



Detecting endocrine-disrupting chemicals in products

Recommendations for EU standards for better protection

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Contents

Introduction and context.....	2
Role of EU standards.....	2
Voluntary standards and schemes.....	3
ECOS recommendations	3
Endocrine-disrupting chemicals in consumer products.....	4
PFAS	4
Bisphenols	5
Flame retardants.....	6
Phthalates.....	7
PAHs	8
Alkylphenols	9
Organotins	9
N-Nitrosamines	10
Chlorinated paraffins	10
UV-filters	11
References	12

Introduction and context

The field of chemical regulation moves rapidly across sectors. This can happen via overarching group restrictions, such as the proposed universal per- and polyfluoroalkyl substances (PFAS) restriction now being investigated at the European Chemicals Agency (ECHA)¹ or REACH entry 72² which restricts substances that are carcinogenic, mutagenic or reprotoxic (CMR) in textiles. It can also happen through more targeted, product-level restrictions - such as those included in the Toy Safety Regulation³, the Packaging and Packaging Waste Regulation⁴, or Food Contact Materials regulation⁵. At the same time, science is also moving quickly to develop best methods and testing practices to detect these substances reliably and at low levels.

This is happening against a backdrop of advancing scientific awareness of substances of concern in products and how combined exposure to them from multiple pathways and products can lead to unknown outcomes for human health and the environment, such as on biodiversity.⁶ Analysis is showing that even very low levels of substances – such as bisphenol A (BPA), or certain PFAS – can have serious health effects. For BPA, this is what has led to a wider restriction for food contact materials, because the European Food Safety Authority determined that there was essentially no safe exposure level.⁷

The broader category of substances which fall into the category of Endocrine-Disrupting Chemicals (EDCs) can have other classifications, like CMR, persistent, or ecotoxic, but the main issue is that they can impact hormonal systems, causing health issues with the reproductive system, brain development, obesity and metabolic issues, and cancers.⁸ EDCs used in consumer products like textiles or toys include the aforementioned PFAS and bisphenols, but also categories like flame retardants, APEOs, phthalates, organotins, chlorinated paraffins, and UV filters.⁹

In 2023, the EU introduced new hazard classes within the Regulation for the classification, labelling and packaging of substances and mixtures (CLP); included within this update were two hazard categories for identifying EDCs.¹⁰ Category 1 will include identified endocrine-disruptors while Category 2 will include suspected endocrine-disruptors. This is an important step in the process to further restrict or limit these pervasive and harmful substances. Some endocrine-disrupting substances are already included on the European Commission's Restrictions Roadmap, which gives an indication of individual chemicals or groups of substances that may soon be limited in some way.¹¹

Some of these substances can also create problems for circularity of materials and recycling streams as they are persistent and do not breakdown, or cannot be safely removed.¹² This is an issue for certain flame retardants, PFAS, and chlorinated paraffins, for example. Some of these persistent substances are already banned under the Stockholm Convention and the EU's Persistent Organic Pollutants Regulation, but others still remain in use.^{13, 14} In cases where circularity barriers have been identified, it is possible that future restrictions will come out of circular economy legislation like the Ecodesign for Sustainable Product Regulation.¹⁵

Role of EU standards

For the functioning of the Single Market in the EU, market surveillance authorities across the Member States must have clear guidance as to which test methods are robust and replicable enough to determine the compliance of products. Validated standards allow for test results to give the same result across the EU, making it simpler for businesses to prove compliance and for Member States to uphold the regulations. This happens through the process of harmonised standards at the European Standardisation Organisations (ESOs), European Committee for Standardisation (CEN) and the European Committee for Electrotechnical Standardisation (CENELEC).

However, the process to develop these standards can take several years, typically at least three and sometimes more. Reviews take place regularly, normally every five years. If the standard is deemed still appropriate, then no changes are made. But if significant changes are needed, or if a new standard must be developed, then the process likely requires financial and material resources to test at participating laboratories. If problems with the method are found, then standards must be edited and tests redone. Finding participating laboratories, materials to test, and adequate resources can delay the process. It is imperative that the ESOs look ahead and ensure that appropriate standards are being developed in a timely way so as not to delay implementation of a restriction.

