DRYKORN: RESTRICTED SUBSTANCES LIST (RSL)

SCOPE OF THE RSL

The DRYKORN RSL applies to all DRYKORN products including apparel, non-apparel, accessories, and packaging materials as well as all components such as trims, metal parts, and other materials used in DRYKORN products.

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_1 INTRODUCTION AND BACKGROUND

AFIRM Background

The Apparel and Footwear International RSL Management (AFIRM) Working Group was established in 2004 with the mission to reduce the use and impact of harmful substances in the apparel and footwear supply chain. AFIRM provides harmonized chemical management standards, aligned testing methods, and industry best practices based on transparency, science, and collaboration. By adopting the AFIRM RSL, DRYKORN requires all suppliers to ensure compliance.

_2 LEGAL REQUIREMENTS & COMPLIANCE

Compliance with REACH Annex XVII

The supplied goods correspond to the prohibitions and restrictions of dangerous substances as they are laid down in the Annex XVII of the Regulation (EC) No 1907/2006, which can be downloaded from the following website https://echa.europa.eu/substances-restricted-under-reach and which forms an essential part of this Agreement. In case of a compound product, this is applicable of each separate component.

SVHC Restriction

The delivered products contain substances of very high concern (SVHCs) registered in the actual (date of delivery) REACH SVHC Candidate-List, only up to 0.1 % (this corresponds to 1000 ppm or 1000 ppm). The REACH SVHC Candidate-List can be downloaded from the following website: https://echa.europa.eu/candidate-list-table. The mentioned weight limit of 0.1 % refers to the weight of the respective products. In case of a compound product, the weight of each separate component is relevant (ECJ, judgment of 10 September 2015, C-106/14), for example the weight of yarn, inlays, buttons or zippers.

Compliance with POP Regulation

The products delivered comply with the requirements of the POP Regulation (EU) 2019/1021 (formerly (EC) No. 850/2004), as amended at the time of delivery. In particular, the limit values defined in Annexes I to V must be complied with.

The current consolidated version of the POP Regulation can be downloaded from the following link: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02019R1021-20251015. Both the current version of the POP Regulation and its amendments are binding for the supplier. The supplier is obliged to inform himself regularly about the current version of the POP Regulation and its amendments.

_3 INDUSTRY & COMPANY GUIDELINES

Adoption of the AFIRM RSL, AFIRM Packaging RSL and Additional Chemical Requirements

DRYKORN follows the AFIRM RSL and the AFIRM Packaging RSL in its original forms which can be found in Chapters 6 and 7 of this document. Any DRYKORN-specific additional chemical requirements are listed separately in chapter 6. The AFIRM RSL is also available in several languages online AFIRM Restricted Substances List (RSL).

Compliance with ZDHC MRSL and Wastewater Guidelines

In addition, only textile auxiliaries and colorants that comply with the limits of the Manufacturing Restricted Substances List (MRSL) of the Zero Discharge of Hazardous Chemicals Programme (ZDHC) in the version current at the time of delivery are used for the production of the goods delivered. The MRSL is available at https://www.roadmaptozero.com/mrsl_online/. It lists the maximum allowed concentrations of specific chemicals for different substance groups in the chemicals used.

We also request adherence to the current version of the ZDHC Wastewater Guidelines (ZDHC-Wastewater-Guidelines). NOTE: While the 'Aspirational' level represents best-in-class performance, the 'Foundational' level must not be undercut under any circumstances.

We reserve the right to verify compliance with both specifications by requiring submission of the chemical register and supplier declarations/certifications, and/or by requesting wastewater monitoring reports. We may contact suppliers directly to obtain or confirm the required documentation.

General Usage Ban

The following substances are strictly prohibited in any materials or products supplied to DRYKORN, regardless of concentration:

- Per- and polyfluorinated substances (PFAS)
- Polyvinylchloride (PVC) (CAS No. 9002-86-2)
- Any flame retardants, including brominated and organophosphorus compounds
- Anti-microbial finishes or components containing anti-microbials

_4 PACKAGING

For the delivered packaging, the above requirements for compliance with REACH Annex XVII, SVHC, and the POP Regulation apply to the same extent. Furthermore, adherence with the AFIRM Packaging RSL is required. The use of packaging or packaging components in which the concentration of lead, cadmium, mercury and chromium VI cumulatively exceeds 100 milligrams per kilogram is prohibited. In the case of composite products, this also applies to the respective product component (e.g. to the plastic and metal proportion in hangers).

_5 SUPPORT TOOLS

In addition to the AFIRM RSL, AFIRM provides support tools such as Chemical Information Sheets and the Supplier Chemistry Toolkit (https://afirm-group.com/toolkit/), available at AFIRM Tools' website. These resources help suppliers implement best practices and maintain compliance.

_6 DRYKORN CHEMICAL REQUIREMENTS IN ADDITION TO AFIRM RSL

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
Aniline					
62-53-3	Aniline in azodyes	50 ppm	Some azodyes can cleave the aromatic amine aniline under reductive conditions. Aniline is suspected to cause cancer and genetic defects.	Textiles: EN ISO 14362-1:2017 Leather: EN ISO 17234-1:2020	5 ppm
62-53-3	Aniline, free in Indigo	20 ppm	Indigo is industrially produced from aniline and cyanic acid. Thus, it can be present as free residue in indigo.	EN ISO 14362:1-2017 without reductive cleavage	5 ppm
Anti-microbialsiline					
The use of anti-microbial finishes or components containing anti-microbials is not permitted unless agreed to in writing.					
Azodicarbonamide (ADCA)					
123-77-3	Azodicarbonamide (ADCA)	0,10%	ADCA can be used specifically for the production of foams, thermoplastics and epoxy resins as blowing agent.	FT-IR; Relevant for foams	0,02%
Use of chrome-free and metal-free tanned leather terminology					
7440-47-3	Total content of chromium	0.1 % on dry weight	Chromium compounds can be used as dyeing additives, dye-fixing agents, color-fastness after-treatments + dyes for wool, silk & polyamide (especially dark shades), and leather tanning.	EN ISO 17072-2:2011	10 ppm
Various	Total content of all tanning metals (Cr, Al, Ti, Zr, Fe)				100 ppm
Isocyanates					
Various	Diphenylmethane diisocyanate (MDI)	1 ppm free Blocked – monitor levels	Isocyanates are the building blocks for polyurethane and under normal circumstances they are fully reacted to leave no residues in PU materials. Isocyanates are present in some adhesive formulations and if the adhesives are not formulated or cured properly then failures can occur.	Free- HPLC Blocked: GC-MS with injector block temperature at 300 °C; confirmation at 180 °C	1 ppm
822-06-0	Hexamethylene diisocyanate (HDI)				
4098-71-9	Isophorone diisocyanate (IPDI)				
2778-42-9	Tetramethylxylene diisocyanate (TMXDI)				
584-84-9 and 91-08-7	Toluene diisocyanate (TDI)				
3173-72-6	Napthylene-1,5,di-isocyanate(1,5-NDI)				
Natural Rubber					
Various	Soluble allergenic proteins	n. d.	Natural latex contains several proteins, some of which can have allergenic properties. Latex is an aqueous dispersion of polymers that can be solidified into rubber.	EN 455-3:2023, (modified) Lowry Method	20 ppm

CAS No.	Substance	Limits Component materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measuremnt	Reporting Limit Limits above which test results should be reported
Process preservative agents (Leather only)					
90-43-7	Ortho-phenylphenol (OPP)	750 ppm	Due to its preservative properties OPP is used as an auxiliary to protect leather through various production stages, from hide to finished goods.	EN 17134-2:2023	10 ppm
59-50-7	Chlormethylisothiazolinon / Methylchloroisothiazolinon (CMC/CMK)	300 ppm	CMK has biocidal properties and can be used as preservative.	EN ISO 13365-1:2020	
21564-17-0	2-(Thiocyanomethylthio)benzothiazol (TCMTB)	500 ppm	TMCTB is a preservative for leather.		
26530-20-1	2-Octyl-2H-isothiazol-3-on (OIT)	100 ppm	OIT has biocidal properties and can be used as preservative.		
Siloxane					
107-51-7	Octamethyltrisiloxane L3	0.1 % each	Siloxanes can be relevant for silicones, silicone finishing, silicone coatings, silicone prints, softeners relevant samples, samples with soft gripe, and water-, soil- and oil-repellent finishes, etc.	Extraction with non-chlorinated organic solvent, GC-MS L3 new on candidate list (01/2025) L4 and M3T new on candidate list (06/2025)	50 ppm each
141-62-8	Decamethyltrisiloxane L4				
17928-28-8	1,1,1,3,5,5,5-Heptamethyl-3-[(trimethylsilyl)oxy]trisiloxane M3T				

