Restricted Substances List (RSL)
Footwear v10

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Introduction

Haglöfs requires that its footwear products, and the raw materials used to construct those products, are manufactured with regard for the safety of consumers and factory workers, as well as the wider environment. The management of chemicals in the supply chain directly impacts these areas.

The Restricted Substances List (RSL) Footwear provides details of chemicals and other materials that are restricted by Haglöfs, and allowable chemical limits for footwear placed on the market. It is expected that Haglöfs' suppliers use industry best practices to proactively manage chemicals, meeting the requirements of the RSL and relevant regulations in the markets in which we operate as well as providing safeguards for consumers, workers and the environment.

- The Haglöfs Footwear RSL Footwear applies to all materials, components and finished footwear products sold under the Haglöfs brand name whether sourced directly or by Haglöfs licensee partners
- Haglöfs reserves the right to request testing of any material or product at any time against this RSL
- Suppliers should certify their compliance to the Haglöfs RSL Footwear by signing the *Supplier Compliance Declaration*

Restricted Substances

Restricted Substances List

Footwear products (See Appendix 1)

Haglöfs follows the Afirm RSL for all footwear products and currently refers to version 09. The Afirm RSL is updated periodically, refer to the AFIRM Group website for the latest version of the RSL. Versions are also available in Spanish, Chinese, Indonesian, Japanese and Vietnamese. www.afirm-group.com

Packaging (See Appendix 2)

Haglöfs follows the AFIRM Group RSL for packaging. Refer to the AFIRM Group website for the latest version of the RSL. Versions are also available in Spanish, Chinese, Indonesian, Japanese and Vietnamese. www.afirm-group.com

Additional requirements

In addition to the restrictions outlined in Appendix 1 and 2 the following requirements must be met:

- Biocides and anti-microbial finishes
  - The use of biocides or anti-microbial finishes as odour control or to inhibit growth of mould during storage/transportation is not allowed.
- Per- and polyfluoroalkyl substances (PFAS)
  - The use of PFAS as a water or stain repellent is not allowed except for limited use cases which have been approved by Haglöfs.
  - Where silicone based DWR alternatives are used it is not allowed that the cyclosiloxanes (D4, D5, D6) are present
- Polyvinyl chloride (PVC)
  - The use of PVC is not allowed except for limited use cases which have been approved by Haglöfs
- Animal-based materials
  - The use of animal-based materials is restricted, see the *Haglöfs Animal Welfare Policy* for more details.
- Oxo-degradable plastics
  - The use of oxo-degradable plastics in Haglöfs packaging is not allowed.

EU REACH Substances of Very High Concern (SVHC)

REACH is the regulatory framework for chemicals in the European Union (EU) administered by the European Chemical Agency (ECHA). Substances that are found to be particularly hazardous are added to a Candidate List of Substances of Very High Concern (SVHC).

Placing a substance on the Candidate List triggers specific obligations for importers, producers, and suppliers of any article that contains one or more of these substances above 0.1 percent by weight per component. The obligations include providing enough information to allow safe use of the article to brand and retail customers or, upon request, to a consumer within 45 days of receipt of the request.

ECHA periodically updates the Candidate List and some SVHCs may become the subject of authorisation requirements or more stringent legislation. The most current version can be found at https://www.echa.europa.eu/candidate-list-table

Suppliers must stay up to date with any additions to the list and notify Haglöfs immediately if substances found on this list are identified in materials or products.

California Proposition 65 Substances

Each year, California publishes a list of chemicals known to the state to cause cancer or reproductive toxicity. Businesses that expose individuals to one or more of these chemicals must provide a clear and reasonable warning before the exposure occurs. For consumer products, this is typically through warning labels on the products or retail signage. Enforcement is carried out through civil lawsuits brought by the California attorney general, district attorneys, or private parties acting in the public interest.
Additional information can be found at https://oehha.ca.gov/proposition-65

Suppliers must stay up to date with any additions to the list and notify Haglöfs immediately if substances found on this list are identified in materials or products.

Supplier's Responsibility

It is the supplier's responsibility to comply with the RSL, avoiding the use of harmful or illegal chemicals in the making of Haglöfs products. RSL compliance is included in, or additional to, all legal partnership agreements relating to the manufacture of Haglöfs product lines.

Haglöfs expects suppliers to:

- provide evidence that materials, components, finished products or packaging supplied meet the RSL - responsibility for testing and associated costs lies with the supplier
- ensure that chemicals are handled safely by workers and that any emissions from facilities such as waste and wastewater, and the handling of such emissions comply with all applicable environmental laws and regulations
- provide access to Haglöfs representatives to visit any locations used in the production of materials, components, finished products or packaging for Haglöfs

With specific reference to the EU REACH SVHC Candidate list and the California Proposition 65 substances list the supplier must notify Haglöfs immediately if substances found on either of these lists are identified in materials, products or packaging. It is the supplier's responsibility to keep up to date with any changes to the lists.

Haglöfs conducts a risk-based testing program and reserves the right to request that suppliers provide samples and/or test against the RSL at any time.

Haglöfs will assess any failure against the RSL standards on a case by case basis and take appropriate action. In the event of a test failure, suppliers will be required to conduct failure analysis and, where appropriate, provide an action plan to resolve the issue for current and/or future production. Suppliers may be required to remediate products, remake products or replace affected components at their own cost.

Tier 1 (finished-goods) factories are required to maintain records of testing on materials from local suppliers as well as those produced in-house.

Testing

It is expected that suppliers can provide evidence that their products meet the RSL. Responsibility for testing and associated costs lies with the supplier.

Suppliers should routinely test their materials for compliance against the Haglöfs RSL as well as related lists such as the REACH SVHC List and the California Proposition 65 List, supplying evidence of this testing as and when requested by Haglöfs.

The Product and Packaging Testing Matrices (Appendix 1c and 2b) outline the recommended tests for different categories of materials based on the likelihood of restricted substances being detected. Suppliers should use this as a tool to guide their efforts to manage restricted substances.

All material and product testing conducted for the purposes of assessing compliance with the Haglöfs RSL Footwear should be carried out by testing institutes that are ISO 17025 certified and are part of a global network which can ensure standard methods and level of quality.

Test results are valid for one year from the test date unless otherwise stated.

Certifications will be accepted in lieu of chemical testing as follows:

- **bluesign®** The supplier can provide a copy of a bluesign® certificate for the production facility where the material was made **AND** the fabric or trim is listed with the appropriate item number/code in the blueguide®
- **Oeko-tex®** The supplier can provide a copy of the STeP by Oeko-tex® certificate for the production facility where the material was made **AND** the supplier can provide a copy of the Standard 100 by Oeko-tex® certificate for the fabric or trim item (or Leather Standard by Oeko-tex® certificate for leather items).

Contamination

- The supplier shall maintain full responsibility for ensuring that no unauthorized or unintended substances are present in the product. This responsibility includes not only responding when a substance is detected, but also proactively establishing, implementing, and maintaining robust processes to control the use of substances, prevent contamination, and ensure full oversight of all materials and production outputs.

- Should any substance nonetheless be detected in the product—regardless of whether it results from contamination, inadequate controls, or any other cause, the supplier shall be solely responsible for promptly identifying the source, implementing immediate corrective and preventive measures, and eliminating its presence in all current and future supplies. The supplier shall notify the buyer in writing of all measures taken and shall ensure that all remediation activities comply with applicable regulatory requirements and standards.

Chemical Input and Output Management

Managing restricted substances includes controlling the chemical formulations that enter facilities. Suppliers should use the systems below to screen for compliant formulations. In addition to input controls, suppliers must also maintain processes to monitor and manage production outputs to ensure that no unintended or unauthorized substances are introduced through manufacturing activities, cross-contamination, or other process sources.

bluesign®FINDER: A database called the bluesign® FINDER can be used to select and screen for approved chemicals. For more information visit www.bluesignFINDER.com

ZDHC Manufacturing Restricted Substances List (MRSL): Manufacturers should contact their chemical suppliers and communicate the ZDHC MRSL standard to them. Chemical suppliers should be able to confirm which of their products meet this standard. A copy of the most current ZDHC MRSL can be downloaded from the ZDHC website www.roadmaptozero.com/mrsl_online

For any questions about the RSL please contact productcompliance@haglofs.se

Haglöfs

Appendix 1a: Product Restricted Substances List (RSL)

Restricted Parameters

CAS No.	Substance	Limits Component Materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
	Acetophenone and 2-Phenyl-2-Propanol				
98-86-2 617-94-7	Acetophenone 2-Phenyl-2-Propanol	50 ppm each	Potential breakdown products in EVA foam when using certain crosslinking agents, including Dicumyl Peroxide.	Extraction in acetone or methanol GC/MS, sonication for 30 minutes at 60° C	25 ppm each
	Acidic and Alkaline Substances				
N/A	pH value	Textiles: 4.0 – 7.5 Leather: Chrome-tanned: 3.2 – 5.5 Other: 3.5 – 7.5	pH value is a characteristic number, ranging from pH 0 to pH 14, which indirectly shows the content of acidic or alkaline substances in a product. pH values less than 7 indicate sources of acidic substances, and values greater than 7 indicate sources of alkaline substances. To avoid irritation or chemical burns to the skin, the pH value of products must be in the range of human skin—approximately pH 5.5. AFIRM recommends the limits cited to comply with global regulations and to minimize the chances of Chromium VI formation during tanning and processing of leather. Important: Egypt, Morocco, and the Gulf Cooperation Council (GCC) require pH for leather not lower than 3.5.	Textiles and synthetic coated fabrics: EN ISO 3071:2020 Leather: EN ISO 4045:2018	N/A

