



Restricted Substances List

(Apparel, Accessory, Equipment and Footwear)

Release date: 20 August 2024

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Introduction

Columbia Sportswear Company (CSC) and each of its subsidiaries and brands are committed to delivering safe, compliant, high-value products to our customers and consumers. We recognize this must be a shared effort and we depend on our partners throughout the supply chain to do their part to support our mission. This manual outlines your responsibilities as a licensee, vendor, or supplier (all referred to as suppliers from hereinafter) to CSC and its affiliated brands including Columbia Sportswear, Mountain Hardware, Prana and Sorel.

Starting from S26, we have combined two individual Restricted Substance List into one manual:

CSC Apparel, Accessory, Equipment and Footwear Restricted Substance List: Meets or exceeds of Apparel and Footwear International RSL Management (AFIRM) RSL version 09 2024 and AFIRM Packaging RSL version 07 2024

This manual does not cover toys, personal protective equipment, mouth or food contact materials, furniture or the broad range of consumer hardgoods products. Please reach out to Product Compliance for additional guidance on requirements for those product types.

CSC requires its suppliers to understand the standards set forth in this manual, to comply all the listed policies and restrict the use of substances listed in the RSL. Licensees are expected to comply with all requirements that apply to their product types. If a licensee would like technical guidance on requirements, they should reach out to Intertek whose regional contacts are located at the end of this manual.

CSC monitors compliance with these standards through RSL Testing Programs, Higg Facility Environmental Module (FEM), onsite factory audit and may remove a supplier from the approved list based on non-compliance with the requirements of this manual or due to concerns identifies through FEM or onsite audit. Additional requirements may be set forth in other CSC policies, manuals, and other documents and agreements, including our Chemical Management Policy and Supply Agreement. CSC expects suppliers to meet all CSC standards and ensure that all materials, finished goods, packaging and manufacturing practices are in compliance with all applicable laws, rules and regulations.

The RSL manual content will not be changed without the approval of Product Compliance Team and Legal Department.

Apparel and Footwear International RSL Management (AFIRM)

CSC is committed to contributing to the development and adoption of leading industry standards. As part of our commitment, CSC joined AFIRM Group in 2024. Founded in 2004, AFIRM Group is a member-driven organization of apparel and footwear companies collaborating to promote chemicals management in the global supply chain. Since its founding, AFIRM's focus has been the continuous advancement of chemicals management including phasing out or limiting restricted substances to established limits in apparel, footwear, and accessories.

CSC has closely aligned with the AFIRM Restricted Substance List and uses it as the basis for our Restricted Substances List. With the collective effort from the industry, we believe that the AFIRM can provide immense value and resources to enable continuous advancement of chemicals management best practices.

To learn more about AFIRM visit AFIRM Group (afirm-group.com)

Leather Working Group (LWG)

CSC values Leather Working Group who supports more responsible leather manufacturing. The group has developed an auditing program which certifies leather manufacturing facilities based on their chemical, environmental compliance and performance capabilities.

Selecting LWG certified manufacturing partners is our priority as we share the same objective of high standards within the leather supply chain. Additionally, the LWG program directly supports compliance with CSC Chemicals Management Policy, Higg Facility Environmental Module (FEM), RSL implementation and helps to advance chemicals management best practices in leather processing facilities, which are traditionally chemical intensive.

To learn more about LWG visit [Leather Working Group](https://leatherworkinggroup.com)

bluesign® System

CSC is committed to contributing to the development and adoption of leading industry standards. The bluesign® system provides an independent, systematic solution for sustainable production and sets standards through an input stream management system and material production facility certification. Input stream management helps to implement responsible sourcing criteria and good purchasing practices which prevents unwanted substances from entering the manufacturing process. This approach helps reduce environmental, resource and human impacts and ensures consumer safety as unwanted substances are unable to be in the finished materials.

We believe that the bluesign® system offers immense value for textile manufacturers and encourage our suppliers to explore facility level certification for their production facilities as well as implement use of their positive chemistry list found within the bluesign® Finder tool.

[To learn more about bluesign® visit bluesign® - solutions and services for a sustainable textile industry](https://bluesign.com/solutions-services)

Supplier Responsibilities

- Suppliers bear responsibility for adhering to all applicable legal requirements regardless of whether they are referenced in this manual.
- The RSL is updated as needed and the most current version is always available on our website. Suppliers are responsible for complying with the most recent version of the RSL. Visit our [website](#) for more information.
- CSC may send periodic notices about relevant RSL updates and suppliers must take action as necessary or required.
- Suppliers bear the responsibility to familiarize themselves with the RSL requirements set forth in this manual and all relevant global product safety requirements and ensure that all materials, components, and products supplied to CSC meet the requirements.
- Suppliers are responsible for informing their suppliers and subcontractors (including all accessory suppliers, dye mills, print mills, garment wash mills, tanneries, chemical suppliers, etc.) of CSC's requirements. Where the supplier controls the selection and sourcing of materials or components, they are responsible for ensuring compliance with the requirements of the RSL Manual.
- If at any time the supplier becomes aware they cannot meet the requirements of the RSL, they must immediately notify an appropriate CSC contact.
- CSC reserves the right to cancel orders and/or terminate a business relationship if the supplier fails to meet these requirements. Compliance with the RSL is mandatory and must be met in its entirety for every order placed by CSC.
- Suppliers are responsible for maintaining adequate systems to control quality, safety and chemical use. Suppliers must maintain safety and environmental programs including documented procedures and training to protect workers and the environment from exposure to chemicals.
- If at any time any party has knowledge that a material or product fails, or will fail, to meet a standard as specified in the RSL Manual or any applicable requirement, production must be stopped, all suspect products must be placed on hold and appropriate CSC personnel must be immediately notified.
- No product or material containing suspected or actual defects that result in RSL or product safety violations may be sold or transferred to CSC or any other party.
- Suppliers will be held responsible for all losses and damages incurred by CSC for product or materials that fail to meet these requirements.
- Material, component and product testing may be required by CSC at any stage of manufacturing to demonstrate compliance with the requirements of this manual. Testing may be random or part of a scheduled testing program according to CSC requests. All testing must be done by a CSC-approved laboratory at the supplier's expense (see Testing Procedures section).
- Sampling, testing and reporting must be performed according to the RSL Testing Procedures in this manual. If test results fail to demonstrate compliance with the requirements of this manual or any legal requirement, production must be halted and may not continue until materials, components and products can be proven to meet the requirements. CSC personnel must be notified immediately of any nonconforming material, component or product.
- Suppliers are responsible for documenting all RSL and product safety failures, remediation efforts and proposed corrective action plans. All appropriate documentation must be submitted to CSC in accordance with our failure remediation processes.
- Suppliers are required to provide to CSC appropriate documentation, such as 3rd party test results, and certification documents, lot tracking and production information, or any information necessary to complete Certificates of Conformity (COC) or demonstrate compliance.

- Suppliers must maintain records of all compliance and production documents for a minimum of 5 years from the date of production. CSC reserves the right to review all records for any shipment at any time and will consider any shipment without associated compliance documents to be in violation of this policy.
- Suppliers shall allow or obtain permission for an authorized representative of CSC to inspect, at any time during normal business hours, any premises of any facility, including any subcontractor facility where any CSC products or raw materials are developed, manufactured or stored. The authorized representative may take samples of products or materials during such inspections.
- Suppliers at all levels of the supply chain must provide a Safety Data Sheet (SDS) and chemical formulations upon request for each input used in, or in the manufacturing of, CSC products.
- Upon request, suppliers must disclose the functional use of each chemical and must distinguish process chemicals from those intended to remain in final product.
- Suppliers may be required to maintain a lot tracking system whereby lot numbers or specific identification of raw materials, components and parts can be traced through all stages of production to a finished good and a finished good can be traced back to records of substituent raw materials, components and parts.
- Suppliers responsible for production of finished goods are required to complete and furnish compliance documentation and Certificates of Conformity (COC) to CSC in accordance with our compliance procedures and process for all product prior to importation.

Chemical Management Policy

CSC Chemical Management Policy (CMP) aims to guide and support our suppliers in implementing an effective chemical management system, providing safer working conditions for workers, supporting product compliance, and improving environmental performance. Our policy is divided into 5 sections, **INPUT, PROCESS, OUTPUT, SYSTEM and COMMUNICATION**. Using the “What, Why and How” approach, our policy guide suppliers on how to set up their own chemical management system. CSC has implemented the CMP since 2017 and started with a priority of 4 Must Do Items compliance. (1. Commitment to comply the CSC RSL; 2. Assigning an individual responsible for chemical management; 3. Establishment of a chemical purchasing process; 4. Development and maintenance of a chemical inventory list.)

With the effective season of S26, we have updated our CMP to align with industrial practices aligned with Higg FEM. All suppliers must comply Higg **Fundamental Environmental Performance (FEP) requirement** according to Higg FEM as the prioritized must do items:

Q1. Does your facility have a written Chemical Management System (CMS) policy	Q10. Does your facility have chemical hazard signage and safe handling equipment in the areas of the facility where chemicals are used?
Q2. Have you assigned the responsibility of implementing and maintaining the Chemical Management System (CMS) to a team/staff member?	Q11. Does your facility select and purchase chemicals based on their hazards and MRSL requirements?
Q3. Does your facility have a chemical purchasing policy?	Q12. Does your facility select and purchase chemicals based on their hazards and RSL requirements?
Q4. Does your facility keep a Chemical Inventory List (CIL) and the suppliers of each chemical product?	Q14. Does your facility have well marked, designated chemical storage areas?
Q5. Does your facility's Chemical Inventory List (CIL) include the following data?	Q15. Does your facility have well marked sub-storage areas?
Q6. Does your facility make Safety Data Sheets (SDS) available to employees for all chemicals used?	Q16. Does your facility train employees responsible for the chemical management system on Restricted Substance Lists (RSLs)?
Q7. Does your facility train all employees who use chemicals on chemical hazards, risk, proper handling, and what to do in case of emergency or spill?	Q17. Does your facility train employees responsible for the chemical management system on Manufacturing Restricted Substance Lists (MRSLs)?
Q8. Does your facility have a chemical spill and emergency response plan that is practiced periodically?	Q18. Does your facility have an established process to investigate and resolve a potential RSL failure?
Q9. Does your facility have appropriate and operable protective and safety equipment, as recommended by the Global Harmonization System compliant (or equivalent) Safety Data Sheet, in all areas where chemicals are stored and used?	

To learn more about Chemical Management Policy visit [Corporate Responsibility Group](#)

We assess supplier performance and compliance with the CMP FEP compliance through the Higg FEM. Suppliers are expected to complete the Higg vFEM (verified Higg FEM) each year during the timeline established by CSC and Cascale.

Manufacturing Restricted Substances List (MRSL)

The purpose of the Manufacturing RSL (MRSL) is to limit the use of toxic chemicals that can be harmful to consumers, the environment and workers who may be exposed during manufacturing processes. The MRSL applies to chemicals used in finished product manufacturing processes in CSC contracted supplier facilities. Finished product suppliers must check all chemical inventories and each chemical purchase order to assure none of the listed chemicals are intentionally used in the manufacturing of products. Suppliers must ensure substitute chemical alternatives do not adversely impact product appearance or intended performance.

MRSL policy will extend to raw material suppliers in our next RSL update and the listed MRSL is subject to change in future editions.

Restriction of Substances Used in Manufacturing				
CAS Number	Chemical Name/Color Index Name	CSC Restriction/Limit on Chemical or Tested Component	Test Method [detection limit]	Chemical Description/Where Chemical May be Found/Comments
50-00-0	Formaldehyde	May not be used	Reference to ISO 14184-1	Solvent, cleanser, wrinkle free resin
68-12-2	Dimethyl Formamide (DMFa)		Solvent extraction, GC-MS analysis [5ppm]	Solvent, cleanser
75-09-2	Dichloromethane			Solvent, cleanser
108-95-2	Phenol			Solvent in primers, adhesives and resin for nylon and plastic
127-18-4	Tetrachloroethylene			Solvent, cleanser
108-88-3	Toluene			Solvent in primers, adhesives, paints and inks
1330-20-7	Xylene			Solvent in primers, adhesives, paints and inks
67-66-3	Trichloromethane			Solvent, cleanser
110-54-3	n-hexane			Solvent, cleanser
71-43-2	Benzene			Solvent in primers, adhesives, paints and inks
Several	AP		LC-MS, GC-MS	Plastic and rubber components
Several	APEO			Degreasing agents, Industrial laundry detergent and Emulsifier

Biocide Policy

Biocides, antimicrobial and pesticide include chemicals used in or on an article to control and protect against harmful organisms like pests or bacteria, by the action of the active substances contained in the biocidal product. Examples of biocidal products include articles treated with insect repellents, disinfectants and antimicrobial chemicals meant to protect the product itself and capable of destroying (killing) living organisms.

Starting from S26 and forward,

- No biocidal claims should be made about any product's ability to protect the consumer
- No biocide is allowed to be used in any CSC product unless it is approved by Product Compliance in prior

Anti-odorless technology by using fabrication and without any usage of chemical is not counted as biocide, it is allowed to be used.