The development of standards also typically is limited to a specific product or material (matrix), and limited to certain specific chemicals, based upon a restriction or limit. This further contributes to the long timelines and heavy need for resources. An analytical method in a standard must be accurate, robust, and replicable, and that does indeed take time. Yet we encourage the ESOs to take a strategic approach that is more overarching and which anticipates that many EDCs will soon be restricted from use as the EU moves toward a clean circular economy with less tolerance for harmful substances.

This paper will look at several priority groups of EDCs which are typically found in consumer products like textiles, footwear, toys and electronics. Some of them are already being regulated (as they may also be classified as a CMR, for example), some have proposals, and others are still at a discussion phase of regulation. Delays in standardisation results – which are still happening today for substances like PAHs in plastics, for instance – should be avoided at all costs. Thus we are presenting an overview of existing standards, identifying the gaps, and making recommendations for these groups of EDCs.

Voluntary standards and schemes

For many of the substances/groups described below, there may be legal restrictions on some and additional voluntary restrictions on other substances in the same group. Or there may be no legal restrictions, and only voluntary industry phaseouts (such as the case of bisphenol A for products like textiles). Voluntary phase-outs by industry programs are encouraged. For the purpose of this paper, however, we will not evaluate every voluntary scheme. Some schemes may be mentioned but that does not indicate support or lack thereof of any specific scheme.

The main purpose of this paper is to provide recommendations for EU standardisers to prepare for potential restrictions of EDCs in consumer products so as to not delay any implementation and to assure the swift phase-out of these substances.

ECOS recommendations

When it comes to analytical methods for substances of concern, we have several overarching recommendations:

- There should be comprehensive coverage of validated standards for priority substances and products
- Analytical methods must be kept up-to-date and fit-for-purpose to reflect current scientific knowledge and development, with the ability to detect to the lowest possible level.
- The method must undergo interlaboratory testing to ensure validity and replicability.
- The method must be replicable across the EU.
- Standards must be applicable to as many products as possible – if different matrices require different methods, then standards must be developed for each matrix.
- Standards must be able to detect a broad range of substances in each chemical group; if technically feasible, group screening methods should be standardised instead of aiming to detect individual chemicals

Endocrine-disrupting chemicals in consumer products

In this section, we will investigate substance groups which currently have some restrictions or restriction proposals but which are not yet fully or universally restricted in consumer products. Our research to map and identify international and/or European standards for detection of these substances shows that gaps exist and must be addressed to better protect the European Single Market, the health of European consumers, and the environment.

PFAS

Per- and polyfluoroalkyl substances (PFAS) are a large group of substances with wide usage. They are now known as “forever chemicals” due to their persistence. They are also now ubiquitous in the environment. These substances have been used in products varying from textiles (for waterproofing) to batteries (flame retardants). This group is now under high scrutiny from EU regulators, with restrictions occurring in various pieces of legislation and with consumer product usage likely to become completely banned within the next years.

Due to the complexity of PFAS chemistry and the rapidly developing regulatory environment, it is challenging for harmonised methods to keep up with the changes. For some sectors, e.g. food contact packaging, it is clear that regulation is moving faster than harmonised standards can be developed.¹⁶ To avoid this for other products like textiles and toys, we urge standardisers to prioritise the development of standardised workflows and analytical methods that will support the Single Market and future restrictions of PFAS in consumer products.

Screening

The method and workflow being advanced for the universal PFAS ban under REACH is a two-step workflow which detects total fluorine (TF) in a product and then, if needed based on the results, looks at the product with additional tests targeted to that product or material.^{17, 18, 19}

These TF methods can present a challenge with reliable results at lower levels but for typical levels of detection for unintentional usage, the methods are relatively reproducible and reliable.