CAS No.	Substance	Limits Component Materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
	Alkylphenols (APs) Alkylphenol Ethoxylates (APEOs) including all isomers				
Various	Nonylphenol (NP), mixed isomers	Total APs: 10 ppm Total APs + APEOs: 100 ppm	APEOs can be used as or found in detergents, scouring agents, spinning oils, wetting agents, softeners, emulsifying/dispersing agents for dyes and prints, impregnating agents, de-gumming for silk production, dyes and pigment preparations, polyester padding and down/feather fillings. APs are used as intermediaries in the manufacture of APEOs and antioxidants used to protect or stabilize polymers. Biodegradation of APEOs into APs is the main source of APs in the environment. APEOs and formulations containing APEOs are prohibited from use throughout supply chain and manufacturing processes. We acknowledge that residual or trace concentrations of APEOs may still be found at levels exceeding 100 ppm and that more time is necessary for the supply chain to phase them out completely. Recycled products: Contact your brand customer for information about potential exemptions from the limit on NPEO	Textiles and Leather: EN ISO 21084:2019 Polymers and all other materials: 1 g sample/20 mL THF, sonication for 60 minutes at 70° C, analysis according to EN ISO 21084:2019 Down (China market only): GB/T 23322-2018 for compliance with GB/T 14272-2021	Total of NP + OP: 3 ppm
Various	Octylphenol (OP), mixed isomers				
Various	Nonylphenol ethoxylates (NPEOs)			All materials except Leather: EN ISO 18254-1:2016 with determination of APEO using LC/MS or LC/MS/MS Leather: Sample prep and analysis using EN ISO 18218-1:2023with quantification according to EN ISO 18254-1:2016 Down (China market only): GB/T 23322-2018 for compliance with GB/T 14272-2021	Total of NPEOs + OPEOs: 20 ppm
Various	Octylphenol ethoxylates (OPEOs)				

CAS No.	Substance	Limits Component Materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
	Azo-amines and Arylamine Salts				
92-67-1	4-Aminobiphenyl	20 ppm each	Azo dyes and pigments are colorants that incorporate one or several azo groups (-N=N-) bound with aromatic compounds. Thousands of azo dyes exist, but only those which degrade to form the listed cleaved amines are restricted. Azo dyes that release these amines are regulated and should no longer be used for dyeing textiles.	All materials except leather: EN ISO 14362-1:2017 Leather: EN ISO 17234-1:2020 p-Aminoazobenzene: All materials except leather: EN ISO 14362-3:2017 Leather: EN ISO 17234-2:2011	5 ppm each
92-87-5	Benzidine				
95-69-2	4-Chloro-o-toluidine				
91-59-8	2-Naphthylamine				
97-56-3	o-Aminoazotoluene				
99-55-8	2-Amino-4-nitrotoluene				
106-47-8	p-Chloraniline				
615-05-4	2,4-Diaminoanisole				
101-77-9	4,4'-Diaminodiphenylmethane				
91-94-1	3,3'-Dichlorobenzidine				
119-90-4	3,3'-Dimethoxybenzidine				
119-93-7	3,3'-Dimethylbenzidine				
838-88-0	3,3'-dimethyl-4,4'-diaminodiphenylmethane				
120-71-8	p-Cresidine				
101-14-4	4,4'-Methylen-bis(2-chloraniline)				
101-80-4	4,4'-Oxydianiline				
139-65-1	4,4'-Thiodianiline				
95-53-4	o-Toluidine				
95-80-7	2,4-Toluenediamine				
137-17-7	2,4,5-Trimethylaniline				
95-68-1	2,4 Xylidine				
87-62-7	2,6 Xylidine				
90-04-0	2-Methoxyaniline (= o-Anisidine)				
60-09-3	p-Aminoazobenzene				
3165-93-3	4-Chloro-o-toluidinium chloride				
553-00-4	2-Naphthylammoniumacetate				
39156-41-7	4-Methoxy-m-phenylene diammonium sulphate				
21436-97-5	2,4,5-Trimethylaniline hydrochloride				

CAS No.	Substance	Limits Component Materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
	Bisphenols				
80-05-7	Bisphenol-A (BPA)	Items intended to come in contact with the mouth: 1 ppm Textiles & leather: 10 ppm Polycarbonate Materials: 100 ppm Other Materials: 200 ppm	BPA may be used in the production of epoxy resins, polycarbonate plastics, flame retardants, and PVC. BPS may be used as a substitute for BPA for some specific uses, including in thermal receipt paper. BPS and BPF can be found in polyamide dye-fixing agents and in sulfone- and phenol-based leather synthetic tanning agents. BPA and BPS can be found in recycled polymeric and paper materials due to polycarbonate plastic and thermal receipt paper made with bisphenols entering waste streams. BPA, BPS, and BPB are included on the REACH SVHC list. Additional restrictions on the entire class of bisphenols are expected, with a revised restriction proposal forthcoming in the European Union. AFIRM recommends testing relevant materials for bisphenols according to the Testing Matrix and to work with suppliers to minimize residual concentrations or replace them with better alternatives where possible.	Leather: EN ISO 11936:2023 All other materials: Extraction: 1g sample/20 ml THF, sonication for 60 minutes at 60° C, then add methanol or acetonitrile for precipitation prior to analysis with LC/MS Note for textiles: For precipitation, draw the extract to another container and add methanol or acetonitrile. Inaccurate higher results will be obtained if the textile sample contacts the precipitation solvent.	Leather: 10 ppm each All other materials: 0.1 ppm for individual samples 1 ppm for composite samples
80-09-1	Bisphenol S (BPS)	Textiles & other materials: 200 ppm each Leather: 500 ppm each In preparation for forthcoming restrictions, significantly lower levels of bisphenols should be achievable in, e.g., polyamide, overtime or better alternatives should be substituted if possible.			
77-40-7	Bisphenol B (BPB)				
620-92-8	Bisphenol F (BPF)				
	Chlorinated Paraffins				
85535-84-8	Short-chain Chlorinated Paraffins (SCCPs) (C10-C13)	1000 ppm	May be used as softeners, flame retardants, or fat-liquoring agents in leather production; also as a plasticizer in polymer production.	Leather: ISO 18219-1:2021 (SCCP) ISO 18219-2:2021 (MCCP) Textiles and all other materials: ISO 22818:2021 (SCCP + MCCP)	100 ppm
85535-85-9	Medium-chain Chlorinated Paraffins (MCCPs) (C14-C17)	1000 ppm			100 ppm

CAS No.	Substance	Limits Component Materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
	Chlorophenols				
15950-66-0	2,3,4-Trichlorophenol (TriCP)	0.5 ppm each	Chlorophenols are polychlorinated compounds used as preservatives or pesticides. Pentachlorophenol (PCP), Tetrachlorophenol (TeCP), and Trichlorophenols (TriCP) are sometimes used to prevent mold and kill insects when growing cotton and when storing/transporting fabrics. PCP, TeCP, and TriCP can also be used as in-can preservatives in print pastes and other chemical mixtures.	All materials: EN 17134-2:2023	0.5 ppm each
933-78-8	2,3,5-Trichlorophenol (TriCP)				
933-75-5	2,3,6-Trichlorophenol (TriCP)				
95-95-4	2,4,5-Trichlorophenol (TriCP)				
88-06-2	2,4,6-Trichlorophenol (TriCP)				
609-19-8	3,4,5-Trichlorophenol (TriCP)				
4901-51-3	2,3,4,5-Tetrachlorophenol (TeCP)				
58-90-2	2,3,4,6-Tetrachlorophenol (TeCP)				
935-95-5	2,3,5,6-Tetrachlorophenol (TeCP)				
87-86-5	Pentachlorophenol (PCP) and its salts and esters				
	Chlorinated Benzenes and Toluenes				
95-49-8	2-Chlorotoluene	Total: 1 ppm	Chlorobenzenes and Chlorotoluenes (Chlorinated Aromatic Hydrocarbons) can be used as carriers in the dyeing process of polyester or wool/polyester fibers. They can also be used as solvents. Cross-contamination from anti-moth agents and poly shipping bags may cause failures. Important: The Gulf Cooperation Council (GCC) maintains a limit of 1 ppm for 1,2-Dichlorobenzene in textiles.	All materials: EN 17137:2018	0.2 ppm each
108-41-8	3-Chlorotoluene				
106-43-4	4-Chlorotoluene				
32768-54-0	2,3-Dichlorotoluene				
95-73-8	2,4-Dichlorotoluene				
19398-61-9	2,5-Dichlorotoluene				
118-69-4	2,6-Dichlorotoluene				
95-75-0	3,4-Dichlorotoluene				
2077-46-5	2,3,6-Trichlorotoluene				
6639-30-1	2,4,5-Trichlorotoluene				
76057-12-0	2,3,4,5-Tetrachlorotoluene				
875-40-1	2,3,4,6-Tetrachlorotoluene				
1006-31-1	2,3,5,6-Tetrachlorotoluene				
877-11-2	Pentachlorotoluene				
541-73-1	1,3-Dichlorobenzene				
106-46-7	1,4-Dichlorobenzene				
87-61-6	1,2,3-Trichlorobenzene				
120-82-1	1,2,4-Trichlorobenzene				
108-70-3	1,3,5-Trichlorobenzene				
634-66-2	1,2,3,4-Tetrachlorobenzene				
634-90-2	1,2,3,5-Tetrachlorobenzene				
95-94-3	1,2,4,5-Tetrachlorobenzene				
608-93-5	Pentachlorobenzene				
118-74-1	Hexachlorobenzene				
5216-25-1	p-Chlorobenzotrichloride				
98-07-7	Benzotrichloride				
100-44-7	Benzyl Chloride				
95-50-1	1,2-Dichlorobenzene	10 ppm			1 ppm

