 1.0 | mg/kg | | |
| Benzo(k)fluoroanthene | 207-08-9 | All | Usage ban | 0.5 | 1.0 | 1.0 | mg/kg | | |
| Chrysene | 218-01-9 | All | Usage ban | 0.5 | 1.0 | 1.0 | mg/kg | | |
| Dibenzo(a,h)anthrene | 53-70-3 | All | Usage ban | 0.5 | 1.0 | 1.0 | mg/kg | | |
| **Polymers** | | | | | | | | | |
| Polyvinyl chloride | 9002-86-2 | All | Usage ban | See comment | | | | FTIR<br>Beilstein test // FTIR measurement only if result of Beilstein test was positive | Usage ban for usage range A and B - Not detected // for usage range C: for special applications. BLUESIGN has the right to make an individual decision |
| **Solvents** | | | | | | | | | |
| 1,2-Dichloroethane | 107-06-2 | All | Usage ban | 1.0 | | | mg/kg | GC-MS // Headspace | |
| Benzene | 71-43-2 | All | Usage ban | 5.0 | | | mg/kg | VDA 278 (2011) | |
| Dichloromethane | 75-09-2 | All | Usage ban | 5.0 | | | mg/kg | GC-MS // Headspace | Usage ban for direct use in manufacturing of articles |

| Chemical Name | CAS Number | Sector of Use | Limit Type | Usage Range | | | Unit | Test Method // Sample Preparation | Comment |
|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | C | | | |
| **Solvents (continued)** | | | | | | | | | |
| N,N-Dimethylacetamide (DMAc) | 127-19-5 | Textiles | Usage ban | 5.0 | | | mg/kg | EN 17131 (2019) | Exceptions:<br>Articles produced by solvent coating, lamination or fiber manufacturing – A/B/C 50mg/kg.<br><br>As residual fiber solvent in elastane and PAN fibers with Monitoring status – A: 10 mg/kg B/ C: 50 mg/kg.<br><br>Aramid fibers -for special applications BLUESIGN has the right to make an individual decision. |
| | | Leather | Usage ban | 5.0 | | | mg/kg | EN ISO 19070 (2016) | |
| | | Metal parts<br>Polymer parts<br>Down/feather articles | Usage ban | 5.0 | | | mg/kg | CEN ISO/TS 16189 (2013) | |
| N,N-Dimethylformamide (DMF) | 68-12-2 | Textiles | Usage ban | 5.0 | | | mg/kg | EN 17131 (2019) | Exceptions:<br>Specific limits are defined for articles produced by solvent coating, lamination or fiber manufacturing - A/B/C 50 mg/kg.<br><br>Exception is valid for PAN fibers. |
| | | Metal parts<br>Polymer parts<br>Down/feather articles | Usage ban | 5.0 | | | mg/kg | CEN ISO/TS 16189 (2013) | |
| | | Leather | Usage ban | 5.0 | | | mg/kg | EN ISO 19070 (2016) | |
| N-Ethyl-2-pyrrolidone (NEP) | 2687-91-4 | Leather | Usage ban | 10 | 10 | 100 | mg/kg | EN ISO 19070 (2016) | |
| | | Metal parts<br>Polymer parts<br>Down/feather articles | Usage ban | 10 | 10 | 100 | mg/kg | CEN ISO/TS 16189 (2013) | |
| | | Textiles | Usage ban | 10 | 10 | 100 | mg/kg | EN 17131 (2019) | |
| N-Methylpyrrolidone (NMP) | 872-50-4 | Textiles | Usage ban | 10 | 10 | 100 | mg/kg | EN 17131 (2019) | Exception is valid for Aramid fibers: for special applications BLUESIGN has the right to make an individual decision |
| | | Metal parts<br>Polymer parts<br>Down/feather articles | Usage ban | 10 | 10 | 100 | mg/kg | CEN ISO/TS 16189 (2013) | |
| | | Leather | Usage ban | 10 | 10 | 100 | mg/kg | EN ISO 19070 (2016) | |

| Chemical Name | CAS Number | Sector of Use | Limit Type | Usage Range | | | Unit | Test Method // Sample Preparation | Comment |
|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | C | | | |
| **Solvents (continued)** | | | | | | | | | |
| Tetrachloroethylene | 127-18-4 | All | Usage ban | 1.0 | | | mg/kg | GC-MS // Headspace | |
| Toluene | 108-88-3 | All | Limitation | 10 | 50 | 50 | mg/kg | GC-MS // Headspace | |
| Trichloroethylene | 79-01-6 | All | Usage ban | 5.0 | | | mg/kg | GC-MS // Headspace | |
| ***Xylene, all isomers*** | 1330-20-7 | All | Usage ban | 50 | 100 | 100 | mg/kg | GC-MS // Headspace | Sum of all isomers.<br>Usage ban not valid for solvent coating, laminating and painting/lacquering. |
| **Tin-organic Compounds** | | | | | | | | | |
| **Tin-organic Compounds – as mono-, di- and tri-, tetraalkyltin organics** | Several | All | Usage ban | | | | | CEN ISO/TS 16179 (2012) | Usage ban for all allocated Members/Substances |
| ***Ethyltin compounds*** | Several | | Usage ban | | | | | | |
| *Tetraethyltin compounds (TET)* | Several | All | Usage ban | 1.0 | | | mg/kg | | |
| ***Hexyltin compounds*** | Several | | Usage ban | | | | | | |
| *Tricyclohexyltin compounds (TCyHT)* | Several | All | Usage ban | 0.5 | | | mg/kg | | |
| ***Butyltin compounds*** | Several | | Usage ban | | | | | | |
| *Dibutyltin compounds (DBT)* | Several | All | Usage ban | 1.0 | | | mg/kg | | |
| *Monobutyltin compounds (MBT)* | Several | All | Usage ban | 1.0 | | | mg/kg | | |
| *Tetrabutyltin compounds (TeBT)* | Several | All | Usage ban | 0.5 | | | mg/kg | | |
| *Tributyltin compounds (TBT)* | Several | All | Usage ban | 0.5 | | | mg/kg | | |
| ***Methyltin compounds*** | Several | | Usage ban | | | | | | |
| *Dimethyltin compounds (DMT)* | Several | All | Usage ban | 0.5 | | | mg/kg | | |