EU Biocidal Product Regulation (BPR)

According to EU Regulation No. 528/2012, biocidal products and their active substances must be authorized before use or placing on the EU market. All treated articles shall contain only authorized biocidal substances and be authorized for use by specific product type. Biocides should not be used in CSC product unless requested and approved by CSC. Suppliers must inform CSC and submit information regarding any biocide chemical used in any product or treated article bearing a CSC brand. Any active biocidal substance used in CSC products must be in compliance with BPR.

Information on the EU Biocide Product Regulation may be found at [Understanding BPR - ECHA \(europa.eu\)](https://echa.europa.eu/en/bpr)
[Labeling Requirements for biocidal products](#)

The label should contain the below information, and the supplier must provide information when relevant:

- a statement that the treated article incorporates biocidal products
- substantiation of biocidal property attributed to the treated article
- name of all active substances contained in the biocidal products
- name of all nanomaterials contained in the biocidal products
- any relevant instructions for use

Labels must be easily understandable and visible for consumers. All the local labelling requirements in each member state must be fulfilled, if any.

US Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

All biocides, antimicrobials, and pesticides used in CSC materials and products must be registered for use with the Environmental Protection Agency (EPA). Depending on the specific substance used and the type of treated article it is used in or on, individual article registration may be required.

Information on the US Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) may be found at

[Summary of the Federal Insecticide, Fungicide, and Rodenticide Act | US EPA.](#)

Canada Pest Control Products Act

Manufacturers treating articles with a biocide, including antimicrobial preservatives, in Canada are required to use an active ingredient(s) and an end-use product(s) that are registered or otherwise authorized under the *Pest Control Products Act* for that use and within the range of approved rates.

[Pest control products \(pesticides\) acts and regulations - Canada.ca](#)

Per - and Poly - fluoroalkyl Substance (PFAS) Chemistry Policy

CSC phased out Long Chain Per- and polyfluoroalkyl substances (LCPFAS) including PFOA and PFOS ($<1\mu\text{g}/\text{m}^2$), from all of our products starting in 2015. Since then, we are working toward moving to Per- and polyfluoroalkyl substances (PFAS) -free chemistry and implemented a transitional approach to PFAS phase-out starting from Spring '24. We are diligently working towards PFAS phase-out by end of 2024 for all CSC product types and brands.

Starting from Fall '24, suppliers must ensure there is no intentional use or contamination of PFAS found in their manufacturing chemicals, produced material including packaging or finished goods to CSC, and must validate the material by 3rd party testing. The test method and requirement can be found in the "Restricted Substance" section.

Besides, with the continuously increasing regulatory need in different countries and/or states, suppliers must meet the mandatory restriction regulation and disclose any required information related to PFAS chemistry including the purpose of which PFAS were used in the past, the CAS number of the chemical and certificate of compliance to declare the PFAS free compliance upon CSC's request.

Definition of PFASs: Refer to the Organization for Economic Co-operation and Development (OECD):

"PFAS is defined as fluorinated substances that contain at least one fully fluorinated methyl or methylene carbon atom (without any H/Cl/Br/I atom attached to it), i.e., with a few noted exceptions, any chemical with at least a perfluorinated methyl group ($-\text{CF}_3$) or a perfluorinated methylene group ($-\text{CF}_2-$) is a PFAS." [OECD. Series on Risk Management No. 61, 2021].

CSC Position Statement regarding effort to reduce and eliminate PFAS: [Corporate Responsibility Group \(columbiasportswearcompany.com\)](https://www.columbiasportswearcompany.com/corporate-responsibility)

Flame Retardant Policy

Flame retardants are chemicals which are applied to materials or finished goods to decrease the ignitability of materials and inhibit the spread of fire. Certain flame retardants are found to pose serious risks to human health, wildlife and the environment. Please reach out to Product Compliance team for approval if any flame retardants are used intentionally.

CSC Children's products:

CSC has restricted the use of flame retardants* in all children's products. Suppliers must not apply any flame-retardant chemicals* to any children's product supplied to CSC.

Unless otherwise noted, Youth products include all infant, toddler, children, girls, boys and youth sizes, products primarily intended for children 14 years and younger, all Youth apparel products sizes Youth XL (18/20) and smaller as well as Youth footwear sizes 7 and smaller.

Product attributes such as size, child related themes, and features with play value, materials, as well as product packaging, promotional materials, display, advertising, appeal and where the product is sold must be evaluated in determining whether a product could be considered a Youth product. If you are unsure whether this guideline applies to a style or product, please contact CSC Product Compliance.

Mountain Hardwear tents:

Mountain Hardwear (MHW) values ethical and sustainable manufacturing practices that are intended to minimize, mitigate or eliminate risks to workers, customers and the environment. Effective from Spring 2019 production forward, MHW has restricted the use of all additive chemical flame retardants* in their tents. Suppliers must not apply any flame-retardant chemicals to any tents to MHW.

*Flame retardant chemicals includes (but not limited to) the entire group of organic and inorganic halogenated and phosphorus compounds.

Polyvinylchloride Policy

CSC has eliminated the use of Polyvinylchloride (PVC, CAS# 9002-86-2) from all products due to high risk of restricted substances such as lead, phthalates, and cadmium and discourages its use except in rare circumstances. If a supplier is asked to use PVC, production and testing processes must be reviewed by and approved by CSC Product Compliance prior to use to ensure the product compliance with the RSL.

Electrical and Electronic Equipment (EEE) Policy

The Columbia Sportswear Company Electrical and Electronic Equipment (EEE) policy applies to any product which is dependent on electric currents or electromagnetic fields in order to work properly and equipment designed for generation, transfer and measurement of such currents and fields with a voltage rating not exceeding 1000 Volt AC and 1500 Volt DC¹. Battery or button cell should not be used in CSC product unless requested and approved by CSC Product Compliance Team.

- Suppliers are responsible for identifying and adhering to all applicable global EEE compliance and product safety standards.
- If EEE is a component of a consumer product, all other parts of the product must meet the RSL requirements above.
- All EEE batteries used in CSC products must comply with the EU battery directive.
- Button cell and coin batteries must comply Reese Law – Battery Safety Requirement including labelling and certification requirement for all CSC's product. Please contact CSC Product Compliance team if any usage by request for specification approval
- EEE batteries, accumulators and battery packs must be marked with the crossed-out wheeled bin symbol shown below and comply with Waste Electrical and Electronic Equipment (WEEE) EU Directive 2002/96/EC:



- Suppliers are responsible for all EEE product compliance testing and conformity assessments to satisfy all applicable regulatory requirements.
- Suppliers must retain all technical documents, declarations of conformity and documentation to demonstrate compliance for 10 years after the EEE is sold or transferred to CSC.
- CSC reserves the right to review all EEE records and will consider any product without associated compliance documents to be in violation of this policy.
- All EEE must comply with Directive 2011/65/EC (RoHS) and meet the chemical limits listed below.

¹ Directive 2011/65/EU of the European Parliament and of the Council on the Restriction of the use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS).

^o Substances in Electrical & Electronic Equipment and Batteries, please refer to CSC RSL section.

Nanotechnology Policy

'Nanomaterial' means a natural, incidental or manufactured material containing very small particles, in an unbound state or as an aggregate or as an agglomerate and where, for 50% or more of the particles in the number size distribution, one or more external dimensions is in the size range 1 nm-100 nm.

Workers handling nanomaterials in manufacturing processes may be exposed to nanoparticles through inhalation, dermal contact, or ingestion. CSC discourages the use of nanomaterials in CSC products except in rare circumstances. If a supplier is asked to use nanomaterial such as in UV blocking, flame retardants, or antimicrobial finishing, production processes must be reviewed by CSC Product Compliance. Also refer to CSC – Supplier's Environmental, Health and Safety Handbook for handling requirements.

Supplier must provide below information, when relevant:

1. Intended use, function and purpose of the nanomaterial and information regarding any material or end product in which it will be used.
2. Manufacturing methods.
3. Characteristics, physical and chemical properties of the nanomaterial such as:
 - composition
 - identity
 - purity
 - morphology
 - structural integrity
 - catalytic or photo-catalytic activity
 - particle size/size distribution
 - electrical/mechanical/optical properties
 - surface-to-volume ratio
 - chemical reactivity
 - surface area/chemistry/charge/structure/shape
 - water solubility/dispersibility
 - agglomeration/aggregation (or other properties), and
 - descriptions of the methods used to assign these determinations
4. Toxicological, eco-toxicological, metabolism and environmental fate data that may be both generic and specific to the nanomaterial if applicable.
5. Risk assessment and risk management strategies, if considered or implemented.

Packaging Restriction Policy

Scope of the AFIRM Packaging RSL:

Suppliers of packaging and packaging components shall comply with the Coalition of Northeastern Governors (CONEG) Toxic in Packaging (TPCH) Legislation adopted by several US states, the EU Directive 94/62/EC on packaging and packaging waste, and the restricted chemicals requirements in the table below.

The EU Packaging and Packaging Waste Directive defines packaging as:

All products made of any materials of any nature to be used for the containment, protection, handling, delivery, and presentation of goods, from raw materials to processed goods, from the producer to the user or the consumer. In addition, below tables outlines examples of product packaging and material types within the scope of the Packaging RSL.

The AFIRM packaging version 07 serves as the basis for the Columbia Sportswear Company (CSC) packaging restriction policy, unless otherwise noted. Beginning with S26, all packaging must comply with the strictest applicable limit and most updated version of test method



Examples of Products within the Scope of the Packaging RSL


Hang Tags	Stickers	Protective Coverings	Trimmings	Sales Packaging	Transport Packaging
<ul style="list-style-type: none"> • Cords • Foil stamps • Hot stamp prints • Paper hang tags • Plastic hang tags • Price tags • Spot UV hang tags • UPC tags 	<ul style="list-style-type: none"> • Antimicrobial stickers • Labels, adhesive • Price tags • Tape 	<ul style="list-style-type: none"> • Lamination, matte or gloss • Foam material • Suit bags • Plastic cases • Poly bags • Poly bags, zippered 	<ul style="list-style-type: none"> • Bead chain • Collar bands • Clips, metal • Clips, plastic • Eyelets/grommets • Magnets • Pins • Tissue paper • Zippers • J-hooks • Plastic fasteners 	<ul style="list-style-type: none"> • Boxes/cartons • Gift boxes • Retail carry bags • Hangers (when sold with a clothing item) • Spot UV boxes • Suit bags • Thermal receipt paper • Tissue paper • UV coated boxes • Varnished coated boxes • Water-based (aqueous) lacquer coated boxes 	<ul style="list-style-type: none"> • Antimicrobial stickers • Boxes/cartons • Corrugated shipping boxes/cartons • J board • Silica gel/desiccant sachets • Stuffing materials, expanded foam materials • Water-based (aqueous) lacquer-coated boxes


Examples of Material Types within the Scope of the AFIRM Packaging RSL




Fibers			Coatings, Dyes & Prints	Natural Materials	Polymers, Plastics, Foams, Natural Rubber & Synthetic Rubber	Metal	Glue	Natural Leather	Synthetic Coated Fabric
Natural	Blended	Synthetic							
<ul style="list-style-type: none"> • Cotton • Linen • Silk • Wool • Lyocell (semi-synthetic) • Rayon (semi-synthetic) • Cellulose 	<ul style="list-style-type: none"> • Cotton-Polyester • Ramie-Polyester • Wool-Nylon 	<ul style="list-style-type: none"> • Acrylic • Nylon • Polyamide • Polyester 	<ul style="list-style-type: none"> • Foil stamping • Hot-stamp printing • Spot UV • Soft-touch coatings 	<ul style="list-style-type: none"> • Cork • Paper • Straw • Stone • Wood • Cardboard • Jacron (semi-synthetic paper product) 	<ul style="list-style-type: none"> • Acrylonitrile butadiene styrene (ABS) • Ethylene vinyl acetate (EVA) • Polystyrene (PS) • Polyethylene (PE) • Neoprene • Polypropylene (PP) • Polycarbonate (PC) • Polyamide (PA) • Polyurethane (PU) • Polyvinyl chloride (PVC) • Thermoplastic polyurethane (TPU) • Thermoplastic elastomer (TPE) • Styrene ethylene butylene styrene (SEBS) 	<ul style="list-style-type: none"> • Aluminum • Brass • Copper • Stainless Steel 	<ul style="list-style-type: none"> • Contact adhesive • Epoxies • Powdered adhesive • Flock adhesive • Hot melt adhesive • Latex glue • Neoprene cement • Polyurethane glue • Silicone adhesive • UV-cured adhesive 	<ul style="list-style-type: none"> • Leather • Fur & Hides 	<ul style="list-style-type: none"> • Polyurethane (PU) • Polyvinyl Chloride (PVC)