While the EU does not yet have standardised screening method, one exists in the United States:

- [D7359 Standard Test Method for Total Fluorine, Chlorine and Sulfur in Aromatic Hydrocarbons and Their Mixtures by Oxidative Pyrohydrolytic Combustion followed by Ion Chromatography Detection \(Combustion Ion Chromatography-CIC\)](#)

Targeted methods:

Leather and textiles

- [ISO 23702-1:2023 - Leather — Per- and polyfluoroalkyl substances — Part 1: Determination of non-volatile compounds by extraction method using liquid chromatography](#)
- [EN 17681-1](#) - Textiles and textile products - Per- and polyfluoroalkyl substances (PFAS) - Part 1: Analysis of an alkaline extract using liquid chromatography and tandem mass spectrometry
- [EN 17681-2](#) - Textiles and textile products - Organic fluorine - Part 2: Determination of volatile compounds by extraction method using gas chromatography
- A new approved work item is underway - [ISO/AWI 25253-1](#) - Footwear — Critical substances potentially present in footwear and footwear components --Per and polyfluoroalkyl substances (PFAS) - Part 1: Determination of non-volatile compound by solvent extraction and liquid chromatography
- The Nordic Council conducted a comprehensive overview in 2022: [Analytical Methods for PFAS in Products and the Environment](#).

Recommendations

ESOs should develop standards for the initial screening total fluorine methods, with accompanying guidance for the screening tests best suited to various matrices. It is not necessary to develop a standard for each matrix/material but to provide standards that will allow for best overall testing and compliance.

Bisphenols

Bisphenols are another problematic group used primarily in the production of polymers and plastics, but have also been found in products like thermal paper, textiles, toys, and electronics.²⁰ They can also be found in recycled products, especially recycled paper products.

Many bisphenols have strong endocrine-disrupting potential, with high exposure in European populations due to their wide usage in products.²¹ Progress is being made particularly on Bisphenol A with voluntary phase outs and restrictions in certain products. However, this is leading to regrettable substitutions of other bisphenols (Bisphenol S, Bisphenol F, etc).

The regulatory environment for bisphenols in consumer products is evolving, although not quite as rapidly as that of PFAS. Some, like BPA, BPS, and BPB, are identified as Substances of Very High Concern (SVHCs).²² The group itself is coming under increased scrutiny. With the new Toy Safety Regulation and the Food Contact Material Regulation including group restrictions on bisphenols, this indicates that additional product restrictions, especially for products for vulnerable or sensitive groups, may occur quickly.

Targeted methods

Up to this point, the standards for the detection of bisphenols have primarily been focused on leather products (ISO 11936:2023), with no widely-adopted ISO methods for finished textile products. The leather standard does not include a limit value as it is a method for determining the total content. There are two European standards in development.

- A CEN standard is being finalised for textile products which will detect a wider range of bisphenols: prEN ISO 23377, "Textiles and textile products — Determination of certain bisphenols (BPA, BPF, BPS, BPB, BPAF), using LC-MS/MS after organic solvent extraction".
- A CENELEC standard is in drafting for the detection of bisphenol A for electrotechnical products, EN IEC 62321-13:2025 (pr). The standard, when final, will apply internationally as it is being worked on in partnership with the International Electrotechnical Committee.

CEN has recently published two new methods to support the detection of phenols and BPA in toys:

- [EN 71-18:2024 'Phenol in aqueous \(content\) and polymeric \(migration\) toy materials'](#)
- [EN 71-19:2024 'Migration of bisphenol A from toy materials'](#)

These two standards are a part of the EN 71 series of standards on toy safety. The migration limit of bisphenol A in EN 71-19:2024 is $\leq 0.04 \text{ mg/L}^2$. While this standard is applicable for products intended for use by children under 36 months, the methodology used within could be extended to other types of toys made of similar materials covered by the new ban.

Recommendations

Several methods are available to adapt for a more comprehensive testing regime for bisphenols. ECOS recommends that the ESOs adapt the standards being developed to apply to a wider range of products with relevant materials. We also urge the ESOs to ensure all new and developing standards include all relevant bisphenols, such as what is being developed under prEN ISO 23377, and to allow the detection of as many bisphenols as possible.