| Chemical Name | CAS Number | Sector of Use | Limit Type | Usage Range | | | Unit | Test Method // Sample Preparation | Comment |
|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | C | | | |
| **Tin-organic Compounds (continued)** | | | | | | | | | |
| *Monomethyltin compounds (MMT)* | Several | All | Usage ban | | 2 | | mg/kg | CEN ISO/TS 16179 (2012) | Usage ban for all allocated Members/Substances |
| *Trimethyltin compounds (TMT)* | Several | All | Usage ban | | 0.5 | | mg/kg | | |
| ***Octyltin compounds*** | Several | | Usage ban | | | | | | |
| *Dioctyltin compounds (DOT)* | Several | All | Usage ban | | 1 | | mg/kg | | |
| *Monooctyltin compounds (MOT)* | Several | All | Usage ban | | 2 | | mg/kg | | |
| *Tetraoctyltin compounds (TeOT)* | Several | All | Usage ban | | 0.5 | | mg/kg | | |
| *Trioctyltin compounds (TOT)* | Several | All | Usage ban | | 0.5 | | mg/kg | | |
| ***Phenyltin compounds*** | Several | | Usage ban | | | | | | |
| *Diphenyltin compounds (DPhT)* | Several | All | Usage ban | | 2 | | mg/kg | | |
| *Monophenyltin compounds (MPhT)* | Several | All | Usage ban | | 1 | | mg/kg | | |
| *Triphenyltin compounds (TPhT)* | Several | All | Usage ban | | 0.5 | | mg/kg | | |
| ***Propyltin compounds*** | Several | | Usage ban | | | | | | |
| *Dipropyltin compounds (DPT)* | Several | All | Usage ban | | 1 | | mg/kg | | |
| *Tripropyltin compounds (TPT)* | Several | All | Usage ban | | 0.5 | | mg/kg | | |
| **UV stabilizers** | | | | | | | | | |
| 2-(2H-Benzotriazol-2-yl)-4-(tert-butyl)-6-(sec butyl)phenol | 36437-37-3 | All | Usage ban | | 1000 | | mg/kg | DIN EN 62321-6 (2016) // Extraction with THF | |
| 2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylpropyl)phenol | 25973-55-1 | All | Usage ban | | 1000 | | mg/kg | | |
| 2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)-phenol | 3864-99-1 | All | Usage ban | | 1000 | | mg/kg | | |
| 2-benzotriazol-2-yl-4,6-di tert-butylphenol | 3846-71-7 | All | Usage ban | | 1000 | | mg/kg | | |

## Annex (compilation of single substances)

In the following tables, single substances belong to groups:

- Arylamines
- Biocides
- Chlorinated Benzenes and Toluenes
- Chlorinated Phenols
- Colorants
- Dioxins and Furans
- Fibers
- Flame Retardants
- Halogenated Diarylalkanes
- Isocyanates
- Pesticides
- PFSA Chemicals
- PFCA Chemicals
- Plasticizers
- Polyaromatic hydrocarbons (PAHs)

| **Annex A: Arylamines** | **CAS Number** |
|---|---|
| *2,4-Diaminoanisole and its salts* | Several |
| 2,4-Diaminoanisole | 615-05-4 |
| 2,4-Diaminoanisole sulphate | 39156-41-7 |
| *2,4-Diaminotoluene and its salts* | Several |
| 2,4-Diaminotoluene | 95-80-7 |
| *2-Naphthylamine and its salts* | Several |
| 2-Naphthylamine | 91-59-8 |
| 2-Naphthylammoniumacetate | 553-00-4 |
| *4,4'-Diaminodiphenylmethane and its salts* | Several |
| 4,4'-Diaminodiphenylmethane | 101-77-9 |
| *4,4'-Methylenebis-(2-chloraniline) and its salts* | Several |
| 4,4'-Methylenebis-(2-chloraniline) | 101-14-4 |
| *4-Amino-3-fluorophenol and its salts* | Several |
| 4-Amino-3-fluorophenol | 399-95-1 |
| *4-Aminobiphenyl and its salts* | Several |
| 4-Aminobiphenyl | 92-67-1 |
| *4-Chloroaniline and its salts* | Several |
| 4-Chloroaniline | 106-47-8 |
| *6-Amino-2-ethoxynaphthalene and its salts* | Several |
| 6-Amino-2-ethoxynaphthalene | 293733-21-8 |
| *o-Aminoazotoluene and its salts* | Several |
| o-Aminoazotoluene | 97-56-3 |
| *p-Aminoazobenzene and its salts* | Several |
| p-Aminoazobenzene | 60-09-3 |
| ***Trimethylanilines and its salts*** | Several |
| *2,4,5-Trimethylaniline and its salts* | Several |
| 2,4,5-Trimethylaniline | 137-17-7 |
| 2,4,5-Trimethylaniline hydrochloride | 21436-97-5 |
| ***Xylidines and its salts - with the exception of those specified elsewhere*** | Several |
| *2,4-Xylidine and its salts* | Several |
| 2,4-Xylidine | 95-68-1 |
| *2,6-Xylidine and its salts* | Several |
| 2,6-Xylidine | 87-62-7 |
| | |

| Annex A: Arylamines (continued) | CAS Number |
|---|---|
| ***Nitrotoluidines and its salts*** | Several |
| *2-Amino-4-nitrotoluene and its salts* | Several |
| 2-Amino-4-nitrotoluene | 99-55-8 |
| ***Anisidines and its salts*** | Several |
| Anisidine (o-, p-isomers) | 29191-52-4 |
| *2-Anisidine and its salts* | Several |
| 2-Anisidine | 90-04-0 |
| ***Benzidines and its salts*** | Several |
| *3,3'-Dichlorobenzidine and its salts - with the exception of those specified elsewhere* | Several |
| 3,3'-Dichlorobenzidine | 91-94-1 |
| *o-Dianisidines and its salts - with the exception of those specified elsewhere* | Several |
| 3,3'-Dimethoxybenzidine | 119-90-4 |
| *3,3'-Dimethylbenzidine and its salts* | Several |
| 3,3'-Dimethylbenzidine | 119-93-7 |
| *Benzidine and its salts* | Several |
| Benzidine | 92-87-5 |
| Benzidine acetate | 36341-27-2 |
| Benzidine dihydrochloride | 531-85-1 |
| Benzidine, sulfate | 21136-70-9 |
| Benzidine, sulfate (1:1) | 531-86-2 |
| ***Toluidines and its salts*** | Several |
| *4,4'-Methylenedi-o-toluidine and its salts* | Several |
| 4,4'-Methylenedi-o-toluidine | 838-88-0 |
| *m-Toluidine and its salts* | Several |
| m-Toluidine | 108-44-1 |
| *o-Toluidine and its salts* | Several |
| o-Toluidine | 95-53-4 |
| *p-Cresidine and its salts* | Several |
| p-Cresidine | 120-71-8 |
| *p-Toluidine and its salts* | Several |
| p-Toluidine | 106-49-0 |
| ***Dianilines and its salts*** | Several |
| *4,4'-Oxydianiline and its salts* | Several |
| 4,4'-Oxydianiline | 101-80-4 |
| *4,4'-Thiodianiline and its salts* | Several |
| 4,4'-Thiodianiline | 139-65-1 |
| ***Chlorotoluidines and its salts*** | Several |
| *4-Chloro-2-toluidine and its salts* | Several |
| 4-Chloro-2-toluidine | 95-69-2 |
| 4-chloro-2-toluidine hydrochloride | 3165-93-3 |

| Annex B: Biocides | CAS Number |
|---|---|
| o-Phenylphenol | 90-43-7 |

| Annex C: Chlorinated Benzenes and Toluenes | CAS Number |
|---|---|
| ***Chlorinated Benzenes*** | Several |
| Hexachlorobenzene | 118-74-1 |
| Hexachlorobenzene | 118-74-1 |
| Monochlorobenzene | 108-90-7 |
| Pentachlorobenzene | 608-93-5 |
| *Tetrachlorobenzenes, all isomers* | Several |
| 1,2,3,4-Tetrachlorobenzene | 634-66-2 |
| 1,2,3,5-Tetrachlorobenzene | 634-90-2 |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 |
| *Trichlorobenzenes, all isomers* | Several |
| 1,2,3-Trichlorobenzene | 87-61-6 |
| 1,2,4-Trichlorobenzene | 120-82-1 |