CAS No.	Substance	Limits Component Materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
	Dimethylfumarate				
624-49-7	Dimethylfumarate (DMFu)	0.1 ppm	DMFu is an anti-mold agent that may be used in sachets in packaging to prevent the buildup of mold, especially during shipping.	All materials: ISO 16186:2021	0.05 ppm
	Dyes (Forbidden and Disperse)				
2475-45-8	C.I. Disperse Blue 1	30 ppm each	Disperse dyes are a class of water-insoluble dyes that penetrate the fiber system of synthetic or manufactured fibers and are held in place by physical forces without forming chemical bonds. Disperse dyes are used in synthetic fiber (e.g., polyester, acetate, polyamide). Restricted disperse dyes are suspected of causing allergic reactions and are prohibited from use for dyeing of textiles.	All materials: DIN 54231:2022	15 ppm each
2475-46-9	C.I. Disperse Blue 3				
3179-90-6	C.I. Disperse Blue 7				
3860-63-7	C.I. Disperse Blue 26				
56524-77-7	C.I. Disperse Blue 35A				
56524-76-6	C.I. Disperse Blue 35B				
12222-97-8	C.I. Disperse Blue 102				
12223-01-7	C.I. Disperse Blue 106				
61951-51-7	C.I. Disperse Blue 124				
23355-64-8	C.I. Disperse Brown 1				
2581-69-3	C.I. Disperse Orange 1				
730-40-5	C.I. Disperse Orange 3				
82-28-0	C.I. Disperse Orange 11				
12223-33-5	C.I. Disperse Orange 37/76/59				
13301-61-6					
51811-42-8					
85136-74-9	C.I. Disperse Orange 149				
2872-52-8	C.I. Disperse Red 1				
2872-48-2	C.I. Disperse Red 11				
3179-89-3	C.I. Disperse Red 17				
61968-47-6	C.I. Disperse Red 151				
119-15-3	C.I. Disperse Yellow 1				
2832-40-8	C.I. Disperse Yellow 3				
6300-37-4	C.I. Disperse Yellow 7				
6373-73-5	C.I. Disperse Yellow 9				
6250-23-3	C.I. Disperse Yellow 23				
12236-29-2	C.I. Disperse Yellow 39				
54824-37-2	C.I. Disperse Yellow 49				
6858-49-7					
54077-16-6	C.I. Disperse Yellow 56				
3761-53-3	C.I. Acid Red 26				
569-61-9	C.I. Basic Red 9				
569-64-2	C.I. Basic Green 4				
2437-29-8					
10309-95-2					
548-62-9	C.I. Basic Violet 3				

CAS No.	Substance	Limits Component Materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
	Dyes (Forbidden and Disperse) (continued)				
632-99-5	C.I. Basic Violet 14	30 ppm each	Disperse dyes are a class of water-insoluble dyes that penetrate the fiber system of synthetic or manufactured fibers and are held in place by physical forces without forming chemical bonds. Disperse dyes are used in synthetic fiber (e.g., polyester, acetate, polyamide). Restricted disperse dyes are suspected of causing allergic reactions and are prohibited from use for dyeing of textiles.	All materials: DIN 54231:2022	15 ppm each
2580-56-5	C.I. Basic Blue 26				
1937-37-7	C.I. Direct Black 38				
2602-46-2	C.I. Direct Blue 6				
573-58-0	C.I. Direct Red 28				
16071-86-6	C.I. Direct Brown 95				
60-11-7	4-Dimethylaminoazobenzene (Solvent Yellow 2)				
6786-83-0	C.I. Solvent Blue 4				
561-41-1	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcoho				
	Dyes, Navy Blue				
118685-33-9	Component 1: C39H23ClCrN7O12S.2Na	30 ppm each	Navy blue colorants are regulated and prohibited from use for dyeing of textiles. Index 611-070-00-2	All materials: DIN 54231:2022	15 ppm each
Not allocated	Component 2: C46H30CrN10O20S2.3Na				
	Flame Retardants				
84852-53-9	Decabromodiphenyl ethane (DBDPE)	10 ppm each	With very limited exceptions, flameretardant substances, including the entire class of organohalogen flame retardants, should no longer be applied to materials during production. Listed here are examples of flame-retardant substances used historically across the apparel and footwear industry. It is not intended to be a complete list. Other flame retardants not applicable to this industry are regulated worldwide by the Stockholm Convention and the Aarhus Protocol, which have been implemented in the European Union under the POPs Regulation. The 10 ppm limit is established to account for incidental impurities, byproducts, and contaminants. Flame retardants should not be used for any other purpose, e.g., as softeners or plasticizers.	All materials: EN ISO 17881-1:2016	5 ppm each
32534-81-9	Pentabromodiphenyl ether (PentaBDE)				
32536-52-0	Octabromodiphenyl ether (OctaBDE)				
1163-19-5	Decabromodiphenyl ether (DecaBDE)				
Various	All other Polybrominated diphenyl ethers (PBDEs)				
79-94-7	Tetrabromobisphenol A (TBBP A)				
59536-65-1	Polybromobiphenyls (PBB)				
3194-55-6	Hexabromocyclododecane (HBCDD)				
3296-90-0	2,2-bis(bromomethyl)-1,3-propanediol (BBMP)				
13674-87-8	Tris(1,3-dichloro-isopropyl) phosphate (TDCPP)			All materials: EN ISO 17881-2:2016	
25155-23-1	Trixylyl phosphate (TXP)				
126-72-7	Tris(2,3,-dibromopropyl) phosphate (TRIS)				
545-55-1	Tris(1-aziridinyl)phosphine oxide) (TEPA)				
115-96-8	Tris(2-chloroethyl)phosphate (TCEP)				
5412-25-9	Bis(2,3-dibromopropyl) phosphate (BDBPP)				

CAS No.	Substance	Limits Component Materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
	Fluorinated Greenhouse Gases				
Various	See Regulation (EU) No 517/2014 for a complete list	0.1 ppm each	Prohibited from use. May be used as foam blowing agents, solvents, fire retardants, and aerosol propellants.	Sample preparation: Purge and trap – thermal desorption or SPME Measurement: GC/MS	0.1 ppm each
	Formaldehyde				
50-00-0	Formaldehyde	Adults and children: 75 ppm Babies: 16 ppm	Used in textiles as an anti-creasing and anti-shrinking agent. It is also often used in polymeric resins. Although very rare in Apparel and Footwear, composite wood materials (such as particle board and plywood) must comply with existing California and U.S. Formaldehyde emission requirements (40 CFR 770). Suppliers are advised to refer to brand-specific requirements for these materials. Important: United Arab Emirates Cabinet Resolution No. (54) restricts Formaldehyde in children's textiles to 20 ppm. Indonesia Ministerial Regulation No. 18 limits Formaldehyde to "not detected" (16 ppm) in the following products: towels, bedding, and handkerchiefs.	All materials except leather: JIS L 1041-2011 A (Japan Law 112) or EN ISO 14184-1:2011 Leather: EN ISO 17226-2:2019 with EN ISO 17226-1:2021 confirmation method in case of interferences. Alternatively, EN ISO 17226-1:2021 can be used on its own.	16 ppm

