

## **Restricted Substances List**

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**Valid from:** Season S19SR  
**Valid for:** All Product Divisions AG & TI / All Main Product Groups

**Created by:** Team Product Risk Management  
**Released by:** Head of Product & Vendor Sustainability

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**LEGEND / ABBREVIATIONS**

AFIRM	The AFIRM Group (Apparel and Footwear International RSL Management Group) is a voluntary association of brands who have the aim to reduce the use and impact of harmful substances in the apparel and footwear supply chain. Therefore the group developed a Restricted Substances List and a Toolkit to reach the aim. The HUGO BOSS Restricted Substances List & Product Compliance is based on the AFIRM RSL.
CADS	Cooperation at DSI (Deutsches Schuhinstitut)
CAS	Chemical-Abstract-Service; Unique numerical identifiers for chemical elements, compounds, polymers, biological sequences, mixtures and alloys
CEN	Comité Européen de Normalisation
C.I.	Color Index; Compendium of dyes: In the U.K. the color Index was prepared by the Society of Dyers and Colorists, while in USA it is done by American Association of Textile Chemists and Colorists.
DIN	Deutsches Institut für Normung
EN	European Norm
EPA	(US) Environmental Protection Agency
ISO	International Society for Standardization
ISO/TS	International Society for Standardization/Technical Specification
mg/kg	milligram per kilogram
MI	Material Information
ppm	parts per million
prEN	Draft European Norm
REACH	Registration, Evaluation, Authorization and Restriction of Chemicals
Reporting limit	Values equal or higher than this limit have to be documented in the test report
RSL	Restricted Substances List
SVHC	Substances of Very High Concern
Usage ban	Substance must not be used intentionally in any production of the product
S19SR	Season: Summer 2019 Spring Summer
w/o	without
µg/cm <sup>2</sup>	microgram per square centimeter
µg/cm <sup>2</sup> /week	microgram per square centimeter per week

## RESTRICTED SUBSTANCES

CAS No.	Substance	Limits Raw Material & Finished Product	Potential Uses Textile Processing for Apparel & Footwear	Suitable Test Method Sample Preparation & Measurement
<b>ACETOPHENONE AND 2-PHENYL-2-PROPANOL - corresponding to AFIRM</b>				
98-86-2	Acetophenone	50 ppm each [reporting limit 25 ppm]	Potential breakdown products in EVA foam when using dicumyl peroxide as a crosslinking agent.	Extraction in acetone or methanol GC/MS, sonication for 30 minutes at 60 degrees C
617-94-7	2-Phenyl-2-propanol			
<b>ALKYLPHENOL (AP) AND ALKYLPHENOETHOXYLATES (APEOs), INCLUDING ALL ISOMERS - corresponding to AFIRM</b>				
Various	Nonylphenol (NP), mixed isomers	Total: 100 ppm [reporting limit 10 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.	Extraction: 1 g sample/20 ml THF, sonication for 60 minutes at 70°C Analysis: EN ISO 18857-2:2011
Various	Octylphenol (OP), mixed isomers			
Various	Nonylphenol ethoxylates (NPEOs)	Total: 100 ppm [reporting limit 20 ppm]	APEOs and formulations containing APEOs are prohibited from use throughout supply chain and manufacturing processes. Because this limit reflects forthcoming EU legislation and was set to provide suppliers with advanced warning and direction for continuous improvement.	Textile: EN ISO 18254-1:2016, determination of AP using LC/MS or GC/MS  Leather: EN ISO 18218-1:2015
Various	Octylphenol ethoxylates (OPEOs)			

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<b>AZO-AMINES</b> - corresponding to AFIRM				
92-67-1	4-Aminobiphenyl	20 ppm each [reporting limit 5 ppm]	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 of textiles.	Textile: EN ISO 14362-1:2017 Leather: EN ISO 17234-1:2015 <b>p-Aminoazobenzene:</b> Textile: EN ISO 14362-3:2017 Leather: EN ISO 17234-2:2011
92-87-5	Benzidine			
95-69-2	4-Chlor-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-Toluyldiamine			
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			
<b>BISPHENOL-A</b> - limits corresponding to AFIRM				
80-05-7	Bisphenol-A (BPA)	1 ppm [reporting limit 1 ppm]	Used in the production of epoxy resins, polycarbonate plastics, flame retardants and PVC. Prohibited from use in food and drink containers, and items intended to come into contact with oral cavity.	Sample preparation: Extraction: 1 g sample/20 ml methanol, sonication for 60 minutes at 70°C. Measurement: DIN EN ISO 18857-2:2011 (mod)