| Annex C: Chlorinated Benzenes and Toluenes (continued) | CAS Number |
|---|---|
| 1,3,5-Trichlorobenzene | 108-70-3 |
| *Dichlorobenzenes, all isomers* | Several |
| 1,2-Dichlorobenzene | 95-50-1 |
| 1,3-Dichlorobenzene | 541-73-1 |
| 1,4-Dichlorobenzene | 106-46-7 |
| ***Chlorinated Toluenes*** | Several |
| Chlorotoluene, unspecific mixture | 25168-05-2 |
| Pentachlorotoluene | 877-11-2 |
| *Trichlorotoluenes, all isomers* | Several |
| 2,3,4-Trichlorotoluene | 7359-72-0 |
| 2,3,6-Trichlorotoluene | 2077-46-5 |
| 2,4,5-Trichlorotoluene | 6639-30-1 |
| 2,4,6-Trichlorotoluene | 23749-65-7 |
| 3,4,5-Trichlorotoluene | 21472-86-6 |
| a,a,a-Trichlorotoluene | 98-07-7 |
| *Dichlorotoluenes, all isomers* | Several |
| 2,3-Dichlorotoluene | 32768-54-0 |
| 2,4-Dichlorotoluene | 95-73-8 |
| 2,5-Dichlorotoluene | 19398-61-9 |
| 2,6-Dichlorotoluene | 118-69-4 |
| 3,4-Dichlorotoluene | 95-75-0 |
| 3,5-Dichlorotoluene | 25186-47-4 |
| *Monochlorotoluenes, all isomers* | Several |
| 2-Chlorotoluene | 95-49-8 |
| 3-Chlorotoluene | 108-41-8 |
| 4-Chlorotoluene | 106-43-4 |
| *Tetrachlorotoluenes, all isomers* | Several |
| 2,3,4,5-Tetrachlorotoluene | 1006-32-2 |
| 2,3,4,6-Tetrachlorotoluene | 875-40-1 |
| 2,3,5,6-Tetrachlorotoluene | 1006-31-1 |
| a,a,a,2-Tetrachlorotoluene | 2136-89-2 |
| a,a,a,4-Tetrachlorotoluene | 5216-25-1 |

| Annex D: Chlorinated Phenols | CAS Number |
|---|---|
| *Tetrachlorophenol, its salts and compounds* | 25167-83-3 |
| 2,3,4,5-Tetrachlorophenol | 4901-51-3 |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 |
| *Trichlorophenol, all isomers* | 25167-82-2 |
| 2,3,4-Trichlorophenol | 15950-66-0 |
| 2,3,5-Trichlorophenol | 933-78-8 |
| 2,3,6-Trichlorophenol | 933-75-5 |
| 2,4,5-Trichlorophenol | 95-95-4 |
| 2,4,6-Trichlorophenol | 88-06-2 |
| 3,4,5-Trichlorophenol | 609-19-8 |
| *Pentachlorophenol, its salts, esters and compounds* | Several |
| Pentachlorophenol | 87-86-5 |
| ***Mono- and Dichlorophenols*** | Several |
| *Dichlorophenols, all isomers* | 25167-81-1 |
| 2,3-Dichlorophenol | 576-24-9 |
| 2,4-Dichlorophenol | 120-83-2 |
| 2,5-Dichlorophenol | 583-78-8 |
| 2,6-Dichlorophenol | 87-65-0 |
| 3,4-Dichlorophenol | 95-77-2 |
| 3,5-Dichlorophenol | 591-35-5 |
| *Monochlorophenols, all isomers* | 25167-80-0 |
| 2-Chlorophenol | 95-57-8 |
| 3-Chlorophenol | 108-43-0 |

| Annex D: Chlorinated Phenols (continued) | CAS Number |
|---|---|
| 4-Chlorophenol | 106-48-9 |

| Annex E: Colorants | CAS Number |
|---|---|
| ***Colorants banned for other reasons*** | Several |
| Acid Orange 24 | 1320-07-6 |
| Acid Violet 49 | 1694-09-3 |
| Basic Blue 26 - with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2) | 2580-56-5 |
| | |
| Direct Black 91 | 6739-62-4 |
| Direct Blue 218 | 28407-37-6 |
| Direct Blue 76 | 16143-79-6 |
| Direct Yellow 1 | 6472-91-9 |
| Disperse Orange 149 | 85136-74-9 |
| Disperse Yellow 23 | 6250-23-3 |
| *Navy Blue: A mixture of: disodium (6-(4-anisidino)-3-sulfonato-2-(3,5-dinitro-2-oxidophenylazo)-1-naphtholato)(1-(5-chloro-2-oxidophenylazo)-2-naphtholato)chromate(1-); trisodium bis(6-(4-anisidino)-3-sulfonato-2-(3,5-dinitro-2-oxidophenylazo)-1- naphtholato)chromat* | Several |
| Disodium (6-(4-anisidino)-3-sulfonato-2-(3,5-dinitro-2-oxidophenylazo)-1-naphtholato)(1-(5-chloro-2-oxidophenylazo)-2-naphtholato)chromate(1-) | 118685-33-9 |
| Trisodium bis(6-(4-anisidino)-3-sulfonato-2-(3,5-dinitro-2-oxidophenylazo)-1-naphtholato)chromat | |
| Basic Violet 1 | 8004-87-3 |
| Basic Violet 3 - with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2) | 548-62-9 |
| Basic Violet 3 [1] | 548-62-9 |
| Basic Violet 3 [2] | 603-48-5 |
| Basic Violet 3 [3] | 14426-25-6 |
| Solvent Blue 4 | 6786-83-0 |
| ***Colorants with allergenic potential*** | Several |
| Disperse Blue 102 | 12222-97-8 |
| Disperse Blue 106 | 12223-01-7 |
| Disperse Blue 124 | 61951-51-7 |
| Disperse Blue 26 | 3860-63-7 |
| Disperse Blue 3 | 2475-46-9 |
| Disperse Blue 7 | 3179-90-6 |
| Disperse Brown 1 | 23355-64-8 |
| Disperse Orange 1 | 2581-69-3 |
| Disperse Orange 3 | 730-40-5 |
| Disperse Red 1 | 2872-52-8 |
| Disperse Red 11 | 2872-48-2 |
| Disperse Red 17 | 3179-89-3 |
| Disperse Yellow 1 | 119-15-3 |
| Disperse Yellow 39 | 12236-29-2 |
| Disperse Yellow 49 | 54824-37-2 |
| Disperse Yellow 9 | 6373-73-5 |
| Solvent Yellow 14 | 842-07-9 |
| *Disperse Blue 35* | Several |
| Disperse Blue 35 [1] | 12222-75-2 |
| Disperse Blue 35 [2] | 56524-77-7 |
| Disperse Blue 35 B | 56524-76-6 |
| *Disperse Orange 37/59/76* | Several |
| Disperse Orange 37/59/76 [1] | 12223-33-5 |
| Disperse Orange 37/59/76 [2] | 13301-61-6 |
| Disperse Orange 37/59/76 [3] | 51811-42-8 |
| ***Colorants with carcinogenic potential*** | Several |
| Acid Red 26 | 3761-53-3 |
| Basic Red 9 | 569-61-9 |
| Basic Violet 14 | 632-99-5 |