CAS No.	Substance	Limits Component Materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
	Heavy Metals, Extractable and Total Content				
7440-36-0	Antimony (Sb)	Extractable: 30 ppm	Found in or used as a catalyst in polymerization of polyester, flame retardants, fixing agents, pigments, and alloys.	All materials except leather: DIN EN 16711-2:2016 Leather: EN ISO 17072-1:2019	Extractable: 3 ppm
7440-38-2	Arsenic (As)	Extractable: 0.2 ppm Total: 100 ppm	Arsenic and its compounds can be used in preservatives, pesticides, and defoliants for cotton, synthetic fibers, paints, inks, trims, and plastics.	Extractable: All materials except leather: DIN EN 16711-2:2016 Leather: EN ISO 17072-1:2019 Total: All materials except leather: DIN EN 16711-1:2016 Leather: EN ISO 17072-2:2022	Extractable: 0.1 ppm Total: 10 ppm
7440-39-3	Barium (Ba)	Extractable: 1000 ppm	Barium and its compounds can be used in pigments for inks, plastics, and surface coatings, as well as in dyeing, mordants, filler in plastics, textile finishes, and leather tanning.	All materials except leather: DIN EN 16711-2:2016 Leather: EN ISO 17072-1:2019	Extractable: 100 ppm
7440-43-9	Cadmium (Cd)	Extractable: 0.1 ppm Total: 40 ppm	Cadmium compounds may be used as pigments (especially in red, orange, yellow and green); as a stabilizer for PVC; and in fertilizers, biocides, and paints.	Extractable: All materials except leather: DIN EN 16711-2:2016 Leather: EN ISO 17072-1:2019 Total: All materials except leather: DIN EN 16711-1:2016 Leather: EN ISO 17072-2:2022	Extractable: 0.05 ppm Total: 5 ppm
7440-47-3	Chromium (Cr)	Extractable: Textiles: Babies: 1 ppm Adults and children: 2 ppm	Chromium compounds can be used as dyeing additives; dyefixing agents; colorfastness aftertreatments; dyes for wool, silk, and polyamide (especially dark shades); and leather tanning. Important: Egypt restricts extractable Chromium to 2 ppm in leather products for babies and 200 ppm in leather products for other ages.	Textiles: DIN EN 16711-2:2016 Leather: EN ISO 17072-1:2019	Extractable: 0.5 ppm

CAS No.	Substance	Limits Component Materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
	Heavy Metals, Extractable and Total Content (continued)				
18540-29-9	Chromium VI	Extractable: Leather: 3 ppm Textiles: 1 ppm	Though typically associated with leather tanning, Chromium VI also may be used in the "after-chroming" process for wool dyeing (Chrome salts applied to acid-dyed wool to improve fastness).	Textiles: DIN EN 16711-2:2016 with EN ISO 17075-1:2017 if Cr is detected Leather: EN ISO 17075-1:2017 and EN ISO 17075-2:2017 for confirmation in case the extract causes interference. Alternatively, EN ISO 17075-2:2017 may be used on its own. Ageing test: ISO 10195:2018 Method A2 is used at brand discretion.	Extractable: Leather: 3 ppm Textiles: 0.5 ppm
7440-48-4	Cobalt (Co)	Extractable: Adults: 4 ppm Children and babies: 1 ppm	Cobalt and its compounds can be used in alloys, pigments, dyestuff, and the production of plastic buttons.	All materials except leather: DIN EN 16711-2:2016 Leather: EN ISO 17072-1:2019	Extractable: 0.5 ppm
7440-50-8	Copper (Cu)	Extractable: Adults: 50 ppm Children and babies: 25 ppm	Copper and its compounds can be found in alloys and pigments, and in textiles as an antimicrobial agent. Copper is exempt from restriction limits in Metal parts. Indonesia Ministerial Regulation No. 18 limits copper to 25 ppm the following products: towels, bedding, and handkerchiefs.	All materials except leather: DIN EN 16711-2:2016 Leather: EN ISO 17072-1:2019	Extractable: 5 ppm
7439-92-1	Lead (Pb)	Extractable: Adults: 1 ppm Children and babies: 0.2 ppm Total: 90 ppm	May be associated with alloys, plastics, paints, inks, pigments and surface coatings. Crystal or "lead glass" is exempt from total Lead restrictions. Indonesia Ministerial Regulation No. 18 limits extractable Lead to 0.2 ppm in towels, bedding, and handkerchiefs.	Extractable: All materials except leather: DIN EN 16711-2:2016 Leather: EN ISO 17072-1:2019 Total: Non-metal: CPSC-CH-E1002-08.3 Metal: CPSC-CH-E1001-08.3 Lead in paint and surface coatings: CPSC-CH-E1003-09.1	Extractable: 0.2 ppm Total: 10 ppm
7439-97-6	Mercury (Hg)	Extractable: 0.02 ppm Total: 0.5 ppm	Mercury compounds can be present in pesticides and as contaminants in caustic soda (NaOH). They may also be used in paints and as catalysts in the manufacture of PU and vinyl chloride for use in PVC.	Extractable: All materials except leather: DIN EN 16711-2:2016 Leather: EN ISO 17072-1:2019 Total: All materials except leather: DIN EN 16711-1:2016 Leather: EN ISO 17072-2:2022	Extractable: 0.02 ppm Total: 0.1 ppm

CAS No.	Substance	Limits Component Materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
	Heavy Metals, Extractable and Total Content (continued)				
7440-02-0	Nickel (Ni)	Extractable: 1 ppm Release (metal parts): Prolonged skin contact: 0.5 µg/cm²/week Eyewear frames: 0.5 µg/cm²/week	Nickel and its compounds can be used for plating alloys and improving corrosion-resistance and hardness of alloys. They can also occur as impurities in pigments and alloys.	Extractable: All materials except leather: DIN EN 16711-2:2016 Leather: EN ISO 17072-1:2019 Release: EN 12472:2020 and EN 1811:2023Release (eyewear frames): EN 16128:2025	Extractable: 0.1 ppm Release: 0.5 µg/cm²/ week
7782-49-2	Selenium (Se)	Extractable: 500 ppm	May be found in synthetic fibers, paints, inks, plastics and metal trims.	All materials except leather: DIN EN 16711-2:2016 Leather: EN ISO 17072-1:2019	Extractable: 50 ppm
	Monomers				
100-42-5	Styrene, Free	500 ppm	Styrene is a precursor for polymerization and may be present in various Styrene copolymers like plastic buttons. Free styrene is restricted, but total styrene is not.	Extraction in Methanol GC/MS, sonication at 60° C for 60 minutes	50 ppm
75-01-4	Vinyl Chloride	1 ppm	Vinyl Chloride is a precursor for polymerization and may be present in various PVC materials like prints, coatings, flip flops, and synthetic leather.	EN ISO 6401:2022	1 ppm
	N-Nitrosamines				
62-75-9	N-nitrosodimethylamine (NDMA)	0.5 ppm each	Can be formed as by-product in the production of rubber.	EN ISO 19577:2019 with LC/MS/MS verification if positive	0.5 ppm each
55-18-5	N-nitrosodiethylamine (NDEA)				
621-64-7	N-nitrosodipropylamine (NDPA)				
924-16-3	N-nitrosodibutylamine (NDBA)				
100-75-4	N-nitrosopiperidine (NPIP)				
930-55-2	N-nitrosopyrrolidine (NPYR)				
59-89-2	N-nitrosomorpholine (NMOR)				
614-00-6	N-nitroso N-methyl N-phenylamine (NMPhA)				
612-64-6	N-nitroso N-ethyl N-phenylamine (NEPhA)				

CAS No.	Substance	Limits Component Materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
	Organotin Compounds				
Various	Tributyltin (TBT)	0.5 ppm each	Class of chemicals combining tin and organics such as butyl and phenyl groups that should no longer be used in the production of apparel, footwear, and related products. Organotins are predominantly found in the environment as antifoulants in marine paints, but they can also be used as biocides (e.g., antibacterials), catalysts in plastic and glue production, and heat stabilizers in plastics/rubber. In textiles and apparel, organotins are associated with plastics/rubber, inks, paints, metallic glitter, polyurethane products and heat transfer material. AFIRM recommends restricting "Other Organotins" as a matter of best practice consistent with other industry restricted subtances lists.	All materials: ISO 16179:2025	0.1 ppm each
Various	Triphenyltin (TPhT)				
Various	Dibutyltin (DBT)	1 ppm each			
Various	Dioctyltin (DOT)				
Various	Monobutyltin (MBT)				
Various	Monooctyltin (MOT)				
Various	Tricyclohexyltin (TCyHT)				
Various	Trimethyltin (TMT)				
Various	Trioctyltin (TOT)				
Various	Tripropyltin (TPT)				
Various	Dimethyltin (DMT)	Other Organotins: 1 ppm each			
Various	Diphenyltin (DPhT)				
Various	Dipropyltin (DPT)				
Various	Monomethyltin (MMT)				
Various	Monophenyltin (MPhT)				
Various	Tetrabutyltin (TeBT)				
Various	Tetraethyltin (TeET)				
Various	Tetraoctyltin (TeOT)				
	Ortho-phenylphenol				
90-43-7	Ortho-phenylphenol (OPP)	1000 ppm	OPP is used for its preservative properties in leather or as a carrier in polyester dyeing processes.	All materials: DIN 50009:2021	100 ppm
	Ozone-depleting Substances				
Various	See Regulation (EC) No 1005/2009 for a complete list.	5 ppm	Prohibited from use. Ozone-depleting substances have been used as a foaming agent in PU foams as well as a dry-cleaning agent.	All materials: GC/MS headspace 120° C for 45 minutes	5 ppm