_7 AFIRM RSL

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, 2-Phenyl-2-Propanol & Related Substances					
98-86-2	Acetophenone	50 ppm each	Potential breakdown products in EVA foam when using certain crosslinking agents, including DicumylPeroxide (DCP).	Extraction in acetone or methanol GC/MS, sonication for 30 minutes at 60° C	25 ppm each
617-94-7	2-Phenyl-2-Propanol		Formed by reaction between acetophenone and hydrazine, a byproduct found in azodicarbonamide (ADCA) up to 0.1%. May be found in foams where ADCA is used as a blowing agent and DCP is used as crosslinker.	Extraction in acetone or methanol GC/MS or LC/MS , sonication for 30 minutes at room temperature	
729-43-1	Acetophenone Azine				
Acidic & Alkaline Substances					
	pH value	Textiles: 4.0-7.5 Leather: Chrome-tanned: 3.2-5.5 Other: 3.5-7.5	pH value is a characteristic number, ranging from pH 0 to pH 14, which indirectly shows the content of acidic or alkaline substances in a product. pH values less than 7 indicate sources of acidic substances, and values greater than 7 indicate sources of alkaline substances. To avoid irritation or chemical burns to the skin, the pH value of products must be in the range of human skin—approximately pH 5.5. AFIRM recommends the limits cited to comply with global regulations and to minimize the chances of Chromium VI formation during tanning and processing of leather. 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. Important: Egypt, Morocco, and the Gulf Cooperation Council (GCC) require pH for leather not lower than 3.5.	Textiles and synthetic coated fabrics: EN ISO 3071:2020 Leather: EN ISO 4045:2018	N/A
Alkylphenols (APs) Alkylphenol Ethoxylates (APEOs) including all isomers					
various	Nonylphenol (NP), mixed isomers	Total APs: 10 ppm Total APs + APEOs: 100 ppm	APEOs can be used as or found in detergents, scouring agents, spinning oils, wetting agents, softeners, emulsifying/dispersing agents for dyes and prints, impregnating agents, de-gumming for silk production, dyes and pigment preparations, polyester padding and down/feather fillings. APs are used as intermediaries in the manufacture of APEOs and antioxidants used to protect or stabilize polymers. Biodegradation of APEOs into APs is the main source of APs in the environment. APEOs and formulations containing APEOs are prohibited from use throughout supply chain and manufacturing processes. We acknowledge that residual or trace concentrations of APEOs may still be found at levels exceeding 100 ppm and that more time is necessary for the supply chain to phase them out completely. Recycled products: Contact your brand customer for information about potential exemptions from the limit on NPEOs in recycled textile products, in particular recycled wool garments.	Textiles and Leather: EN ISO 21084:2019 Polymers and all other materials: 1 g sample/20 mL THF, sonication for 60 minutes at 70° C, analysis according to EN ISO 21084:2019 Down (China market only): GB/T 23322-2018 for compliance with GB/T 14272-2021	Total of NP + OP: 3 ppm
various	Octylphenol (OP), mixed isomers				
various	Nonylphenol ethoxylates (NPEOs)			All materials except Leather: EN ISO 18254-1:2016 with determination of APEO using LC/MS or LC/MS/MS Leather: Sample prep and analysis using EN ISO 18218-1:2023 with quantification according to EN ISO 18254-1:2016 Down (China market only): GB/T 23322-2018 for compliance with GB/T 14272-2021	Total of NPEOs + OPEOs: 20 ppm
various	Octylphenol ethoxylates (OPEOs)				

CAS No.	Substance	Limits Component materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
Azo-amines & Arylamine Salts					
92-67-1	4-Aminobiphenyl	20 ppm each	Azo dyes and pigments are colorants that incorporate one or several azo groups (-N=N-) bound with aromatic compounds. Thousands of azo dyes exist, but only those which degrade to form the listed cleaved amines are restricted. Azo dyes that release these amines are regulated and should no longer be used for dyeing textiles.	All materials except leather: EN ISO 14362-1:2017 Leather: EN ISO 17234-1:2024 p-Aminoazobenzene: All materials except leather: EN ISO 14362-3:2017 Leather: EN ISO 17234-2:2011	5 ppm each
92-87-5	Benzidine				
95-69-2	4-Chloro-o-toluidine				
91-59-8	2-Naphthylamine				
97-56-3	o-Aminoazotoluene				
99-55-8	2-Amino-4-nitrotoluene				
106-47-8	p-Chloraniline				
615-05-4	2,4-Diaminoanisole				
101-77-9	4,4'-Diaminodiphenylmethane				
91-94-1	3,3'-Dichlorobenzidine				
119-90-4	3,3'-Dimethoxybenzidine				
119-93-7	3,3'-Dimethylbenzidine				
838-88-0	3,3'-dimethyl-4,4'-diaminodiphenylmethane				
120-71-8	p-Cresidine				
101-14-4	4,4'-Methylen-bis(2-chloraniline)				
101-80-4	4,4'-Oxydianiline				
139-65-1	4,4'-Thiodianiline				
95-53-4	o-Toluidine				
95-80-7	2,4-Toluenediamine				
137-17-7	2,4,5-Trimethylaniline				
95-68-1	2,4 Xylidine				
87-62-7	2,6 Xylidine				
90-04-0	2-Methoxyaniline (= o-Anisidine)				
60-09-3	p-Aminoazobenzene				
3165-93-3	4-Chloro-o-toluidinium chloride				
553-00-4	2-Naphthylammoniumacetate				
39156-41-7	4-Methoxy-m-phenylene diammonium sulphate				
21436-97-5	2,4,5-Trimethylaniline hydrochloride				

CAS No.	Substance	Limits Component materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
Bisphenols					
80-05-7	Bisphenol-A (BPA)	Items intended to come in contact with the mouth: 1 ppm Textiles & leather: 10 ppm Polycarbonate Materials: 100 ppm Other Materials: 200 ppm	BPA may be used in the production of epoxy resins, polycarbonate plastics, flame retardants, and PVC. BPS may be used as a substitute for BPA for some specific uses, including in thermal receipt paper. BPS and BPF can be found in polyamide dye-fixing agents used to dye nylon and in sulfone- and phenolbased leather synthetic tanning agents. Metal-complex dyes used on nylon may contain BPS. BPA and BPS can be found in recycled polymeric and paper materials due to polycarbonate plastic and thermal receipt paper made with bisphenols entering waste streams. BPA, BPS, and BPB are included on the REACH SVHC list. Additional restrictions on the entire class of bisphenols are expected, with a revised restriction proposal forthcoming in the European Union. Important: Compliance with bisphenol (and other) limits in the AFIRM RSL does not prevent public or private enforcers from asserting that products violate California Proposition 65 warning obligations. AFIRM recommends testing relevant materials for bisphenols according to the Testing Matrix and working with suppliers to minimize residual concentrations or replacing them with better alternatives where possible. Washing nylon fibers can remove free BPS but sufficient wastewater treatment should be in place.	Textiles: For precipitation, draw the extract to another container and add methanol or acetonitrile. This keeps the extraction process consistent. Extraction: 1 g sample/20 mL THF, sonication for 60 minutes at 60° C, then add methanol or acetonitrile for precipitation prior to analysis with LC/MS. Leather: EN ISO 11936:2023 Other Materials: Extraction: 1 g sample/20 mL THF, sonication for 60 minutes at 60° C, then add methanol or acetonitrile for precipitation prior to analysis with LC/MS	Leather: 10 ppm each All other materials: 0.1 ppm for individual samples 1 ppm for composite samples
80-09-1	Bisphenol S (BPS)	Textiles & other materials: 200 ppm each Leather: 500 ppm each Limits will likely be reduced further in future revisions of the AFIRM RSL based on the best available technology and feasibility within the supply chain.			
77-40-7	Bisphenol B (BPB)				
620-92-8	Bisphenol F (BPF)				
Brominated & Organophosphorus Substances-*Formerly Flame Retardants*					
84852-53-9	Decabromodiphenyl ethane (DBDPE)	10 ppm each	With very limited exceptions, flameretardant substances, including the entire class of organohalogen flame retardants, should no longer be applied to materials during production. Listed here are examples of flame-retardant substances used historically across the apparel and footwear industry. It is not intended to be a complete list. Other flame retardants not applicable to this industry are regulated worldwide by the Stockholm Convention and the Aarhus Protocol, which have been implemented in the European Union under the POPs Regulation. The 10 ppm limit is established to account for incidental impurities, byproducts, and contaminants. Flame retardants should not be used for any other purpose, e.g., as softeners or plasticizers.	All materials: EN ISO 17881-1:2016	5 ppm each
32534-81-9	Pentabromodiphenyl ether (PentaBDE)				
32536-52-0	Octabromodiphenyl ether (OctaBDE)				
1163-19-5	Decabromodiphenyl ether (DecaBDE)				
Various	All other Polybrominated diphenyl ethers (PBDEs				
79-94-7	Tetrabromobisphenol A (TBBP A)				
59536-65-1	Polybromobiphenyls (PBB)				
3194-55-6	Hexabromocyclododecane (HBCDD)				
3296-90-0	2,2-bis(bromomethyl)-1,3-propanediol (BBMP)				
13674-87-8	Tris(1,3-dichloro-isopropyl) phosphate (TDCPP)			All materials: EN ISO 17881-2:2016	
25155-23-1	Trixylyl phosphate (TXP)				
126-72-7	Tris(2,3,-dibromopropyl) phosphate (TRIS)				
545-55-1	Tris(1-aziridinyl)phosphine oxide) (TEPA)				
115-96-8	Tris(2-chloroethyl)phosphate (TCEP)				
5412-25-9	Bis(2,3-dibromopropyl) phosphate (BDBPP)				
115-86-6	Triphenyl phosphate (TPP)	500 ppm	May be used as a flame retardant, an antioxidant for PU materials, or as an alternative plasticizer to orthophthalates. Now included on the REACH SVHC list.	All materials: EN ISO 17881-2:2016	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
Chlorinated Paraffins					
85535-84-8	Short-chain Chlorinated Paraffins (SCCPs) (C10-C13)	1000 ppm	May be used as softeners, flame retardants, or fat-liquoring agents in leather production; also as a plasticizer in polymer production.	Leather: ISO 18219-1:2021 (SCCP) ISO 18219-2:2021 (MCCP) Textiles and all other materials: ISO 22818:2021 (SCCP + MCCP)	100 ppm
85535-85-9	Medium-chain Chlorinated Paraffins (MCCPs) (C14-C17)	1000 ppm			100 ppm
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. Important: Egypt and Morocco additionally restrict MCP and DCP to levels at or above this limit. They further restrict TeCP, TriCP, and PCP in baby products to levels below the 0.5 ppm reporting limit and not reliably testable across the international lab networks.	All materials: EN 17134-2:2023	0.5 ppm each
933-78-8	2,3,5-Trichlorophenol (TriCP)				
933-75-5	2,3,6-Trichlorophenol (TriCP)				
95-95-4	2,4,5-Trichlorophenol (TriCP)				
88-06-2	2,4,6-Trichlorophenol (TriCP)				
609-19-8	3,4,5-Trichlorophenol (TriCP)				
4901-51-3	2,3,4,5-Tetrachlorophenol (TeCP)				
58-90-2	2,3,4,6-Tetrachlorophenol (TeCP)				
935-95-5	2,3,5,6-Tetrachlorophenol (TeCP)				
87-86-5	Pentachlorophenol (PCP) and its salts and esters				
Chlorinated Benzenes & Toulenes					
95-49-8	2-Chlorotoluene	Total: 1 ppm	Chlorobenzenes and Chlorotoluenes (Chlorinated Aromatic Hydrocarbons) can be used as carriers in the dyeing process of polyester or wool/ polyester fibers. They can also be used as solvents. Cross-contamination from anti-moth agents and poly shipping bags may cause failures. Important: The Gulf Cooperation Council (GCC) maintains a limit of 1 ppm for 1,2-Dichlorobenzene in textiles.	All materials: EN 17137:2024	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
Cyclosiloxanes					
556-67-2	Octamethylcyclotetrasiloxane (D4)	1000 ppm each	May be present in silicone pads and as contaminants in formulations that contain silicone, like silicone softeners and those used for prints. They are SVHCs and will be restricted from use in solvents used for dry cleaning of textiles, leather, and fur in the EU beginning 06 June 2026 with derogations.	All materials: Ultrasonic extraction with tert-Butyl methy ether (TBME) or acetone for 30 min at 40° C then GC/MS	50 ppm each
541-02-6	Decamethylcyclopentasiloxane (D5)				
540-97-6	Dodecamethylcyclohexasiloxane (D6)				
Dimethylfumarate					
624-49-7	Dimethylfumarate (DMFu)	0.1 ppm	DMFu is an anti-mold agent that may be used in sachets in packaging to prevent the buildup of mold, especially during shipping.	All materials: ISO 16186:2021	0.05 ppm
Dyes (Forbidden & Disperse)					
2475-45-8	C.I. Disperse Blue 1	30 ppm each	Disperse dyes are a class of water-insoluble dyes that penetrate the fiber system of synthetic or manufactured fibers and are held in place by physical forces without forming chemical bonds. Disperse dyes are used in synthetic fiber (e.g., polyester, acetate, polyamide). Restricted disperse dyes are suspected of causing allergic reactions and are prohibited from use for dyeing of textiles	All materials: DIN 54231:2022	15 ppm each
2475-46-9	C.I. Disperse Blue 3				
3179-90-6	C.I. Disperse Blue 7				
3860-63-7	C.I. Disperse Blue 26				
56524-77-7	C.I. Disperse Blue 35A				
56524-76-6	C.I. Disperse Blue 35B				
12222-97-8	C.I. Disperse Blue 102				
12223-01-7	C.I. Disperse Blue 106				
61951-51-7	C.I. Disperse Blue 124				
23355-64-8	C.I. Disperse Brown 1				
2581-69-3	C.I. Disperse Orange 1				
730-40-5	C.I. Disperse Orange 3				
82-28-0	C.I. Disperse Orange 11				
12223-33-5	C.I. Disperse Orange 37/76/59				
13301-61-6					
51811-42-8					
85136-74-9	C.I. Disperse Orange 149				
2872-52-8	C.I. Disperse Red 1				
2872-48-2	C.I. Disperse Red 11				
3179-89-3	C.I. Disperse Red 17				
61968-47-6	C.I. Disperse Red 151				
119-15-3	C.I. Disperse Yellow 1				
2832-40-8	C.I. Disperse Yellow 3				
6300-37-4	C.I. Disperse Yellow 7				
6373-73-5	C.I. Disperse Yellow 9				
6250-23-3	C.I. Disperse Yellow 23				
12236-29-2	C.I. Disperse Yellow 39				
54824-37-2	C.I. Disperse Yellow 49				
6858-49-7					
54077-16-6	C.I. Disperse Yellow 56				
3761-53-3	C.I. Acid Red 26				
1694-09-3	C.I. Acid Violet 49				
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				