| Annex E: Colorants (continued) | CAS Number |
|---|---|
| Direct Black 38 | 1937-37-7 |
| Direct Blue 6 | 2602-46-2 |
| Direct Brown 95 | 16071-86-6 |
| Direct Red 28 | 573-58-0 |
| Disperse Blue 1 | 2475-45-8 |
| Disperse Orange 11 | 82-28-0 |
| Disperse Yellow 3 | 2832-40-8 |
| Pigment Red 104 | 12656-85-8 |
| Pigment Yellow 34 | 1344-37-2 |
| Solvent Red 80 | 6358-53-8 |
| Solvent Yellow 2 | 60-11-7 |
| Solvent Violet 8 - with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2) | 561-41-1 |
| *Basic Green 4* | Several |
| Leucomalachite green | 129-73-7 |
| Malachite green | 10309-95-2 |
| Malachite green chloride | 569-64-2 |
| Malachite green oxalate | 2437-29-8 |

| Annex F: Dioxins and Furans | CAS Number |
|---|---|
| *Dioxins and Furans - Group 3* | Several |
| 1,2,3,4,6,7,8,9-Octachlorodibenzofuran | 39001-02-0 |
| 1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin | 3268-87-9 |
| 1,2,3,4,6,7,8-Heptachlorodibenzofuran | 67562-39-4 |
| 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin | 35822-46-9 |
| 1,2,3,4,7,8,9-Heptachlorodibenzofuran | 55673-89-7 |
| ***Dioxins and Furans - Group 4 and 5*** | Several |
| *Dioxins and Furans - Group 5* | Several |
| 1,2,3,4,7,8-Hexabromodibenzo-p-dioxin | 110999-44-5 |
| 1,2,3,6,7,8-Hexabromodibenzo-p-dioxin | 110999-45-6 |
| 1,2,3,7,8,9-Hexabromodibenzo-p-dioxin | 110999-46-7 |
| 1,2,3,7,8-Pentabromodibenzofuran | 107555-93-1 |
| *Dioxins and Furans - Group 4* | Several |
| 1,2,3,7,8-Pentabromodibenzo-p-dioxin | 109333-34-8 |
| 2,3,4,7,8-Pentabromodibenzofuran | 131166-92-2 |
| 2,3,7,8-Tetrabromodibenzofuran | 67733-57-7 |
| 2,3,7,8-Tetrabromodibenzo-p-dioxin | 50585-41-6 |
| ***Dioxins and Furans - Group 1 and 2*** | Several |
| *Dioxins and Furans - Group 2* | Several |
| 1,2,3,4,7,8-Hexachlorodibenzofuran | 70648-26-9 |
| 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin | 39227-28-6 |
| 1,2,3,6,7,8-Hexachlorodibenzofuran | 57117-44-9 |
| 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin | 57653-85-7 |
| 1,2,3,7,8,9-Hexachlorodibenzofuran | 72918-21-9 |
| 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin | 19408-74-3 |
| 1,2,3,7,8-Pentachlorodibenzofuran | 57117-41-6 |
| 2,3,4,6,7,8-Hexachlorodibenzofuran | 60851-34-5 |
| *Dioxins and Furans - Group 1* | Several |
| 1,2,3,7,8-Pentachlorodibenzo-p-dioxin | 40321-76-4 |
| 2,3,4,7,8-Pentachlorodibenzofuran | 57117-31-4 |
| 2,3,7,8-Tetrachlorodibenzofuran | 51207-31-9 |
| 2,3,7,8-Tetrachlorodibenzo-p-dioxin | 1746-01-6 |

| Annex G: Fibers | CAS Number |
|---|---|
| ***Asbestos*** | Several |
| Actinolite | 77536-66-4 |
| Amosite | 12172-73-5 |

| Annex G: Fibers (continued) | CAS Number |
|---|---|
| Anthophyllite | 77536-67-5 |
| Chrysotile | 12001-29-5 |
| | 132207-32-0 |
| Crocidolite | 12001-28-4 |
| Tremolite | 77536-68-6 |

| Annex H: Flame Retardants | CAS Number |
|---|---|
| ***Brominated alkyl alcohols*** | Several |
| 2,2-Bis(bromomethyl)-1,3-propanediol | 3296-90-0 |
| 1-Propanol, 2,2-dimethyl-, tribromo derivates | 36483-57-5<br>1522-92-5 |
| 2,3-Dibromopropan-1-ol-(2,3-DPA) | 96-13-9 |
| Bis(2,3-dibromopropyl) phosphate | 5412-25-9 |
| Tetrabromobisphenol A | 79-94-7 |
| Tetrabromobisphenol A bis(2,3-dibromopropylether) | 21850-44-2 |
| Tri(aziridin-1-yl) phosphine oxide | 545-55-1 |
| Trimethyl phosphate | 512-56-1 |
| Tri-o-cresyl phosphate | 78-30-8 |
| Tris(2,3-dibromopropyl) phosphate | 126-72-7 |
| Tris-(2-chloro-1-methylethyl) phosphate | 13674-84-5 |
| Tris(2-chloroethyl) phosphate | 115-96-8 |
| Tris(methylphenyl) phosphate | 1330-78-5 |
| Tris-[2-chloro-1-(chloromethyl)ethyl] phosphate | 13674-87-8 |
| Trixylyl phosphate | 25155-23-1 |
| ***Hexabromocyclododecan, all isomers - group for all major diastereoisomers identified*** | Several |
| µ-Hexabromocyclododecane | 134237-52-8 |
| 1,2,5,6,9,10-Hexabromocyclododecane | 3194-55-6 |
| Hexabromocyclododecane | 25637-99-4 |
| α-Hexabromocyclododecane | 134237-50-6 |
| β-Hexabromocyclododecane | 134237-51-7 |
| ***Chlorinated Paraffins, all chain lengths*** | Several |
| *Paraffin wax, chlorinated* | 63449-39-8 |
| *Paraffin, C10-C13, chlorinated* | 85535-84-8 |
| *Paraffin, C14-C17, chlorinated* | 85535-85-9 |
| *Paraffin, C18-C28, chlorinated* | 85535-86-0 |
| ***Polybrominated diphenyl ethers*** | Several |
| Decabromodiphenyl ether | 1163-19-5 |
| *Tetrabromodiphenyl ether* | 40088-47-9 |
| *Pentabromodiphenyl ether* | 32534-81-9 |
| *Octabromodiphenyl ether* | 32536-52-0 |
| *Nonabromodiphenyl ether* | 63936-56-1 |
| *Hexabromodiphenyl ether* | 36483-60-0 |
| *Heptabromodiphenyl ether* | 68928-80-3 |
| *Monobromodiphenyl ether* | Several |
| 2-Bromodiphenyl ether | 7025-06-1 |
| 3-Bromodiphenyl ether | 6876-00-2 |
| 4-Bromodiphenyl ether | 101-55-3 |
| ***Polybrominated diphenyl ethanes*** | Several |
| Decabromodiphenylethane | 84852-53-9 |

| Annex I: Halogenated Diarylalkanes | CAS Number |
|---|---|
| ***Monomethyl-dibromo-diphenyl methane*** | 99688-47-8 |
| ***Monomethyl-dichloro-diphenyl methane*** | 81161-70-8 |
| ***Monomethyl-tetrachloro-diphenyl methane*** | 76253-60-6 |