CAS No.	Substance	Limits Component Materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
	Per- and Polyfluoroalkyl Substances (PFAS)				
Various	All PFAS as measured by total organic fluorine	100 ppm by 2025 50 ppm by 2027	Regulations around the world ban the use of PFAS in apparel and footwear, with partial or full exemptions for personal protective equipment and outdoor apparel for severe wet conditions. See California AB 1817 and check with your brand customer for their exemption policy, which may depend on the market. PFAS may be used in commercial water-, oil-, and stain-repellent agents as well as in breathable membranes that remove moisture, e.g., PTFE. Refer to Appendix 1b for a list of PFAS substances and CAS Numbers for which testing can be conducted to indicate whether PFAS chemistry is present above restricted levels due to intended use or unintended contamination.	EN 14582:2016 or ASTM D7359:2018	50 ppm total
Various	Perfluorooctane Sulfonate (PFOS) and related substances	1 µg/m² total	All materials: EN 17681-1:2025 The 1 μ g/m2 total area-based limit for PFOS and related substances is in the process of revision under the EU POPs Regulation and will transition to a 25 ppb total sum limit on PFOS and its salts and a 1000 ppb total sum limit on PFOS-related substances. This will bring EU PFOS restrictions into alignment with other existing PFAS restrictions included here.	1 µg/m² total
Various	Perfluorooctanoic Acid (PFOA) and its salts	25 ppb total		25 ppb total
Various	PFOA-related substances	1000 ppb total		1000 ppb total
Various	Perfluorohexane-1-sulphonic acid (PFHxS) and its salts	25 ppb total		25 ppb total
Various	PFHxS-related substances	1000 ppb total		1000 ppb total
Various	C9-C14 Perfluorocarboxylic acids (PFCAs) and their salts	25 ppb total		25 ppb total
Various	C9-C14 PFCA-related substances	260 ppb total		260 ppb total
Various	PFHxA, its salts, and related substances	Anticipated regulated limits in the EU: PFHxA and its salts: 25 ppb PFHxA-related substances: 1000 ppb		PFHxA and its salts: 25 ppb PFHxA-related substances: 1000 ppb
	Pesticides and Herbicides, Agricultural				
Various	See Appendix C in Afirm RSL for a complete list.	0.5 ppm each	May be found in natural fibers, primarily cotton.	All materials: EN ISO 15913:2003 or EPA 8081/EPA 8151A or BVL L 00.00-34:2010-09	0.5 ppm each

CAS No.	Substance	Limits Component Materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
	Phthalates				
28553-12-0	Di-Iso-nonylphthalate (DINP)	500 ppm each Total: 1000 ppm	Esters of ortho-phthalic acid (Phthalates) are a class of organic compound commonly added to plastics to increase flexibility. They are sometimes used to facilitate the molding of plastic by decreasing its melting temperature. Phthalates can be found in: · Flexible plastic components (e.g., PVC) · Print pastes · Adhesives · Plastic buttons · Plastic sleevings · Polymeric coatings Listed here are all legally restricted phthalates as well as those included on the REACH substances of very high concern (SVHC) candidate list at the time of publication. Suppliers should assume that the AFIRM RSL includes all phthalates on the SVHC list -whether itemized here or not– since the list is updated frequently.	Sample preparation for all materials: CPSC-CH-C1001-09.4 Measurement: Textiles: GC/MS, EN ISO 14389:2022 (8.1 Calculation based on weight of print only; 8.2 Calculation based on weight of print and textile if print cannot be removed). All materials except textiles: GC/MS	50 ppm each
117-84-0	Di-n-octylphthalate (DNOP)				
117-81-7	Di(2-ethylhexyl)-phthalate (DEHP)				
26761-40-0	Diisodecylphthalate (DIDP)				
85-68-7	Butylbenzylphthalate (BBP)				
84-74-2	Dibutylphthalate (DBP)				
84-69-5	Diisobutylphthalate (DIBP)				
84-75-3	Di-n-hexylphthalate (DnHP)				
84-66-2	Diethylphthalate (DEP)				
131-11-3	Dimethylphthalate (DMP)				
131-18-0	Di-n-pentyl phthalate (DPENP)				
84-61-7	Dicyclohexyl phthalate (DCHP)				
71888-89-6	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich				
117-82-8	Bis(2-methoxyethyl) phthalate				
605-50-5	Diisopentyl phthalate (DIPP)				
131-16-8	Dipropyl phthalate (DPRP)				
27554-26-3	Diisooctyl phthalate (DIOP)				
68515-50-4	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear				
71850-09-4	Diisohexyl phthalate (DIHxP)				
68515-42-4	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)				
84777-06-0	1,2-Benzenedicarboxylic acid Dipentyl ester, branched and linear				
68648-93-1	1,2-Benzenedicarboxylic acid, di-C6-10-alkyl esters or mixed decyl and hexyl and octyl diesters with ≥0.3% of dihexyl phthalate; 1,2-Benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters; 1,2-Benzenedicarboxylic acid, di-C6-10-alkyl esters				
68515-51-5					
776297-69-9	n-Pentyl-isopentylphthalate (nPIPP)				
26040-51-7	Bis(2-ethylhexyl) tetrabromophthalate				

CAS No.	Substance	Limits Component Materials in Finished Product		Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
	Polycyclic Aromatic Hydrocarbons (PAHs)					
83-32-9	Acenaphtene	No individual restriction	Total: 10 ppm	PAHs are natural components of crude oil and are common residues from oil refining. PAHs have a characteristic smell similar to that of car tires or asphalt. Oil residues containing PAHs are added to rubber and plastics as a softener or extender and may be found in rubber, plastics, lacquers and coatings. PAHs are often found in the outsoles of footwear and in printing pastes for screen prints. PAHs can be present as impurities in Carbon Black. They also may be formed from thermal decomposition of recycled materials during reprocessing Naphthalene: Dispersing agents for textile dyes may contain high residual Naphthalene concentrations due to the use of low-quality Naphthalene derivatives (e.g., poor quality Naphthalene Sulphonate Formaldehyde condensation products).	All materials: AFPS GS 2019 or EN 17132:2019 or ISO 16190:2021	0.2 ppm each
208-96-8	Acenaphthylene					
120-12-7	Anthracene					
191-24-2	Benzo(g,h,i)perylene					
86-73-7	Fluorene					
206-44-0	Fluoranthene					
193-39-5	Indeno(1,2,3-cd)pyrene					
91-20-3	Naphthalene**					
85-01-8	Phenanthrene					
129-00-0	Pyrene					
56-55-3	Benzo(a)anthracene	1 ppm each Child care articles: 0.5 ppm each				
50-32-8	Benzo(a)pyrene					
205-99-2	Benzo(b)fluoranthene					
192-97-2	Benzo[e]pyrene					
205-82-3	Benzo[j]fluoranthene					
207-08-9	Benzo(k)fluoranthene					
218-01-9	Chrysene					
53-70-3	Dibenzo(a,h)anthracene					
	Quinoline					
91-22-5	Quinoline	50 ppm		Found as an impurity in polyester and some dyestuffs. Quinoline can be included with disperse dye testing, as the same method is used for both. It is not expected in non-dyed materials.	All materials: DIN 54231:2022 with methanol extraction at 70° C	10 ppm

CAS No.	Substance	Limits Component Materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
	Solvents and Residuals				
68-12-2	Dimethylformamide (DMFa)	500 ppm	Solvent used in plastics, rubber, and polyurethane (PU) coating. Waterbased PU does not contain DMFa and is therefore preferable.	Textiles: EN 17131-1:2025 All other materials: ISO 16189:2021	50 ppm each
75-12-7	Formamide	1000 ppm each	Byproduct in the production of EVA foams. Taiwan CNS 15493: BSMI may enforce a limit of 200 ppm in yoga mats under authority of the Consumer Protection Act.		
127-19-5	Dimethylacetamide (DMAC)		Solvent used in the production of elastane fibers and sometimes as substitute for DMFa.		
872-50-4	N-Methyl-2-pyrrolidone (NMP)		Industrial solvent used in production of water-based polyurethanes and other polymeric materials. May also be used as a surface treatment for textiles, resins, and metal-coated plastics, or as a paint stripper.		
	UV Absorbers/Stabilizers				
3846-71-7	UV 320	1000 ppm each	PU foam materials such as open cell foams for padding. Used as UV Absorbers for plastics (PVC, PET, PC, PA, ABS, and other polymers), rubber, polyurethane.	ISO 24040:2022with extraction in THF, analysis by GC/MS Note: Stabilized THF should be used for extraction.	50 ppm each
3864-99-1	UV 327				
36437-37-3	UV 350				
25973-55-1	UV 328	100 ppm			
2440-22-4	Drometrizole	For informational purposes only. AFIRMrecommends testing to assess content levels.	Used as UV Absorbers for plastics (PVC, PET, PC, PA, ABS, and other polymers), rubber, and polyurethane.		