AFIRM Packaging Restricted Substances List



CAS No.	Substance	Limits Component Materials	Potential Uses & Additional Information Processing for Packaging Materials	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: 100 ppm	<p>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.</p> <p>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.</p> <p>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.</p>	<p>Textiles and Leather: EN ISO 21084</p> <p>Polymers and all other materials: 1 g sample/20 mL THF, sonication for 60 minutes at 70°C, analysis according to EN ISO 21084</p>	Sum of NP & OP: 3 ppm
Various	Octylphenol (OP), mixed isomers			GB/T 23322 (for down)	
Various	Nonylphenol ethoxylates (NPEOs)	Total: 100 ppm		<p>All materials except Leather: EN ISO 18254-1 with determination of APEO using LC/MS or LC/MS/MS</p> <p>Leather: Sample prep and analysis using EN ISO 18218-1 with quantification according to EN ISO 18254-1</p>	Sum of NPEO & OPEO: 20 ppm
Various	Octylphenol ethoxylates (OPEOs)			GB/T 23322 (for down)	


CAS No.	Substance	Limits Component Materials	Potential Uses & Additional Information Processing for Packaging Materials	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	<p>Azo dyes and pigments are colorants that incorporate one or several azo groups (-N=N-) bound with aromatic compounds.</p> <p>Thousands of azo dyes exist, but only those which degrade to form the listed cleavable amines are restricted.</p> <p>Azo dyes that release these amines are regulated and should no longer be used for dyeing textiles.</p>	<p>All materials except leather: EN ISO 14362-1</p> <p>Leather: EN ISO 17234-1</p> <p>p-Aminoazobenzene:</p> <p>All materials except leather: EN ISO 14362-3</p> <p>Leather: EN ISO 17234-2</p> <p>GB/T 19942</p>	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	Potential Uses & Additional Information Processing for Packaging Materials	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits Above Which Test Results Should Be Reported
Bisphenols 					
80-05-7	Bisphenol-A (BPA)	Receipt paper: BPA: 1 ppm Other packaging: 100 ppm each	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 and can be found along with BPF in polyamide dye-fixing agents and sulfone- and phenol- based leather 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.	Leather: EN ISO 11936 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)	100 ppm each	BPS was added to the REACH SVHC list and may need to be notified to ECHA in leather goods if found above 0.1%. Additional restrictions on the entire class of bisphenols are forthcoming, with a new restriction proposal pending in the European Union. AFIRM recommends testing relevant materials for bisphenols according to the Risk Matrix and to begin working with suppliers to replace bisphenols with suitable alternatives.		
77-40-7	Bisphenol-B (BPB)				
620-92-8	Bisphenol-F (BPF)				
1478-61-1	Bisphenol-AF (BPAF)				


CAS No.	Substance	Limits Component Materials	Potential Uses & Additional Information Processing for Packaging Materials	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits Above Which Test Results Should Be Reported
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.	All materials: ASTM D4275	5 ppm
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	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	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				

CAS No.	Substance	Limits Component Materials	Potential Uses & Additional Information Processing for Packaging Materials	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits Above Which Test Results Should Be Reported
Formaldehyde 					
50-00-0	Formaldehyde	150 ppm	<p>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.</p> <p>Formaldehyde found in packaging can off-gas directly onto product.</p> <p>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.</p>	<p>Wood: EN 717-3</p> <p>Paper: DIN EN 645 & EN 1541</p> <p>Textiles, Finishings, Dyes, Inks & Coatings: JIS L 1041-2011 A (Japan Law 112) or EN ISO 14184-1</p> <p>Leather: EN ISO 17226-2 with EN ISO 17226-1 confirmation method in case of interferences.</p> <p>Alternatively, EN ISO 17226-1 can be used on its own.</p>	16 ppm

CAS No.	Substance	Limits Component Materials	Potential Uses & Additional Information Processing for Packaging Materials	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits Above Which Test Results Should Be Reported
Heavy Metals (Total Content) 					
7440-43-9	Cadmium (Cd)	Total: 100 ppm	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): DIN EN 16711-1 If the total of four heavy metals exceeds 100 ppm and Cr contributes to the sum, test for Cr VI. This test method detects metal elements (Cd, Cr, Hg, Pb). When the final value > 100 ppm and Cr contributes to the sum, the Cr VI method described below should be used to exclude the presence of Cr VI.	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 The testing laboratory will convert the test result into ppm. Natural leather and natural materials: EN ISO 17075-1 and EN ISO 17075-2 for confirmation in case the extract causes interference. Alternatively, EN ISO 17075-2 may be used on its own. All other materials: IEC 62321-7-2	3 ppm

CAS No.	Substance	Limits Component Materials	Potential Uses & Additional Information Processing for Packaging Materials	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. 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: CEN ISO/TS 16179 or EN ISO 22744-1	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 No.	Substance	Limits Component Materials	Potential Uses & Additional Information Processing for Packaging Materials	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	50 ppm	<p>Regulations around the world ban the use of PFAS in packaging.</p> <p>PFAS may be used in commercial water-, oil-, and stain-repellent agents as well as in breathable membranes that remove moisture, e.g., PTFE.</p> <p>Refer to Appendix x 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.</p> <p>See AFIRM PFAS Phaseout Guidance for a recommended testing approach to ensure compliance with all global regulations using the methods included in this section.</p>	EN 14582 or ASTM D7359	20 ppm total
Various	Perfluorooctane Sulfonate (PFOS) and related substances	1 µg/m ² total		All materials: prEN 17681-1:2023	1 µg/m ² total
Various	Perfluorooctane Sulfonate (PFOS) and its salt	20 ppb total			20 ppb total
Various	Perfluorooctane Sulfonate (PFOS) related substances	1000 ppb total			1000 ppb total
Various	Perfluorooctanoic Acid (PFOA) and its salts	20 ppb total			20 ppb total
Various	PFOA-related substances	1000 ppb total			1000 ppb total
Various	Perfluorohexane-1-sulphonic acid (PFHxS) and its salts	20 ppb total			20 ppb total
Various	PFHxS-related substances	1000 ppb total			1000 ppb total
Various	C9-C14 Perfluorocarboxylic acids (PFCAs) and their salts	20 ppb total			20 ppb total
Various	C9-C14 PFCA-related substances	260 ppb total			260 ppb total
Various	PFHxA, its salts, and related substances	PFHxA and its salts: 20 ppb PFHxA-related substances: 1000 ppb			PFHxA and its salts: 25 ppb PFHxA-related substances: 1000 ppb

CAS No.	Substance	Limits Component Materials	Potential Uses & Additional Information Processing for Packaging Materials	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits Above Which Test Results Should Be Reported
Phthalates 					
28553-12-0 68515-48-0 117-84-0 117-81-7 26761-40-0 68515-49-1 85-68-7 84-74-2 84-69-5 84-75-3 84-66-2 131-11-3 131-18-0 84-61-7 71888-89-6 117-82-8 605-50-5 131-16-8 27554-26-3 68515-50-4 71850-09-4 68515-42-4 84777-06-0 68648-93-1 68515-51-5 776297-69-9 26040-51-7	Di-Iso-nonylphthalate (DINP) Di-n-octylphthalate (DNOP) Di(2-ethylhexyl)-phthalate (DEHP) Diisodecylphthalate (DIDP) Butylbenzylphthalate (BBP) Dibutylphthalate (DBP) Diisobutylphthalate (DIBP) Di-n-hexylphthalate (DnHP) Diethylphthalate (DEP) Dimethylphthalate (DMP) Di-n-pentyl phthalate (DPENP) Dicyclohexyl phthalate (DCHP) 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich Bis(2-methoxyethyl) phthalate Diisopentyl phthalate (DIPP) Dipropyl phthalate (DPRP) Diisooctyl phthalate (DIOP) 1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear Diisohexyl phthalate (DIHxP) 1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP) 1,2-Benzenedicarboxylic acid Dipentyl ester, branched and linear 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 n-Pentyl-isopentylphthalate (nPIPP) Bis(2-ethylhexyl) tetrabromophthalate	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: <ul style="list-style-type: none"> • 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

84-76-4	Dinonyl phthalate				
68515-40-2	1,2-Benzenedicarboxylic acid, benzyl C7-9-branched and linear alkyl esters				

Regulatory Requirements

From time-to-time CSC may become aware of new regulatory requirements. As applicable, CSC will endeavor to inform suppliers annually or as needed of new requirements through periodic notice and/or manual update. However, failure of CSC to inform suppliers of regulatory changes does not release suppliers from responsibility to monitor and fully comply with all relevant legal requirements.

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

REACH Regulation (EC) No 1907/2006 of the European Parliament and European Council is the European Community Regulation on chemicals and their safe use. REACH entered into force on June 1, 2007, and establishes requirements for the registration, evaluation, authorization and restriction of chemical substances within the EU market. REACH Annex XVII which came into force on June 1, 2009, restricts the manufacture placing on the market and use of certain dangerous substances, mixtures and articles adopted under REACH and prior legislation Directive 76/769/EEC (European Economic Community). A restriction can apply to any substance on its own, in a mixture or in an article.

Suppliers have legal obligations related to REACH regulations and the REACH Candidate List of Substances of Very High Concern (SVHC). Suppliers must continuously monitor updates to REACH, Annex XVII and Candidate List of Substances of Very High Concern (SVHC) and ensure materials, packaging material and products supplied to CSC comply with all REACH requirements regardless of whether the substances are included within the RSL.

Suppliers must evaluate each step in the supply chain, including the sourcing and processing of raw materials, component parts, chemicals and other product ingredients and ensure the article contain < 0.1% of candidate list of SVHC. They must immediately inform CSC of any cases where a substance listed in the candidate list is present in the product at or in a concentration above 0.1% weight by weight. In the case of articles composed of multiple materials, the limit applies to each homogenous part or component of the article. CSC may require random testing for SVHC in materials and finished products to demonstrate compliance.

REACH information may be found at <https://echa.europa.eu/regulations/reach/understanding-reach> and <https://echa.europa.eu/home>
Candidate list substances (SVHC) can be found at <https://echa.europa.eu/web/guest/candidate-list-table>
Pre-candidate substances are found at <https://echa.europa.eu/substances-of-very-high-concern-identification>

General Product Safety Regulation (GPSR)

The European Commission has approved the General Product Safety Regulation (EU) 2023/988 (GPSR) to replace General Product Safety Directive (GPSD). GPSR will enter into force on December 13th, 2024. It aligns general product safety requirements across the EU market and endeavors to modernize the EU general product safety framework. GPSR applies broadly to products offered to consumers in the EU via all sales channels.

The purpose of this regulation is to provide a high level of consumer protection and lay down essential rules on the safety of consumer products. Only safe products are allowed to be placed or made available on the market.

As part of GPSR implementation, CSC is now required to keep technical documentation for every product we manufacture. Suppliers are required to provide information and supporting documents for reporting upon request.

Regulations that require to comply including but not limit to:

- REACH Regulation (EC No 1907/2006)
- POP Regulation (EU) No 2019/1021
- BPR Regulation (EU) 528/2012

United States of America (U.S.) State Level Regulations and Requirements

Children's Product Reporting

Various U.S. state level regulations may require importers to notify relevant authorities of the presence of Chemicals of High Concern to Children (CHCC) or Priority Chemicals (PC) in children's products. Suppliers must inform CSC product compliance if any of the listed CHCCs or PCs are intentionally added to any CSC product, or if a listed chemical is a contaminant in the process that exceeds 100 ppm in any component. In addition to chemical disclosure and reporting, various regulations may require documented exposure assessments, alternatives assessments, substitutions or removal of CHCC or PC.

A list of Chemicals of High Concern to Children or Priority Chemicals can be found at:

Washington: [Chemicals of high concern to children - Washington State Department of Ecology](#)

Vermont: [Env CDP chemicals of high concern to children.xls \(healthvermont.gov\)](#)

Maine: [Chemicals of High Concern, Safer Chemicals, Maine DEP; Safer Chemicals in Children's Products, Priority Chemicals, Maine DEP](#)

Oregon: [Oregon Health Authority : High Priority Chemicals of Concern for Children's Health : Toxic Substances : State of Oregon](#)

New York: [Toxic Chemicals in Children's Products – New York State Department of Environmental Conservation](#)

Current Children's Regulations:

Washington State Children Safe Product Act (CSPA)², Vermont Toxic Free Families Act³, Maine Toxic Chemicals in Children's Products⁴ and Oregon Toxic Free Kids Act⁵, New York State Toxic Chemicals in Children's Products.

² Washington State Children Safe Product Act, RCW 70.240 reporting rule

³ Vermont Toxic Free Families Act, S239, Act 188, An Act relating to the regulation of toxic substances reporting rules

⁴ Maine Toxic Chemicals in Children's Product, M.R.S.A. §1691-1695, A law relating to the regulation of toxic substances reporting rules

⁵ Oregon Toxic Free Kids Act, Senate Bill 478 2015 session, An Act relating to the regulation of toxic substances reporting rules
Columbia Sportswear Company Restricted Substances List (Apparel, Accessory, Equipment and Footwear) – 20 August 2024

PFAS Reporting

Various U.S. state level notification requirements on products containing PFAS are under consideration. A few have already approved and reporting on the use of PFAS is required by law. For examples, Maine Department of Environmental Protection requires manufacturers of products for sale that contain intentionally added PFAS to submit a written notification. Suppliers are required to disclose below information for reporting:

1. The purpose for which PFAS are used in the product,
2. The amount of each of the PFAS in the product identified by its CAS#, reported as an exact quantity determined using commercially available analytical methods or as falling within a range approved for reporting purposes by DEP.