| Annex J: Isocyanates | CAS Number |
|---|---|
| 1,3-bis(isocyanatomethyl)benzene | 3634-83-1 |
| Hexamethylene-di-isocyanate | 822-06-0 |
| Isophorone-di-isocyanate | 4098-71-9 |
| Tetramethylxylene-di-isocyanate | 2778-42-9 |
| ***Diphenylmethane-di-isocyanates*** | Several |
| Diphenylmethane-2,2-di-isocyanate | 2536-05-2 |
| Diphenylmethane-2,4-di-isocyanate | 5873-54-1 |
| Diphenylmethane-4,4-di-isocyanate | 101-68-8 |
| Methylenediphenyl diisocyanate - mixed isomers | 26447-40-5 |
| ***Toluene-di-isocyanates*** | Several |
| Toluene-2,4-di-isocyanate | 584-84-9 |
| Toluene-2,6-di-isocyanate | 91-08-7 |

| Annex K: Pesticides | CAS Number |
|---|---|
| Aldrin | 309-00-2 |
| Azinphos ethyl | 2642-71-9 |
| Azinphos methyl | 86-50-0 |
| Bromophos-ethyl | 4824-78-6 |
| Captafol | 2425-06-1 |
| Carbaryl | 63-25-2 |
| Chlordane | 57-74-9 |
| Chlordecone | 143-50-0 |
| Chlordimeform | 6164-98-3 |
| Chlorfenvinphos | 470-90-6 |
| Chlorobenzilate | 510-15-6 |
| Clothianidin | 210880-92-5 |
| Coumaphos | 56-72-4 |
| Cyfluthrin | 68359-37-5 |
| Cyhalothrin, lambda | 91465-08-6 |
| Cypermethrin | 52315-07-8 |
| Deltamethrin | 52918-63-5 |
| Diazinon | 333-41-5 |
| Dichlorprop | 120-36-5 |
| Dicrotophos | 141-66-2 |
| Dieldrine | 60-57-1 |
| Dimethoate | 60-51-5 |
| Dinotefuran | 165252-70-0 |
| Endosulfan, alpha | 959-98-8 |
| Endosulfan, beta | 33213-65-9 |
| Endrin | 72-20-8 |
| Esfenvalerate | 66230-04-4 |
| Ethyl parathion | 56-38-2 |
| Fenvalerate | 51630-58-1 |
| Heptachlor | 76-44-8 |
| Heptachlor epoxide | 1024-57-3 |
| Imidacloprid (ISO) | 105827-78-9<br>138261-41-3 |
| Isodrin | 465-73-6 |
| Kelevan | 4234-79-1 |
| Lindane (ISO) | 58-89-9 |
| Malathion | 121-75-5 |
| MCPA | 94-74-6 |
| MCPB | 94-81-5 |
| Mecoprop | 93-65-2 |
| Methamidophos | 10265-92-6 |
| Methoxychlor | 72-43-5 |
| Methyl parathion | 298-00-0 |
| Mevinophos | 7786-34-7 |

| Annex K: Pesticides (continued) | CAS Number |
|---|---|
| Mirex | 2385-85-5 |
| Monocrotophos | 6923-22-4 |
| o,p'-Dichlorodiphenyl-dichloroethane | 53-19-0 |
| o,p'-Dichlorodiphenyl-dichloroethylene | 3424-82-6 |
| o,p'-Dichlorodiphenyl-trichloroethane and its isomers - preparations containing DDT and its isomers | 789-02-6 |
| p,p'-Dichlorodiphenyldichloroethane | 72-54-8 |
| p,p'-Dichlorodiphenyl-dichloroethylene | 72-55-9 |
| p,p'-Dichlorodiphenyl-trichloroethane and its isomers - preparations containing DDT and its isomers | 50-29-3 |
| Perthane | 72-56-0 |
| Phosphamidon | 13171-21-6 |
| Profenophos | 41198-08-7 |
| Propetamphos | 31218-83-4 |
| Quinalphos | 13593-03-8 |
| Strobane | 8001-50-1 |
| Telodrin | 297-78-9 |
| Thiamethoxam | 153719-23-4 |
| Tiacloprid | 111988-49-9 |
| Toxaphene | 8001-35-2 |
| Tribufos (DEF) | 78-48-8 |
| Trifluralin - containing < 0.5 ppm NPDA | 1582-09-8 |
| ***Hexachlorocyclohexane, all isomers*** | 608-73-1 |
| ***Acetamipirid, its salts, esters and compounds*** | Several |
| Acetamipirid (ISO) | 135410-20-7 |
| Acetamipirid [2] | 160430-64-8 |
| ***Dinoseb, its salts, esters and acetate*** | Several |
| Dinoseb | 88-85-7 |
| ***2,4-Dichlorophenoxyacetic acid, salts, esters and compounds*** | Several |
| 2,4-Dichlorophenoxy acetic acid | 94-75-7 |
| 2,4-Dichlorophenoxy acetic acid | 94-75-7 |
| ***Nitenpyram, its salts, esters and compounds*** | Several |
| Nitenpyram [1] | 150824-47-8 |
| Nitenpyram [2] | 120738-89-8 |
| ***2,4,5-Trichlorophenoxyacetic acid, its salts, esters and compounds*** | Several |
| 2,4,5-Trichlorophenoxy acetic acid | 93-76-5 |

| Annex L: Perfluoroalkyl sulfonic acids and derivatives - PFSA | CAS Number |
|---|---|
| ***Perfluorooctane sulfonic acid and its derivatives*** | Several |
| *Perfluorooctane sulphonic acid and its salts* | Several |
| Ammonium perfluorooctane sulfonate | 29081-56-9 |
| Diethanolamine perfluorooctane sulfonate | 70225-14-8 |
| Lithium perfluorooctane sulfonate | 29457-72-5 |
| Perfluorooctane sulfonate | 45298-90-6 |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 |
| Potassium heptadecafluoro-octane-1-sulphonate | 2795-39-3 |
| *Perfluorooctane sulfon amidoethanols* | Several |
| 1-Octanesulfonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro- | 4151-50-2 |
| 1-Octanesulfonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-(2-hydroxyethyl)- | 1691-99-2 |
| Heptadecafluoro-N-methyloctane sulfonamideoethanol | 24448-09-7 |
| *Perfluorooctane sulfon polymers* | Several |
| *Perfluorooctane sulfon halides* | Several |
| 1-Octanesulfonyl fluoride, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro- | 307-35-7 |
| *Perfluorooctane sulfon amides* | Several |
| Heptadecafluoro-N-methyloctane sulfonamide | 31506-32-8 |
| Perfluorooctane sulfonamide | 754-91-6 |
| *Perfluorooctane sulfon amidoethyl (meth)acrylates* | Several |

| Annex M: Perfluoroalkyl carboxylic acids and derivatives - PFCA | CAS Number |
|---|---|
| ***Perfluorocarboxylic acids and its salts*** | Several |
| *Perfluorohexanoic acid and its salts* | Several |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 |
| *Perfluorooctanoic acid and its salts* | Several |
| Ammonium pentadecafluoro octanoate | 3825-26-1 |
| Octanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-, sodium salt (1:1) | 335-95-5 |
| Perfluorooctanoic acid (PFOA) | 335-67-1 |
| Potassium perfluorooctanoate | 2395-00-8 |
| ***Perfluorooctanoic acid related substances*** | Several |
| Methyl perfluorooctanoate | 376-27-2 |
| Ethyl perfluorooctanoate | 3108-24-5 |
| *Perfluorooctylethyl alcohols* | Several |
| Perfluorooctylethanol | 678-39-7 |
| *Perfluorooctylethyl olefins* | Several |
| Perfluorooctylethene | 21652-58-4 |
| *Perfluorooctylethyl halides* | Several |
| 1H,1H,2H,2H-Perfluorodecyliodide | 2043-53-0 |
| Heptadecafluoro-1-iodooctane | 507-63-1 |
| Pentadecafluorooctyl fluoride | 335-66-0 |
| Perfluorooctylethyl acrylate or methacrylate | Several |
| *Perfluorooctylethyl polymers* | Several |