CAS No.	Substance	Limits Component materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
Dyes (Forbidden & Disperse), continued					
1937-37-7	C.I. Direct Black 38	30 ppm each	Disperse dyes are a class of water-insoluble dyes that penetrate the fiber system of synthetic or manufactured fibers and are held in place by physical forces without forming chemical bonds. Disperse dyes are used in synthetic fiber (e.g., polyester, acetate, polyamide). Restricted disperse dyes are suspected of causing allergic reactions and are prohibited from use for dyeing of textiles	All materials: DIN 54231:2022	15 ppm each
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				
Dyes, Navy Blue					
118685-33-9	Component 1: C39H23ClCrN7O12S.2Na	30 ppm each	Navy blue colorants are regulated and prohibited from use for dyeing of textiles. Index 611-070-00-2	All materials: DIN 54231:2022	15 ppm each
Not allocated	Component 2: C46H30CrN10O20S2.3Na				
Fluorinated Greenhouse Gases					
Various	See Regulation (EU) 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
Formalaldehyde					
50-00-0	Formalaldehyde	Adults and children: 75 ppm Babies: 16 ppm	Used in textiles as an anti-creasing and anti-shrinking agent. It is also often used in polymeric resins. Although very rare in Apparel and Footwear, composite wood materials (such as particle board and plywood) must comply with existing California and U.S. Formaldehyde emission requirements (40 CFR 770). Suppliers are advised to refer to brand-specific requirements for these materials. Important: United Arab Emirates Cabinet Resolution No. (54) restricts Formaldehyde in children's textiles to 20 ppm. Indonesia Ministerial Regulation No. 18 limits Formaldehyde to "not detected" (16 ppm) in the following products: towels, bedding, and handkerchiefs	All materials except leather: JIS L 1041-2011 A (Japan Law 112) or EN ISO 14184-1:2011 Leather: EN ISO 17226-1:2021 or EN ISO 17226-2:2019. In case of interferences/doubts, proceed with EN ISO 17226-1:2021. EN ISO 17226-1:2021 can be used on its own	16 ppm
Heavy Metals (Non-Jewelry) Extractable & Total Content			**See Appendix A for separate South Korea KC Mark soluble Heavy Metal requirements.**		
7440-36-0	Antimony (Sb)	Extractable: 30ppm	Found in or used as a catalyst in polymerization of polyester, flame retardants, fixing agents, pigments, and alloys.	All materials except leather: EN 16711-2:2015 Leather: EN ISO 17072-1:2019	Extractable: 3 ppm
7440-38-2	Arsenic (As)	Extractable: 0.2 ppm Total: 100 ppm	Arsenic and its compounds can be used in preservatives, pesticides, and defoliants for cotton, synthetic fibers, paints, inks, trims, and plastics	Extractable: All materials except leather: EN 16711-2:2015 Leather: EN ISO 17072-1:2019 Total: All materials except leather: EN 16711-1:2015 Leather: EN ISO 17072-2:2022	Extractable: 0.1 ppm Total: 10 ppm
7440-39-3	Barium (Ba)	Extractable: 1000 ppm	Barium and its compounds can be used in pigments for inks, plastics, and surface coatings, as well as in dyeing, mordants, filler in plastics, textile finishes, and leather tanning	All materials except leather: EN 16711-2:2015 Leather: EN ISO 17072-1:2019	Extractable: 100 ppm

CAS No.	Substance	Limits Component materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
Heavy Metals (Non-Jewelry) Extractable & Total Content, continued					
7440-43-9	Cadmium (Cd)	Extractable: 0.1 ppm Total: 40 ppm	Cadmium compounds may be used as pigments (especially in red, orange, yellow and green); as a stabilizer for PVC; and in fertilizers, biocides, and paints.	Extractable: All materials except leather: EN 16711-2:2015 Leather: EN ISO 17072-1:2019 Total: All materials except leather: EN 16711-1:2015 Leather: EN ISO 17072-2:2022	Extractable: 0.05 ppm Total: 5 ppm
7440-47-3	Chromium (Cr)	Extractable: Textiles: Babies: 1 ppm Adults and children: 2 ppm	Chromium compounds can be used as dyeing additives; dyefixing agents; colorfastness aftertreatments; dyes for wool, silk, and polyamide (especially dark shades); and leather tanning. Important: Egypt and Morocco restrict extractable Chromium in leather products to 2 ppm for babies and 200 ppm for other ages.	Textiles: EN 16711-2:2015 Leather: EN ISO 17072-1:2019	Extractable: 0.05 ppm
18540-29-9	Chromium VI	Extractable: Leather: 3 ppm Textiles: 1 ppm	Though typically associated with leather tanning, Chromium VI also may be used in the "after-chroming" process for wool dyeing (Chrome salts applied to acid-dyed wool to improve fastness). Important: Saudi Arabia and Egypt have a limit of Not Detected (< 0.5 ppm) in textiles.	Textiles: EN 16711-2:2015 with EN ISO 17075-1:2017 if Cr is detected Leather: EN ISO 17075-1:2017 and EN ISO 17075-2:2017 for confirmation in case the extract causes interference. Alternatively, EN ISO 17075-2:2017 may be used on its own. Aging test: ISO 10195:2018 (At brand discretion but required for footwear by India BIS).	Extractable: Leather: 3 ppm Textiles: 0.5 ppm
7440-48-4	Cobalt (Co)	Extractable: Adults: 4 ppm Children and babies: 1 ppm	Cobalt and its compounds can be used in alloys, pigments, dyestuff, and the production of plastic buttons.	All materials except leather: EN 16711-2:2015 Leather: EN ISO 17072-1:2019	Extractable: 0.5 ppm
7440-50-8	Copper (Cu)	Extractable: Adults: 50 ppm Children and babies: 25 ppm	Copper and its compounds can be found in alloys and pigments, and in textiles as an antimicrobial agent. Copper is exempt from restriction limits in Metal parts. Indonesia Ministerial Regulation No. 18 limits copper to 25 ppm the following products: towels, bedding, and handkerchiefs.	All materials except leather: EN 16711-2:2015 Leather: EN ISO 17072-1:2019	Extractable: 5 ppm
7439-92-1	Lead (Pb)	Extractable: Adults: 1 ppm Children and babies: 0.2 ppm Total: 90 ppm	May be associated with alloys, plastics, paints, inks, pigments and surface coatings. Crystal or "lead glass" is exempt from total Lead restrictions. Indonesia Ministerial Regulation No. 18 limits extractable Lead to 0.2 ppm in towels, bedding, and handkerchiefs.	Extractable: All materials except leather: EN 16711-2:2015 Leather: EN ISO 17072-1:2019 Total: Non-metal: CPSC-CH-E1002-08.3 Metal: CPSC-CH-E1001-08.3 Lead in paint and surface coatings: CPSC-CH-E1003-09.1	Extractable: 0.2 ppm Total: 10 ppm