Below list out some states reporting regulations examples but is not exhaustive.

Maine: [Title 38 Chapter 16: §1614. Products Containing PFAS](#)

Minnesota: [Sec. 116.943 MN Statutes](#)

Washington: <http://ecology.wa.gov/Safer-Products-WA>

USEPA: [TSCA Section 8\(a\)\(7\) Reporting and Recordkeeping Requirements for Perfluoroalkyl and Polyfluoroalkyl Substances | US EPA](#)

California Proposition 65

Proposition 65, the Safe Drinking Water and Toxic Enforcement Act of 1986, was intended by its authors to protect California citizens and the State's drinking water sources from chemicals known to cause cancer, birth defects or other reproductive harm, and to inform citizens about exposures to such chemicals. Businesses and Manufacturers must provide Proposition 65 warnings if any listed chemical's exposures greater than the safe harbor level.

Suppliers must inform CSC Product Compliance if any of the listed chemicals are present in any CSC product including packaging.

Proposition 65 list can be found at [The Proposition 65 List - OEHHA \(ca.gov\)](#)

Restricted Substances List (RSL)

The RSL is not intended to be a comprehensive list of all global restrictions but rather a compliance tool for our suppliers. The CSC RSL Manual reflects mandatory regulations and voluntary safety standards applicable to our products. In some cases, CSC requirements may go beyond the legal requirements of any country, in these cases suppliers are expected to meet CSC requirements. The RSL applies to all products of all brands supplied to CSC including apparel, footwear, equipment, accessories and other products with different requirements depending on the product types. The RSL also applies to all materials, components, parts and other goods supplied for use in manufacturing CSC products. Restricted substances must not exceed the limits stated in the Columbia Sportswear Company RSL.

The substances listed in the RSL are grouped by type or functionality and are referenced by the Chemical Abstract Service Number (CAS Number) and common chemical name or color index name. Corresponding restrictions, limits for use and required test methods, if available, are listed for each substance or chemical group. The most up to date test method should be used.

A brief description⁶ of the substance (or chemical group) and an indication of where it may be found in materials or products is also provided. This information is provided as a general reference only and does not represent the actual risk a substance may be present. It is advisable to consult your own materials experts or outside expertise to learn more about these specific substances and their potential occurrence in the materials or products you supply.

The AFIRM version 09 serves as the basis for the Columbia Sportswear Company (CSC) Restricted Substances List, unless otherwise noted. Beginning with S26, all production must comply with the strictest applicable limit⁶.

⁶ Refer to the limit of Age Range baby to adult

Links and References

AFIRM Chemistry Toolkit www.afirm-group.com/toolkit English, Chinese, Vietnamese, Japanese, Indonesian, and Spanish versions	AFIRM Chemical Information Sheets www.afirm-group.com/chemical-information-sheets English, Chinese, Vietnamese, Japanese, Indonesian, and Spanish versions	EU Packaging and Packaging Waste Directive http://ec.europa.eu/environment/waste/packaging/index_en.htm
Toxics in Packaging Clearinghouse (TPCH) https://toxicsinpackaging.org	AFIRM Explainer Videos www.afirm-group.com/start-here English available, with translations forthcoming	Sustainable Packaging Coalition (SPC) www.sustainablepackaging.org
AFIRM PFAS Phaseout Guidance www.afirm-group.com/pfas-phaseout-guidance Available in English, Simplified Chinese, Traditional Chinese, Vietnamese, Japanese, Indonesian, Spanish, and Turkish	AFIRM Sampling Guidance http://afirm-group.com/sampling-guidance Available in English	Regulated substances that deplete the ozone layer; Regulation (EU) 2024/590 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202400590
Regulated fluorinated greenhouse gases; Regulation (EU) No 2024/573 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202400573	Zero Discharge of Hazardous Chemicals (ZDHC) Foundation — Manufacturing Restricted Substances List (MRSL) https://mrsl.roadmaptozero.com	AFIRM Restricted Substances List www.afirm-group.com/afirm-rsl Available in English, Simplified Chinese, Traditional Chinese, Vietnamese, Japanese, Indonesian, Spanish, and Turkish.

AFIRM Chemical Information Sheets

AFIRM member brands have produced a comprehensive set of educational materials advising suppliers about best practices for chemicals management.

Each chemical information sheet covers a chemical or class of chemicals, giving an overview of the substance(s), where they are likely to be found in the material manufacturing process, and how to maintain compliance with the AFIRM RSL.

The sheets contain some information relevant to packaging, and future revisions will include more specific information.

The complete library of chemical information sheets is available on the AFIRM website at <http://afirm-group.com/information-sheets>; additionally, links to individual information sheets are embedded in the pages that follow.

The download icon next to a chemical or class of chemicals in the AFIRM RSL indicates that an information sheet is available.



Click on the icon or chemical name, and your web browser will open and download a PDF of the information sheet for that substance.

Definitions

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.

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

Age: Various countries define the terms “babies,” “children,” and “adults” differently. Based on legislation, the age ranges listed *below* satisfy the most restrictive global requirements.

Baby: 0 to <36 months

Children: 36 months to <14 years

Adults: 14 years and older

Child Care Article: Various countries define the term “childcare article” differently. The most restrictive definition (based on global chemical legislation) includes articles designed or intended by the manufacturer to facilitate sleeping, relaxation, hygiene, feeding, sucking, or teething for children three years of age or younger.

Limit: Some restrictions require that substance limits not be exceeded while others require that substance concentrations be below designated limits.

For example, chromium VI must be below 3 ppm to be compliant with EU law. Test results should always be below designated limits to ensure compliance with all market requirements.

Reporting Limits:

Values above which labs should report substances detected for purposes of data capture and harmonization. By reporting these values, instead of a simple PASS/ FAIL, the supply chain can capture information regarding the presence of substances below the RSL limit. The reporting limits also allow data to be harmonized between various testing labs. Reporting limits are values at or above the method Practical Quantification Limit (PQL). The PQL represents the lowest level at which accurate, precise, and robust data can be reported. AFIRM RSL reporting limits are widely achievable by laboratories across the global analytical testing industry and allow for combined (composite) testing where applicable

Material Types:

For the purpose of this RSL, AFIRM offers these definitions of material types and provides examples of materials in Table 1, on the next page

Natural fibers. Animal or vegetable fibers (including semi-synthetics).

Blended fibers. Woven or knitted materials created by blending two or more fiber types. For the purpose of this RSL, a blended fiber consists of a natural and a synthetic fiber.

Synthetic fibers. Human-made fibers based on synthetic chemicals (often from petroleum sources) such as polymers and extruded fibers.

Synthetic coated fabrics. Leather-like materials composed of a textile backing and, typically, a PU or PVC coating. May be referred to as artificial, imitation, vegan, or synthetic leather, or pleather.

Natural leather. Created by tanning animal rawhides.

Coating. A fluid, semi-fluid, or other material, with or without a suspension of finely divided coloring matter, which changes to a solid film when a thin layer is applied to a metal, wood, stone, paper, leather, cloth, plastic, or other surface.

Coatings do not include printing inks or those materials which actually become a part of the substrate, such as the pigment in a plastic article or those materials which are actually bonded to the substrate, such as by electroplating or ceramic glazing. See “synthetic coated fabrics” for leather-like materials where the coating becomes part of the substrate.

Printing. The process of applying color to a fabric in definite patterns or designs.

Natural materials. Material derived from animals or plants that have undergone very little modification. Includes horn, bone, cork, wood, paper, and straw. Excludes natural fibers, natural leather, feathers, down, and metals.

Crystal. In this variety of glass, also known as lead glass, lead replaces calcium content of a typical potash glass. The addition of lead oxide gives crystal a much higher index of refraction than normal glass, and consequently much greater sparkle. Crystal typically contains at least 24% lead and is therefore exempt from many regulatory requirements for jewelry. In the European Union, labeling of crystal products is regulated by Council Directive 69/493/EEC, which defines four categories based on the chemical composition and properties of the material.

Polymers and plastics. Plastics are composed of various polymers (typically from petroleum sources) usually mixed with additives including colorants, plasticizers, stabilizers, and fillers. These additives affect the chemical composition, chemical properties, and mechanical properties of the plastic.

Natural rubber. Elastic material made from latex sap or trees that can be vulcanized.

Synthetic rubber. Material made from petroleum-based monomers with properties similar to natural rubber.

Foam. Spongy material made by trapping air bubbles in a solid. These can be open cell or closed cell.

Metals. Chemical elements that can be lustrous, ductile, malleable, and good conductors of heat and electricity. Includes metals deposited by physical vapor deposition (PVD), chemical vapor deposition (CVD), or electroplating.

Feathers and down. Includes the smaller down feathers as well as the larger contour and flight feathers. See the International Down and Feather Bureau for specific down and feather definitions.


Glue. A substance capable of holding materials together by surface attachment.



Table 1. Examples of Materials within the Scope of the AFIRM RSL


NOTE: This list provides examples of materials within each category but is not exhaustive.


Natural Fibers Including semi- synthetics	Blended Fibers	Synthetic Fibers	Synthetic Coated Fabrics	Natural Leather & Fur Skin	Coatings & Prints	Natural Materials	Other Materials	Polymers, Plastics, Foams, Natural Rubber & Synthetic Rubber	Metal	Feathers & Down	Glue
<ul style="list-style-type: none"> • Cotton • Wool • Silk • Hemp • Cashmere • Linen • Fur hair • Rayon (semi-synthetic) • Lyocell (semi-synthetic) 	<ul style="list-style-type: none"> • Cotton-Polyester • Wool-Nylon • Ramie-Polyester 	<ul style="list-style-type: none"> • Polyester • Acrylic • Nylon • Polyamide 	Textiles with: <ul style="list-style-type: none"> • Polyurethane (PU) coating • Polyvinyl Chloride (PVC) coating • Other Polymeric coatings 	<ul style="list-style-type: none"> • Leather • Fur skin • Bonded/ recycled leather 	Printing techniques such as: <ul style="list-style-type: none"> • Heat transfers • Dye sublimation printing • Screen printing • Direct-to-garment printing • Discharge printing • Plastisol transfers Coatings such as: <ul style="list-style-type: none"> • Polyvinyl chloride (PVC) • Polyurethane (PU) • UV-cured 	<ul style="list-style-type: none"> • Horn • Bone • Cork • Wood • Paper • Straw • Stone • Shell (e.g. coconut or mother of pearl) • Jacron (a semi-synthetic paper product) 	<ul style="list-style-type: none"> • Glass • Synthetic stone • Porcelain • Ceramic • Crystal 	<ul style="list-style-type: none"> • Ethylene vinyl acetate (EVA) • Polystyrene (PS) • Polyethylene (PE) • Acrylonitrile butadiene styrene (ABS) • Neoprene • Polypropylene (PP) • Polycarbonate (PC) • Polyamide (PA) • Polyurethane (PU) • Polyvinyl chloride (PVC) • Thermoplastic polyurethane (TPU) • Thermoplastic elastomer (TPE) • Styrene ethylene butylene styrene (SEBS) 	<ul style="list-style-type: none"> • Stainless steel • Brass • Copper • Gold • Silver • Aluminum 	<ul style="list-style-type: none"> • Feathers • Down 	<ul style="list-style-type: none"> • Hot melt adhesive • Powdered adhesive • Flock adhesive • Contact adhesive • Latex glue • Polyurethane glue • Neoprene cement • Epoxies • Silicone adhesive • UV-cured adhesive



Restricted substances


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	Acetophenone	50 ppm each	Potential breakdown products in EVA foam when using certain cross- linking agents, including Dicumyl Peroxide.	Extraction in acetone or methanol GC/MS, sonication for 30 minutes at 60° C	25 ppm each
617-94-7	2-Phenyl-2-Propanol				
	Acidic and Alkaline Substances				
N/A	pH value	<p>Textiles: 4.0 – 7.5 Leather:</p> <p>Chrome-tanned: 3.2 – 5.5</p> <p>Other: 3.5 – 7.5</p>	<p>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.</p> <p>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.</p> <p>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.</p> <p>For chrome-tanned leather, the final fixing bath of the re-tanning process should always have a pH below 4.0 to guard against the formation of Chromium VI.</p> <p>Important: Egypt, Morocco, and the Gulf Cooperation Council (GCC) require pH for leather not lower than 3.5.</p>	<p>Textiles and synthetic coated fabrics: EN ISO 3071</p> <p>China market Textile, GB test method: GB/T 7573</p> <p>Leather: EN ISO 4045</p>	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	<p>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.</p> <p>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.</p> <p>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.</p> <p>Recycled products: Contact your brand customer for information about potential exemptions from the limit on NPEOs in recycled textile products, in particular recycled wool garments.</p>	Textiles and Leather: EN ISO 21084 Polymers and all other materials: 1 g sample/20 mL THF, sonication for 60 minutes at 70° C, analysis according to EN ISO 21084	Total of NP + OP: 3 ppm
Various	Octylphenol (OP), mixed isomers			China market Down and wool/wool-like knitting goods: GB/T 23322	
Various	Nonylphenol ethoxylates (NPEOs)			All materials except Leather: EN ISO 18254-1 with determination of APEO using LC/MS or LC/MS/MS Leather: Sample prep and analysis using EN ISO 18218-1 with quantification according to EN ISO 18254-1	Total of NPEOs + OPEOs: 20 ppm
Various	Octylphenol ethoxylates (OPEOs)			China market: Down and wool/wool-like knitting goods: GB/T 23322	