| Annex N: Plasticizers | CAS Number |
|---|---|
| ***Phthalic acid esters*** | Several |
| Bis-(2-methoxyethyl) phthalate | 117-82-8 |
| Butylbenzyl phthalate | 85-68-7 |
| Dibutyl phthalate | 84-74-2 |
| Di-cyclohexyl phthalate | 84-61-7 |
| Diethyl phthalate | 84-66-2 |
| Diethylhexyl phthalate | 117-81-7 |
| Di-iso-butyl phthalate | 84-69-5 |
| Di-iso-hexyl phthalate | 71850-09-4 |
| Di-iso-octyl phthalate | 27554-26-3 |
| Di-iso-pentyl phthalate | 605-50-5 |
| Dimethyl phthalate | 131-11-3 |
| Di-n-hexyl phthalate | 84-75-3 |
| Di-n-octyl phthalate | 117-84-0 |
| Dinonyl phthalate | 84-76-4 |
| Di-n-pentyl phthalate | 131-18-0 |
| Di-n-propyl phthalate | 131-16-8 |
| n-Pentyl-isopentyl phthalate | 776297-69-9 |
| *1,2-Benzenedicarboxylic acid, benzyl C7-9-branched and linear alkyl esters* | 68515-40-2 |
| *1,2-Benzenedicarboxylic acid, di-C6-8-branched alkylesters, C7-rich* | 71888-89-6 |
| *1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkylesters* | 68515-42-4 |
| *1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear* | 68515-50-4 |
| *1,2-Benzenedicarboxylic acid, dipentylester, branched and linear* | 84777-06-0 |
| Di-iso-nonyl phthalate - iso & n-Butene based | 68515-48-0 |
| *1,2-Benzenedicarboxylic acid, di-C6-10-alkyl esters or mixed decyl and hexyl and octyl diesters* | Several |
| 1,2-Benzenedicarboxylic acid, di-C6-10-alkyl esters | 68515-51-5 |
| 1,2-Benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters | 68648-93-1 |
| *Di-iso-decyl phthalate* | Several |
| Di-iso-decyl phthalate [1] | 26761-40-0 |
| Di-iso-decyl phthalate [2] | 68515-49-1 |

| Annex O: Polyaromatic hydrocarbons (PAHs) | CAS Number |
|---|---|
| Acenaphthene | 83-32-9 |
| Acenaphthylene | 208-96-8 |

| Annex O: Polyaromatic hydrocarbons (PAHs) (Continued) | CAS Number |
|---|---|
| Anthracene | 120-12-7 |
| Benzo[rst]pentaphene | 189-55-9 |
| Dibenzo[b,def]chrysene | 189-64-0 |
| Dibenzo[def,p]chrysene | 191-30-0 |
| Cyclopenta[c,d]pyrene | 27208-37-3 |
| Benzo(ghi)perylene | 191-24-2 |
| Fluoranthene | 206-44-0 |
| Fluorene | 86-73-7 |
| Indeno(1,2,3-cd) pyrene | 193-39-5 |
| Methylpyrene, 1- | 2381-21-7 |
| Naphthalene | 91-20-3 |
| Naptho[1,2,3,4-def]chrysene | 192-65-4 |
| Phenanthrene | 85-01-8 |
| Pyrene | 129-00-0 |

## Glossary of Terms / Acronyms

- **AAS**: Atomic Absorption Spectroscopy
- **APEO**: Alkylphenol Ethoxylates
- **AP**: Alkyl Phenols
- **CAS**: Chemical Abstracts Service. CAS Registry Numbers are unique identifiers for chemical substances. CAS is a division of the American Chemical Society. See www.cas.org
- **DBT**: Dibutyltin
- **Detection limit**: The lowest quantity of a substance that can be distinguished from the absence of that substance (a blank value) within a stated confidence limit
- **DOT**: Dioctyltin
- **EU**: European Union
- **GC-MS**: Gas Chromatography/Mass Spectrometer, an instrument used to identify components of mixtures or unknown substances
- **ISO**: International Standards Organization
- **µg/m$^2$**: Microgram per square meter
- **mg/kg**: Milligram per kilogram
- **MSDS**: Material Safety Data Sheet Information is the compiled chemical safety and toxicological information supplied with chemicals
- **PAHs**: Polyaromatic Hydrocarbons
- **PCP**: Pentachlorophenol
- **Percent by Mass**: Also called weight percent or percent by weight, this is the mass of the solute divided by the total mass of the solution and multiplied by 100% (also see ppm)
- **PFOA**: Perfluorooctanoic acid
- **PFOS**: Perfluorooctane sulfonate
- **ppm**: Parts Per Million. A unit describing concentrations of chemical substances. 1 ppm can also be notated as 1 milligram per kilogram (mg/kg), 1 microgram per gram (µg/g) or as a percent where, X(ppm) = X(%) × 10000
- **PVC**: Polyvinyl Chloride
- **Solvent**: A substance in which another substance is dissolved, forming a solution.
- **TBT**: Tributyltin
- **TCEP**: Tris (2-chloroethyl) phosphate
- **TDCPP**: Tris (1,3-dichloro-2-propyl) phosphate
- **TPhT**: Triphenyltin

# Manufacturing Restricted Substances List (MRSL)

Darn Tough Vermont requires manufacturers to meet the standards set forth in the Zero Discharge of Hazardous Chemicals (ZDHC) MRSL. Suppliers must not intentionally introduce chemicals listed in the ZDHC MRSL, especially where there are substitutes for them.

Suppliers must document all chemicals used in the manufacturing process, as well as the supplier of each chemical. The list must be available to Darn Tough Vermont upon request and should include but not be limited to raw materials, inks, adhesives, dyes, dyeing process chemicals, and equipment maintenance chemicals. Safety Data Sheets must be kept for each chemical as previously noted.

Suppliers can utilize the *Chemical Register Form* (see Addendum 3) to help identify potential chemical risks based on the ZDHC MRSL. When a potential risk is identified, suppliers must verify any claim(s) to conform to the ZDHC MRSL. Valid claims include third party test reports, accepted third party certification, and accepted self-declarations upon review with Darn Tough Vermont. Darn Tough Vermont reserves the right to request all related documents for verification.

In the event a chemical cannot comply with the ZHDC MRSL, the supplier must take corrective action and implement a corrective action plan using the *Failure Remediation Form* (Addendum 2).

ZDHC MRSL: https://mrsl-30.roadmaptozero.com/

# Additional Guidance

## Phthalates

Phthalates are banned in all materials, components, trims, and products provided to Darn Tough Vermont. Suppliers must provide Darn Tough Vermont with proof that all plastics, glues, adhesives, inks, paints, and other items are free of phthalates.