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 & Total Content, continued					
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: EN 16711-2:2015 Leather: EN ISO 17072-1:2019 Total: All materials except leather: EN 16711-1:2015 Leather: EN ISO 17072-2:2022	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: EN 16711-2:2015 Leather: EN ISO 17072-1:2019 Release: EN 12472:2020 and EN 1811:2023 Release (eyewear frames): EN 16128:2025	Extractable: 0.1 ppm Release: 0.5 µg/cm²/ week
7782-49-2	Selenium (Se)	Extractable: 500 ppm	Selenium and its compounds may be found in paints and inks. Important: Morocco and Egypt now have a 100 ppm limit.	All materials except leather: EN 16711-2:2015 Leather: EN ISO 17072-1:2019	Extractable: 50 ppm
Heavy Metals (Jewelry)				**Sample preparation for jewelry and wearables: Wax areas not intended for skincontact: EN 1811:2023**	
7440-36-0	Antimony (Sb)	Paints & Coatings: Extractable: 60 ppm	Antimony and its compounds can be used as a Flame Retardant in paints, as well as a colorant in pigments.	ASTM F963-23 as referenced in ASTM F2923:2020	Extractable: 5 ppm
7440-38-2	Arsenic (As)	Paints & Coatings: Extractable: 25 ppm	Arsenic and its compounds can be used in paints and inks.	ASTM F963-23 as referenced in ASTM F2923:2020	Extractable: 5 ppm
7440-39-3	Barium (Ba)	Paints & Coatings: Extractable: 1000 ppm	Barium and its compounds can be used in pigments for inks	ASTM F963-23 as referenced in ASTM F2923:2020	Extractable: 100 ppm
7440-43-9	Cadmium (Cd)	Substrates, Paints & Coatings: Total: Adults: 75 ppm Children: 40 ppm	Cadmium and its compounds are used as pigments (especially in red, orange, yellow, and green). It can also be used in alloys to improve hardness or be found as a contaminant	ASTM F963-23 as referenced in ASTM F2923:2020	Total: 5 ppm
7440-47-3	Chromium (Cr)	Paints & Coatings: Extractable: 60 ppm	Chromium and its compounds can be used as pigments in paints. It can also be used as part of alloys such as stainless steel.	ASTM F963-23 as referenced in ASTM F2923:2020	Extractable: 5 ppm
7439-92-1	Lead (Pb)	Paints & Coatings: Extractable: 90 ppm	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. Crystal or “lead glass” is exempt from total Lead restrictions.	ASTM F963-23 as referenced in ASTM F2923:2020	Total: 10 ppm
7439-97-6	Mercury (Hg)	Paints & Coatings: Extractable: 60 ppm	Mercury and its compounds may be used in paints and can be found as a contaminant in alloys and in gold due to its use during the extraction process.	ASTM F963-23 as referenced in ASTM F2923:2020	Extractable: 5 ppm
7440-02-0	Nickel (Ni)	Release (metal parts): Prolonged skin contact: 0.5 µg/cm²/week Pierced part: 0.2 µg/cm²/week	Nickel and its compounds can be used for plating alloys and improving the corrosion-resistance and hardness of alloys. They can also occur as impurities in pigments and alloys.	EN 12472:2020 and EN 1811:2023	Release: Prolonged skin contact: 0.5 µg/cm²/ week Pierced part: 0.2 µg/cm²/ week
7782-49-2	Selenium (Se)	Paints & Coatings: Extractable: 500 ppm	Selenium and its compounds may be found in paints and inks.	ASTM F963-23 as referenced in ASTM F2923:2020	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	1 ppm	Vinyl Chloride is a precursor for polymerization and may be present in various PVC materials like prints, coatings, flip flops, and synthetic leather.	EN ISO 6401:2022	1 ppm
N-Nitrosamines					
62-75-9	N-nitrosodimethylamine (NDMA)	0.5 ppm each	Can be formed as by-product in the production of rubber and PU/TPU materials	EN ISO 19577:2019 with LC/MS/MS verification if positive	0.5 ppm each
55-18-5	N-nitrosodiethylamine (NDEA)				
621-64-7	N-nitrosodipropylamine (NDPA)				
924-16-3	N-nitrosodibutylamine (NDBA)				
100-75-4	N-nitrosopiperidine (NPIP)				
930-55-2	N-nitrosopyrrolidine (NPYR)				
59-89-2	N-nitrosomorpholine (NMOR)				
614-00-6	N-nitroso N-methyl N-phenylamine (NMPhA)				
612-64-6	N-nitroso N-ethyl N-phenylamine (NEPhA)				
Organotin Compounds					
Various	Tributyltin (TBT)	0.5 ppm each	Class of chemicals combining tin and organics such as butyl and phenyl groups that should no longer be used in the production of apparel, footwear, and related products. Organotins are predominantly found in the environment as antifoulants in marine paints, but they can also be used as biocides (e.g., antibacterials), catalysts in plastic and glue production, and heat stabilizers in plastics/rubber. In textiles and apparel, organotins are associated with plastics/rubber, inks, paints, metallic glitter, polyurethane products and heat transfer material. AFIRM recommends restricting "Other Organotins" as a matter of best practice consistent with other industry restricted substances lists.	All materials: ISO 16179:2025 or EN ISO 22744-1:2020	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: 1ppm 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)				
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 17134-2:2023	100 ppm
Ozone-depleting Substances					
Various	See Regulation (EU) 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-& Polyfluoroalkyl Substances (PFAS)					
Various	All PFAS as measured by total fluorine Note: Several U.S. states restrict total organic fluorine while some EU member states restrict total fluorine with the ability to demonstrate that fluorine > 50 ppm does not come from PFAS.	50 ppm	Regulations around the world restrict the use of PFAS in apparel and footwear, with partial or full exemptions for recycled materials, personal protective equipment, and outdoor apparel for severe wet conditions. Check with your brand customers for their exemption policy, which may vary by market. PFAS may be used in commercial water-, oil-, and stain-repellent agents as well as in breathable membranes that remove moisture, e.g., PTFE. Refer to Appendix 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. Note: As of 1 January 2026, French Decree No. 2025-1376 on the prevention of risks related to PFAS has entered into force. This regulation introduces stringent controls on PFAS in a wide range of consumer products, is aligned with proposed EU universal PFAS restriction limits, provides exemptions that include recycled materials, and provides a sell-off period for existing stock manufactured prior to 1 January 2026. Further guidance on the Decree is forthcoming.	EN 14582:2016 or ASTM D7359:2023 or EN 17813:2023 Methods quantify total fluorine (inorganic + organic). See AFIRM PFAS Phaseout Guidance for additional information about total versus total organic fluorine.	20 ppm for individual sample 50 ppm for max. composite of two samples
Various	Perfluorooctane Sulfonate (PFOS) and its salts	25 ppb total		Textiles, synthetic coated fabrics, excluding leathers and polymers: EN 17681-1:2025 alkaline hydrolysis Leather: EN ISO 23702-1:2023 Polymers: EN ISO 23702-1:2023 using THF extraction followed by methanol precipitation (1:1). Significantly higher findings of PFAS analytes are possible with EN 17681-1:2025, especially FTOHs, which does not necessarily mean PFAS were intentionally used. Check with your brand customers to understand whether re-tests of previously tested materials are necessary	25 ppb total
Various	PFOS-related substances	1000 ppb total			1000 ppb total
Various	Perfluorooctanoic Acid (PFOA) and its salts	25 ppb total			25 ppb total
Various	PFOA-related substances	1000 ppb total			1000 ppb total
Various	Perfluorohexane-1-sulphonic acid (PFHxS) and its salts	25 ppb total			25 ppb total
Various	PFHxS-related substances	1000 ppb total			1000 ppb total
Various	C9-C14 Perfluorocarboxylic acids (PFCAs) and their salts	25 ppb total			25 ppb total
Various	C9-C14 PFCA-related substances	260 ppb total			260 ppb total
Various	PFHxA and its salts	25 ppb total			25 ppb total
Various	PFHxA-related substances	1000 ppb total			1000 ppb total
Pesticides & 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 15913:2003 or EPA 8081/EPA 8151A or BVL L 00.00-34:2010-09	0.5 ppm each
Phthalates					
28553-12-0	Di-Iso-nonylphthalate (DINP)	500 ppm each Total: 1000 ppm	Esters of ortho-phthalic acid (Phthalates) are a class of organic compound commonly added to plastics to increase flexibility. They are sometimes used to facilitate the molding of plastic by decreasing its melting temperature. Phthalates can be found in: Flexible plastic components (e.g., PVC) Print pastes, Adhesives Plastic buttons, Plastic sleevings Polymeric coatings Listed here are all legally restricted phthalates as well as those included on the REACH substances of very high concern (SVHC) candidate list at the time of publication. Suppliers should assume that the AFIRM RSL includes all phthalates on the SVHC list—whether itemized here or not—since the list is updated frequently. Other ortho-phthalates (like DPHP) may have similar toxicological characteristics to those listed. Before using any unlisted orthophthalates, please make sure to have a sound toxicology study from your chemical supplier. If you are unsure, please communicate with your brand customer.	Sample preparation for all materials: CPSC-CH-C1001-09.4 Measurement: Textiles: GC/MS, EN ISO 14389:2022 (8.1 Calculation based on weight of print only; 8.2 Calculation based on weight of print and textile if print cannot be removed). All materials except textiles: GC/MS	50 ppm each
117-84-0	Di-n-octylphthalate (DNOP)				
117-81-7	Di(2-ethylhexyl)-phthalate (DEHP)				
26761-40-0	Diisodecylphthalate (DIDP)				
85-68-7	Butylbenzylphthalate (BBP)				
84-74-2	Dibutylphthalate (DBP)				
84-69-5	Diisobutylphthalate (DIBP)				
84-75-3	Di-n-hexylphthalate (DnHP)				
84-66-2	Diethylphthalate (DEP)				
131-11-3	Dimethylphthalate (DMP)				
131-18-0	Di-n-pentyl phthalate (DPENP)				
84-61-7	Dicyclohexyl phthalate (DCHP)				
71888-89-6	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich				
117-82-8	Bis(2-methoxyethyl) phthalate				
605-50-5	Diisopentyl phthalate (DIPP)				
131-16-8	Dipropyl phthalate (DPRP)				
27554-26-3	Diisooctyl phthalate (DIOP)				
68515-50-4	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear				