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	<p>Azo dyes and pigments are colorants that incorporate one or several azo groups (-N=N-) bound with aromatic compounds.</p> <p>Thousands of azo dyes exist, but only those which degrade to form the listed cleaved amines are restricted.</p> <p>Azo dyes that release these amines are regulated and should no longer be used for dyeing textiles.</p>	<p>All materials except leather: EN ISO 14362-1</p> <p>Leather: EN ISO 17234-1</p> <p>p-Aminoazobenzene: All materials except leather: EN ISO 14362-3</p> <p>Leather: EN ISO 17234-2</p> <p>China market, GB test method: Textile, artificial leather, synthetic leather: GB/T 17592</p> <p>aniline and 1,4-phenylenediamines; GB/T 23344</p> <p>leather and fur: GB/T 19942</p>	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)	<p>Baby or items intended to come in contact with the mouth or next to the skin: 1 ppm</p> <p>Children/adult: 10 ppm</p>	<p>BPA may be used in the production of epoxy resins, polycarbonate plastics, flame retardants, and PVC.</p> <p>BPS may be used as a substitute for BPA for some specific uses, including in thermal receipt paper.</p> <p>BPS and BPF can be found in polyamide dye-fixing agents and in sulfone- and phenol- based leather synthetic tanning agents.</p>	<p>Leather: EN ISO 11936</p> <p>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</p>	<p>Leather: 10 ppm each</p>
77-40-7	Bisphenol B (BPB)	100 ppm	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.		
1478-61-1	Bisphenol AF	100 ppm	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.		
620-92-8	Bisphenol F (BPF)	<p>All material: 100 ppm each</p>			
80-09-1	Bisphenol S (BPS)	<p>Specific limit for leather tanning and textile Aftertreatment (dye-fixing agent): 500 ppm</p>		<p>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.</p>	<p>All other materials: 0.1 ppm for individual samples 1 ppm for composite samples</p>



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
	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) China market Test method for SCCPs: Textile: GB/T 40263 Leather, fur, artificial leather and synthetic leather: GB/T 38405 Rubber, plastic and other synthetic materials: SN/T 3814	100 ppm
85535-85-9	Medium-chain Chlorinated Paraffins (MCCPs) (C14-C17)	1000 ppm			100 ppm
	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 China market GB Test method: Textile, artificial leather, synthetic leather: GB/T 18414.1 Leather, fur: GB/T 22808	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				



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
	Chlorinated Benzenes and Toluenes 				
95-49-8	2-Chlorotoluene	Total: 1 ppm	<p>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.</p> <p>Cross-contamination from anti-moth agents and poly shipping bags may cause failures.</p> <p>Important: The Gulf Cooperation Council (GCC) maintains a limit of 1 ppm for 1,2-Dichlorobenzene in textiles.</p>	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 China market GB test method: GB/T 26713	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	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				


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, continued				
3179-89-3	C.I. Disperse Red 17	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	15 ppm each
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				
632-99-5	C.I. Basic Violet 14				
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 alcohol				

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 2024/573 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: 75 ppm Children: 20 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). Important: United Arab Emirates Cabinet Resolution No. (54) restricts Formaldehyde in children's textiles to 20 ppm.	All materials except leather: JIS L 1041-2011 A (Japan Law 112) or EN ISO 14184-1 Leather: EN ISO 17226-2 with EN ISO 17226-1 confirmation method in case of interferences. Alternatively, EN ISO 17226-1 can be used on its own. China market GB test method: Textile: GB/T 2912.1 Leather and fur: GB/T 19941.1 or GB/T 19941.2	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
	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	15 ppm each
Not allocated	Component 2: C46H30CrN10O20S2·3Na				
	Flame Retardants 				
84852-53-9	Decabromodiphenyl ethane (DBDPE)	10 ppm each	With very limited exceptions, flame-retardant 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	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)				
25155-23-1	Trixylyl phosphate (TXP)				
126-72-7	Tris(2,3,-dibromopropyl) phosphate (TRIS)				
545-55-1	Tris(1-aziridinyl)phosphine oxide) (TEPA)			All materials: EN ISO 17881-2	
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
	Heavy Metals (Non-Jewelry) Extractable  and Total Content 		See Appendix A for separate South Korea KC Mark soluble Heavy Metal requirements.		
7440-36-0	Antimony (Sb)	Extractable: Baby: 5 ppm	Found in or used as a catalyst in polymerization of polyester, flame retardants, fixing agents, pigments, and alloys.	Leather EN ISO 17072-1 // Acidic sweat solution	Extractable: 3 ppm Total = 10 ppm
		Extractable: Children or adult: 10 ppm		Textile DIN EN 16711-2 // Acidic sweat solution	
		Metal parts Polymer parts Down/feather articles: 60 ppm		DIN EN ISO 11885 EN 71-3 // Acidic solution migration simulating gastric juices DIN EN ISO 17294-2	
		Fibers/yarn: Total: 260 ppm		DIN EN 16711-1 // Total content	


7440-38-2	Arsenic (As)	<p>Extractable: 0.2 ppm</p> <p>Total: 100 ppm</p>	Arsenic and its compounds can be used in preservatives, pesticides, and defoliants for cotton, synthetic fibers, paints, inks, trims, and plastics.	<p>Extractable: All materials except leather: DIN EN 16711-2</p> <p>Leather: DIN EN ISO 17072-1</p> <p>Total: All materials except leather: DIN EN 16711-1</p> <p>Leather: DIN EN ISO 17072-2</p>	<p>Extractable: 0.1 ppm</p> <p>Total: 10 ppm</p>
7440-39-3	Barium (Ba)	<p>Extractable: 1000 ppm</p>	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.	<p>All materials except leather: DIN EN 16711-2</p> <p>Leather: DIN EN ISO 17072-1</p>	<p>Extractable: 100 ppm</p>
7440-43-9	Cadmium (Cd)	<p>Extractable: 0.1 ppm</p> <p>Total: 40 ppm</p>	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.	<p>Extractable: All materials except leather: DIN EN 16711-2</p> <p>Leather: DIN EN ISO 17072-1</p> <p>Total: All materials except leather: DIN EN 16711-1</p> <p>Leather: DIN EN ISO 17072-2</p> <p>China market GB test method:</p> <p>Total: Coating for textile apparel, accessory: GB/T 30157; Coating for footwear: QB/T 4340</p> <p>Extractable: PVC artificial leather: GB 21550</p>	<p>Extractable: 0.05 ppm</p> <p>Total: 5 ppm</p>


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 (Non-Jewelry), continued		See Appendix A for separate South Korea KC Mark soluble Heavy Metal requirements.		
7440-47-3	Chromium (Cr)	Extractable: Textiles: 0.5 ppm Metal parts Polymer parts Down/feather articles: 60ppm	Chromium compounds can be used as dyeing additives; dye-fixing agents; colorfastness after-treatments; 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 Leather: EN ISO 17072-1	Extractable: 0.5 ppm
18540-29-9	Chromium VI 	Extractable: Leather: 3 ppm Textiles and metal: 0.5 ppm Textiles Metal parts Polymer parts Down/feather articles: 0.5 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 with EN ISO 17075-1 if Cr is detected Leather: EN ISO 17075-1 and EN ISO 17075-2 for confirmation in case the extract causes interference. Alternatively, EN ISO 17075-2 may be used on its own. Ageing test: ISO 10195 Method A2 China market: GB Test method for leather and fur: GB/T 22807 or GB/T 38402	Extractable: Leather: 3 ppm Textiles and metal: 0.5 ppm


7440-48-4	Cobalt (Co)	<p>Extractable:</p> <p>Leather and Textile: 1ppm</p> <p>Others material:</p> <p>Baby and Children: 1ppm</p> <p>Adult: 4 ppm</p>	Cobalt and its compounds can be used in alloys, pigments, dyestuff, and the production of plastic buttons.	<p>All materials except leather: DIN EN 16711-2</p> <p>Leather: DIN EN ISO 17072-1</p>	Extractable: 0.5 ppm
7440-50-8	Copper (Cu)	<p>Extractable:</p> <p>Adults: 50 ppm</p> <p>Children and babies: 25 ppm</p>	<p>Copper and its compounds can be found in alloys and pigments, and in textiles as an antimicrobial agent.</p> <p>Copper is exempt from restriction limits in Metal parts.</p> <p>Indonesia Ministerial Regulation No. 18 limits copper to 25 ppm the following products: towels, bedding, and handkerchiefs.</p>	<p>All materials except leather: DIN EN 16711-2</p> <p>Leather: DIN EN ISO 17072-1</p>	Extractable: 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 (Non-Jewelry), continued		See Appendix A for separate South Korea KC Mark soluble Heavy Metal requirements.		
7439-92-1	Lead (Pb)	<p>Extractable:</p> <p>Baby: 0.2 ppm</p> <p>Children or adult: 1 ppm</p> <p>Total:</p> <p>Metal: 90 ppm</p> <p>Leather, Textiles, Polymer parts Down/feather and others articles:</p> <p>Total: 40 ppm</p> <p>Paints, Coating and Metal:</p> <p>Total: 90 ppm</p>	<p>May be associated with alloys, plastics, paints, inks, pigments and surface coatings.</p> <p>Crystal or "lead glass" is exempt from total Lead restrictions.</p> <p>Lead and its compounds may be associated with plastics, paints, inks, pigments, and surface coatings. It can also be found in metals as a contaminant.</p>	<p>Extractable:</p> <p>All materials except leather: DIN EN 16711-2</p> <p>Leather: DIN EN ISO 17072-1</p> <p>Total:</p> <p>Non-metal: CPSC-CH-E1002-08.3</p> <p>Metal: CPSC-CH-E1001-08.3</p> <p>Lead in paint and surface coatings: CPSC-CH-E1003-09.1</p> <p>China market GB Test method:</p> <p>Total:</p> <p>Coating for kids' and infants' garment: GB/T 30157; Coating for footwear: QB/T 4340</p> <p>Extractable:</p> <p>PVC artificial leather: GB 21550</p>	<p>Extractable: 0.1 ppm</p> <p>Total : 10 ppm</p>


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 Leather: DIN EN ISO 17072-1 Total: All materials except leather: DIN EN 16711-1 Leather: DIN EN ISO 17072-2	Extractable: 0.02 ppm Total: 0.1 ppm
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 Leather: DIN EN ISO 17072-1 Release: EN 12472 and EN 1811 Release (eyewear frames): EN 16128	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 Leather: DIN EN ISO 17072-1	Extractable: 50 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
	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	Refer to PVC policy 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; GB 21550, GB/T 4615	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
	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 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	<p>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.</p> <p>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.</p> <p>In textiles and apparel, organotins are associated with plastics/ rubber, inks, paints, metallic glitter, polyurethane products and heat transfer material.</p> <p>AFIRM recommends restricting “Other Organotins” as a matter of best practice consistent with other industry restricted substances lists.</p>	All materials: CEN ISO/TS 16179 or EN ISO 22744-1	0.1 ppm each
Various	Triphenyltin (TPhT)				
Various	Dibutyltin (DBT)				
Various	Diocetyl tin (DOT)				
Various	Monobutyltin (MBT)				
Various	Monooctyltin (MOT)				
Various	Tricyclohexyltin (TCyHT)				
Various	Trimethyltin (TMT)				
Various	Triocetyl tin (TOT)				
Various	Tripropyltin (TPT)				
Various	Dimethyltin (DMT)				
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 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
	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: EN 17134-2	100 ppm
	Ozone-depleting Substances 				
Various	See Regulation (EU) No 2024/590 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	50 ppm	<p>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.</p> <p>PFAS may be used in commercial water-, oil-, and stain-repellent agents as well as in breathable membranes that remove moisture, e.g., PTFE.</p> <p>Refer to Appendix B 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.</p> <p>See AFIRM PFAS Phaseout Guidance for a recommended testing approach to ensure compliance with all global regulations using the methods included in this section.</p>	EN 14582 or ASTM D7359	20 ppm total
Various	Perfluorooctane Sulfonate (PFOS) and related substances	1 µg/m ² total		<p>All materials: prEN 17681-1:2023</p> <p>China market: Textile GB test method: GB/T 31126</p>	1 µg/m ² total
Various	Perfluorooctane Sulfonate (PFOS) and its salt	20 ppb total			20 ppb total
Various	Perfluorooctane Sulfonate (PFOS) related substances	1000 ppb total			1000 ppb total
Various	Perfluorooctanoic Acid (PFOA) and its salts	20 ppb total			20 ppb total
Various	PFOA-related substances	1000 ppb total			1000 ppb total
Various	Perfluorohexane-1-sulphonic acid (PFHxS) and its salts	20 ppb total			20 ppb total
Various	PFHxS-related substances	1000 ppb total			1000 ppb total
Various	C9-C14 Perfluorocarboxylic acids (PFCAs) and their salts	20 ppb total			20 ppb total
Various	C9-C14 PFCA-related substances	260 ppb total			260 ppb total
Various	PFHxA, its salts, and related substances	PFHxA and its salts: 20 ppb PFHxA-related substances: 1000 ppb			PFHxA and its salts: 20 ppb PFHxA-related substances: 1000 ppb


	Pesticides and Herbicides, Agricultural 				
Various	See Appendix C for a complete list.	0.5 ppm each	May be found in natural fibers, primarily cotton.	All materials: EN ISO 15913 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 68515-48-0	Di-Iso-nonylphthalate (DINP)	Apparel: 50 ppm each Footwear: 500 ppm, each, Total < 1000 ppm	<p>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.</p> <p>Phthalates can be found in:</p> <ul style="list-style-type: none"> • Flexible plastic components (e.g., PVC) • Print pastes • Adhesives • Plastic buttons • Plastic sleeveings • Polymeric coatings <p>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.</p>	<p>Sample preparation for all materials: CPSC-CH-C1001-09.4</p> <p>Measurement:</p> <p>Textiles: GC/MS, EN ISO 14389 (8.1 Calculation based on weight of print only; 8.2 Calculation based on weight of print and textile if print cannot be removed).</p> <p>All materials except textiles: GC/MS</p> <p>China market GB test method:</p> <p>Materials for textile apparel, accessory: GB/T 20388</p> <p>Materials for footwear: GB/T 32440.1</p>	50 ppm each
117-84-0	Di-n-octylphthalate (DNOP)				
117-81-7	Di(2-ethylhexyl)-phthalate (DEHP)				
26761-40-0 68515-49-1	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 ≥				

68515-51-5	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				
776297-69-9	n-Pentyl-isopentylphthalate (nPIPP)				
26040-51-7	Bis(2-ethylhexyl) tetrabromophthalate				
84-76-4	Dinonyl phthalate				
68515-40-2	1,2-Benzenedicarboxylic acid, benzyl C7-9-branched and linear alkyl esters				

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	Sum: Skin contact Total: 10 ppm Non skin contact: Total: 50 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	All materials: AFPS GS or EN 17132 or ISO 16190	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 Childcare articles: 0.5 ppm each	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).			
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					

CAS No.	Substance	Limits Component Materials in Shed Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
	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 with methanol extraction at 70° C	10 ppm
	Solvents and Residuals 				
87-68-3	Hexachlorobutadiene	Not detected	Primarily used as a solvent for chlorine-containing compounds. It is used in the synthesis of rubber compounds and <u>lubricants</u> , and as a solvent	Solvent extraction, then GCMS analysis	50 ppm
68-12-2	Dimethylformamide (DMFa)	Solvent used in plastics, rubber, and polyurethane (PU) coating.: 500 ppm Other: 5 ppm	Solvent used in plastics, rubber, and polyurethane (PU) coating. Water-based PU does not contain DMFa and is therefore preferable.	Textiles: EN 17131 Leather: EN ISO 19070 All other materials: ISO 16189	5 ppm each
75-12-7	Formamide	Foaming Mid-sole & EVA: 1000 ppm Other material: Skin contact and baby: 50 ppm Non skin contact: 100	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)	5 ppm	Solvent used in the production of elastane fibers and sometimes as substitute for DMFa.		
872-50-4	N-Methyl-2-pyrrolidone (NMP)	Baby or Children; 10 ppm Adult: 100 ppm	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.		

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
	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 with extraction in THF, analysis by GC/MS	100 ppm each
3864-99-1	UV 327				
25973-55-1	UV 328				
36437-37-3	UV 350				
2440-22-4	Drometrizole	For informational purposes only. AFIRM recommends 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	<p>These VOCs should not be used in textile auxiliary chemical preparations.</p> <p>They are associated with solvent-based processes such as solvent-based polyurethane coatings and glues/adhesives.</p> <p>They should not be used for any kind of facility cleaning or spot cleaning.</p>	<p>For general VOC screening:</p> <p>GC/MS headspace 45 minutes at 120° C</p> <p>China market GB test method:</p> <p>Dichloromethane: Wool/wool-like knitting goods: FZ/T 20018</p>	<p>Benzene: 5 ppm</p> <p>Dichloromethane: 5 ppm</p> <p>1,2-Dichloroethane: 1 ppm</p> <p>Trichloroethylene: 5ppm</p> <p>Tetrachloroethylene: 1 p p m</p> <p>Other: 20 ppm each</p>
75-09-2	Dichloromethane	5 ppm			
107-06-2	1,2-Dichloroethane	1 ppm			
79-01-6	Trichloroethylene	5 ppm			
127-18-4	Tetrachloroethylene (PERC)	1 ppm			
108-88-3	Toluene	Baby: 10 ppm Children and adult: 50 ppm			
1330-20-7	Xylenes (meta-, ortho-, para-)	Baby: 50 ppm Children and adult: 100 ppm			
108-38-3					
95-47-6					
106-42-3					
56-23-5	Carbon Tetrachloride	Total: 1000 ppm			
67-66-3	Chloroform				
108-94-1	Cyclohexanone				
75-15-0	Carbon Disulfide				
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				
71-55-6	1,1,1- Trichloroethane				
79-00-5	1,1,2- Trichloroethane				

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
	Others				
108-95-2	Phenol	Baby: 20 ppm Children: 50 ppm Adult: 100 ppm	Phenol is primarily used to synthesize plastics and related materials. Phenol and its chemical derivatives are essential for production of nylon.	LC-MS // Extraction with Methanol GC-MS // Extraction with Methanol	10 ppm
All	Fluorescent Whitening Agent	Fluorescent does not appear	Fluorescent Whitening Agent are usually added in order to increase whiteness and intensifying the colors.	350 ~ 370nm ultraviolet light	Not applicable
All	Other Volatile Matter (-)	20 g/m2	Restriction of VOC in polyvinyl chloride artificial leather	GB 21550	20 g/m2
110-71-4	Ethylene glycol dimethyl ether	5 mg/kg	Used as a lubricant, softener and finishing agent for textile	GC-MS // Extraction with Methanol Plastic articles: 2-Step extraction with THF and Methanol	5 mg/kg
110-54-3	n - hexane	150 g/kg	Used as solvent for glue	GB 19340	0.1g/kg
26471-62-5	Free toluene diisocyanate	10 g/kg	Used as solvent for glue	GB 18583	0.1g/kg

Appendix A. South Korea KC Mark Soluble Heavy Metal Requirements

NOTE: South Korea KC Mark requirements apply to the migration of Heavy Metals from surface coatings/paints, synthetic resins, and paper materials in products intended to be placed in the mouth of children and products intended for infants.

CAS No.	Substance	Limits	Suitable Test Method
7440-36-0	Antimony (Sb)	60 ppm	ISO 8124-3
7440-38-2	Arsenic (As)	25 ppm	
7440-39-3	Barium (Ba)	1000 ppm	
7440-43-9	Cadmium (Cd)	75 ppm	
7440-47-3	Chromium (Cr)	60 ppm	
7439-92-1	Lead (Pb)	90 ppm	
7439-97-6	Mercury (Hg)	60 ppm	
7782-49-2	Selenium (Se)	500 ppm	

Appendix B. Per- and Polyfluoroalkyl Substances (PFAS)

NOTE: This list is a subset of PFAS and is not exhaustive.
Findings would indicate intentional use or significant contamination.

CAS No.	PFC (PFAS) Name	CAS No.	PFC (PFAS) Name
	PFOS, Its Salt and Related Substances (*represent PFOS related substance)		PFHxS and Its Salts
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	355-46-4	Perfluorohexane Sulfonic acid (PFHxS)
45298-90-6	Perfluorooctane sulfonate	3871-99-6	Perfluorohexane Sulfonic acid, potassium salt (PFHxS-K)
2795-39-3	Perfluorooctanesulfonic acid, potassium salt (PFOS-K)	55120-77-9	Perfluorohexane Sulfonic acid, lithium salt (PFHxS-Li)
29457-72-5	Perfluorooctanesulfonic acid, lithium salt (PFOS-Li)	68259-08-5	Perfluorohexane Sulfonic acid, ammonium salt (PFHxS-NH ₄)
29081-56-9	Perfluorooctanesulfonic acid, ammonium salt (PFOS-NH ₄)	82382-12-5	Perfluorohexane Sulfonic acid, sodium salt (PFHxS-Na)
70225-14-8	Perfluorooctane sulfonate diethanolamine salt (PFOS-NH(OH) ₂)		
56773-42-3	Perfluorooctanesulfonic acid, tetraethylammonium salt (PFOS-N(C ₂ H ₅) ₄)		PFHxS-related Substances
251099-16-8	Didecylmethyl ammonium perfluorooctane sulfonate (PFOS-N(C ₁₀ H ₂₁) ₂ (CH ₃) ₂)	68259-15-4	N-Methylperfluoro-1-hexanesulfonamide (N-Me-FHxSA)
4151-50-2*	N-Ethylperfluoro-1-octanesulfonamide (N-Et-FOSA)	41997-13-1	Perfluorohexane sulfonamide (PFHxSA)
31506-32-8*	N-Methylperfluoro-1-octanesulfonamide (N-Me-FOSA)		C9 – C14 PFCAs and Their Salts
1691-99-2*	2-(N-Ethylperfluoro-1-octanesulfonamido)-ethanol (N-Et-FOSE)	375-95-1	Perfluorononanoic Acid (PFNA, C9-PFCA)
24448-09-7*	2-(N-Methylperfluoro-1-octanesulfonamido)-ethanol (N-Me-FOSE)	335-76-2	Perfluorodecanoic Acid (PFDA, C10-PFCA)
307-35-7	Perfluoro-1-octanesulfonyl fluoride (POSF)	2058-94-8	Perfluoroundecanoic Acid (PFUnA, C11-PFCA)
754-91-6*	Perfluorooctane sulfonamide (PFOSA)	307-55-1	Perfluorododecanoic Acid (PFDoA, C12-PFCA)
	PFOA and Its Salts	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)	17741-60-5	1H,1H,2H,2H-Perfluorododecyl acrylate (10:2 FTA)
335-66-0	Perfluorooctanoyl fluoride (PFOA-F)	2144-54-9	1H,1H,2H,2H-Perfluorododecyl methacrylate (10:2 FTMA)
3825-26-1	Ammonium pentadecafluorooctanoate (APFO)	865-86-1	1H,1H,2H,2H-Perfluorododecanol (10:2 FTOH)
	PFOA-related Substances	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	2-Perfluorooctylethanol (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)		

1996-88-9	1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMA)	30046-31-2	1H,1H,2H,2H-Perfluorotetradecyl iodide (12:2 FTI)
27854-31-5 Several	2H,2H-Perfluorodecanoic acid (H ₂ PFDA) Perfluorooctylethyl olefins		PFHxA, Its Salts, and Related Substances
21652-58-4 Several	Perfluorooctylethene Perfluorooctylethyl halides		
2043-53-0	1H,1H,2H,2H-Perfluorodecyl iodide		
507-63-1	Heptadecafluoro-1-iodooctane	307-24-4	Perfluorohexanoic Acid (PFHxA, C6-PFCA)
		27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)
		647-42-7	1H,1H,2H,2H-Perfluorooctanol (6:2 FTOH)