CAS No.	Substance	Limits Component Materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
	Volatile Organic Compounds (VOCs)				
71-43-2	Benzene	5 ppm	These VOCs should not be used in textile auxiliary chemical preparations. They are associated with solventbased processes such as solventbased polyurethane coatings and glues/adhesives. They should not be used for any kind of facility cleaning or spot cleaning.	For general VOC screening: GC/MS headspace 45 minutes at 120° C	Benzene: 5 ppm Other: 20 ppm each
75-15-0	Carbon Disulfide	Total: 1000 ppm			
56-23-5	Carbon Tetrachloride				
67-66-3	Chloroform				
108-94-1	Cyclohexanone				
107-06-2	1,2-Dichloroethane				
75-35-4	1,1-Dichloroethylene				
100-41-4	Ethylbenzene				
76-01-7	Pentachloroethane				
630-20-6	1,1,1,2- Tetrachloroethane				
79-34-5	1,1,2,2- Tetrachloroethane				
127-18-4	Tetrachloroethylene (PERC)				
108-88-3	Toluene				
71-55-6	1,1,1- Trichloroethane				
79-00-5	1,1,2- Trichloroethane				
79-01-6	Trichloroethylene				
1330-20-7	Xylenes (meta-, ortho-, para-)				
108-38-3					
95-47-6					
106-42-3					

Appendix 1b: Per- and Polyfluoroalkyl Substances (PFAS)

CAS Number	Chemical Name	CAS Number	Chemical Name
	PFOS and Related Substances		**PFHxS and Its Salt**
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	355-46-4	Perfluorohexane Sulfonic acid (PFHxS)
2795-39-3	Perfluorooctanesulfonic acid, potassium salt (PFOS-K)	3871-99-6	Perfluorohexane Sulfonic acid, potassium salt (PFHxS-K)
29457-72-5	Perfluorooctanesulfonic acid, lithium salt (PFOS-Li)	55120-77-9	Perfluorohexane Sulfonic acid, lithium salt (PFHxS-Li)
29081-56-9	Perfluorooctanesulfonic acid, ammonium salt (PFOS-NH_4)	68259-08-5	Perfluorohexane Sulfonic acid, ammonium salt (PFHxS-NH_4)
70225-14-8	Perfluorooctane sulfonate diethanolamine salt (PFOS-$NH(OH)_2$)	82382-12-5	Perfluorohexane Sulfonic acid, sodium salt (PFHxS-Na
56773-42-3	Perfluorooctanesulfonic acid, tetraethylammonium salt (PFOS-$N(C_2H5)_4$		**PFHxS-related Substances**
251099-16-8	Didecyldimethyl ammonium perfluorooctane sulfonate (PFOS-$N(C_{10}H_{21})_2(CH_3)_2$)		
4151-50-2	N-Ethylperfluoro-1-octanesulfonamide (N-Et-FOSA)	68259-15-4	N-Methylperfluoro-1-hexanesulfonamide (N-Me-FHxSA)
31506-32-8	N-Methylperfluoro-1-octanesulfonamide (N-Me-FOSA)	41997-13-1	Perfluorohexane sulfonamide (PFHxSA)
1691-99-2	2-(N-Ethylperfluoro-1-octanesulfonamido)-ethanol (N-Et-FOSE)		**C9 – C14 PFCAs and Their Salts**
24448-09-7	2-(N-Methylperfluoro-1-octanesulfonamido)-ethanol (N-Me-FOSE)		
307-35-7	Perfluoro-1-octanesulfonyl fluoride (POSF)	375-95-1	Perfluorononanoic Acid (PFNA, C9-PFCA)
754-91-6	Perfluorooctane sulfonamide (PFOSA)	335-76-2	Perfluorodecanoic Acid (PFDA, C10-PFCA)
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	2058-94-8	Perfluoroundecanoic Acid (PFUnA, C11-PFCA)
	PFOA and Its Salts	307-55-1	Perfluorododecanoic Acid (PFDoA, C12-PFCA)
		72629-94-8	Perfluorotridecanoic Acid (PFTrDA, C13-PFCA)
335-67-1	Perfluorooctanoic acid (PFOA)	376-06-7	Perfluorotetradecanoic Acid (PFTeDA, C14-PFCA)
335-95-5	Sodium perfluorooctanoate (PFOA-Na)	172155-07-6	Perfluoro-3-7-dimethyloctanecarboxylate (PF-3,7-DMOA
2395-00-8	Potassium perfluorooctanoate (PFOA-K)		**C9 – C14 PFCA-related Substances**
335-93-3	Silver perfluorooctanoate (PFOA-Ag)		
335-66-0	Perfluorooctanoyl fluoride (PFOA-F)	17741-60-5	1H,1H,2H,2H-Perfluorododecyl acrylate (10:2 FTA)
3825-26-1	Ammonium pentadecafluorooctanoate (APFO)	2144-54-9	1H,1H,2H,2H-Perfluorododecyl methacrylate (10:2 FTMA)
	PFOA-related Substances	865-86-1	1H,1H,2H,2H-Perfluorododecanol (10:2 FTOH)
		34598-33-9	2H,2H,3H,3H-Perufloroundecanoic acid (H4PFUnA)
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	678-39-7	Perfluorocylethanol 8:2 (8:2 FTOH)
376-27-2	Methyl perfluorooctanoate (Me-PFOA)	39239-77-5	1H,1H,2H,2H-perfluorotetradecan-1-ol (12:2 FTOH)
3108-24-5	Ethyl perfluorooctanoate (Et-PFOA)	120226-60-0	1H,1H,2H,2H-Perfluorododecanesulphonic acid (10:2 FTS)
678-39-7	Perfluorocylethanol 8:2 (8:2 FTOH)	2043-54-1	1H,1H,2H,2H-Perfluorododecyl iodide (10:2 FTI)
27905-45-9	1H,1H,2H,2H-Perfluorodecyl acrylate (8:2 FTA)	30046-31-2	1H,1H,2H,2H-Perfluorotetradecyl iodide (12:2 FTI)
1996-88-9	1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMA)		**Other Perfluoroalkyl Carboxylic Acids (PFCAs)**
27854-31-5	2H,2H-Perfluorodecanoic acid (H2PFDA)		
647-42-7	1H,1H,2H,2H-Perfluorooctanol (6:2 FTOH)	307-24-4	Perfluorohexanoic Acid (PFHxA, C6-PFCA)

Appendix 1c: Product Testing Matrix

	Natural Fibers	Synthetic Fibers	Natural Leather	Natural materials	Metal	Feather & Down	Polymers & Plastics	Coatings & Prints	Glue
Acetophenone & 2-Phenyl-2-Propanol							x[1]		
Acidic and alkaline substances (pH)	x	x	x						
Alkylphenol (AP) & Alkylphenol Ethoxylates (APEOs)	x	x	x	x		x	x	x	x
Azo-amines and Arylamine salts	x	x	x	x		x		x	
Bisphenols		x	x				x[2]		
Chlorinated Paraffins		o[3]	x				x[3]	-	
Chlorophenols	o	o	o						
Chlorinated Benzenes and Toluenes		o							
Dimethylfumarate (DMFu)			o						
Dyes, Forbidden & Disperse		x						o	
Flame Retardants	x[4]								
Formaldehyde	x	x	x				o[5]	x	x
Heavy Metals, Chromium VI	o[6]		x						
Heavy Metals, Extractable	x	x	x				o	o	
Heavy metals, Nickel Release (Ni)					x[7]				
Heavy metals, total	o[8]		o		x		x[9]	x	o
N-Nitrosamine							o[5]		
Isocyanates							o[10]	o[10]	
Organotin Compounds		o	o				x	x	x
Ortho-Phenylphenol (OPP)	o	o	o					o	
Per- and polyfluoroalkyl substances (PFAS)	x[11]								

[1] Only applicable to EVA foam
[2] Polycarbonate
[3] PU, TPU, rubber and PVC
[4] Contains fire retardant finish
[5] Only applicable to rubber material
[6] Wool only
[7] Direct and prolonged contact with the skin
[8] Plant based fibers only
[9] Core testing for foams only
[10] Only applicable to Polyurethane material
[11] If PFAS use or contamination is suspected

	Natural Fibers	Synthetic Fibers	Natural Leather	Natural materials	Metal	Feather & Down	Polymers & Plastics	Coatings & Prints	Glue
Phthalates							x	x	x
Polycyclic Aromatic Hydrocarbons (PAHs)							x[12]	x	x
Quinoline		o							
Solvents / Residuals (Formamide)							o[13]		
Solvents / Residuals DMFa		x[14]					x[14]	x[14]	x[14]
Solvents / Residuals DMAc, NMP							o	o	o
UV Stabilizers / Inhibitors							o		
Vinyl Chloride Monomer							x[15]	x[15]	
Volatile Organic Compounds (VOCs)							o	o	x

x Core Testing o Additional testing

[12] Rubber o black polymeric materials
[13] Core for Formamide in EVA only
[14] Core for PU and PVC only
[15] Only applicable to PVC

Appendix 2a: Packaging Restricted Substances List (RSL)

- An interactive version of the AFIRM packaging RSL v07 which includes information sheets on different materials groups can be found at the below link: AFIRM Packaging Restricted Substances List (afirm-group.com)
- Versions in Chinese, Indonesian, Japanese, Spanish and Vietnamese are also available on the AFIRM website.