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, continued						
71850-09-4	Diisohexyl phthalate (DIHxP)	500 ppm each Total: 1000 ppm		Esters of ortho-phthalic acid (Phthalates) are a class of organic compound commonly added to plastics to increase flexibility. They are sometimes used to facilitate the molding of plastic by decreasing its melting temperature. Phthalates can be found in: Flexible plastic components (e.g., PVC) Print pastes, Adhesives Plastic buttons, Plastic sleevings Polymeric coatings Listed here are all legally restricted phthalates as well as those included on the REACH substances of very high concern (SVHC) candidate list at the time of publication. Suppliers should assume that the AFIRM RSL includes all phthalates on the SVHC list—whether itemized here or not—since the list is updated frequently. Other ortho-phthalates (like DPHP) may have similar toxicological characteristics to those listed. Before using any unlisted orthophthalates, please make sure to have a sound toxicology study from your chemical supplier. If you are unsure, please communicate with your brand customer.	Sample preparation for all materials: CPSC-CH-C1001-09.4 Measurement: Textiles: GC/MS, EN ISO 14389:2022 (8.1 Calculation based on weight of print only; 8.2 Calculation based on weight of print and textile if print cannot be removed). All materials except textiles: GC/MS	50 ppm each
68515-42-4	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)					
84777-06-0	1,2-Benzenedicarboxylic acid Dipentyl ester, branched and linear					
68648-93-1	1,2-Benzenedicarboxylic acid, di-C6-10-alkyl esters or mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate; 1,2-Benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters; 1,2-Benzenedicarboxylic acid, di-C6-10-alkyl esters					
68515-51-5						
776297-69-9	n-Pentyl-isopentylphthalate (nPIPP)					
26040-51-7	Bis(2-ethylhexyl) tetrabromophthalate					
53306-54-0	Bis(2-propylheptyl) phthalate (DPHP)	For informational purposes only. AFIRM recommends testing to assess content levels.				
Polycyclic Aromatic Hydrocarbons (PAHs)						
83-32-9	Acenaphtene	No individual restriction	Total: 10 ppm	PAHs are natural components of crude oil and are common residues from oil refining. PAHs have a characteristic smell similar to that of car tires or asphalt. Oil residues containing PAHs are added to rubber and plastics as a softener or extender and may be found in rubber, plastics, lacquers and coatings. PAHs are often found in the outsoles of footwear and in printing pastes for screen prints. PAHs can be present as impurities in Carbon Black. They also may be formed from thermal decomposition of recycled materials during reprocessing **Naphthalene: Dispersing agents for textile dyes may contain high residual Naphthalene concentrations due to the use of low-quality Naphthalene derivatives (e.g., poorquality Naphthalene Sulphonate Formaldehyde condensation products).	All materials: AFPS GS 2019 or EN 17132:2019 or ISO 16190:2021	0.2 ppm each
208-96-8	Acenaphthylene					
120-12-7	Anthracene					
191-24-2	Benzo(g,h,i)perylene					
86-73-7	Fluorene					
206-44-0	Fluoranthene					
193-39-5	Indeno(1,2,3-cd)pyrene					
91-20-3	Naphthalene**					
85-01-8	Phenanthrene					
129-00-0	Pyrene					
56-55-3	Benzo(a)anthracene	1 ppm each Child care articles: 0.5 ppm each				
50-32-8	Benzo(a)pyrene					
205-99-2	Benzo(b)fluoranthene					
192-97-2	Benzo[e]pyrene					
205-82-3	Benzo[j]fluoranthene					
207-08-9	Benzo(k)fluoranthene					
218-01-9	Chrysene					
53-70-3	Dibenzo(a,h)anthracene					
Quinoline						
91-22-5	Quinoline	50 ppm		Found as an impurity in polyester and some dyestuffs. Quinoline can be included with disperse dye testing, as the same method is used for both. It is not expected in non-dyed materials.	All materials: DIN 54231:2022 with methanol extraction at 70° C	10 ppm

CAS No.	Substance	Limits Component materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
Solvents & Residuals					
68-12-2	Dimethylformamide (DMFa)	50 ppm	Solvent used in plastics, rubber, and polyurethane (PU) coating. Waterbased PU does not contain DMFa and is therefore preferable	Textiles: EN 17131-1:2025 All other materials: ISO 16189:2021	50 ppm each
75-12-7	Formamide	1000 ppm each Play/baby/yoga mats: 200 ppm	Byproduct in the production of EVA foams. Note: China Standard TYT 3802.1-2024, Technical requirement and test method of fitness yoga equipment— Part 1: Yoga mat, specifies a limit of 200 ppm.		
127-19-5	Dimethylacetamide (DMAC)	1000 ppm each	Solvent used in the production of elastane fibers and sometimes as substitute for DMFa.		
872-50-4	N-Methyl-2-pyrrolidone (NMP)		Industrial solvent used in production of water-based polyurethanes and other polymeric materials. May also be used as a surface treatment for textiles, resins, and metal-coated plastics, or as a paint stripper		
UV Absorbrs/ Stabilizers					
3846-71-7	UV 320	1000 ppm each	Used as UV absorbers for plastics (PVC, PET, PC, PA, ABS, PU and other polymers), coatings, resins, rubber, and PU foam materials such as open cell foams for padding.	ISO 24040:2022 with extraction in THF, analysis by GC/MS Note: Stabilized THF should be used for extraction.	50 ppm
3864-99-1	UV 327				
3896-11-543	UV 326				
3147-75-9	UV 329				
36437-37-3	UV 350				
25973-55-1	UV 328	100 ppm			
2440-22-4	Drometrizole	**For informational purposes only.** AFIRM recommends testing to assess content levels.			
Volatile Organic Compounds (VOCs)					
71-43-2	Benzene	5 ppm	The VOCs in Appendix D represent a broad range of potentially harmful substances that can be semiquantified using the prescribed headspace method. Upon conducting this test, substances that also appear in other sections of the RSL with specific test methods and limit values may be detected, and further testing may be appropriate to assess product conformance. The substances in Appendix D should not be used in textile auxiliary chemical preparations. They are associated with solventbased processes such as solventbased polyurethane coatings, glues/ adhesives, and polymer anufacturing. They should not be used for any kind of facility or spot cleaning. Individual VOCs should be reported if found > 100 ppm and confirmation testing may be required, especially for substances also included in other sections of the RSL with dedicated limits. See AFIRM VOC Testing Guidance for additional information.	For general VOC screening: GC/MS headspace 45 minutes at 120° C	5 ppm
Various	Other: See Appendix D for a complete list.	Total: 500 ppm			Other: 100 ppm each