Appendix C. Pesticides and Herbicides, Agricultural

CAS No.	Pesticide Name	CAS No.	Pesticide Name	CAS No.	Pesticide Name
93-72-1	2-(2,4,5-trichlorophenoxy) propionic acid, its salts and compounds; 2,4,5-TP	333-41-5	Diazinone	465-73-6	Isodrine
		1085-98-9	Dichlofluanide	4234-79-1	Kelevane
93-76-5	2,4,5-T	120-36-5	Dichloroprop	143-50-0	Kepone
94-75-7	2,4-D	115-32-2	Dicofol	58-89-9	Lindane
309-00-2	Aldrine	141-66-2	Dicrotophos	121-75-5	Malathione
86-50-0	Azinophosmethyl	60-57-1	Dieldrine	94-74-6	MCPA
2642-71-9	Azinophosethyl	60-51-5	Dimethoate	94-81-5	MCPB
4824-78-6	Bromophos-ethyl	88-85-7	Dinoseb, its salts and acetate	93-65-2	Mecoprop
2425-06-1	Captafol	63405-99-2	DTTB (4, 6-Dichloro-7 (2,4,5-trichloro-phenoxy) -2-Trifluoro methyl benz imidazole)	10265-92-6	Metamidophos
63-25-2	Carbaryl			72-43-5	Methoxychlor
510-15-6	Chlorbenzilat	115-29-7	Endosulfan	2385-85-5	Mirex
57-74-9	Chlordane	959-98-8	Endosulfan I (alpha)	6923-22-4	Monocrotophos
6164-98-3	Chlordimeform	33213-65-9	Endosulfan II (beta)	298-00-0	Parathion-methyl
470-90-6	Chlorfenvinphos	72-20-8	Endrine	1825-21-4	Pentachloroanisole
1897-45-6	Chlorthalonil	66230-04-4	Esfenvalerate	7786-34-7	Phosdrin/Mevinphos
56-72-4	Coumaphos	106-93-4	Ethylendibromid	72-56-0	Perthane
68359-37-5	Cyfluthrin	56-38-2	Ethylparathione; Parathion	31218-83-4	Propethamphos
91465-08-6	Cyhalothrin	51630-58-1	Fenvalerate	41198-08-7	Profenophos
52315-07-8	Cypermethrin	Various	Halogenated naphthalenes, including polychlorinated naphthalenes (PCNs)	13593-03-8	Quinalphos
78-48-8	S,S,S-Tributyl phosphorotrithioate (Tribufos)			82-68-8	Quintozone
52918-63-5	Deltamethrin	76-44-8	Heptachlor	8001-50-1	Strobane
53-19-0	DDD	1024-57-3	Heptachloroepoxide	297-78-9	Telodrine
72-54-8		36355-01-8	Hexabromobiphenyl	8001-35-2	Toxaphene
3424-82-6	DDE	319-84-6	a-Hexachlorocyclohexane with & without Lindane	731-27-1	Tolyfluanide
72-55-9		319-85-7	b-Hexachlorocyclohexane with & without Lindane	1582-09-8	Trifluraline
50-29-3	DDT	319-86-8	g-Hexachlorocyclohexane with & without Lindane		
789-02-6		118-74-1	Hexachlorobenzene		

RSL Testing Guideline

The following AFIRM testing matrix table provides testing guidance for suppliers in developing their own RSL compliance testing and chemical management programs and is used as a basis for CSC routine and random RSL testing programs. Suppliers must restrict the use of all chemicals listed in the RSL regardless of whether testing is required. The substances listed in the table represent a selection of high-risk chemicals commonly found by material type. Higher risk test items are indicated by (1), Lower risk test items are indicated by (2), and Lowest risk by blank.

1	Red = High risk
2	Orange = Medium risk
	Blank = Low risk

Determining Test Methods Using the AFIRM RSL Testing Matrix

The test methods listed in the RSL for specific materials correspond to the AFIRM RSL Testing Matrix.

A blank color code for any material will not have a corresponding test method.

For example, Metal has a blank color code for APEOs and therefore no test method is listed for APEOs for Metal in the RSL.

If the RSL states "All Materials" or "All Materials Except," this means the test method is applicable to all materials listed with a color of 1 or 2 that do not have a specific test method listed.

Please consulting CSC Product Compliance Team to determine the best test method for any material not currently listed in this document

NOTE: For recycled materials, additional testing may be required at Level 1; check with CSC Product Compliance team on requirements.

Substance	Natural Fibers	Synthetic Fibers	Natural & Synthetic Blends	Synthetic Coated Fabrics	Natural Leather & Fur Skin	Natural Materials	Metals	Other: Porcelain, Ceramic, Glass, Crystal, Etc.	Feathers & Down	Polymers								Coatings & Prints	Glue
										EVA	PU Foams	All other PU & TPU	Rubber Excludes Latex and Silicon	Polycarbonate	ABS	PVC	All Other Foams, Plastics & Polymers		
Acetophenone and 2-Phenyl-2-Propanol										2									
Acidic and Alkaline Substances (pH)	1	1	1	1	1														
Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs), including all isomers	1	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1
Azo-amines and Aryl Amine salts	1A	1A	1A	1A	1A	1A			1A									1	
Bisphenols		1	1	1	1					2	2	2	2	1	2	2	2		
Chlorinated Paraffins (SCCP, MCCP)				2J	1					2	2	1	1	2	2	1	2		
Chlorophenols	2	2	2		2														
Chlorinated Benzenes and Toluenes		2	2	2															
Dimethylfumarate (DMFu)					2														
Dyes, Forbidden and Disperse		1A	1A	1A														2	
Dyes, Navy Blue		2	2																
Flame Retardants	2B																		
Fluorinated Greenhouse Gases																			
Formaldehyde	1	1	1	2	1	1C							2					1	1

A Level 1 for dyed/colored materials (non-white) only.
B Level 2 only if Flame Retardant use or contamination is suspected.
C Level 1 for Wood, Paper, and Straw materials only.

D Level 2 for Wool materials only.
E Level 2 if extractable Chrome above 1 ppm only.
F Copper is exempt from restriction limits in Metal parts.
G Level 2 for plant-based fibers only; N/A for animal-based fibers.

H Level 1 for Cadmium and Lead only; Crystal is exempt for Lead.
J Level 1 for PVC materials only. Otherwise, Level 2.
K Level 2 for Styrene/Butadiene Rubbers (SBRs) only

L Level 1 if PFAS use or contamination is suspected.
M Level 1 if Rubber or black Polymeric materials, otherwise Level 2.
N Level 1 for PU and PVC- based materials only.

Substance	Natural Fibers	Synthetic Fibers	Natural & Synthetic Blends	Synthetic Coated Fabrics	Natural Leather & Fur Skin	Natural Materials	Metals	Other: Porcelain, Ceramic, Glass, Crystal, Etc.	Feathers & Down	Polymers								Coatings & Prints	Glue
										EVA	PU Foams	All other PU & TPU	Rubber Excludes Latex and	Polycarbonate	ABS	PVC	All Other Foams, Plastics & Polymers		
Heavy Metals, Chromium VI	2D	2E			1														
Heavy Metals, Extractable	1	1	1	2	1		2F			2	2	2	2	2	2	2	2	2	
Heavy Metals, Nickel Release							1												
Heavy Metals, Total	2G		2G	1	2		1	1H		1	1	1	1	1	1	1	1	1	2
Monomers: Styrene & Vinyl Chloride				1J									2K		2	1		1J	
N-Nitrosamines													2						
Organotin Compounds		2	2	1	2						1	1	1			1	1	1	1
Ortho-phenylphenol (OPP)	2	2	2	2	2													2	
Ozone-depleting Substances																			
Per- and Polyfluoroalkyl Substances (PFAS)	1L																		
Pesticides, Agricultural																			
Phthalates				1						1	1	1	1	2	2	1	1	1	1
Polycyclic Aromatic Hydrocarbons (PAHs)				2						1M	1M	1M	1			1M	1M	1M	1M
Quinoline		2	2																
Solvents / Residuals, DMFa				1							1	1						1N	1N
Solvents / Residuals, DMAC and NMP				1							2	2					2	2	2
Solvents / Residuals, Formamide										2								2	
UV Absorbers / Stabilizers										2	2	2	2	2	2	2	2		
Volatile Organic Compounds (VOCs)				2						2	2	2	2	2	2	2	2	2	1

A Level 1 for dyed/colored materials (non-white) only.
B Level 2 only if Flame Retardant use or contamination is suspected.
C Level 1 for Wood, Paper, and Straw materials only.

D Level 2 for Wool materials only.
E Level 2 if extractable Chrome above 1 ppm only.
F Copper is exempt from restriction limits in Metal parts.
G Level 2 for plant-based fibers only; N/A for animal-based fibers.

H Level 1 for Cadmium and Lead only; Crystal is exempt for Lead.
J Level 1 for PVC materials only. Otherwise, Level 2.
K Level 2 for Styrene/Butadiene Rubbers (SBRs) only

L Level 1 if PFAS use or contamination is suspected.
M Level 1 if Rubber or black Polymeric materials, otherwise Level 2.
N Level 1 for PU and PVC- based materials only.

AFIRM Packaging RSL Risk Matrix

NOTE: This matrix provides representative examples of materials within each category but is not all-inclusive.

Substance	Fibers			Coatings, Dyes & Prints	Natural Materials Including paper and cardboard	Polymers, Plastics, Foams, Natural Rubber & Synthetic Rubber	Metal	Glue	Natural Leather	Synthetic Coated Fabric
	Natural	Blended	Synthetic							
Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs), including all isomers	1	1	1	1	1	1A		1	1	1
Azo-amines and Arylamine Salts	1B	1B	1B		1B				1B	1B
Bisphenols		1	1	1C	1D	2E			1	1
Butylhydroxytoluene (BHT)						2F				
Dimethylfumarate (DMFu)						2G			2	
Flame Retardants						2J				
Formaldehyde	2	2	2	1	1	2H		1	2	2
Heavy Metals, Total Content (Cd, CrVI, Pb, Hg) ¹				2	2J	2K	2		2	
Organotin Compounds				1		1		1	2	1
Per- and Polyfluoroalkyl Substances (PFAS)	Prohibited									
Phthalates				1L		1M		1	2N	1

1 Please 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.

A Level 1 for foams only; Level 2 for all other materials.

B Level 1 for dyed/colored materials (non-white) only.

C Level 1 for PVC only; Level 2 for all other materials.

D Level 1 for thermal receipt and recycled paper only; Level 2 for all other materials.

E Level 2 for tapes, polycarbonate, and recycled plastic cases only; no testing requirement for other materials.

F Level 2 for poly bags only; no testing requirement for other materials.

G Level 2 for silica gel packets and foam packaging only; no testing requirement for other materials.

H Level 2 for rubber only, no testing requirement for other materials.

J Level 2 for materials with high recycled content only; no testing requirement for other materials.

K Level 2 for PVC only, no testing requirement for other materials.

L Level 1 for plastisol prints; Level 2 for all other materials.

M Level 2 for polycarbonate and ABS, Level 1 for all other polymers.

N Level 2 for patent or coated leather; no testing requirement for other materials.

Testing Requirement

Testing should be performed by suppliers on an ongoing basis to monitor compliance with the RSL requirements. Test reports or related documents may be required at any time to demonstrate compliance with the RSL. Testing may be part of a routine or random testing program and must be conducted at the supplier's expense. Testing must be done by a CSC-approved laboratory, see [Columbia Approved RSL Testing Laboratories](#) section of this manual. Where the supplier controls the selection and sourcing of materials or components, they are responsible for demonstrating compliance and testing upon request.

CSC may conduct additional random testing throughout the supply chain. Results from random testing supersede all previous test results. Suppliers will be held responsible for any material or product that fails to meet the standards of the RSL.

All children's products must comply with the US Consumer Product Safety Improvement Act (CPSIA) and relevant global requirements. Children's products may require additional testing.

Sampling and Test Request Procedures

1. According to the testing guideline above or at CSC's request all materials and/or finished goods needed for testing must be taken from the first production lot unless otherwise specified.
2. All sample materials and finished goods used for testing must be representative in all respects, of those used or intended to be used in production of CSC products. If there are any finished good finishing processes such as garment wash or garment dye, suppliers shall make sure the submitted sample is tested after finishing.
3. Composite testing of up to 3 colors of the same material may be acceptable for certain test items. If needed, consult Intertek for sample quantities and composite instructions.
4. All the testing must be applied on the actual color. Primary color testing is not allowed unless with product compliance team approval in prior (i.e., Individual red material and blue material test result cannot represent purple material testing)
5. Complete a CSC RSL Test Request Form (TRF) making sure to include all required information.
6. Submit TRF and required samples to Intertek for testing.
7. Please advise Intertek they are required to report test results directly to the CSC Liaison Office originating the test request and to RSL@columbia.com. All test reports must be in English.
8. If any test results in a failure, production must be stopped, and all suspect products must be put on hold. **Non-conforming product must not be shipped.**
 - a. Suppliers are required log-in into [CSC Gateway](#) to submit the root cause analysis and corrective action plan (CAP) for approval when receiving Product Compliance Remediation Notice. CSC will work with the supplier to determine corrective action which may include canceling the order.
 - b. Retesting may be required as directed by CSC.
 - c. Testing records must be kept by the supplier for a minimum of 5 years.

Columbia Approved RSL Testing Laboratories

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If you have any questions about the Columbia Sportswear Company RSL, please refer to the regional contacts listed below.

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Revision Record

Date	Section	Page	Changes
Aug 01 2012	Previous version	-	-
May 12 2014	Washington Children's Safe Product Act	7	Added section
May 12 2014	EU REACH - SVHC	7	Inform CSC of any SVHC > 0.1% by weight per article
May 12 2014	RSL	9-17	Azo Dyes, Disperse Dyes, Nickel Release - Test method updated
May 12 2014	RSL	10-20	PFOA, Phthalates, Carcinogenic dyes, PAHs, Heavy metals in packaging - Added
May 12 2014	RSL	13	Fluorinated Greenhouse Gases – Changed requirement to “prohibited”
May 12 2014	RSL	15	Flame retardants – Changed CSC requirement to “prohibited”
May 12 2014	RSL	19	PVC usage requirements revised
May 12 2014	Policy on Textiles, Fibers, and Skins Derived from Animals	24	Animal material restrictions revised
May 12 2014	RSL and Product Safety Procedure	25	RSL test sample compositing procedure revised
May 12 2014	RSL and Product Safety Procedure	25	Disperse dyes included in synthetic testing package. PAHs included in plastic testing package for footwear
May 12 2014	Columbia Approved RSL Testing Laboratories	28	Laboratory contacts revised
May 12 2014	Columbia Sportswear Company contact list	34	CSC contacts revised
July 01 2015	REACH	8	Revise to material level requirement for complex articles
July 01 2015	Biocide Products Regulation	9	Added section
July 01 2015	Reporting Regulations - Washington Children's Safe Product Act	9	Merge into a new Reporting Regulation section
July 01 2015	Reporting Regulations	10	Vermont reporting regulation is added
July 01 2015	Reporting Regulations	10	Maine reporting regulation is added
July 01 2015	California Proposition 65	10	California Proposition 65 is added
July 01 2015	RSL	11,23	APEOs and AP, Organotin Compounds - Prohibition on the usage of active biological substance in EU added in chemical description
July 01 2015	RSL	11-24	Disperse dyes, Solvents, Pesticides, Fluorinated Greenhouse Gases, Flame Retardants, Total and Released Metal Content, Miscellaneous, PVC - Restricted Chemicals added
July 01 2015	RSL	11-26	APEOs and AP, Disperse Dyes, Carcinogenic Dyes, Solvents, Total and Released Metal Content, Miscellaneous, PAHs - CSC restrictions limit updated
July 01 2015	RSL	11-26	APEOs and AP, Disperse Dyes, Carcinogenic Dyes, Solvents, Pesticides, Fluorinated Greenhouse Gases, Total and Released Metal Content, Organotin Compounds, Miscellaneous, PAHs - Test method updated
July 01 2015	RSL	20	Extractable Heavy Metals (Acidic solution, Children's product) added
July 01 2015	RSL	21	Total and Released Metal Content - Definition of prolonged contact added, Antimony, Arsenic, Cobalt and Mercury requirement are added
July 01 2015	RSL	23	Nitrosamine in Rubber - added
July 01 2015	Packaging Restrictions	27	No change of requirement but separate in a new section
July 01 2015	Electrical and Electronic Equipment Policy	30	Metals in Batteries - CSC mercury restriction revised
July 01 2015	Policy on Textiles, Fibers, and skins Derived from Animals	31	Add dog and cat fur restriction
July 01 2015	Policy on Nanotechnology	31	Section added
July 01 2015	Policy on DWR Chemical	33	Section added
July 01 2015	RSL and Product Safety Testing Procedures	34	Testing Guidelines revised
July 01 2015	RSL and Product Safety Testing Procedures	35	Sampling and test request procedures revised – Finished good finishing sample submission requirement added
July 01 2015	Columbia Approved RSL Testing Laboratories	37-40	Laboratory contacts revised

Date	Section	Page	Changes
July 17 2017	Cover page	-	Remove Montrail and Outdry logo
July 17 2017	Introduction	7	Remove Montrail and Pacific Trail from introduction
July 17 2017	Regulatory Requirements	9, 11	Revised term of regulation to Registration for REACH, Updated SVHCs requirement to 0.1% weight by weight Added Oregon Toxic Free Kids Act and its footnote
July 17 2017	bluesign® system Partnership	12	New added section
July 17 2017	Chemical Management Policy	12	New added section
July 17 2017	RSL	13-59	Adopt bluesign RSL
July 17 2017	MRSL	60	Formaldehyde – Test method update
July 17 2017	Conflict Minerals and Policy on Textiles, Fibers and Skins Derived from Animals	-	Section removed
July 17 2017	Policy on PVC	63	Section added
July 17 2017	Flame retardants in children's product	64	Section added
July 17 2017	RSL Testing Guideline	65	Added wood in material matrix; Test substances name updated; Footnotes updated
July 17 2017	Glossary of Terms/Acronyms	67	Updated terms/acronyms
July 17 2017	Columbia Approved RSL Testing Laboratories	68	Laboratory contacts revised
July 17 2017	Columbia Sportswear Company RSL Contact Information	72	CSC contacts revised
July 31 2020	Cover page	-	Version change, split into Apparel, Accessory, Equipment and Footwear.
July 31 2020	Re-order the section sequence	All	Consolidate policy sections
July 31 2020	Introduction	4	Update the content about the separation of Apparel, Accessory and Equipment from Footwear manual
July 31 2020	Introduction	4	Add statement with content of "All the RSL manual content is not to be changed without the approval of Product Compliance Team".
July 31 2020	CMP	8	Revise the CMP link
July 31 2020	REACH	17	Add the request of "ensure the article contain < 0.1% of candidate list of SVHC"
July 31 2020	RSL	19	Adopt to bluesign® 10.0 version and adding potential usage
July 31 2020	RSL	19	Effective from Fall 21
July 31 2020	RSL	19	Revise the Footnote "6"
July 31 2020	RSL	22	Revise detection limit of formaldehyde as 15 mg/kg and limit for Usage C as 75 mg/kg
July 31 2020	RSL	22-45	Aniline, PFHxA, Heptadecafluoro-1-iodooctane, 1H,1H,2H,2H-Perfluorodecylidide, 8:2 FTOH, Perfluorooctylethanol**, Perfluorooctylethyl acrylate or methacrylate**, Phenol, Quinoline, UV stabilizer - Added as bluesign version 10.0
July 31 2020	RSL	22-45	Plasticizers, Polyaromatic Hydrocarbons (PAHs), Polyvinyl chloride (PVC) - Restriction limit Updated as industrial RSL
July 31 2020	RSL	22-45	Chlorinated Phenols, Flame retardants, Halogenated Biphenyls, halogenated Terphenyls, halogenated Naphthalenes, Cresol, all isomers, o-Phenylphenol, Antimony (Sb), Arsenic (As), Cadmium (Cd), Chromium (Cr), Chromium Cr(VI), Cobalt (Co), Copper (Cu), Lead (Pb), Mercury (Hg), Nickel (Ni) - Test method update
July 31 2020	RSL	35-36	Solvents (VOC) for both substances and restrictions limit update
July 31 2020	RSL	36	DMF limit update
July 31 2020	RSL	37	MPhT, DPT, TeET in Tin organic compounds - Added as bluesign 10.0
July 31 2020	RSL	42	Total Lead in substrate restrictions limit update as regulation
July 31 2020	RSL	45	Remove Nitrosamines sections.
July 31 2020	RSL	45	Add Phenylmercury compounds

Date	Section	Page	Changes
July 31 2020	Appendices	46-63	Adopt bluesign 10.0 version update with Arylamines, Colorants with carcinogenic potential, Colorants banned for other reasons, Flame retardants, Pesticides
July 31 2020	Appendices	49	Moving CMR dyestuff Basic Violet 3 from Appendix H to Appendix F
July 31 2020	Appendices	61	Add 5 REACH CMR phthalate in Appendix Q
July 31 2020	RSL Testing Guideline	63	Revise material type in Matrix
July 31 2020	RSL Testing Guideline	63	Mandatory items replaced with higher risk test items; supplementary items replaced with lower risk test items.
July 31 2020	RSL Testing Guideline	63	Remove "Footwear only" from PAHs in RSL testing guideline
July 31 2020	RSL Testing Guideline	63	Add DMFa, NMP, DMAc, PCP for leather, add Azo Dyes and corresponding salts, PFOA-related substance, Extractable Heavy Metal, Chlorinated Benzenes and Toluene, and Quinoline
July 31 2020	RSL Testing Guideline	63	Delete "white" in Footnote "6"
July 31 2020	RSL Testing Guideline	63	Add footnote "11" of Polymers, "12" of DWR and "13" of Quinoline
July 31 2020	Columbia Approved RSL Testing Laboratories	65-68	Laboratory global contacts revised
July 31 2020	Columbia Sportswear Company RSL Contact Information	69	CSC contacts revised
May 10 2023	Leather Working Group Partnership	4	New section
May 10 2023	MRSL	8	Add AP/APEO in MRSL
May 10 2023	Per - and Poly - fluoroalkyl Substance (PFAS) Chemistry Policy	10	Section renamed. Add vendor responsibility and reporting process, add PFAS transition period.
May 10 2023	Packaging Restriction Policy	15	Add Phthalate and PFAS under scope
May 10 2023	United States of America (U.S.) State Level Regulations and Requirements	17	Add New York State Law and PFAS reporting requirement
May 10 2023	Restricted parameters	23	Adjust pH requirement for leather
May 10 2023	RSL	24-52	Reformat adopt bluesign RSL ver.13
May 10 2023	RSL	24	AP/APEO limit change from each to sum of all, add standards for down/feather.
May 10 2023	RSL	25	Add "each" to Arylamines requirement
May 10 2023	RSL	25	Add each 1.0 mg/kg requirement to alpha-substituted chlorinated toluenes
May 10 2023	RSL	30	Add as received and after ageing for Chromium VI for leather, update ageing test method.
May 10 2023	RSL	31	Add test method EN 16128 to Nickel release
May 10 2023	RSL	34	Add Siloxanes
May 10 2023	RSL	34	Add Fluorescent Whitening Agent for Face Covering
May 10 2023	RSL	35-36	Reformat PFAS section adopt AFIRM RSL ver.8 2023 PFAS list
May 10 2023	RSL	39	Dimethylformamide limit adjust as 500 ppm for solvent coating, lamination or fiber manufacturing
May 10 2023	RSL	39	Update Phenylmercury limit as 0.01%
May 10 2023	RSL	41-43	Add AP/ APEO individual substances in Annex following bluesign BSBL v4.0
May 10 2023	RSL	47-48	Add Antimony trioxide and Phenol, isopropylated, phosphate (3:1) (PIP(3:1)), Bis (2-ethylhexyl)-3,4,5,6-tetrabromophthalate(TBPH), 2-Ethylhexyl-2, 3,4,5-tetrabromobenzoate (TBB) in Flame Retardant Annex
May 10 2023	RSL Testing Guideline	53	Add phthalate under package material, add screen-print category under finishing, add feather and down category. Replace PFOS/PFOA with PFAS to align with PFAS phase out policy. Add paint and enamel in DWR category.
May 10 2023	RSL Testing Guideline	53	Edit footnote 8 regarding 3-in-1 testing. Add footnote 14 for PFAS individual substances subject to lab capacity.
May 10 2023	Sampling and Test Request Procedures	54	Failure remediation now centralized in Gateway
May 10 2023	Columbia Approved RSL Testing Laboratories	55-58	Laboratory global contacts update
May 10 2023	Columbia Sportswear Company RSL Contact Information	59	CSC contacts update

Date	Section	Page	Changes
Aug 20 2024	Introduction	1	Add AFIRM membership partnership and adopt AFIRM RSL. Combine Apparel, Accessory and Equipment and Footwear RSL
Aug 20 2024	AFRIM	2	Add AFIRM membership detail and introduce AFIRM, adjust LWG and bluesign section content
Aug 20 2024	Chemical Management Policy	5	Replace the 4 must do requirement by FEP compliance requirement
Aug 20 2024	MRS�	6	Add a statement about the policy adoption to RMV
Aug 20 2024	Biocide Policy	7-8	No antimicrobial chemistry can be used without approval. Add Canada Pest Control Product Act
Aug 20 2024	PFAS Policy	9	Remove the transition period
Aug 20 2024	EEE Policy	12	Add button cell and batteries requirement and Reese's Law
Aug 20 2024	Packaging Restriction Policy	14-25	Adopt AFIRM packaging requirement including APEO, AP, azo dye, bisphenol, DMFu, formaldehyde, heavy metal, organotin, PFAS, phthalate. Add Link and reference
Aug 20 2024	Regulatory Requirement	26-27	Add GPSR requirement
Aug 20 2024	US state level regulation and requirement	28-29	Add reporting regulation link as examples
Aug 20 2024	RSL	30-31	Replace bluesign by AFIRM 09 RSL as the basic content. Add Link and reference from AFIRM
Aug 20 2024	RSL	32	Add AFIRM chemical info sheet
Aug 20 2024	Definition	33-35	Adopt AFIRM terminology definition
Aug 20 2024	Restricted Substance	36-68	Replace bluesign RSL by AFRIM RSL except Ethylene glycol dimethyl ether, Chlorinated Paraffins, Antimony, CrVI, Cr, Co, Pb, bisphenol group, formaldehyde, phenol, PFAS, phthalate, PVC and solvent
Aug 20 2024	RSL Testing Guideline	69-72	Adopt AFIRM testing requirement including packaging material testing requirement
Aug 20 2024	Columbia Approved RSL Testing Laboratory	74-77	Update the contact
Aug 20 2024	CSC RSL contact info	78	Update the contact