CAS Number	**Chemical Name**	Limits	Potential Uses	**Sample Preparation**	Reporting Limit
Alkylphenols (APs) and Alkylphenol Ethoxylates (APEOs), including all isomers					
Various	Nonylphenol (NP), mixed isomers	Total: 100 ppm	APEOS are used as surfactants in the production of plastics, elastomers, paper, and textiles. These chemicals can be found in many processes involving foaming, emulsification, solubilization, or dispersion. APEOs can be used in paper pulping, lubrication oils, and plastic polymer stabilization. APs are used as intermediaries in the manufacture of APEOs and antioxidants used to protect or stabilize polymers. Biodegradation of APEOs into APs is the main source of APs in the environment. APEOs and formulations containing APEOs are prohibited from use throughout supply chain and manufacturing processes. We acknowledge that residual or trace concentrations of APEOs may still be found at levels exceeding 100 ppm and that more time is necessary for the supply chain to phase them out completely.	Textiles and Leather: EN ISO 21084:2019 with determination of LC/MS or LC/MS/MS Polymers and all other materials: 1 g sample/20 mL THF, sonication for 60 minutes at 70 degrees C, analysis according to EN ISO 21084:2019	Sum of NP & OP: 3 ppm
Various	Octylphenol (OP), mixed isomers				
Various	Nonylphenol ethoxylates (NPEOs)	Total: 100 ppm		All materials except Leather: EN ISO 18254-1:2016 with determination of APEO using LC/MS or LC/MS/MS Leather: Sample prep and analysis using EN ISO 18218-1:2023with quantification according to EN ISO 18254-1:2016	Sum of NPEO & OPEO: 20 ppm
Various	Octylphenol ethoxylates (OPEOs)				

CAS Number	**Chemical Name**	Limits	Potential Uses	**Sample Preparation**	Reporting Limit
Azo-amines + and Arylamine Salts					
92-67-1	4-Aminobiphenyl	20 ppm each	Azo dyes and pigments are colorants that incorporate one or several azo groups (-N=N-) bound with aromatic compounds. Thousands of azo dyes exist, but only those which degrade to form the listed cleavable amines are restricted. Azo dyes that release these amines are regulated and should no longer be used for dyeing textiles.	All materials except Leather: EN ISO 14362-1:2017 Leather: EN ISO 17234-1:2020 p-Aminoazobenzene: All materials except Leather: EN ISO 14362-3:2017 Leather: EN ISO 17234-2:2011	5 ppm each
92-87-5	Benzidine				
95-69-2	4-Chloro-o-toluidine				
91-59-8	2-Naphthylamine				
97-56-3	o-Aminoazotoluene				
99-55-8	2-Amino-4-nitrotoluene				
106-47-8	p-Chloraniline				
615-05-4	2,4-Diaminoanisole				
101-77-9	4,4'-Diaminodiphenylmethane				
91-94-1	3,3'-Dichlorobenzidine				
119-90-4	3,3'-Dimethoxybenzidine				
119-93-7	3,3'-Dimethylbenzidine				
838-88-0	3,3'-dimethyl-4,4'-Diaminodiphenylmethane				
120-71-8	p-Cresidine				
101-14-4	4,4'-Methylen-bis(2-chloraniline)				
101-80-4	4,4'-Oxydianiline				
139-65-1	4,4'-Thiodianiline				
95-53-4	o-Toluidine				
95-80-7	2,4-Toluenediamine				
137-17-7	2,4,5-Trimethylaniline				
95-68-1	2,4 Xylidine				
87-62-7	2,6 Xylidine				
90-04-0	2-Methoxyaniline (= o-Anisidine)				
60-09-3	p-Aminoazobenzene				
3165-93-3	4-Chloro-o-toluidinium chloride				
553-00-4	2-Naphthylammoniumacetate				
39156-41-7	4-Methoxy-m-phenylene diammonium sulphate				
21436-97-5	2,4,5-Trimethylaniline hydrochloride				

CAS Number	**Chemical Name**	Limits	Potential Uses	**Sample Preparation**	Reporting Limit
Bisphenols					
80-05-7	Bisphenol-A (BPA)	Items intended to come in contact with the mouth: 1 ppm Textiles & leather: 10 ppm Polycarbonate Materials: 100 ppm Other Materials: 200 ppm	BPA may be used in the production of epoxy resins, polycarbonate plastics, flame retardants, and PVC. BPS may be used as a substitute for BPA for some specific uses, including in thermal receipt paper. BPS and BPF can be found in polyamide dye-fixing agents and in sulfone- and phenol- based leather synthetic tanning agents. BPA and BPS can be found in recycled polymeric and paper materials due to polycarbonate plastic and thermal receipt paper made with bisphenols entering waste streams. BPA, BPS, and BPB are included on the REACH SVHC list. Additional restrictions on the entire class of bisphenols are expected, with a revised restriction proposal forthcoming in the European Union. AFIRM recommends testing relevant materials for bisphenols according to the Testing Matrix and to work with suppliers to minimize residual concentrations or replace them with better alternatives where possible.	Leather: EN ISO 11936:2023 All other materials: Extraction: 1 g sample/20 ml THF, sonication for 60 minutes at 60° C, analysis with LC/MS Note for textiles: For precipitation, draw the extract to another container and add methanol or acetonitrile. This keeps the extraction process consistent.	Leather: 10 ppm each All other materials: 0.1 ppm for individual samples 1 ppm for composite samples
80-09-1	Bisphenol-S (BPS)	Textiles & other materials: 200 ppm each Leather: 500 ppm each			
77-40-7	Bisphenol-B (BPB)				
620-92-8	Bisphenol-F (BPF)				
Butylated Hydroxytoluene (BHT)					
128-37-0	Dibutylhydroxytoluene (BHT)	25 ppm	Used as an additive in plastics as an antioxidant to prevent aging. Can cause phenolic yellowing of textiles	ASTM D4275:2017	5 ppm

CAS Number	**Chemical Name**	Limits	Potential Uses	**Sample Preparation**	Reporting Limit
Dimethylfumarate					
624-49-7	Dimethylfumarate (DMFu)	0.1 ppm	DMFu is an anti-mold agent used in sachets in packaging to prevent the buildup of mold, especially during shipping.	All materials: ISO 16186:2021	0.05 ppm
Flame Retardants					
1163-19-5	Decabromodiphenyl ether (DecaBDE)	Total: 500 ppm	Flame retardant substances, including the entire class of organohalogen flame retardants, should no longer be applied to packaging materials during production. Listed here are relevant flame retardants included in the Stockholm Convention. These substances should not be used for any other purpose, e.g., as plasticizers or softeners. Impurities found may come from electronic waste recycling streams, e.g., polystyrene, and can impede future recycling opportunities.	All materials: EN ISO 17881-1:2016	5 ppm each
32534-81-9	Pentabromodiphenyl ether (PentaBDE)				
3194-55-6	Hexabromocyclododecane (HBCDD)				
79-94-7	Tetrabromobisphenol A (TBBP A)				
40088-47-9	Tetrabromodiphenyl ether				
36483-60-0	Hexabromodiphenyl ether				
68928-80-3	Heptabromodiphenyl ether				
Formaldehyde					
50-00-0	Formaldehyde	150 ppm	Formaldehyde can be found in polymeric resins, binders, and fixing agents for dyes and pigments, including those with fluorescent effects. It is also used as a catalyst in certain printing, adhesives, and heat transfers. Formaldehyde can be used in antimicrobial applications for odor control. Formaldehyde found in packaging can off-gas directly onto product. Composite wood materials (e.g., particle board and plywood) must comply with California and U.S. formaldehyde emission requirements (40 CFR 770). Though formaldehyde legislation does not specifically apply to packaging, suppliers are advised to refer to brand-specific requirements for these materials.	Wood: EN 717-3:1996 Paper: DIN EN 645:1994 and EN 1541:2001 Textiles, Finishings, Dyes, Inks & Coatings: JIS L 1041-2011 A (Japan Law 112) or EN ISO 14184-1:2011 Leather: EN ISO 17226-2:2019 with EN ISO 17226-1:2021 confirmation method in case of interferences. Alternatively, EN ISO 17226-1:2021 can be used on its own.	16 ppm

CAS Number	**Chemical Name**	Limits	Potential Uses	**Sample Preparation**	Reporting Limit
Heavy Metals (Total Content)					
7440-43-9	Cadmium (Cd)	100 ppm (Sum)	Cadmium compounds are used as pigments (especially in red, orange, yellow and green) and in paints. It can also be used as a stabilizer for PVC.	All materials: Total heavy metals (Cd, Cr, Pb & Hg): EN ISO 16711-1:2016 If total of four heavy metals exceeds 100 ppm and Cr is detected, test for CrVI.	5 ppm
7439-92-1	Lead (Pb)		May be associated with plastics, paints, inks, pigments, and surface coatings.		10 ppm
7439-97-6	Mercury (Hg)		Mercury compounds can be present in pesticides and as contaminants in caustic soda (NaOH). They may also be used in paints.		5 ppm
18540-29-9	Chromium VI		Though typically associated with leather tanning, Chromium VI also may be used in pigments, chrome plating of metals, and wood preservatives.	Metal: IEC 62321-7-1:2015 All other materials: IEC 62321-7- 2:2015.	3 ppm