_8 AFIRM PACKAGING RSL

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: 100 ppm	APEOS are used as surfactants in the production of plastics, elastomers, paper, and textiles. These chemicals can be found in many processes involving foaming, emulsification, solubilization, or dispersion. APEOs can be used in paper pulping, lubrication oils, and plastic polymer stabilization. APs are used as intermediaries in the manufacture of APEOs and antioxidants used to protect or stabilize polymers. Biodegradation of APEOs into APs is the main source of APs in the environment. APEOs and formulations containing APEOs are prohibited from use throughout supply chain and manufacturing processes. We acknowledge that residual or trace concentrations of APEOs may still be found at levels exceeding 100 ppm and that more time is necessary for the supply chain to phase them out completely. Recycled materials: Contact your brand customer for information about potential exemptions from the limit on NPEOs in recycled materials.	Textiles and Leather: EN ISO 21084:2019 Polymers and all other materials: 1 g sample/20 mL THF, sonication for 60 minutes at 70°C, analysis according to EN ISO 21084:2019	Sum of NP & OP: 3 ppm
various	Octylphenol (OP), mixed isomers				
various	Nonylphenol ethoxylates (NPEOs)	Total: 100 ppm		All materials except Leather: EN ISO 18254-1:2016 with determination of APEO using LC/MS or LC/MS/MS Leather: Sample prep and analysis using EN ISO 18218-1:2023 with quantification according to EN ISO 18254-1:2016	NPEO & OPEO: 20 ppm
various	Octylphenol ethoxylates (OPEOs)				
Azo-amines and Arylamine Salts					
92-67-1	4-Aminobiphenyl	20 ppm each	Azo dyes and pigments are colorants that incorporate one or several azo groups (-N=N-) bound with aromatic compounds. Thousands of azo dyes exist, but only those which degrade to form the listed cleavable amines are restricted. Azo dyes that release these amines are regulated and should no longer be used for dyeing textiles.	All materials except leather: EN ISO 14362-1:2017 Leather: EN ISO 17234-1:2024 p-Aminoazobenzene: All materials except leather: EN ISO 14362-3:2017 Leather: EN ISO 17234-2:2011	5 ppm each
92-87-5	Benzidine				
95-69-2	4-Chloro-o-toluidine				
91-59-8	2-Naphthylamine				
97-56-3	o-Aminoazotoluene				
99-55-8	2-Amino-4-nitrotoluene				
106-47-8	p-Chloraniline				
615-05-4	2,4-Diaminoanisole				
101-77-9	4,4'-Diaminodiphenylmethane				
91-94-1	3,3'-Dichlorobenzidine				
119-90-4	3,3'-Dimethoxybenzidine				
119-93-7	3,3'-Dimethylbenzidine				
838-88-0	3,3'-dimethyl-4,4'-Diaminodiphenylmethane				
120-71-8	p-Cresidine				
101-14-4	4,4'-Methylen-bis(2-chloraniline)				
101-80-4	4,4'-Oxydianiline				
139-65-1	4,4'-Thiodianiline				
95-53-4	o-Toluidine				
95-80-7	2,4-Toluenediamine				
137-17-7	2,4,5-Trimethylaniline				
95-68-1	2,4 Xylidine				
87-62-7	2,6 Xylidine				
90-04-0	2-Methoxyaniline (= o-Anisidine)				
60-09-3	p-Aminoazobenzene				

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, continued					
3165-93-3	4-Chloro-o-toluidinium chloride	20 ppm each	Azo dyes and pigments are colorants that incorporate one or several azo groups (-N=N-) bound with aromatic compounds. Thousands of azo dyes exist, but only those which degrade to form the listed cleavable amines are restricted. Azo dyes that release these amines are regulated and should no longer be used for dyeing textiles.	All materials except leather: EN ISO 14362-1:2017 Leather: EN ISO 17234-1:2024 p-Aminoazobenzene: All materials except leather: EN ISO 14362-3:2017 Leather: EN ISO 17234-2:2011	5 ppm each
553-00-4	2-Naphthylammoniumacetate				
39156-41-7	4-Methoxy-m-phenylene diammonium sulphate				
21436-97-5	2,4,5-Trimethylaniline hydrochloride				
Biphenols					
80-05-7	Bisphenol-A (BPA)	Receipt paper: BPA and BPS: 1 ppm each Other packaging: 1000 ppm each In preparation for forthcoming restrictions, significantly lower levels of bisphenols should be achievable, e.g., in polyamide, over time or better alternatives should be substituted if possible.	BPA may be used in the production of epoxy resins, polycarbonate plastics, flame retardants, and PVC. BPS may be used as a substitute for BPA for some specific uses, including in thermal receipt paper. BPS and BPF can be found in polyamide dye-fixing agents and in sulfone- and phenol- based leather synthetic tanning agents. BPA and BPS can be found in recycled polymeric and paper materials due to polycarbonate plastic and thermal receipt paper made with bisphenols entering waste streams. BPA, BPS, and BPB are included on the REACH SVHC list. Additional restrictions on the entire class of bisphenols are expected, with a revised restriction proposal forthcoming in the European Union. Important: Compliance with bisphenol (and other) limits in the AFIRM Packaging RSL does not prevent public or private enforcers from asserting that packaging violates California Proposition 65 warning obligations. AFIRM recommends testing relevant materials for bisphenols according to the Testing Matrix and to work with suppliers to minimize residual concentrations or replace them with better alternatives where possible.	Leather: EN ISO 11936:2023 All other materials: Extraction: 1 g sample/20 ml THF, sonication for 60 minutes at 60°C, analysis with LC/MS Note for textiles: For precipitation, draw the extract to another container and add methanol or acetonitrile. This keeps the extraction process consistent.	Leather: 10 ppm each All other materials: 0.1 ppm for individual samples 1 ppm for composite samples
80-09-1	Bisphenol-S (BPS)				
77-40-7	Bisphenol-B (BPB)				
620-92-8	Bisphenol-F (BPF)				
Brominated & Organophosphorus Substances Formerly 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. The EU is seeking to reduce limits on polybrominated diphenyl ethers (PBDEs) to improve material recyclability. Once adopted, new limits will be included.	All materials: EN ISO 17881-1:2016	5 ppm each
32534-81-9	Pentabromodiphenyl ether (PentaBDE)				
79-94-7	Tetrabromobisphenol A (TBBP A)				
40088-47-9	Tetrabromodiphenyl ether				
36483-60-0	Hexabromodiphenyl ether				
68928-80-3	Heptabromodiphenyl ether				
3194-55-6	Hexabromocyclododecane (HBCDD)	75 ppm			
115-86-6	Triphenyl phosphate (TPP)	500 ppm	May be used as a flame retardant, an antioxidant for PU materials, or as an alternative plasticizer to orthophthalates. Now included on the REACH SVHC list.	All materials: EN ISO 17881-2:2016	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
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 D4275:2017	5 ppm each
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.	ISO 16186:2021	0.05 ppm
Formaldehyde					
50-00-0	Formaldehyde	150 ppm	Formaldehyde can be found in polymeric resins, binders, and fixing agents for dyes and pigments, including those with fluorescent effects. It is also used as a catalyst in certain printing, adhesives, and heat transfers. Formaldehyde can be used in antimicrobial applications for odor control. Formaldehyde found in packaging can off-gas directly onto product. Composite wood materials (e.g., particle board and plywood) must comply with California and U.S. formaldehyde emission requirements (40 CFR 770). Though formaldehyde legislation does not specifically apply to packaging, suppliers are advised to refer to brand-specific requirements for these materials.	Wood: EN 717-3:1996 Paper: DIN EN 645:1994 & EN 1541:2001 Textiles, Finishings, Dyes, Inks & Coatings: JIS L 1041-2011 A (Japan Law 112) or EN ISO 14184-1:2011 Leather: EN ISO 17226-2:2019 with EN ISO 17226-1:2021 confirmation method in case of interferences. Alternatively, EN ISO 17226-1:2021 can be used on its own.	16 ppm
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: 2016 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 62321-7-1:2015 The testing laboratory will convert the test result into ppm. Natural leather and natural materials: EN ISO 17075-1:2017 and EN ISO 17075-2:2017 for confirmation in case the extract causes interference. Alternatively, EN ISO 17075-2:2017 may be used on its own. All other materials: IEC 62321-7-2:2017	3 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
Organotin Compounds					
Various	Tributyltin (TBT)	0,5 ppm each	Class of chemicals combining tin and organics such as butyl and phenyl groups. Organotins are predominantly found in the environment as antifoulants in marine paints, but they can also be used as biocides (e.g., antibacterials), catalysts in plastic and glue production, and heat stabilizers in plastics/rubber. In textiles and apparel packaging, organotins are associated with plastics/rubber, inks, paints, metallic glitter, polyurethane products and heat transfer material. AFIRM recommends restricting "Other Organotins" as a matter of best practice consistent with other industry restricted substances lists.	All materials: ISO 16179:2025	0.1 ppm each
Various	Triphenyltin (TPhT)				
Various	Dibutyltin (DBT)	1 ppm each			
Various	Dioctyltin (DOT)				
Various	Monobutyltin (MBT)				
Various	Monooctyltin (MOT)				
Various	Tricyclohexyltin (TCyHT)				
Various	Trimethyltin (TMT)				
Various	Trioctyltin (TOT)				
Various	Tripropyltin (TPT)				
Various	Dimethyltin (DMT)	Other Organotins: 1 ppm each			
Various	Diphenyltin (DPhT)				
Various	Dipropyltin (DPT)				
Various	Monomethyltin (MMT)				
Various	Monophenyltin (MPhT)				
1461-25-2	Tetrabutyltin (TeBT)				
597-64-8	Tetraethyltin (TeET)				
3590-84-9	Tetraoctyltin (TeOT)				
Per- and Polyfluoroalkyl Substances (PFAS)					
Various	All PFAS as measured by total organic fluorine	50 ppm	Regulations around the world ban the use of PFAS in packaging. PFAS may be used in commercial water-, oil-, and stain-repellent agents as well as in breathable membranes that remove moisture, e.g., PTFE. Refer to Appendix A for a list of PFAS substances and CAS Numbers for which testing can be conducted to indicate whether PFAS chemistry is present above restricted levels due to intended use or unintended contamination. See AFIRM PFAS Phaseout Guidance for a recommended testing approach to ensure compliance with all global regulations using the methods included in this section. Recycled packaging: Contact your brand customer about potential exemptions from the limit on total organic fluorine in recycled textile products.	EN 14582:2016 or ASTM D7359:2023 or EN 17813:2023 Methods quantify total fluorine (inorganic + organic). See AFIRM PFAS Phaseout Guidance for additional information about total versus total organic fluorine.	20 ppm for individual sample 50 ppm for max. composite of two samples
Various	Perfluorooctane sulfonate (PFOS) and its salts	25 ppb total		Textiles and other materials (excluding polymers): EN 17681-1:2025 Leather: EN ISO 23702-1:2023 Polymers (synthetic coated fabrics & polymers, plastics, foams, natural & synthetic rubber): EN ISO 23702-1:2023 using THF extraction followed by methanol precipitation (1:1). Significantly higher findings of PFAS analytes are possible with EN 17681-1:2025, especially FTOHs, which does not necessarily mean PFAS were intentionally used. Check with your brand customers to understand whether re-tests of previously tested materials are necessary.	25 ppb total
Various	PFOS-related substances	1000 ppb total			1000 ppb total
Various	Perfluorooctanoic Acid (PFOA) and its salts	25 ppb total			25 ppb total
Various	PFOA-related substances	1000 ppb total			1000 ppb total
Various	Perfluorohexane-1-sulphonic acid (PFHxS) and its salts	25ppb total			25ppb total
Various	PFHxS-related substances	1000 ppb total			1000 ppb total
Various	C9-C14 Perfluorocarboxylic acids (PFCAs) and their salts	25 ppb total			25 ppb total
Various	C9-C14 PFCA-related substances	260 ppb total			260 ppb total
Various	PFHxA and its salts	25 ppb total			25 ppb total
Various	PFHxA-related substances	1000 ppb total			1000 ppb total