Flame retardants

The group of flame retardants (FRs) does not refer to chemicals per se but to the function of the substances, meaning this category can be quite broad and complex. Typically, however, there are three types of organic flame retardant chemicals, based upon the substances bromine (Br), chlorine (Cl), and phosphate (P).²³ The first two types are referred to as organohalogen FRs, and these are the most likely to be regulated. But there are others like halogenated organophosphorus FRs (OPFRs) or chlorinated paraffins (which are addressed in a below section) that also have harmful properties.

Several flame retardants are restricted globally under the Stockholm Convention or within the EU due to their persistence and toxicity. Yet not all substances are restricted, and new substances are constantly being developed, so there is a continuing need for robust and comprehensive standards to detect new flame retardants or those that are not yet restricted. Initial studies looking at some of these new replacement FRs indicate that these substances are likely to be identified as endocrine-disruptors.^{24, 25}

In 2023, the EU launched a regulatory strategy for a group restriction of flame retardants with a focus on brominated and OP flame retardants.²⁶ Some sectors have phased out certain categories of non-restricted FRs but others remain in use.

Targeted methods

For textiles, there are currently two EN ISO standards in place to detect “certain flame retardants”:

- [ISO 17881-1:2016 - Textiles — Determination of certain flame retardants — Part 1: Brominated flame retardants](#)
- [ISO 17881-2:2016\(en\), Textiles — Determination of certain flame retardants — Part 2: Phosphorus flame retardants](#)

These standards are being updated now under ISO, with an expanded scope and applicability to “all kinds of textile products”:

- [ISO/AWI 17881-1 - Textiles — Determination of certain flame retardants — Part 1: Brominated, chlorinated and phosphorus flame retardants](#)

For electrotechnical products, there are also several standards in place to detect various types of flame retardant substances used in this category:

- [IEC 62321-3-2:2020](#) - Determination of certain substances in electrotechnical products - Part 3-2: Screening - Fluorine, bromine and chlorine in polymer and electronics by combustion-ion chromatography (C-IC)
- [EN IEC 62321-3-3:2021](#) - Determination of certain substances in electrotechnical products - Part 3-3: Screening - Polybrominated biphenyls, polybrominated diphenyl ethers and phthalates in polymers by gas chromatography-mass spectrometry using a pyrolyser/thermal desorption accessory (Py/TD-GC-MS)
- [EN 62321-6:2015](#) - Determination of certain substances in electrotechnical products - Part 6: Polybrominated biphenyls and polybrominated diphenyl ethers in polymers by gas chromatography-mass spectrometry (GC-MS)
- [EN IEC 62321-9:2021](#) - Determination of certain substances in electrotechnical products - Part 9: Hexabromocyclododecane in polymers by chromatography-mass spectrometry (GC-MS)
- [EN IEC 62321-11:2024](#) - Determination of certain substances in electrotechnical products - Part 11: Tris(2-chloroethyl) phosphate (TCEP) in plastics by gas chromatography-mass spectrometry (GC-MS) and liquid chromatography-mass spectrometry (LC-MS)

- [EN IEC 62321-12:2023](#) - Determination of certain substances in electrotechnical products - Part 12: Simultaneous determination - Polybrominated biphenyls, polybrominated diphenyl ethers and phthalates in polymers by gas chromatography-mass spectrometry

For toys, there is a standard to detect certain chlorinated phosphorus flame retardants with a limit attached, as toy safety regulations place a limit value on the content:

- [EN 71-16](#) - Safety of toys – Part 16: Certain chlorinated phosphorus flame retardants (TCEP, TCPP, TDCP) in toy materials

Recommendations

The development of analytical methods to detect various categories of flame retardants is quite advanced, yet there are still some gaps. Since flame retardants are such a broad category, with new substances being developed and used in products, it is possible that specific standards are not covering newer substances. In addition, it is imperative that the standards cover more materials, especially as different substances may be used in synthetic vs natural materials (or fibres). As more restrictions and limits are placed on this category of substances, it will be necessary to update or broaden the existing standards.

Phthalates

Phthalates (esters of ortho-phthalic acid) are additives used in the process of making plastics; they soften the materials and make plastics more flexible. This group encompasses many substances, and they are widely found in consumer products made of plastic. Many of the substances in this group are restricted under REACH or product-specific policies but others are still in use and not yet restricted or limited.

Phthalates are known endocrine disruptors, and some have been classified as reprotoxic. The EU may consider further restrictions on phthalates as a group.²⁷

Screening

Work is planned for a screening method to be developed under CEN TC 462 “Regulated chemicals in products” but it has not yet launched. The scope will cover restricted phthalates with considerations for other phthalates that are currently identified as Substances of Very High Concern.

Targeted methods

Textiles and footwear

- [EN ISO 14389:2022](#) - Textiles — Determination of the phthalate content — Tetrahydrofuran method
- [EN ISO 16181-1:2021](#) - Footwear - Critical substances potentially present in footwear and footwear components - Part 1: Determination of phthalate with solvent extraction
- [EN ISO 16181-2:2021](#) - Footwear - Critical substances potentially present in footwear and footwear components - Part 1: Determination of phthalate without solvent extraction

Electrotechnical

- [EN IEC 62321-3-3:2021](#) - Determination of certain substances in electrotechnical products - Part 3-3: Screening - Polybrominated biphenyls, polybrominated diphenyl ethers and phthalates in polymers by gas chromatography-mass spectrometry using a pyrolyser/thermal desorption accessory (Py/TD-GC-MS)
- [EN IEC 62321-3-4:2023](#) - Determination of certain substances in electrotechnical products - Part 3-4: Screening - Phthalates in polymers of electrotechnical products by high performance liquid

chromatography with ultraviolet detector (HPLC-UV), thin layer chromatography (TLC) and thermal desorption mass spectrometry (TD-MS)

- [EN IEC 62321-12:2023](#) - Determination of certain substances in electrotechnical products - Part 12: Simultaneous determination - Polybrominated biphenyls, polybrominated diphenyl ethers and phthalates in polymers by gas chromatography-mass spectrometry

Toys

- [ISO 8124-6:2023 - Safety of toys — Part 6: Certain phthalate esters](#) – applies to DIBP, DBP, BBP, DEHP, DNOP, DINP, and DIDP in toys made of plastics, textiles, coatings and liquids. The standard can also be applied to other phthalate esters and has been validated for polyvinylchloride (PVC) and polyurethane (PU) plastics.

Recommendations

With additional restrictions likely coming in this group, and with product standards currently available, the new screening workstream within CEN TC 462 will importantly provide a broader method that includes the detection of additional phthalates than only those which are restricted. Standardisers should closely monitor the regulatory developments so that the screening method covers as many phthalates as possible. It may be necessary to develop a CEN standard to test for phthalates if additional substances are banned under the Toy Safety Regulation.

PAHs

Polycyclic aromatic hydrocarbons (PAHs) are another large group of substances, which can be carcinogenic, mutagenic, and reprotoxic, as well endocrine-disrupting.^{28,29} Eight PAHs are restricted by REACH: Benzo[a]pyrene, Benzo[e]pyrene, Benzo[a]anthracene, Chrysene, Benzo[b]fluoranthene, Benzo[j]fluoranthene, Benzo[k]fluoranthene, and Dibenzo[a,h]anthracene. But others are problematic—naphthalene (simplest PAH) is not yet regulated.

The restricted PAHs are not typically found in textiles. However, non-restricted PAHs, like naphthalene and some others, can be found in some synthetic textiles. The new Toy Safety Regulation may further restrict PAHs if they are classified as EDCs. Footwear soles can be produced with carbon black and can possibly contain restricted PAHs as well as non-restricted.

Targeted methods

Textiles

- [EN 17132:2019](#) - Textiles and textile products - Determination of Polycyclic Aromatic Hydrocarbons (PAH), method using gas chromatography – this standard is likely to be updated in the coming years.

Footwear

- [ISO 16190:2021](#) - Footwear — Critical substances potentially present in footwear and footwear components — Test method to quantitatively determine polycyclic aromatic hydrocarbons (PAHs) in footwear materials.

Plastics and Rubbers / Other Products

- A standard is under drafting in CEN TC 462. This will be used to implement the REACH restriction for PAHs in products.
- There is a German Product Safety standard to verify PAH content in product: [AfPS GS 2019:01 PAK](#), which can be used for several products which have “plastic, rubber, or coated parts that come into skin or oral contact.”

Recommendation

Once the method being developed in CEN TC 462 is finalised and the textile standard from 2019 reviewed, then it may not be necessary to develop other standards. Currently, that standard has focused primarily on testing products made of rubber, with a lack of tests on plastics. If more PAHs are eventually restricted, then it may be necessary to review that standard to ensure robust coverage and ability to detect these substances across plastic products.

Alkylphenols

Alkylphenol ethoxylates (APEOs)/alkylphenols (APs) are chemicals with a wide usage, including as detergents, emulsifiers and surfactants. This group of substances, which includes their breakdown products, have a range of hazardous properties, including aquatic toxicity, bioaccumulation, and endocrine disruption.³⁰ They have typically been used in the textile industry, but are being increasingly restricted via REACH or voluntarily phased out by the textiles industry and brands.³¹ These substances may still be found in recycled products, particularly certain recycled textiles.

Targeted methods

- [EN ISO 18254-1:2016](#) Textiles Methods for the Detection and Determination of alkylphenol ethoxylates APEOS - Part 1: Method using HPLC-MS. This standard was reviewed and confirmed in 2021.
- [EN ISO 18254-2:2018](#) - Textiles - Method for the detection and determination of alkylphenol ethoxylates (APEO) - Part 2: Method using NPLC. This standard was reviewed and confirmed in 2024.
- [EN ISO 18218-1:2023](#) Leather - Determination of ethoxylated alkylphenols (APEO)
- [EN ISO 18218-2:2019](#) - Leather - Determination of ethoxylated alkylphenols - Part 2: Indirect method. This standard was reviewed and confirmed in 2025.
- [EN ISO 21084:2019](#) - Textiles - Method for determination of alkylphenols (AP). A revision is currently under development for this standard.

Recommendation

Standardisers should continue to monitor regulatory developments of APEOs/APs and their breakdown products to ensure that standards meet the needs of implementation.

Organotins

Organotins are compounds that contain at least one carbon-tin bond, so they are both organic and metallic. There are many substances in this group, with varying properties depending on their composition. Organotins can be used in the manufacture of PVC plastics, in the production of some polyurethane foams, as a coating or sealant.³²

Some organotins used as biocides have been restricted under the EU Biocidal Products Regulation, other have been restricted under the Toy Safety Directive or REACH. For textiles, certain organotins are being phased out under voluntary schemes. These substances are typically no longer found in compliant products in the EU.

Targeted methods

Textiles and Footwear

- [EN ISO 22744-1:2020](#) - Textiles and textile products - Determination of organotin compounds - Part 1: Derivatisation method using gas chromatography. Under review.
- [EN ISO 22744-2:2020](#) - Textiles and textile products - Determination of organotin compounds - Part 1: Derivatisation method using gas chromatography. Under review.

- [EN ISO 16179:2025](#) – Footwear - Critical substances potentially present in footwear and footwear components - Determination of organotin compounds in footwear materials

Recommendations

As these substances are now generally rarely found in most (conforming) consumer products, we recommend maintaining the current standards. Further development is not necessary unless circumstances regarding non-conforming products change.

N-Nitrosamines

N-Nitrosamines are carcinogenic substances that can occur unintentionally in consumer products made of rubbers.³³ There are restrictions in place for toys and childcare articles; typically these are specific to products made of rubber (elastomers) like balloons or pacifiers. The new Toy Safety Regulation places stricter requirements on nitrosamines in toys.

These substances can also be found in footwear and there are not yet any restrictions on footwear. However, some industry voluntary programs have set limits on n-nitrosamines in footwear products.

Targeted methods

Toys and childcare articles

- [EN 71-12](#) (2016)- Safety of toys - Part 12: N-Nitrosamines and N-nitrosatable substances.
- [EN 12868](#) (2017)- Child use and care articles - Method for determining the release of N-nitrosamines and N-nitrosatable substances from elastomer or rubber teats and soothers.