CAS Number	**Chemical Name**	Limits	Potential Uses	**Sample Preparation**	Reporting Limit
Organotin Compounds					
Various	Tributyltin (TBT)	0.5 ppm each	Class of chemicals combining tin and organics such as butyl and phenyl groups. Organotins are predominantly found in the environment as antifoulants in marine paints, but they can also be used as biocides (e.g., antibacterials), catalysts in plastic and glue production, and heat stabilizers in plastics/rubber. In textiles and apparel packaging, organotins are associated with plastics/rubber, inks, paints, metallic glitter, polyurethane products and heat transfer material. AFIRM recommends restricting "Other Organotins" as a matter of best practice consistent with other industry restricted substances lists.	All materials: ISO 16179:2025	0.1 ppm each
Various	Triphenyltin (TPhT)				
Various	Dibutyltin (DBT)	1 ppm each			
Various	Dioctyltin (DOT)				
Various	Monobutyltin (MBT)				
Various	Monooctyltin (MOT)				
Various	Tricyclohexyltin (TCyHT)				
Various	Trimethyltin (TMT)				
Various	Trioctyltin (TOT)				
Various	Tripropyltin (TPT)				
Various	Dimethyltin (DMT)	Other Organotins: 1 ppm each			
Various	Diphenyltin (DPhT)				
Various	Dipropyltin (DPT)				
Various	Monomethyltin (MMT)				
Various	Monophenyltin (MPhT)				
1461-25-2	Tetrabutyltin (TeBT)				
597-64-8	Tetraethyltin (TeET)				
3590-84-9	Tetraoctyltin (TeOT)				

CAS Number	**Chemical Name**	Limits	Potential Uses	**Sample Preparation**	Reporting Limit
Per- and polyfluoroalkyl substances (PFAS)					
Various	All PFAS as measured by total organic fluorine	100 ppm by 2025 50 ppm by 2027	Regulations around the world ban the use of PFAS in packaging. PFAS may be used in commercial water-, oil-, and stain-repellent agents as well as in breathable membranes that remove moisture, e.g., PTFE. Refer to Appendix 1b for a list of PFAS substances and CAS Numbers for which testing can be conducted to indicate whether PFAS chemistry is present above restricted levels due to intended use or unintended contamination. See AFIRM PFAS Phaseout Guidance for a recommended testing approach to ensure compliance with all global regulations using the methods included in this section.	EN 14582:2016 or ASTM D7359:2023	50 ppm total
Various	Perfluorooctane Sulfonate (PFOS) and related substances	1 µg/m2 total		All materials: EN 17681-1:2025 The 1 µg/m2 total area-based limit for PFOS and related substances is in the process of revision under the EU POPs Regulation and will transition to a 25 ppb total sum limit on PFOS and its salts and a 1000 ppb total sum limit on PFOSrelated substances. This will bring EU PFOS restrictions into alignment with other existing PFAS restrictions included here.	1 µg/m² total
Various	Perfluorooctanoic Acid (PFOA) and its salts	25 ppb total			25 ppb total
Various	PFOA-related substances	1000 ppb total			1000 ppb total
Various	Perfluorohexane-1-sulphonic acid (PFHxS) and its salts	25 ppb total			25 ppb total
Various	PFHxS-related substances	1000 ppb total			1000 ppb total
Various	C9-C14 Perfluorocarboxylic acids (PFCAs) and their salts	25 ppb total			25 ppb total
Various	C9-C14 PFCA-related substances	260 ppb total			260 ppb total
Various	PFHxA, its salts, and related substances	Anticipated regulated limits in the EU: PFHxA and its salts: 25 ppb PFHxA-related substances: 1000 ppb			PFHxA and its salts: 25 ppb PFHxA-related substances: 1000 ppb

CAS Number	**Chemical Name**	Limits	Potential Uses	**Sample Preparation**	Reporting Limit
Phthalates					
28553-12-0	Di-Iso-nonylphthalate (DINP)	500 ppm each Total: 1000 ppm	Esters of ortho-phthalic acid (Phthalates) are a class of organic compound commonly added to plastics to increase flexibility. They are sometimes used to facilitate the moulding of plastic by decreasing its melting temperature. Phthalates can be found in: • Flexible plastic packaging • Components (e.g., PVC) • Plastisol print pastes • Adhesives • Plastic sleeves • Polymeric coatings The REACH substances of very high concern (SVHC) candidate list is updated frequently. Suppliers should assume that the AFIRM Packaging RSL includes all Phthalates on the SVHC list—whether itemized here or not.	All materials: CPSC-CH-C1001-09.4, analysis by GC/MS	50 ppm each
117-84-0	Di-n-octylphthalate (DNOP)				
117-81-7	Di(2-ethylhexyl)-phthalate (DEHP)				
26761-40-0	Diisodecylphthalate (DIDP)				
85-68-7	Butylbenzylphthalate (BBP)				
84-74-2	Dibutylphthalate (DBP)				
84-69-5	Diisobutylphthalate (DIBP)				
84-75-3	Di-n-hexylphthalate (DnHP)				
84-66-2	Diethylphthalate (DEP)				
131-11-3	Dimethylphthalate (DMP)				
131-18-0	Di-n-pentyl phthalate (DPENP)				
84-61-7	Dicyclohexyl phthalate (DCHP)				
71888-89-6	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich				
117-82-8	Bis(2-methoxyethyl) phthalate				
605-50-5	Diisopentyl phthalate (DIPP)				
131-16-8	Dipropyl phthalate (DPRP)				
27554-26-3	Diisooctyl phthalate (DIOP)				
68515-50-4	Diisohexyl phthalate (DIHP)				
71850-09-4	Diisohexyl phthalate (DIHxP)				
68515-42-4	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)				
84777-06-0	1,2-Benzenedicarboxylic acid Dipentyl ester,branched and linear				
68648-93-1	1,2-Benzenedicarboxylic acid, di-C6-10-alkyl esters or mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate; 1,2-Benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters; 1,2-Benzenedicarboxylic acid, di-C6-10-alkyl esters				
68515-51-5					
776297-69-9	n-Pentyl-isopentylphthalate (nPIPP)				
26040-51-7	Bis(2-ethylhexyl) tetrabromophthalate				

Appendix 2b: Packaging Testing Matrix

	Wood & Paper	Plastic & Wraps	Finishing, Dyes, inks & Coatings	Metal	Textiles	Other Items
Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs)	x	x	x		x	x[16]
Azo-amines and Arylamine Salts	x				x	
Bisphenols	x[17]	x[18]	o[19]		x	
Butylhydroxytoluene (BHT)		o[20]				
Dimethylfumarate (DMFu)						o[21]
Flame Retardants		o[22]				
Formaldehyde	x		x		o	
Heavy Metals (Cd, CrVI, Pb, Hg)#	O[22]	o[19]	o	o		
Organotin Compounds		x	x			
Per- and polyfluoroalkyl substances (PFAS)	**Prohibited**					
Phthalates		x	x[23]			

x Core Testing o Additional testing

note that Chromium VI, Cadmium, Lead, and Mercury are restricted to a sum total of 100 ppm in several jurisdictions. Cadmium, Lead, and Mercury are analyzed using the same method even if the risk of finding them varies across different materials.

[16] Foams only
[17] Thermal receipt and recycled paper
[18] Tapes, polycarbonate, and recycled plastic cases
[19] PVC
[20] Poly bags
[21] Silica gel packets and foam packaging
[22] High recycled content
[23] Plastisol prints

Appendix 2c: Packaging material categories

Examples of materials in each category

Paper & Wood	• Shoe boxes • Corrugated shipping boxes/cartons	• Tissue paper • Hang tags	• Thermal receipt paper
Plastic & Wrap Finishing	• Poly bags • Stickers	• Boxes or cases • Tape	• Stuffing materials, expanded foam materials
Dyes, Inks & Coatings	• Cellulose laminates • Coatings containing heavy metals • Hot stamp printing	• Foil stamping • Soft-touch coatings • Lamination, matte or gloss	• UV coatings • Varnish coatings • Water-based (aqueous) lacquer coatings
Metal	• Magnets • Eyelets	• Bead chain • Pins	• Zippers
Textiles	• Synthetic textiles	• Plant-based textiles	• Natural fibers (e.g. silk. Wool)
Other Items	• Silica gel/desiccant sachets	• Antimicrobial stickers	

Appendix 3: Definitions

Accessory
A component of a consumer product which is not classified as textile fabric (e.g. button, label, zipper, etc.)

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.).

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 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.

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.

Reporting limits
Reporting limits are values at or above the practical quantification limit (PQL) for the test method. The PQL represents the lowest level at which accurate, precise, and robust data can be reported. These limits are values above which labs should report detected substances for purposes of data capture and harmonization.