CAS No.	Substance	Limits Component materials in Finished Product	Potential Uses & Additional Information	Suitable Test Method Sample Preparation & Measurement	Reporting Limit Limits above which test results should be reported
Phthalates					
28553-12-0	Di-Iso-nonylphthalate (DINP)	500 ppm each Total: 1000 ppm	Esters of ortho-phthalic acid (Phthalates) are a class of organic compound commonly added to plastics to increase flexibility. They are sometimes used to facilitate the moulding of plastic by decreasing its melting temperature. Phthalates can be found in: • Flexible plastic packaging • Components (e.g., PVC) • Plastisol print pastes • Adhesives • Plastic sleeves • Polymeric coatings The REACH substances of very high concern (SVHC) candidate list is updated frequently. Suppliers should assume that the AFIRM Packaging RSL includes all Phthalates on the SVHC list — whether itemized here or not.	All materials: CPSC-CH-C1001-09.4, analysis by GC/MS	50 ppm each
117-84-0	Di-n-octylphthalate (DNOP)				
117-81-7	Di(2-ethylhexyl)-phthalate (DEHP)				
26761-40-0	Diisodecylphthalate (DIDP)				
85-68-7	Butylbenzylphthalate (BBP)				
84-74-2	Dibutylphthalate (DBP)				
84-69-5	Diisobutylphthalate (DIBP)				
84-75-3	Di-n-hexylphthalate (DnHP)				
84-66-2	Diethylphthalate (DEP)				
131-11-3	Dimethylphthalate (DMP)				
131-18-0	Di-n-pentyl phthalate (DPENP)				
84-61-7	Dicyclohexyl phthalate (DCHP)				
71888-89-6	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich				
117-82-8	Bis(2-methoxyethyl) phthalate				
605-50-5	Diisopentyl phthalate (DIPP)				
131-16-8	Dipropyl phthalate (DPRP)				
27554-26-3	Diisooctyl phthalate (DIOP)				
68515-50-4	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,				
68648-93-1	1,2-Benzenedicarboxylic acid, di-C6-10-alkyl esters or mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate; 1,2-Benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters; 1,2-Benzenedicarboxylic acid, di-C6-10-alkyl esters				
68515-51-5					
776297-69-9	n-Pentyl-isopentylphthalate (nPIPP)				
26040-51-7	Bis(2-ethylhexyl) tetrabromophthalate				
53306-54-0	Bis(2-propylheptyl) phthalate (DPHP)	For informational purposes only. AFIRM recommends testing to assess content levels.			

_9 APPENDIX AFIRM RSL

APPENDIX A) SOUTH KOREA KC MARK SOLUBLE HEAVY METALS REQUIRMENTS

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 8124-3:2020 with Amendment 1 of 2023
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	

The substances in red are included as they appear in the regulation. However, as they are hydrolysed during the testing, they will never be detected or reported. Instead, they will be reported as the related substances as shown, each of which is also included in the regulation. * Cannot be detected by the 17681-1:2025 alkaline hydrolysis method, and it is important to check your supply chain to make sure it is not present in input chemistry.	**A** Converted to PFOS **B** Converted to PFOA **C** Converted to 8:2 FTOH	**D** Converted to PFHxS **E** Converted to 10:2 FTOH **F** Converted to 6:2 FTOH

APPENDIX B) PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

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

CAS No.	Substance
PFOS and Its Salts	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)
2795-39-3	Perfluorooctanesulfonic acid, potassium salt (PFOS-K)
29457-72-5	Perfluorooctanesulfonic acid, lithium salt (PFOS-Li)A
29081-56-9	Perfluorooctanesulfonic acid, ammonium salt (PFOS-NH4) A
70225-14-8	Perfluorooctane sulfonate diethanolamine salt (PFOS-NH(C2H5OH)2) A
56773-42-3	Perfluorooctanesulfonic acid, tetraethylammonium salt (PFOS-N(C2H5)4)A
251099-16-8	Didecyldimethyl ammonium perfluorooctane sulfonate (PFOS-N(C10H21)2(CH3)2)A
PFOS-related Substances	
4151-50-2	N-Ethylperfluoro-1-octanesulfonamide (N-Et-FOSA)
31506-32-8	N-Methylperfluoro-1-octanesulfonamide (N-Me-FOSA)
1691-99-2	2-(N-Ethylperfluoro-1-octanesulfonamido)-ethanol (N-Et-FOSE)
24448-09-7	2-(N-Methylperfluoro-1-octanesulfonamido)-ethanol (N-Me-FOSE)
307-35-7	Perfluoro-1-octanesulfonyl fluoride (POSF)A
754-91-6	Perfluorooctane sulfonamide (PFOSA)
PFOA and Its Salts	
335-67-1	Perfluorooctanoic acid (PFOA)
335-95-5	Sodium perfluorooctanoate (PFOA-Na)B
2395-00-8	Potassium perfluorooctanoate (PFOA-K)B

CAS-No.	Substance
PFOA and Its Salts, continued	
335-93-3	Silver perfluorooctanoate (PFOA-Ag)B
335-66-0	Perfluorooctanoyl fluoride (PFOA-F)B
3825-26-1	Ammonium pentadecafluorooctanoate (APFO)B
PFOA-related Substances	
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)
376-27-2	Methyl perfluorooctanoate (Me-PFOA)B
3108-24-5	Ethyl perfluorooctanoate (Et-PFOA)B
678-39-7	2-Perfluorooctylethanol (8:2 FTOH)
27905-45-9	1H,1H,2H,2H-Perfluorodecyl acrylate (8:2 FTA)C
1996-88-9	1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMA)C
27854-31-5	2H,2H-Perfluorodecanoic acid (H2PFDA)*
PFHxS and Its Salts	
355-46-4	Perfluorohexane Sulfonic acid (PFHxS)
3871-99-6	Perfluorohexane Sulfonic acid, potassium salt (PFHxS-K)D
55120-77-9	Perfluorohexane Sulfonic acid, lithium salt (PFHxS-Li)D
68259-08-5	Perfluorohexane Sulfonic acid, ammonium salt (PFHxS-NH4)D
82382-12-5	Perfluorohexane Sulfonic acid, sodium salt (PFHxS-Na)D
PFHxS-related Substances	
68259-15-4	N-Methylperfluoro-1-hexanesulfonamide (N-Me-FHxSA)
41997-13-1	Perfluorohexane sulfonamide (PFHxSA)
C9 – C14 PFCAs and Their Salts	
375-95-1	Perfluorononanoic Acid (PFNA, C9-PFCA)
335-76-2	Perfluorodecanoic Acid (PFDA, C10-PFCA)
2058-94-8	Perfluoroundecanoic Acid (PFUnA, C11-PFCA)
307-55-1	Perfluorododecanoic Acid (PFDoA, C12-PFCA)
72629-94-8	Perfluorotridecanoic Acid (PFTrDA, C13-PFCA)
376-06-7	Perfluorotetradecanoic Acid (PFTeDA, C14-PFCA)
172155-07-6	Perfluoro-3-7-dimethyloctanecarboxylate (PF-3,7-DMOA)
C9 – C14 PFCA-related Substances	
17741-60-5	1H,1H,2H,2H-Perfluorododecyl acrylate (10:2 FTA)E
2144-54-9	1H,1H,2H,2H-Perfluorododecyl methacrylate (10:2 FTMA)E
865-86-1	1H,1H,2H,2H-Perfluorododecanol (10:2 FTOH)
34598-33-9	2H,2H,3H,3H-Perufloroundecanoic acid (H4PFUnA)
678-39-7	2-Perfluorooctylethanol (8:2 FTOH)
39239-77-5	1H,1H,2H,2H-perfluorotetradecan-1-ol (12:2 FTOH)
120226-60-0	1H,1H,2H,2H-Perfluorododecanesulphonic acid (10:2 FTS)
2043-54-1	1H,1H,2H,2H-Perfluorododecyl iodide (10:2 FTI)*
30046-31-2	1H,1H,2H,2H-Perfluorotetradecyl iodide (12:2 FTI)*
PFHxA and Its Salts	
307-24-4	Perfluorohexanoic Acid (PFHxA, C6-PFCA)
PFHxA-related Substances	
17527-29-6	1H,1H,2H,2H-Perfluorooctyl acrylate (6:2 FTA)F
2144-53-8	1H,1H,2H,2H-Perfluorooctyl methacrylate (6:2 FTMA)F
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.	Substance
93-72-1	2-(2,4,5-trichlorophenoxy) propionic acid, its salts and compounds; 2,4,5-TP
93-76-5	2,4,5-T
94-75-7	2,4-D
309-00-2	Aldrine
86-50-0	Azinophosmethyl
2642-71-9	Azinophosethyl
4824-78-6	Bromophos-ethyl
2425-06-1-	Captafol
63-25-2	Carbaryl
510-15-6	Chlorbenzilat
57-74-9	Chlordane
6164-98-3	Chlordimeform
470-90-6	Chlorfenvinphos
1897-45-6	Chlorthalonil
56-72-4	Coumaphos
68359-37-5	Cyfluthrin
91465-08-6	Cyhalothrin
52315-07-8	Cypermethrin
78-48-8	S,S,S-Tributyl phosphorotrithioate (Tribufos
52918-63-5	Deltamethrin
53-19-0	DDD
72-54-8	
3424-82-6	DDE
72-55-9	
50-29-3	DDT
789-02-6	
333-41-5	Diazinone
1085-98-9	Dichlofluanide
120-36-5	Dichloroprop
115-32-2	Dicofol
141-66-2	Dicrotophos
60-57-1	Dieldrine
60-51-5	Dimethoate
88-85-7	Dinoseb, its salts and acetate
63405-99-2	DTTB (4, 6-Dichloro-7 (2,4,5-trichlorophenoxy) -2-Trifluoro methyl benz imidazole)
115-29-7	Endosulfan
959-98-8	Endosulfan I (alpha)
33213-65-9	Endosulfan II (beta)
72-20-8	Endrine
66230-04-4	Esfenvalerate
106-93-4	Ethylendibromid
56-38-2	Ethylparathione; Parathion
51630-58-1	Fenvalerate
Various	Halogenated naphthalenes, including polychlorinated naphthalenes (PCNs)
76-44-8	Heptachlor
1024-57-3	Heptachloroepoxide
36355-01-8	Hexabromobiphenyl
319-84-6	a-Hexachlorocyclohexane with & without Lindane
319-85-7	b-Hexachlorocyclohexane with & without Lindane
319-86-8	g-Hexachlorocyclohexane with & without Lindane
118-74-1	Hexachlorobenzene
465-73-6	Isodrine
4234-79-1	Kelevane
143-50-0	Kepone
58-89-9	Lindane
121-75-5	Malathione
94-74-6	MCPA