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<b>CHLORINATED PARAFFINS</b> - corresponding to AFIRM				
85535-84-8	Short-chain chlorinated Paraffins (SCCP) (C10-C13)	1000 ppm [reporting limit 100 ppm]	May be used as softeners, flame retardants or as fat liquoring agents in leather production. Also used as plasticizer in polymer production.	Combined CADs <sup>1</sup> / ISO 18219:2015 method V1:06/17 (extraction by ISO 18219:2015 and analysis by GC-NCI-MS)
85535-85-9	Medium-chain chlorinated Paraffins (MCCP) (C14-C17)	1000 ppm [reporting limit 100 ppm]		
<b>CHLOROPHENOLS</b> - corresponding to AFIRM				
15950-66-0	2,3,4-Trichlorophenol	0,5 ppm each [reporting limit 0,5 ppm]	Chlorophenols are polychlorinated compounds used as preservatives or pesticides. Pentachlorophenol (PCP) and Tetrachlorophenol (TeCP) are sometimes used to prevent mold and kill insects when growing cotton and when storing/transporting fabrics. PCP and TeCP can also be used as preservatives in print pastes.	1 M KOH extraction, 12-15 hours at 90°C, derivatization and analysis §64 LFGB B 82.02-08 or DIN EN ISO 17070:2015
933-78-8	2,3,5-Trichlorophenol			
933-75-5	2,3,6-Trichlorophenol			
95-95-4	2,4,5-Trichlorophenol			
88-06-2	2,4,6-Trichlorophenol			
609-19-8	3,4,5-Trichlorophenol			
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)			
<b>CHLORORGANIC CARRIERS</b> - corresponding to AFIRM				
95-49-8	2-Chlorotoluene	Total: 1 ppm [reporting limit 0,2 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.	DIN 54232:2010
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			

<sup>1</sup> CADs test method: *Determination of SCCP and MCCP in different matrices by use of GC-ECNI-MS V8\_final\_20171117* published on the AFIRM website

CAS No.	Substance	Limits Raw Material & Finished Product	Potential Uses Textile Processing for Apparel & Footwear	Suitable Test Method Sample Preparation & Measurement
<b>CHLORORGANIC CARRIERS, continued</b>				
877-11-2	Pentachlorotoluene	Total: 1 ppm [reporting limit 0,2 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.	DIN 54232:2010
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	10 ppm [reporting limit 1 ppm]		
95-50-1	1,2-Dichlorobenzene			
<b>DIMETHYLFORMAMIDE - corresponding to AFIRM</b>				
68-12-2	Dimethylformamide (DMFa)	500 ppm [reporting limit 50 ppm]	DMFa is a solvent used in plastics, rubber, and polyurethane (PU) coating. Water-based PU does not contain DMFa and is therefore preferable.	CEN ISO/TS 16189:2013
<b>DIMETHYLFUMARATE - corresponding to AFIRM</b>				
624-49-7	Dimethylfumarate (DMFu)	0,1 ppm [reporting limit 0,05 ppm]	DMFu is an anti-mold agent used in sachets in packaging to prevent the buildup of mold, especially during shipping.	CEN ISO/TS 16186:2012

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<b>DYES, FORBIDDEN AND DISPERSE</b>				
<b>- corresponding to AFIRM</b>				
2475-45-8	C.I. Disperse Blue 1	50 ppm each [reporting limit 15 ppm]	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 or of being carcinogenic and are prohibited from use for dyeing of textiles.	DIN 54231:2005
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 / 13301-61-6 / 51811-42-8	C.I. Disperse Orange 37/76/59			
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			
54077-16-6	C.I. Disperse Yellow 56			
3761-53-3	C.I. Acid Red 26			
569-61-9	C.I. Basic Red 9			



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<b>DYES FORBIDDEN AND DISPERSE, continued</b>				
569-64-2 / 2437-29-8 / 10309-95-2	C.I. Basic Green 4	50 ppm each [reporting limit 15 ppm]	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 or of being carcinogenic and are prohibited from use for dyeing of textiles.	DIN 54231:2005
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			
<b>DYES, NAVY BLUE - corresponding to AFIRM</b>				
118685-33-9	Component 1: C39H23ClCrN7O12S.2Na	50 ppm each [reporting limit 15 ppm]	Navy blue colorants are regulated and are prohibited from use for dyeing of textiles. (Index 611-070-00-2)	DIN 54231:2005
Not allocated	Component 2: C46H30CrN10O20S2.3Na			
<b>FLAME-RETARDANTS - corresponding to AFIRM</b>				
32534-81-9	Pentabromodiphenyl ether (PentaBDE)	10 ppm each [reporting limit 5 ppm]	Flame-retardant chemicals, including the entire class of organohalogen flame retardants, should no longer be used.	EN ISO 17881-1:2016
32536-52-0	Octabromodiphenyl ether (OctaBDE)			
1163-19-5	Decabromodiphenyl ether (DecaBDE)			
various	All other Polybrominated diphenyl ether (PBDE)			
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)			EN ISO 17881-2:2016
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)			
115-96-8	Tris(2-chloroethyl)phosphate (TCEP)			
5412-25-9	Bis(2,3-dibromopropyl) phosphate (BDBPP)			

CAS No.	Substance	Limits Raw Material & Finished Product	Potential Uses Textile Processing for Apparel & Footwear	Suitable Test Method Sample Preparation & Measurement
<b>FLUORINATED GREENHOUSE GASES</b> - corresponding to AFIRM				
Various	See Regulation (EC) No 842/2006 for a complete list: <a href="http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32006R0842">http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32006R0842</a>	0,1 ppm each [reporting limit 0,1 ppm]		Sample preparation: Purge and trap — thermal desorption or SPME Measurement: GC/MS
<b>FORMALDEHYDE</b> - corresponding to AFIRM				
50-00-0	Formaldehyde	Adults and children: 75 ppm Babies: 16 ppm [reporting limit 16 ppm]	Used in textiles as an anti-creasing and anti-shrinking agent, often also in polymeric resins.  Although very rare in apparel & footwear, composite wood materials, e.g. particle board and plywood, must comply with existing California forthcoming US formaldehyde emission requirements (40 CFR 770). Suppliers are advised to refer to brand-specific requirements for these materials.	Textile, wood, paper: JIS L 1041-1983 A (Japan Law 112) or EN ISO 14184-1:2011  Leather: ISO 17226-1:2008 with ISO 17226-2:2008 confirmation method in case of interferences.
<b>HEAVY METALS</b> - corresponding to AFIRM				
7440-36-0	Antimony (Sb)	<u>Extractable:</u> 30 ppm [reporting limit 3 ppm]	Found in or used as a catalyst in polymerization of polyester, flame retardants, fixing agents, pigments and alloys.	Textiles: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017
7440-38-2	Arsenic (As)	<u>Extractable:</u> 0,2 ppm [reporting limit 0,1 ppm] <u>Total:</u> 100 ppm [reporting limit 10 ppm]	Arsenic and its compounds can be used in preservatives, pesticides and defoliants for cotton, synthetic fibers, paints, inks, trims and plastics.	<u>Extractable:</u> Textiles: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017 <u>Total:</u> Textiles: DIN EN 16711-1:2016 Leather: DIN EN ISO 17072-2:2017
7440-39-3	Barium (Ba)	<u>Extractable:</u> 1000 ppm [reporting limit 100 ppm]	Barium and its compounds can be used in pigments for inks, plastics, surface coatings, as well as in dyeing, mordant, filler in plastics, textile finish and leather tanning.	Textiles: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017
7440-43-9	Cadmium (Cd)	<u>Extractable:</u> 0,1 ppm [reporting limit 0,05 ppm]  <u>Total:</u> 40 ppm [reporting limit 5 ppm]	Cadmium compounds are used as pigments (especially in red, orange, yellow and green); as a stabilizer for PVC; and in fertilizers, biocides and paints.	<u>Extractable:</u> Textiles: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017  <u>Total:</u> Textiles, plastics, metal: DIN EN 16711-1:2016 Leather: DIN EN ISO 17072-2:2017

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<b>HEAVY METALS, continued</b>				
7440-47-3	Chromium (Cr)	<u>Extractable:</u> Textiles: 2 ppm [reporting limit 0,5 ppm] Leather footwear for babies: 60 ppm [reporting limit 0,5 ppm]	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.	<u>Extractable:</u> Textiles: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017
18540-29-9	Chromium VI	<u>Extractable:</u> Leather: 3 ppm [reporting limit 3 ppm] Knitted textiles for babies: 0,5 ppm [reporting limit 0,5 ppm]	Though typically associated with leather tanning, Chromium VI also may occur in the dyeing of wool (after the chroming process).	Textiles: DIN EN 16711-2:2016 with EN ISO 17075-1:2017 if Cr is detected  Leather: EN ISO 17075-1:2017 and EN ISO 17075-2:2017 for confirmation in case the extract causes interference
7440-48-4	Cobalt (Co)	<u>Extractable:</u> Adults: 4 ppm Children/babies: 1 ppm [reporting limit 0,5 ppm]	Cobalt and its compounds can be used in alloys, pigments, dyestuff and the production of plastic buttons.	Textiles: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017
7440-50-8	Copper (Cu)	<u>Extractable:</u> Adults: 50 ppm Children/babies: 25 ppm [reporting limit 5 ppm]	Copper and its compounds can be found in alloys and pigments and in textiles as an antimicrobial agent.	Textiles: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017
7439-92-1	Lead (Pb)	<u>Extractable:</u> Adults and children: 1 ppm Babies: 0,2 ppm [reporting limit 0,1 ppm]  <u>Total:</u> 90 ppm [reporting limit 10 ppm]	May be associated with plastics, paints, inks, pigments, surface coatings and metal components.	<u>Extractable:</u> Textile: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017  <u>Total:</u> Non-metal: CPSC-CH-E1002-08.3 Metal: CPSC-CH-E1001-08.3 Lead in paint and surface coating: CPSIA Section 101.16 CFR 1303

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<b>HEAVY METALS, continued</b>				
7439-97-6	Mercury (Hg)	<u>Extractable:</u> 0,02 ppm [reporting limit 0,02 ppm]  <u>Total:</u> 0,5 ppm [reporting limit 0,1 ppm]	Mercury compounds can be present in pesticides and as contaminants in caustic soda (NaOH). They could also occur in paints.	<u>Extractable:</u> Textile: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017  <u>Total:</u> Textiles, plastics, metal: DIN EN 16711-1:2016 Leather: DIN EN ISO 17072-2:2017
7440-02-0	Nickel (Ni)	<u>Extractable:</u> 1 ppm [reporting limit 0,1 ppm]  <u>Release (metal parts):</u> Prolonged skin contact: 0,5 µg/cm <sup>2</sup> /week Pierced part: 0,2 µg/cm <sup>2</sup> /week [reporting limit 0,1 µg/cm <sup>2</sup> /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.	<u>Extractable:</u> Textile: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017  <u>Release</u> EN 12472:2005+A1:2009 and EN 1811:2015
7782-49-2	Selenium (Se)	<u>Extractable:</u> 500 ppm [reporting limit 50 ppm]	May be found in synthetic fibers, paints, inks, plastics and metal trims.	Textiles: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017
<b>MONOMERS - corresponding to AFIRM</b>				
100-42-5	Styrene	500 ppm [reporting limit 50 ppm]	Styrene is a precursor for polymerization and may be present in various styrene-copolymers like plastic buttons.	GC/MS 120°C for 45 minutes; -or- Extraction in Methanol GC/MS, sonication for 60 minutes at 60°C
75-01-4	Vinyl Chloride	1 ppm [reporting limit 1 ppm]	Vinyl Chloride is a precursor for polymerization and may be present in various PVC material like prints, coatings, flip flops and synthetic leather.	EN ISO 6401:2008

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<b>N-NITROSAMINE</b> - corresponding to AFIRM				
62-75-9	N-nitrosodimethylamine (NDMA)	0,5 ppm each [reporting limit 0,5 ppm]	Can be formed as by-product in the production of rubber.	GB/T 24153-2009: determination using GC/MC with LC/MS/MS verification if positive. Alternatively, LC/MS/MS may be performed on its own. prEN 19577:2017
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)			
<b>ORGANOTIN COMPOUNDS</b> - corresponding to AFIRM				
Various	Dibutyltin (DBT)	1 ppm each [reporting limit 0,1 ppm]	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, organotins are associated with plastics/rubber, inks, paints, metallic glitter, polyurethane products and heat transfer material.	CEN ISO/TS 16179:2012
Various	Diocetyl tin (DOT)			
Various	Monobutyltin (MBT)			
Various	Tricyclohexyltin (TCyHT)			
Various	Trimethyltin (TMT)			
Various	Trioctyltin (TOT)			
Various	Tripropyltin (TPT)			
Various	Tributyltin (TBT)			
Various	Triphenyltin (TPhT)	0,5 ppm each [reporting limit 0,1 ppm]		
<b>ORTHO-PHENYLPHENOL</b> - corresponding to AFIRM				
90-43-7	Ortho-phenylphenol (OPP)	1000 ppm [reporting limit 100 ppm]	OPP can be used for its preservative properties in leather or as a carrier in dyeing processes.	1 M KOH extraction, 12-15 hours at 90°C, derivatization and analysis §64 LFGB B 82.02-08 or DIN EN ISO 17070:2015
<b>OZONE-DEPLETING SUBSTANCES</b> - corresponding to AFIRM				
Various	See Regulation (EC) No 1005/2009 for a complete list: <a href="http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:286:0001:0030:EN:PDF">http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:286:0001:0030:EN:PDF</a>	5 ppm [reporting limit 5 ppm]	Ozone-depleting substances have been used as a foaming agent in PU foams as well as a dry-cleaning agent and are prohibited from use.	GC/MS headspace 120°C for 45 minutes

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<b>PERFLUORINATED AND POLYFLUORINATED CHEMICALS (PFCs) - limits corresponding to AFIRM</b>				
Various	Perfluorooctane Sulfonate (PFOS) ) and related substances	1 µg/m <sup>2</sup> each [reporting limit 1 µg/m <sup>2</sup> ]	PFOA and PFOS may be present as unintended by-products in long-chain and short-chain commercial water, oil and stain repellent agents. PFOA may also be used in polymers like polytetrafluoroethylene (PTFE).  Long-chain PFC technology is restricted from use with a 25 ppb limit on PFOA and its salts and a 1000 ppb total limit on PFOA-related substances in all materials. See commission Regulation (EU) 2017/1000. This is effective 4 July 2020. RSL limits will be revised in a subsequent update.	CEN/TS 15968:2014
Various	Perfluorooctanoic Acid (PFOA) and related substances			
<b>PESTICIDES, AGRICULTURAL - corresponding to AFIRM</b>				
93-72-1	2-(2,4,5-trichlorophenoxy) propionic acid, its salts and compounds; 2,4,5-TP	0,5 ppm each [reporting limit 0,5 ppm]	May be found in natural fibers (primarily cotton).	Natural fibers: ISO 15913 / DIN 38407 F2 or EPA 8081 / EPA 8151A or BVL L 00.00-34:2010-09
93-76-5	2,4,5-trichlorophenoxyacetic acid, its salts and compounds; 2,4,5-T			
94-75-7	2,4-dichlorophenoxy-acetic acid, its salts and compounds; 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	o,p-Dichlorodiphenyl-dichloroethane (o,p-DDD)			

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<b>PESTICIDES; AGRICULTURAL; continued</b>				
72-54-8	p,p-Dichlorodiphenyl-dichloroethane (p,p-DDD)	0,5 ppm each [reporting limit 0,5 ppm]	May be found in natural fibers (primarily cotton).	Natural fibers: ISO 15913 / DIN 38407 F2 or EPA 8081 / EPA 8151A or BVL L 00.00-34:2010-09
3424-82-6	o,p-Dichlorodiphenyl-dichloroethylene (o,p-DDE)			
72-55-9	p,p-Dichlorodiphenyl-dichloroethylene (p,p-DDE)			
789-02-6	o,p-Dichlorodiphenyl-trichloroethane (o,p-DDT)			
50-29-3	p,p-Dichlorodiphenyl-trichloroethane (p,p-DDT)			
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-trichloro-phenoxy) -2- Trifluoro methyl benzimidazole)			
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	Ethylenedibromid			
56-38-2	Ethylparathione; Parathion			
51630-58-1	Fenvalerate			
1336-36-3; 53469-21-9; Various	Halogenated biphenyls, including Polychlorinatedbiphenyl (PCB)			
Various	Halogenated terphenols, including polychlorinated terphenyl (PCT)			
Various	Halogenated naphthalenes, including polychlorinated naphthalenes (PCNs)			
Various	Halogenated diarylalkanes			

CAS No.	Substance	Limits Raw Material & Finished Product	Potential Uses Textile Processing for Apparel & Footwear	Suitable Test Method Sample Preparation & Measurement
<b>PESTICIDES; AGRICULTURAL; continued</b>				
99688-47-8; 81161-70-8; 76253-60-6	Halogenated diphenyl methanes, including Monomethyl-dibromo-diphenyl methane, Monomethyl-dichloro-diphenyl methane, and Monomethyl-tetra-chloro-diphenyl methane	0,5 ppm each [reporting limit 0,5 ppm]	May be found in natural fibers (primarily cotton).	Natural fibers: ISO 15913 / DIN 38407 F2 or EPA 8081 / EPA 8151A or BVL L 00.00-34:2010-09
76-44-8	Heptachlor			
1024-57-3	Heptachloroepoxide			
319-84-6	a-Hexachlorocyclohexane with and without Lindane			
319-85-7	b-Hexachlorocyclohexane with and without Lindane			
319-86-8	g-Hexachlorocyclohexane with and without Lindane			
118-74-1	Hexachlorobenzene			
465-73-6	Isodrine			
4234-79-1	Kelevane			
143-50-0	Kepone			
7784-40-9	Lead hydrogen arsenate			
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			



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<b>PESTICIDES; AGRICULTURAL; continued</b>				
297-78-9	Telodrine	0,5 ppm each [reporting limit 0,5 ppm]	May be found in natural fibers (primarily cotton).	Natural fibers: ISO 15913 / DIN 38407 F2 or EPA 8081 / EPA 8151A or BVL L 00.00-34:2010-09
8001-35-2	Toxaphene			
731-27-1	Tolyfluanide			
1582-09-8	Trifluarline			
<b>PHTHALATES - corresponding to AFIRM</b>				
28553-12-0	Di-Iso-nonylphthalate (DINP)	500 ppm each Total. 1000 ppm [reporting limit 50 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 sleeveings Polymeric coatings  The listed phthalates are those most commonly used and regulated across industry sectors. Find more information about additional phthalates on the REACH SVHC list, which is updated frequently.	Sample preparation: CPSC-CH-C1001-09.3 Measurement: Textile: GC-MS, EN ISO 14389:2014 Leather: GC-MS
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)			

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<b>POLYCYCLIC AROMATIC HYDROCARBONS (PAHS) - corresponding to AFIRM</b>				
83-32-9	Acenaphthene	No individual restriction	Total: 10 ppm [reporting limit 0,2 ppm]	AFPS GS 2014
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 [reporting limit 0,2 ppm]		
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			

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<b>VOLATILE ORGANIC COMPOUNDS (VOCs)</b> - corresponding to AFIRM				
71-43-2	Benzene	5 ppm [reporting limit 5 ppm]	<p>These VOCs should not be used in textile auxiliary chemical preparations. They are also associated with solvent-based processes such as solvent-based polyurethane coatings and glues/adhesives. They should not be used for any kind of facility cleaning or spot cleaning.</p>	<p>For general VOC screening: GC/MS headspace 45 minutes at 120 degrees C. For DMAC: DIN CEN ISO/TS 16189:2013</p>
75-15-0	Carbon Disulfide	<p>Total: 1000 ppm [reporting limit 20 ppm each]</p>		
56-23-5	Carbon tetrachloride			
67-66-3	Chloroform			
108-94-1	Cyclohexanone			
71-55-6	1,1,1- Trichloroethane			
107-06-2	1,2-Dichloroethane			
75-35-4	1,1-Dichloroethylene			
127-19-5	Dimethylacetamide (DMAC)			
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 (PER)			
108-88-3	Toluene			
79-00-5	1,1,2- Trichloroethane			
79-01-6	Trichloroethylene			
1330-20-7	Xylenes (meta-, ortho-, para-)			