In the event phthalates are found, suppliers must determine the root cause of the contamination, implement corrective actions, and eliminate them from the supply chain.

## Polyvinylchloride and Plastics

Polyvinylchloride (PVC) (CAS 9002-86-2) is banned for use in all materials, components, trim, and products provided to Darn Tough Vermont. The use of PVC comes with a high risk of RSL failure from restricted substances such as lead, phthalates, and cadmium.

The use of PVC and polystyrene (PS, rigid or foam) must be avoided. If polybags are used by a supplier, polybags that contain PVC should be eliminated and replaced with polybags made of #2 or #4 clear, recyclable plastic film.

Suppliers who have been asked to use PVC must immediately inform Darn Tough Vermont. Subsequent production and testing processes must be reviewed and approved by Darn Tough Vermont to ensure RSL compliance.

***Other Plastics Guidance***

- Biodegradable and compostable plastics should be clearly labeled to promote proper disposal and reduce contamination in the recycling stream.

- Compostable and biodegradable plastics must have third party certification to confirm that all materials will completely break down. See FTC Green Guides for more details: https://www.ftc.gov/enforcement/rules/rulemaking-regulatory-reform-proceedings/green-guides.
- Suppliers must use plastics made of recycled and recyclable content and should use a consistent resin to increase recyclability (e.g., 100% PET).

## Per- and Polyfluoroalkyl Substances (PFAS)

Per- and polyfluoroalkyl substances are banned in all materials, components, trims, products, and packaging provided to Darn Tough Vermont. While two of the most widely studied chemicals in the PFAS family, perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), are no longer manufactured in the US, they are still being produced internationally.

In the event any of these substances are found, suppliers must determine the root cause of the contamination, implement corrective actions, and immediately eliminate them from the supply chain. Depending on the nature of PFAS found, EPA review may be required.

All materials, components, trims, products, and packaging provided to Darn Tough Vermont are required to be 100% PFAS-free.

Additional information:

- The PFAS Project Lab: https://pfasproject.com/
- U.S. EPA Risk Management for Per- and Polyfluoroalkyl Substances (PFAS) under TSCA: https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/risk-management-and-polyfluoroalkyl-substances-pfas
- Compliance Guide for Imported Articles Containing Surface Coatings Subject to the Long-Chain Perfluoroalkyl Carboxylate and Perfluoroalkyl Sulfonate Chemical Substances Significant New Use Rule (January 19, 2021): https://www.epa.gov/sites/production/files/2021-01/documents/final_lcpfac-snur_surface-coating-compliance-guide_0.pdf

## Flame Retardants

Flame retardants are chemicals that are applied to materials to decrease ignitability and inhibit the spread of fire. Many flame retardants pose serious risks to human health, wildlife, and the environment. Suppliers must not apply flame retardant chemicals to any materials, components, trim, or products provided to Darn Tough Vermont.

## Packaging Restrictions

Responsible and ethical management of packaging is required of all packaging and packaging component suppliers at all stages of the lifecycle to minimize health, environmental, and safety impacts.

In addition to specifications already noted under this RSL for substances frequently found in plastic, rubber, silicone, foam, paper products, and surface coatings, treatments and adhesives (e.g., bisphenols, chlorofluorocarbons, hydrochlorofluorocarbons, chlorophenols, dimethylformamide, formaldehyde, isocyanates, phenols, polyaromatic hydrocarbons, o-phenylphenol, polychlorinated biphenyls, polychlorinated triphenyls, styrene, triglycidyl isocyanurate, metals, and VOCs), packaging suppliers and packaging component suppliers (e.g., suppliers of stickers, labels, tags, tape, hangers, boxes, bags and

polybags, foam, shipping pallets, corrugated cartons, and protective films) shall, at minimum, comply with the Toxics in Packaging Clearinghouse (TPCH) Model Legislation and the EU Packaging Directive (94/62/EC, Article 11).

Adherence to these directives requires that suppliers prohibit the intentional use of cadmium, lead, mercury, hexavalent chromium, perfluoroalkyl and polyfluoroalkyl substances (PFAS) and ortho-phthalates in any finished package or packaging component. As noted above, all items provided to Darn Tough Vermont are required to be 100% PFAS-free.

The sum concentration levels of cadmium, lead, mercury, and hexavalent chromium incidentally present in any package or packaging component shall not exceed 100 parts per million by weight (0.01%). The sum concentration of phthalates incidentally present in any package or packaging component shall not exceed 100 parts per million by weight (0.01%).

Packaging is defined as any container providing a means of protection, marketing, or handling of a product, and includes a unit package, an intermediate package, and a shipping container as defined in American Society for Testing and Materials (ASTM) D 996. Packaging also includes carrying cases, crates, cups, wrappers, wrapping films, pails, rigid foil, other trays, bags, and tubs.

Packaging component means any individual assembled part of a package such as, but not limited to, any interior or exterior blocking, bracing, cushioning, weatherproofing, exterior strapping, coatings, closures, inks, and labels. Tin-plated steel that meets the American Society for Testing and Materials (ASTM) specification A-623 shall be considered as a single package component. Electro-galvanized coated steel and hot dipped coated galvanized steel that meets the ASTM specification A-525 and A-879 shall be treated in the same manner as tin-plated steel.

Additional information:

- TPCH Model Legislation (February 2021): https://toxicsinpackaging.org/model-legislation/model/
- European Parliament and Council Directive 94/62/EC: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31994L0062:EN:HTML
- Package definition: https://toxicsinpackaging.org/model-legislation/package-definition/
- Sustainable Packaging Coalition: https://sustainablepackaging.org/
- Association of Plastics Recyclers: https://plasticsrecycling.org/
- FTC Green Guides for environmental claims: https://www.ftc.gov/news-events/media-resources/truth-advertising/green-guides
- Environmental labels and declarations, ISO 14021:2016: https://www.iso.org/standard/66652.html

## Inks, Coatings, Adhesives, and Bleach

General guidance on inks, coatings, adhesives, and bleach are noted below and apply to all materials and products provided to Darn Tough Vermont.

- **Adhesives.** At minimum, adhesives must be certified non-VOC. VOC emitting adhesives are frequently harmful to people and the environment. Wherever possible, adhesives should be avoided to facilitate recycling and to avoid the use of chemicals.

- **Bleach.** Unbleached paper should be used whenever possible to avoid the use of chemical processes. If unbleached paper isn't feasible, Processed Chlorine Free (PCF) is the next most desirable process, using recycled fiber and chlorine-free processing. In the event that

unbleached and PCF options are unavailable, Totally Chlorine Free Bleached (TCF) is acceptable (i.e., processed using oxygen-based compounds, no chlorine or chlorine derivatives).

- **Coatings.** Coatings often use adhesives, may contain restricted substances, typically involve additional and energy-intensive processes, and often result in the creation of mixed materials that make recycling difficult. Whenever possible, packaging without coatings is preferred as a means of avoiding chemicals and resources. If it is not possible to forego coating, UV coating (no VOCs) and water/aqueous-based coatings that emit fewer VOCs than solvent-based varnishes are to be used. Suppliers must contact Darn Tough Vermont for review and approval prior to the use of overprint varnishes and laminations (foils and poly) that often represent health hazards.

- **Inks.** Many inks contain restricted substances and contaminate the recycling process (e.g., metallic inks). Darn Tough Vermont prohibits the use of PVC (plastisol) inks, conventional discharge inks, the use of heat transfers containing PVC, low formaldehyde inks, and ink systems using solvent-based PU coats, all of which pose a high risk of RSL failure.