94-81-5	MCPB
93-65-2	Mecoprop
10265-92-6	Metamidophos
72-43-5	Methoxychlor
2385-85-5	Mirex
6923-22-4	Monocrotophos
298-00-0	Parathion-methyl
1825-21-4	Pentachloroanisole
7786-34-7	Phosdrin/Mevinphos
72-56-0	Perthane
31218-83-4	Propethamphos
41198-08-7	Profenophos
13593-03-8	Quinalphos
82-68-8	Quintozene
8001-50-1	Strobane
297-78-9	Telodrine
8001-35-2	Toxaphene
731-27-1	Tolylfluanide
1582-09-8	Trifluraline

APPENDIX D) VOLATILE ORGANIC COMPOUNDS (VOCS)

Existing VOCs from Previous Versions of the AFIRM RSL	
CAS-No.	**Substance**
75-15-0	Carbon Disulfide
56-23-5	Carbon Tetrachloride
67-66-3	Chloroform
108-94-1	Cyclohexanone
107-06-2	1,2-Dichloroethane
75-35-4	1,1-Dichloroethylene
100-41-4	Ethylbenzene
76-01-7	Pentachloroethane
630-20-6	1,1,1,2- Tetrachloroethane
79-34-5	1,1,2,2- Tetrachloroethane
127-18-4	Tetrachloroethylene (PERC)
108-88-3	Toluene
71-55-6	1,1,1- Trichloroethane
79-00-5	1,1,2- Trichloroethane
79-01-6	Trichloroethylene
1330-20-7	Xylenes (meta-, ortho-, para-)
108-38-3	
95-47-6	
106-42-3	

VOCs Restricted in Other Sections of the AFIRM RSL	
95-50-1	1,2-Dichlorobenzene
106-46-7	1,4-Dichlorobenzene
872-50-4	1-Methyl-2-pyrrolidione
617-94-7	2-phenyl-2-propanol
98-86-2	Acetophenone
75-12-7	Formamide
127-19-5	N,N-Dimethylacetamide (DMAC)
91-20-3	Naphthalene
68-12-2	N-N-Dimethylformamide (DMFa)
100-42-5	Styrene
VOCs Added to the 2025 AFIRM RSL	
96-18-4	1,2,3-trichloropropane
78-87-5	1,2,Dichloropropane
111-15-9	2-Ethoxyethyl acetate
149-57-5	2-Ethylhexane acid
62-53-3	Aniline
111-96-6	Bis(2-methoxyethyl)ether
78-59-1	Isophorone
108-95-2	Phenol
109-99-9	THF
106-94-5	1-bromopropane
70657-70-4	1-PG2MEA 1-Propanol,2-methoxy-, acetate)
111-77-3	2-(2-Methoxyethoxy)ethanol
110-80-5	2-ethoxyethanol
109-86-4	2-Methoxyethanol EGME (ethylene glycol monomethyl ether)
1589-47-5	2-Methoxypropan-1-o
110-71-4	EGDME (Ethylene glycol dimethyl ether)
110-49-6	EGMEA (Ethylene glycol monomethyl ether acetate)
67-72-1	Hexachloroethane
75-09-2	Merhylene chloride (dichloromethane)
110-54-3	n-hexane
112-49-2	TEGDME (Triethylene glycol dimethyl ether)

_10 APPENDIX AFIRM PACKAGING RSL

The substances in red are included as they appear in the regulation. However, as they are hydrolyzed during the testing, they will never be detected or reported. Instead, they will be reported as the related substances as shown, each of which is also included in the regulation	**A** Hydrolyzed to PFOA. **B** Hydrolyzed to x:2 FTOH under hydrolysis conditions.

APPENDIX A) PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

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

CAS-No.	Substance
PFOS and Its Salts	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)
PFOS-related Substances	
4151-50-2	N-Ethylperfluoro-1-octanesulfonamide (N-Et-FOSA)
31506-32-8	N-Methylperfluoro-1-octanesulfonamide (N-Me-FOSA)
1691-99-2	2-(N-Ethylperfluoro-1-octanesulfonamido)-ethanol (N-Et-FOSE)
24448-09-7	2-(N-Methylperfluoro-1-octanesulfonamido)-ethanol (N-Me-FOSE)
307-35-7	Perfluoro-1-octanesulfonyl fluoride (POSF)
754-91-6	Perfluorooctane sulfonamide (PFOSA)
PFOA and Its Salts	
335-67-1	Perfluorooctanoic acid (PFOA)
PFOA-related Substances	
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)
376-27-2	Methyl perfluorooctanoate (Me-PFOA)A
3108-24-5	Ethyl perfluorooctanoate (Et-PFOA)A
678-39-7	2-Perfluorooctylethanol (8:2 FTOH)
27905-45-9	1H,1H,2H,2H-Perfluorodecyl acrylate (8:2 FTA)B
1996-88-9	1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMA)B
PFHxS and Its Salts	
355-46-4	Perfluorohexane Sulfonic acid (PFHxS)
PFHxS-related Substances	
68259-15-4	N-Methylperfluoro-1-hexanesulfonamide (N-Me-FHxSA)
41997-13-1	Perfluorohexane sulfonamide (PFHxSA)
C9 – C14 PFCAs and Their Salts	
375-95-1	Perfluorononanoic Acid (PFNA, C9-PFCA)
335-76-2	Perfluorodecanoic Acid (PFDA, C10-PFCA)
2058-94-8	Perfluoroundecanoic Acid (PFUnA, C11-PFCA)
307-55-1	Perfluorododecanoic Acid (PFDoA, C12-PFCA)
72629-94-8	Perfluorotridecanoic Acid (PFTrDA, C13-PFCA)
376-06-7	Perfluorotetradecanoic Acid (PFTeDA, C14-PFCA)
172155-07-6	Perfluoro-3-7-dimethyloctanecarboxylate (PF-3,7-DMOA)
C9 – C14 PFCA-related Substances	
17741-60-5	1H,1H,2H,2H-Perfluorododecyl acrylate (10:2 FTA)B
2144-54-9	1H,1H,2H,2H-Perfluorododecyl methacrylate (10:2 FTMA)B
865-86-1	1H,1H,2H,2H-Perfluorododecanol (10:2 FTOH)
34598-33-9	2H,2H,3H,3H-Perufloroundecanoic acid (H4PFUnA)

CAS-No.	Substance
678-39-7	2-Perfluorooctylethanol (8:2 FTOH)
39239-77-5	1H,1H,2H,2H-perfluorotetradecan-1-ol (12:2 FTOH)
120226-60-0	1H,1H,2H,2H-Perfluorododecanesulphonic acid (10:2 FTS)
PFHxA and Its Salts	
307-24-4	Perfluorohexanoic Acid (PFHxA, C6-PFCA)
PFHxA-related Substances	
17527-29-6	1H,1H,2H,2H-Perfluorooctyl acrylate (6:2 FTA)B
2144-53-8	1H,1H,2H,2H-Perfluorooctyl methacrylate (6:2 FTMA)B
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)
647-42-7	1H,1H,2H,2H-Perfluorooctanol (6:2 FTOH)

_11 LETTER TO THE SUPPLIER

The supplier confirms that goods/fabrics/trims/leather or any delivered material comply with the DRYKORN Chemical Management & Restricted Substances Policy and all valid laws. In case of any discrepancy, the supplier has to inform DRYKORN.

The undersigned is authorized to agree to and sign this Chemical Management & Restricted Substances Policy on behalf of the supplier identified below.

Agent (only if no direct supplier):

Supplier name:

Supplier address:

Date:

Signature & Stamp: