Manufacturing Restricted Substances List (MRSL)

The s.Oliver group's defined the Zero Discharge of Hazardous Chemicals Manufacturing Restricted Substances List (ZDHC MRSL) Version 2.0 as the minimum requirement for chemical formulations used in the production of materials and articles delivered to the s.Oliver group. From December 2023 on, the ZDHC MRSL Version 3.0 will become s.Oliver group's minimum requirement and all chemicals used in production need to be checked on compliance with new version in advance.

Restricted Substances List (RSL)

The s.Oliver group is a member of the Apparel and Footwear International RSL Management (AFIRM) working group. One Goal is to align the Restricted Substances Lists (RSL) of the member brands. Currently s.Oliver group maintains an own RSL that is already aligned to ca. 95% with AFIRM group RSL. The s.Oliver group RSL is attached below.

CAS No.	Substance	Limits Component Materials in Finished Product	Potential Uses Textile Processing for Apparel & Footwear	Suitable Test Method Sample Preparation & Measurement	Reporting Limits Limits above which test results should be reported
	Acetophenone and 2-Phenyl-2-Propanol				
98-86-2	Acetophenone	50 ppm each	Potential breakdown products in EVA foam when using Dicumyl Peroxide as a cross-linking agent.	Extraction in acetone or methanol GC/MS, sonication for 30 minutes at 60 degrees C	20 ppm each
617-94-7	2-Phenyl-2-propanol				
	Acidic and Alkaline Substances				
Various	pH-Value	Textiles: 4.0-7.5 Leather: 3.2-4.5 -	The pH-value is a characteristic number, ranging from pH 1 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 of skin the pH-value of products shall be in the range of the human skin with - approximately pH 5.5.	Textiles and Artificial Leather: EN ISO 3071:2020 Leather: EN ISO 4045:2018	N/A

CAS No.	Substance	Limits Component Material in Finished Product	Potential Uses Textile Processing for Apparel & Footwear	Suitable Test Method Sample Preparation & Measurement	Reporting Limits Limits above which test results should be reported
	Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs), including all isomers				
Various	Nonylphenol (NP), mixed isomers	Total: 10 ppm	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 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. 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. This limit covers EU legislation reflecting NPEOs effective 3 February 2021 and provides advance warning to suppliers.	Textiles and leather: EN ISO 21084:2019 Polymers and all other materials: 1 g sample/20 mL THF, sonication for 60 minutes at 70 degrees C, analysis according to EN ISO 21084:2019	Sum of NP &OP: 3 ppm
Various	Octylphenol (OP), mixed isomers				
Various	Octylphenol ethoxylates (OPEOs)	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 18218-1:2015 with quantification according to EN ISO 18254-1:2016	Sum of NPEO & OPEO: 20 ppm
Various	Nonylphenol ethoxylates (NPEOs)				

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	Azo-amines and Arylamine salts				
92-67-1	4-Aminobiphenyl	20 ppm each	Azo dyes and pigments are colourants 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.	All materials except leather: EN ISO 14362-1:2017 Leather: EN ISO 17234-1:2015 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-Chloroaniline				
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-chloroaniline)				
101-80-4	4,4'-Oxydianiline				
139-65-1	4,4'-Thiodianiline				
95-53-4	o-Toluidine				
95-80-7	2,4-Toluylendiamine				
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				

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	Bisphenol-A				
80-05-7	Bisphenol-A (BPA)	1 ppm	Used in the production of epoxy resins, polycarbonate plastics, flame retardants and PVC. Restricted in items intended to come into contact with the mouth.	All materials: Extraction: 1 g sample/20 ml THF, sonication for 60 minutes at 60°C, analysis with LC/MS	0.1 ppm individual sample 1.0 ppm composite sample
80-09-1	Bisphenol S (BPS)	For informational purposes only – testing of polycarbonate materials recommended to assess content levels	Applicable to items intended to come into contact with the mouth. BPA alternatives with known or suspected similar hazards used in the production of epoxy resins, polycarbonate plastics, flame retardants and PVC.		1 ppm each
620-92-8	Bisphenol F (BPF)				
1478-61-1	Bisphenol AF (BPAF)				
	Chlorinated Paraffins				
85535-84-8	Short-chain chlorinated Paraffins (SCCP) (C10-C13)	1000 ppm	May be used as flame retardants or as fat liquoring agents in leather production; also used as a plasticizer in polymer production.	Leather: ISO 18219-1:2021 (SCCP) ISO 18219-2:2021 (MCCP) All other materials: ISO 22818:2021	100 ppm
85535-85-9	Medium-chain chlorinated Paraffins (MCCP) (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) 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 and other chemical mixtures.	all materials: DIN 50009:2021	0.1 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)				

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	Chlorinated Benzenes and Toluenes				
95-49-8	2-Chlorotoluene	Total: 1 ppm	Chlorobenzenes and chlorotoluenes (chlorinated aromatic hydrocarbons) can be used as carriers in the dyeing process of polyester or wool/polyester fibres. They can also be used as solvents.	All materials: EN 17137:2018	0.2 ppm each
108-41-8	3-Chlorotoluene				
106-43-4	4-Chlorotoluene				
32768-54-0	2,3-Dichlorotoluene				
95-73-8	2,4-Dichlorotoluene				
19398-61-9	2,5-Dichlorotoluene				
118-69-4	2,6-Dichlorotoluene				
95-75-0	3,4-Dichlorotoluene				
2077-46-5	2,3,6-Trichlorotoluene				
6639-30-1	2,4,5-Trichlorotoluene				
76057-12-0	2,3,4,5-Tetrachlorotoluene				
875-40-1	2,3,4,6-Tetrachlorotoluene				
1006-31-1	2,3,5,6-Tetrachlorotoluene				
877-11-2	Pentachlorotoluene				
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	Total: 10 ppm			0,5 ppm each
541-73-1	1,3-Dichlorobenzene				
106-46-7	1,4-Dichlorobenzene				

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	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.	Textiles: EN 17130:2019 All other 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 fibre system of synthetic or manufactured fibres and are held in place by physical forces without forming chemical bonds. Disperse dyes are used in synthetic fibre (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 54231:2005	10 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				

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	Dyes, continued				
119-15-3	C.I. Disperse Yellow 1	30 ppm each	Disperse dyes are a class of water-insoluble dyes that penetrate the fibre system of synthetic or manufactured fibres and are held in place by physical forces without forming chemical bonds. Disperse dyes are used in synthetic fibre (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 54231:2005	10 ppm each
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				
569-64-2	C.I. Basic Green 4				
2437-29-8					
10309-95-2					
548-62-9	C.I. Basic Violet 3				
632-99-5	C.I. Basic Violet 14				
2580-56-5	C.I. Basic Blue 26				
1937-37-7	C.I. Direct Black 38				
2602-46-2	C.I. Direct Blue 6				
573-58-0	C.I. Direct Red 28				
16071-86-6	C.I. Direct Brown 95				
60-11-7	4-Dimethylaminoazobenzene (Solvent Yellow 2)				
6786-83-0	C.I. Solvent Blue 4				
561-41-1	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol				

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	Dyes, Navy Blue				
118685-33-9	Component 1: C39H23ClCrN7O12S·2Na	30 ppm each	Navy blue colorants are regulated and are prohibited from use for dyeing of textiles. (Index 611-070-00-2)	All materials: DIN 54231:2005	10 ppm each
Not allocated	Component 2: C46H30CrN10O20S2·3Na				
	Flame Retardants				
84852-53-9	Decabromodiphenyl ethane (DBDPE)	10 ppm each	With very limited exceptions, flame retardant substances, including the entire class of organohalogen flame retardants, should no longer be applied to materials during production. Listed here are examples of flame-retardant substances used historically across the apparel and footwear industry. It is not intended to be a complete list. Other flame retardants not applicable to this industry are regulated worldwide by the Stockholm Convention and the Aarhus Protocol, which have been implemented in the European Union under the POPs Regulation.	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)				

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	Fluorinated Greenhouse Gases				
Various	See Regulation (EU) No 517/2014 for a complete list.	0.1 ppm each	Prohibited from use May be used as blowing agents, solvents, fire retardant and aerosol propellants.	Sample preparation: Purge and trap — thermal desorption or SPME Measurement: GC/MS	0.1 ppm each
	Formaldehyde				
50-00-0	Formaldehyde	Adults and children: 75 ppm Babies: 16 ppm	Used in textiles as an anti-creasing and anti-shrinking agent. It is also often used in polymeric resins. Although very rare in Apparel and Footwear, composite wood materials (such as particle board and plywood) must comply with existing California and forthcoming 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 1041-1983 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

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	Heavy Metals (Extractable and Total Content)				
7440-36-0	Antimony (Sb)	Extractable: 30 ppm	Found in or used as a catalyst in polymerization of polyester, flame retardants, fixing agents, pigments and alloys.	All materials except leather: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2019	Extractable: 3 ppm
7440-38-2	Arsenic (As)	Extractable: 0.2 ppm Total: 100 ppm	Arsenic and its compounds can be used in preservatives, pesticides and defoliants for cotton, synthetic fibers, paints, inks, trims and plastics.	Extractable: All materials except leather: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2019 Total: All materials except leather: DIN EN 16711-1:2016 Leather: DIN EN ISO 17072-2:2019	Extractable: 0.06 ppm Total: 10ppm
7440-39-3	Barium (Ba)	Extractable: 1000 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.	All materials except leather: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2019	Extractable: 100 ppm
7440-43-9	Cadmium (Cd)	Extractable: 0.1 ppm Total: 40 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.	Extractable: All materials except leather: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2019 Total: All materials except leather: DIN EN 16711-1:2016 Leather: DIN EN ISO 17072-2:2019	Extractable: 0.03 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, dye-fixing agents, colour fastness after-treatments, dyes for wool, silk and polyamide (especially dark shades) and leather tanning. Important: Egypt restricts extractable Chromium to 2 ppm in leather products for babies and 200 ppm in leather products for other ages.	All materials except leather: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2019	Extractable: 0.5 ppm

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	Heavy Metals (Extractable and Total Content)				
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).	All materials except leather: DIN EN 16711-2:2016 with EN ISO 17075-1:2017 if Cr is detected Leather: Leather ageing: ISO 10195:2018 Method A2 Analysis: EN ISO 17075-1:2017 or EN ISO 17075-2:2017	Extractable: Leather: 3 ppm Textiles: 0.5 ppm
7440-48-4	Cobalt (Co)	Extractable: Adults: 4 ppm Children and babies: 1 ppm	Cobalt and its compounds can be used in alloys, pigments, dyestuff, and the production of plastic buttons.	All materials except leather: DIN EN 16711-2:2016 Leather: DIN 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. Indonesia Ministerial Regulation No. 18 limits copper to 25 ppm the following products: towels, bedding, and handkerchiefs.	All materials except leather: DIN EN 16711-2:2016 Leather: DIN 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 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 the following products: towels, bedding, and handkerchiefs	Extractable: All materials except leather: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2019 Total: Non-metal: CPSC-CH-E1002-08.3 Metal: CPSC-CH-E1001-08.3 Lead in paint and surface coating: CPSC-CH-E1003-09.1	Extractable: 0.1 ppm Total: 10 ppm

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	Heavy Metals (Extractable and Total Content)				
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. They may also be used in paints and as catalysts in the manufacture of PU and vinyl chloride for use in PVC.	Extractable: All materials except leather: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2019 Total: All materials except leather: DIN EN 16711-1:2016 Leather: DIN EN ISO 17072-2:2019	Extractable: 0.006 ppm Total: 0.1 ppm
7440-02-0	Nickel (Ni)	Extractable: 1 ppm Release: Prolonged skin contact: 0.5 µg/cm²/week Pierced part: 0.2 µg/cm²/week Eyewear frames: 0.5 µg/cm²/week	Nickel and its compounds can be used for plating alloys and improving corrosion-resistance and hardness of alloys. They can also occur as impurities in pigments and alloys.	Extractable: All materials except leather: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2019 Release: EN 12472:2020 and EN 1811:2011+A1:2015 Release (eyewear frames): EN 16128:2015	Extractable: 0.1 ppm release 0.28 µg/cm²/week
7782-49-2	Selenium (Se)	Extractable: 500 ppm	May be found in synthetic fibres, paints, inks, plastics and metal trims.	All materials except leather: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2019	Extractable: 50 ppm
7440-43-9 7439-92-1 7439-97-6 18540-29-9	Cadmium (Cd), Lead (Pb), Mercury (Hg), Chromium VI (CrVI)	Total: 100 ppm **Only relevant for packaging and packaging components!**	“Packaging” and “packaging components” includes all products of any materials of any nature to be used for containment, protection, handling, delivery and presentation of goods.	All materials except leather: DIN EN 16711-1:2016 Leather: DIN EN ISO 17072-2:2019	Cd: 5 ppm Pb: 10 ppm Hg: 0.1 ppm CrVI: 3 ppm

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	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, not total styrene.	Extraction in Methanol GC/MS, sonication at 60 degrees C for 60 minutes	50 ppm
	N-Nitrosamines				
62-75-9	N-nitrosodimethylamine (NDMA)	0.5 ppm each	Can be formed as by-product in the production of rubber.	GB/T 24153-2009: determination using GC/MS, with LC/MS/MS verification if positive. Alternatively, LC/MS/MS may be performed on its own. EN ISO 19577:2019	0.5 ppm
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	Dibutyltin (DBT)	1 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, organotins are associated with plastics/rubber, inks, paints, metallic glitter, polyurethane products and heat transfer material.	All materials: CEN ISO/TS 16179: 2012 EN ISO 22744-1:2020	0.1 ppm each
Various	Dioctyltin (DOT)				
Various	Monobutyltin (MBT)				
Various	Tricyclohexyltin (TCyHT)				
Various	Trimethyltin (TMT)				
Various	Trioctyltin (TOT)				
Various	Tripropyltin (TPT)				
Various	Tributyltin (TBT)	0.5 ppm each			
Various	Triphenyltin (TPhT)				

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	Odor				
-	Odor not related to product (e.g. Fish, meal, smog, etc.)	≤ 3	Due to storage and transport conditions readymade articles can take up unpleasant smell from surroundings	Odor test and estimation SNV 195651:2015 (rating 1-5)	N/A
	Ortho-phenylphenol				
90-43-7	Ortho-phenylphenol (OPP)	1000 ppm	OPP can be used for its preservative properties in leather or as a carrier in dyeing processes.	All materials: DIN 50009:2021	100 ppm
	Ozone-depleting Substances				
Various	See Regulation (EC) No 1005/2009 for a complete list.	5 ppm each	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
	Perfluorinated and Poly-fluorinated Chemicals (PFCs)				
The s.Oliver group aims to phase out water-repellent finishes containing per- and polyfluorinated chemicals (PFCs). However, if an article is treated with a PFC containing finish, the s.Oliver QA department in headquarter has to be informed. In addition a pretest of bulk material on below listed PFCs has to be provided to s.Oliver QA HQ.					
Various	Perfluorooctane Sulfonate (PFOS) and related substances	1 µg/m² each	PFOA and PFOS may be present as unintended byproducts in long-chain commercial water, oil and stain repellent agents. PFOA may also be used in polymers like polytetrafluoroethylene (PTFE) Refer to Appendix A for the list of substances and CAS Numbers included in this restriction. In addition to this list, all PFOA- and PFOS-related substances are prohibited from use and are regulated worldwide by the Stockholm Convention and the Aarhus Protocol, which have been implemented in the European Union under the POPs Regulation.	All materials: EN 23702-1:2018	1 µg/m² each
Various	Perfluorooctanoic Acid (PFOA) and its salts	25 ppb total			25ppb total
Various	PFOA-related substances	1000 ppb total			1000 ppb total

CAS No.	Substance	Limits Component Material in Finished Product	Potential Uses Textile Processing for Apparel & Footwear	Suitable Test Method Sample Preparation & Measurement	Reporting Limits Limits above which test results should be reported
	Pesticides and Herbicides, Agricultural				
Various	See Appendix B for a complete list.	0.5 ppm each	May be found in natural fibers, primarily cotton.	All materials: ISO 15913/DIN 38407 F2 or EPA 8081/EPA 8151A or BVL L 00.00-34:2010-09	0.5 ppm
	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 Suppliers should assume that the AFIRM RSL includes all phthalates on the SVHC list—whether itemized here or not— since the list is updated frequently.	Sample preparation for all materials: CPSC-CH-C1001-09.4 Measurement: Textile: GC-MS, EN ISO 14389:2014 Content of prints has to be calculated according to chapter 7.1 All materials except textiles: GC-MS	50 ppm
117-84-0	Di-n-octylphthalate (DNOP)				
117-81-7	Di(2-ethylhexyl)-phthalate (DEHP)				
26761-40-0	Di-iso-decylphthalate (DIDP)				
85-68-7	Butylbenzylphthalate (BBP)				
84-74-2	Dibutylphthalate (DBP)				
84-69-5	Di-iso-butylphthalate (DIBP)				
84-75-3	Di-n-hexyl phthalate (DnHP)				
131-18-0	Di-n-pentyl phthalate (DPENP)				
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	Di-iso-pentyl phthalate (DIPP)				

CAS No.	Substance	Limits Component Material in Finished Product		Potential Uses Textile Processing for Apparel & Footwear	Suitable Test Method Sample Preparation & Measurement	Reporting Limits Limits above which test results should be reported
	Polycyclic Aromatic Hydrocarbons (PAHs)					
83-32-9	Acenaphthene	No individual restriction	Total: 10 ppm	PAHs are natural components of crude oil and are common residues from oil refining. PAHs have a characteristic smell similar to that of car tires or asphalt. Oil residues containing PAHs are added to rubber and plastics as a softener or extender and may be found in rubber, plastics, lacquers and coatings. PAHs are often found in the outsoles of footwear and in printing pastes for screen prints. PAHs can be present as impurities in Carbon Black. They also may be formed from thermal decomposition of recycled materials during reprocessing **Naphthalene: Dispersing agents for textile dyes may contain high residual naphthalene concentrations due to the use of low-quality naphthalene derivatives (e.g., poor-quality Naphthalene Sulphonate formaldehyde condensation products).	AFPS GS 2019	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 dyestuff. Quinoline can be included with disperse dye testing, as the same method is used for both.	All materials: DIN 54231:2005 with methanol extraction at 70 degrees C	10 ppm
	Polyvinylchloride					
9002-86-2	PVC	Not detectable		Used as plastic parts, sequins and plastisol prints	Burning Test by Beilstein Method / FT-IR	N/A

CAS No.	Substance	Limits Component Material in Finished Product	Potential Uses Textile Processing for Apparel & Footwear	Suitable Test Method Sample Preparation & Measurement	Reporting Limits Limits above which test results should be reported
	Solvents/ Residuals				
68-12-2	Dimethylformamide (DMFa)	Water based PU: 50 ppm All other materials: 500 ppm	Solvent used in plastics, rubber, and polyurethane (PU) coating. Waterbased PU does not contain DMFa and is therefore preferable.	Textiles: EN 17131:2019 All other materials: DIN CEN ISO/TS 16189:2013	50 ppm each
75-12-7	Formamide	1000 ppm each	Byproduct in the production of EVA foams.		
127-19-5	Dimethylacetamide (DMAc)		Solvent used in the production of elastane fibers and sometimes as substitute for DMFa.		
872-50-4	N-Methyl-2-pyrollodone (NMP)		Industrial solvent used in production of water-based Polyurethanes and other polymeric materials. May also be used as a surface treatment for textiles, resins, and metal-coated plastics, or as a paint stripper		
	UV Absorbers / Stabilizers				
3846-71-7	UV 320	1000 ppm each	PU foam materials such as open cell foams for padding. Used as UV-absorbers for plastics (PVC, PET, PC, PA, ABS, and other polymers), rubber, Polyurethane.	DIN EN 62321-6:2016 (Extraction in THF, analysis by GC/MS)	100 ppm each
3864-99-1	UV 327				
25973-55-1	UV 328				
36437-37-3	UV 350				
2440-22-4	Drometrizole		Used as UV absorbers for Plastics (PVC, PET, PC, PA, ABS and other polymers), Rubber and Polyurethane.		

CAS No.	Substance	Limits Raw Material & Finished Product	Potential Uses Textile Processing for Apparel & Footwear	Suitable Test Method Sample Preparation & Measurement	Reporting Limits Limits above which test results should be reported
	Volatile Organic Compounds (VOCs)				
71-43-2	Benzene	5 ppm	These VOCs should not be used in textile auxiliary chemical preparations. They are 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.	For general VOC screening: GC/MS headspace 45 minutes at 120 degrees C	2,5 ppm
75-15-0	Carbon Disulfide	Total: 1000 ppm			Others: 20 ppm each
56-23-5	Carbon Tetrachloride				
67-66-3	Chloroform				
108-94-1	Cyclohexanone				
107-06-2	1,2-Dichloroethane				
75-35-4	1,1-Dichloroethylene				
100-41-4	Ethylbenzene				
76-01-7	Pentachloroethane				
630-20-6	1,1,1,2- Tetrachloroethane				
79-34-5	1,1,2,2- Tetrachloroethane				
127-18-4	Tetrachloroethylene (PERC)				
108-88-3	Toluene				
71-55-6	1,1,1- Trichloroethane				
79-00-5	1,1,2- Trichloroethane				
79-01-6	Trichloroethylene				
1330-20-7	Xylenes (meta-, ortho-, para-)				
108-38-3					
95-47-6					
106-42-3					

Appendix A: Perfluorinated and Polyfluorinated Chemicals (PFCs)

CAS No.	PFC Name	CAS No.	PFC Name
	PFOS and Related Substances		PFOA and its salts
1763-23-1	Perflouroctanesulfonic acid (PFOS)	335-67-1	Perfluorooctanoic acid (PFOA)
2795-39-3	Perflouroctanesulfonic acid, potassium salt (PFOS-K)	335-95-5	Sodium perfluorooctanoate (PFOA-Na)
29457-72-5	Perflouroctanesulfonic acid, lithium salt (PFOS-Li)	2395-00-8	Potassium perfluorooctanoate (PFOA-K)
29081-56-9	Perflouroctanesulfonic acid, ammonium salt (PFOS-NH_4)	335-93-3	Silver perfluorooctanoate (PFOA-Ag)
70225-14-8	Perfluorooctane sulfonate, diethanolamine salt (PFOS-$NH_2(C_2H_4OH)_2$)	335-66-0	Perfluorooctanoyl fluoride (PFOA-F)
56773-42-3	Perflouroctanesulfonic acid, tetraethylammonium salt (PFOS-$N(C_2H_5)_4$)	3825-26-1	Ammonium pentafluorooctanoate (APFO)
4151-50-2	N-Ethylperfluoro-1-octanesulfonamide (N-Et-FOSA)		PFOA-related substances
31506-32-8	N-Methylperfluoro-1-octanesulfonamide (N-Me-FOSA)		
1691-99-2	2-(N-Ethylperfluoro-1-octanesulfonamido)-ethanol (N-Et-FOSe)	39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)
24448-09-7	2-(N-Methylperfluoro-1-octanesulfonamido)-ethanol (N-Me-FOSE)	376-27-2	Methyl perfluorooctanoate (Me-PFOA)
307-35-7	Perfluoro-1-octanesulfonylfluoride (POSF)	3108-24-5	Ethyl perfluorooctanoate (Et-PFOA)
754-91-6	Perfluorooctane sulfonamide (PFOSA)	678-39-7	2-Perfluorooctylethanol (8:2 FTOH)
		27905-45-9	1H,1H,2H,2H-Perfluorodecyl acrylate (8:2 FTA)
		1996-88-9	1H,1H,2H,2H-Perfluorodecyl methyacrylate (8:2) FTMA

Appendix B: Pesticides and Herbicides, Agricultural

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