  Compostable soy and vegetable-based inks are strongly preferred, as they are relatively easy to separate from fibers and avoid metal dyes and pigments. Low VOC water-based inks are also acceptable, though they are harder to remove from paper fibers in the recycling process. Lastly, silicone inks and non-PVC plastisol inks (high solids acrylic) are permitted for use. Petroleum-based inks typically emit VOCs and must be tested at the Supplier's expense and formally approved by Darn Tough Vermont prior to use.

## Forest Stewardship Council – FSC Certification

Paper-based packaging must be FSC certified. FSC certification confirms that the forest is being managed in a way that preserves biological diversity and creates social, economic, and other environmental value and benefits. Darn Tough Vermont has adopted FSC certified paper for our own packaging.

Additional information: https://fsc.org

# Addendum 1: Supplier Acknowledgement of Receipt and Understanding

Darn Tough Vermont
364 Whetstone Drive
PO Box 307
Northfield, VT 05663

We, the "Supplier," hereby acknowledge our receipt and understanding of the Darn Tough Vermont Restricted Substances List (RSL). We also acknowledge and understand that this RSL replaces any previous Darn Tough Vermont RSL. The requirements set forth in this RSL are in addition to and not a replacement of other standards issued by Darn Tough Vermont.

| **Main Supplier Point of Contact** | |
|---|---|
| Company: | |
| Name: | |
| Title: | |
| Email: | |
| Phone Number: | |
| Date (mm-dd-yyyy): | |
| RSL Version | April 2023 |

We, the "Supplier," hereby understand and agree to the following Darn Tough Vermont compliance expectations:

1. Annually review the Darn Tough Vermont RSL (https://www.darntough.com/restricted-substances-list);
2. Adhere to all applicable legal requirements, regardless of whether those requirements are captured in the RSL;
3. Have an independent process for ensuring compliance with this RSL and all legal requirements;
4. Inform material suppliers and sub-contractors of relevant requirements and expectations;
5. Maintain a chemical inventory and a valid chemical Safety Data Sheet (SDS) for each processing chemical stored and used on site;
6. Clearly post information about hazards associated with each chemical and chemical formulation in storage and use areas;
7. Provide staff with appropriate training and protective equipment to prevent chemical exposure;
8. Upon request, provide Darn Tough Vermont with existing compliance documentation or laboratory test results;
9. Upon request, disclose the identity and use of each chemical used in materials for Darn Tough Vermont;
10. Upon request, disclose the contact information for upstream suppliers and sub-contractors used to make materials, components, products, or packaging provided to Darn Tough Vermont;
11. Complete and return *Addendum 1: Supplier Acknowledgement of Receipt and Understanding* as confirmation of accepting these terms for each updated version of the Darn Tough Vermont RSL;
12. Immediately notify Darn Tough Vermont if any materials, components, products, or packaging cannot meet the requirements set forth in the RSL using *Addendum 2: Failure Remediation Form*.

**RSL Testing**: material, component, product, and packaging testing may be required by Darn Tough Vermont at any stage of manufacturing to demonstrate compliance with the requirements set forth herein. Testing may be random or part of Darn Tough Vermont's scheduled testing program. All random testing is at Darn Tough Vermont's expense unless the testing is in direct response to an identify RSL or regulatory compliance violation.

**Existing Test Reports**: If a material, component, or product requested for RSL testing was tested in the past year, you may provide the applicable test report to Darn Tough Vermont for review. Darn Tough Vermont will determine and advise whether the report can be accepted in lieu of additional testing.

**Transparency**: Suppliers shall allow an authorized representative of Darn Tough Vermont to inspect the manufacturing facility where Darn Tough Vermont raw materials, components, products, or packaging are developed, manufactured, or stored. Visits would be conducted during normal business hours.

Darn Tough Vermont reserves the right to cancel orders and terminate a business relationship if the Supplier fails to meet any of these requirements.

☐ AGREED BY THE SUPPLIER (*please mark your agreement with a checkmark or "x" in the box*)

# Addendum 2: Failure Remediation Form

This form initiates a Corrective Action Plan (CAP) for a restricted substance failure in a raw material, component, *or* finished product. Darn Tough Vermont staff, the Supplier, and/or manufacturer will provide the below information as appropriate.

All corrective actions must be approved by Darn Tough Vermont prior to action. Please submit a completed form to sustainability@darntough.com.

| **Part 1: RSL failure details** (*to be completed by Darn Tough Vermont*); see attached test reports | |
|---|---|
| Restricted substance(s) (name & CAS): | |
| Detection level | |
| Darn Tough Vermont limit | |
| Test method | |
| Test lab | |
| Report Reference # | |

| **Part 2: Material details** (*to be completed by Darn Tough Vermont*) | |
|---|---|
| Supplier article(s) | |
| Material description | |
| Material content | |
| Material supplier | |
| Colors affected | |

| **Part 3: Product information for styles impacted by this failure** (*to be completed by Supplier*) | |
|---|---|
| Style(s) | |
| Season(s) | |
| Number of units with failure | |

| **Part 4: Root cause analysis** (*to be completed by Supplier*) | |
|---|---|
| What is the source of the RSL failure (please list the chemical product/s) | |
| Has the source been confirmed by review of the SDS, chemical test, or other? | |
| Why was the chemical used? | |
| What other Darn Tough Vermont materials may be contaminated? | |
| Other explanation | |

*Attach additional pages if needed.*

| **Part 5: Proposed corrective actions by Supplier** (*to be completed by Supplier*) | | | |
|---|---|---|---|
| Describe proposed corrective actions | Person in charge | Due date | Comments |
| | | | |

| **Part 6: Disposition** (*to be completed by Darn Tough Vermont after reviewing relevant information*) |
|---|
| |

| **Part 7: Corrective actions by Darn Tough Vermont** (*to be completed by Darn Tough Vermont*) | | | | |
|---|---|---|---|---|
| | Steps of corrective action | Person in charge | Due date | Comments |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |

*Attach additional pages if needed.*

| **Part 8: Corrective actions agreement** (*to be completed once corrective actions are finalized*) | | | |
|---|---|---|---|
| Darn Tough Vermont staff: | | Supplier staff: | |
| Signature: | | Signature: | |
| Date Signed: | | Date Signed: | |

# Addendum 3: Chemical Register Form

| **Supplier / Factory Name:** | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Quarterly Checked by Name and Date:** | | | | | | | | | | | |
| **Chemical name** (or trade name of preparation) | **CAS No.** | **Color** | **Category**[1] | **Use Purpose** | **SDS (Y/N)** | **Potential Risk** | **Complies with ZDHC MRSL (Y/N or N/A)** | **Valid Claim** | **Valid Claim Document #** | **Corrective Action Plan**[2] **(Y/N)** | **Chemical Supplier Name & Location** |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

*Attach additional pages if needed.* As an alternative to this form, a downloadable Chemical Inventory List (CIL) is available in the Outdoor Industry Association's free *Chemicals Management Guide & Training for Manufacturers* (https://outdoorindustry.org/sustainable-business/cm-docs).

1. Category: raw material (e.g., yarn), ink, adhesive, etc.
2. Corrective Action Plan: marking "Y" requires completion of the Failure Remediation Form (Addendum 2)