Footwear

- [EN ISO 19577:2019](#) – Determination of Nitrosamines – this method tests for 12 nitrosamines in rubber. Under review.

Recommendations

With new stricter limits under the Toy Safety Regulation, it may be necessary to accelerate the review of the EN 71-12 standard. It was last reviewed in 2022 and deemed sufficient, but it is necessary to ensure that the standard is robust enough to implement the new Regulation's limits.

Chlorinated paraffins

These substances are additives to plastic, rubber, coatings, or used in dyes; they can also be used as a flame retardant. The short-chain chlorinated paraffins (SCCPs) are restricted globally under the Stockholm Convention and the EU's POPs Regulation due to several classifications, as they are persistent, bioaccumulative, and toxic.

Medium-chain CPs (MCCPs) are not restricted yet, but are currently listed as SVHCs.³⁴ Some industry groups have set their own limits on the substances in their products. It is likely that MCCPs will have further restrictions placed upon them; however in December 2024 the EU decided not to restrict MCCPs in electrical and electronics products via the RoHS Directive.

Thus far there are no regulations on the long-chain CPs as they have so far been deemed less problematic, but this may change in the future with more attention being paid to their environmental risks.³⁵

Chlorinated paraffins have been used in textiles, toys, electronics, and other plastic products, but at the moment, their usage in the EU is declining via various restrictions and voluntary phase-outs. However, they may still be found in consumer products due to contamination or use of recycled materials.³⁶

Targeted methods

Textiles

- [EN ISO 18219-1:2021](#) – Leather - Determination of chlorinated hydrocarbons in leather - Part 1: Chromatographic method for short-chain chlorinated paraffins (SCCP)
- [EN ISO 18219-2:2021](#) - Leather - Determination of chlorinated hydrocarbons in leather - Part 2: Chromatographic method for middle-chain chlorinated paraffins (MCCPs)
- [EN ISO 22818:2021](#) – Textiles - Determination of short-chain chlorinated paraffins (SCCP) and middle-chain chlorinated paraffins (MCCP) in textile products out of different matrices by use of gas chromatography negative ion chemical ionization mass spectrometry (GC-NCI-MS). This standard includes detection of CPs in polymers on coated fabrics, prints, and buttons.

Electrotechnical Products

- [prEN IEC 62321-14:2025](#) - Determination of certain substances in electrotechnical products - Part 14: Determination of short-chain chlorinated paraffins (SCCPs) and medium-chain chlorinated paraffins (MCCPs) in electrotechnical products by gas chromatography-negative chemical ionization-mass spectrometry (GC-NCI-MS)

Recommendations

Standardisers should monitor regulatory developments of this group as they are increasingly likely to be regulated and restricted. Due to the limited number of targeted methods, it may be needed to develop standards for the detection of these substances in products like toys or childcare articles.

UV-filters

UV-Filters (also known as absorbers or stabilisers) are another group of substances added to plastics. They protect pigments or to prevent cracking of the material. UV-filters can be found in textiles, toys, and other plastics.

Some UV-filters are persistent and bioaccumulative, with indications of endocrine-disrupting potential.³⁷ Certain substances are already restricted globally under the Stockholm Convention or in the EU under REACH or product legislation. Others are listed as SVHCs.³⁸

Their presence in recycled products is especially an issue. Thus it is likely that substances in this category come under further scrutiny.

Targeted methods

- [ISO 24040:2022 - Textiles — Determination of certain benzotriazole compounds](#) (for UV-320, UV-327, UV-328, UV-350)

Recommendations

At the moment, there are clear gaps in standardised analytical methods to detect UV-filters, even those regulated under the POPs Regulation (such as UV-328). Laboratories are using their own methods or those developed by voluntary specification schemes.³⁹ Thus we recommend that the EU standardisation organisations prioritise developing a robust standard for the detection of these substances to the lowest limits possible. This will enable the full implementation of the EU POPs regulation and ensure further restrictions can be upheld.

References

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- ³ New rules for safer toys in the EU
- ⁴ Packaging & Packaging Waste Regulation - European Commission
- ⁵ Legislation - Food Safety - European Commission
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