Restricted Substances List (RSL)

2019

Always visit https://pentlandbrands.com/our-responsibility/ to verify that you have the most recent version of the Restricted Substances List. The online version of this document is the official version.

Pentland

Contents

About Pentland Brands Ltd

Pentland Brands Limited, a Pentland Group plc owned company, is a global family business bringing some of the most loved active and footwear brands to millions of people around the world.

We own Speedo, Berghaus, Canterbury of New Zealand, Endura, Mitre, Ellesse, Boxfresh, SeaVees, KangaROOS and Red or Dead. We're the global licensee for Karen Millen footwear and Kickers in the UK and Ireland, and have a joint venture partnership for Lacoste Chaussures.

Pentland Brands requires that its products, and the raw materials used to construct those products, are manufactured with regard for the safety of consumers and factory workers, and with consideration for the wider environment.

This Restricted Substances List (RSL) provides details of chemicals and other potentially harmful substances that are restricted by Pentland Brands, and allowable chemical limits for products placed on the market.

Pentland Brands RSL applies to all materials, components and finished products manufactured and sold under the name of any of the Pentland Brands family of brands, whether sourced directly or by brands' licensee partners, unless communicated otherwise in writing.

All materials, components and finished products manufactured for Pentland Brands must comply with the requirements in this document no later than 90 days after the release date, and must also comply with all applicable legislation.

Alignment with the AFIRM RSL

The Apparel and Footwear International RSL Management (AFIRM) Group, is an apparel and footwear industry body whose aim is to reduce the use and impact of harmful substances in the apparel and footwear supply chains.

One of its areas of focus is to create an industry-wide RSL to provide an aligned approach to managing restricted substances across the largely shared global supply chains of member brands.

Based on the collaborative effort of more than 20 brands, the AFIRM RSL reduces the large number of complicated and sometimes contradictory brand RSLs while simplifying the approach and accelerating efforts to reduce chemical hazards. Pentland Brands Ltd has adopted the AFIRM RSL with some additions and modifications (see opposite).

AFIRM chemical information sheets

AFIRM member brands have produced a comprehensive set of educational materials advising suppliers about best practices for chemical management. Each chemical information sheet covers a chemical or class of chemicals, giving an overview of the substance(s), where they are likely to be found in the material process and how to maintain compliance with the AFIRM RSL. The complete library of chemical information sheets is available on the AFIRM website at http://afirm-group.com/information-sheets

For more information on the AFIRM Group visit www.afirm-group.com

AFIRM RSL – Pentland Brands modifications

Modifications are highlighted in a separate column of the RSL and relate to:

- Acetophenone and 2-Phenyl-2-Propanol: monitoring only, no pass/fail standard operated
- Chromium (Cr): Pentland Brands would prefer all leathers – not just children's products – to meet the 60 ppm standard
- Phthalates: Pentland Brands restricts Substance of Very High Concern (SVHC) phthalates not covered by other restrictions
- VOCs: Reporting required. Legal compliance (e.g. SVHCs) required

AFIRM RSL – Pentland Brands additions

Additions are included for substances not listed on the AFIRM RSL that are restricted under the Pentland Brands RSL:

- Isocyanates
- Antimicrobial guidance
- Substances listed as SVHCs under Reach

Packaging

Pentland Brands has adopted the AFIRM Packaging RSL and suppliers should ensure that packaging for all Pentland Brands' products are compliant.

The AFIRM Packaging RSL is available at: https://www.afirm-group.com/packaging-restricted-substance-list/

Supplier’s responsibility

It is the supplier’s responsibility to comply with this RSL and all relevant legislation, thereby avoiding the use of harmful or illegal chemicals in the making of Pentland Brands’ products. The requirement to comply with this RSL and all relevant legislation is included in, or additional to, all legal partnership agreements relating to the manufacture of Pentland Brands product lines.

1

Pentland Brands conducts bespoke, risk-based testing programs and reserves the right to request that suppliers test against the RSL at any time.

2

Pentland Brands expect suppliers to be able to provide evidence that materials, components or finished products supplied can meet the RSL.

Responsibility for testing and associated costs lies with the supplier.

3

Pentland Brands will assess any failure against the RSL standards individually and take appropriate action.

In the event of a test failure, suppliers will be required to conduct failure analysis and, where appropriate, provide an action plan to resolve the issue for current and/or future production.

Suppliers may be required to remediate products, remake products or replace affected components at their own cost.

Additional requirements

Individual Pentland Brands may have additional requirements relating to certification requirements or substances used in manufacturing their products. Brands will communicate these requirements directly to the supplier and/or licensee partners.

Age ranges for interpreting RSL limits

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

	Age range
Babies	0 to 36 months
Children	36 months to 14 years
Adults	14 years and older

Restricted Substances List

Table 1: RSL

CAS No.	Substance	Limits Raw material and finished product	Potential uses Textile processing for apparel and footwear	Suitable test method Sample preparation and measurement	Pentland modification
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 GC/MS, sonication for 30 minutes at 60 degrees C.	Pentland will not initially operate a pass/fail limit but will use tests to study prevalence of the chemicals in EVA materials with a view to a phase out. Any results above 50ppm must be reported.
617-94-7	2-Phenyl-2-propanol				
Acidic and alkaline substances					
Various	pH value	Textiles: 4.0–7.5 Leather: 3.5–7.0	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 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 all global regulations for all products.	Textiles and Artificial Leather: EN ISO 3071:2006 (KCl Solution) Leather: EN ISO 4045:2018	Pentland may permit pH up to 8.5 for skin contact and pH up to 9.0 in some circumstances. Results should be discussed with your Pentland Brands contact.

Table 1: RSL

CAS No.	Substance	Limits Raw material and finished product	Potential uses Textile processing for apparel and footwear	Suitable test method Sample preparation and measurement	Pentland modification
Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs), including all isomers					
Various	Nonylphenol (NP), mixed isomers	Total: 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. 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 restricting NPEOs, effective 3 February 2021, and provides advance warning to suppliers.	Textiles: Extraction: 1 g sample/20 mL THF, sonication for 60 minutes at 70˚C Measurement: EN ISO 18857-2:2011 (with derivatization) Leather: EN ISO 18218-2:2015 Polymers: 1 g sample/20 mL THF, sonication for 60 minutes at 70 degrees C analysis with LC/MS or LC/MS/MS All other materials: 1 g sample/20 mL THF, sonication for 60 minutes at 70˚C analysis with GC/MS	
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: EN ISO 18218-1:2015	
Various	Nonylphenol ethoxylates (NPEOs)				
Azo-amines					
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.	Textiles: EN ISO 14362-1:2017 Leather: EN ISO 17234-1:2015 p-Aminoazobenzene: Textiles: EN ISO 14362-3:2017 Leather: EN ISO 17234-2:2011.	
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-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				

Table 1: RSL

CAS No.	Substance	Limits Raw material and finished product	Potential uses Textile processing for apparel and footwear	Suitable test method Sample preparation and measurement	Pentland modification
Azo-amines (continued)					
3165-93-3	4-Chloro-o-toluidinium chloride	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.	Textiles: EN ISO 14362-1:2017 Leather: EN ISO 17234-1:2015 p-Aminoazobenzene: Textiles: EN ISO 14362-3:2017 Leather: EN ISO 17234-2:2011.	
553-00-4	2-Napthylammoniumacetate				
39156-41-7	4-Methoxy-m-phenylene diammonium sulphate				
21436-97-5	2,4,5-Trimethylaniline hydrochloride				
Bisphenol-A					
80-05-7	Bisphenol-A (BPA)	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.	All materials: Extraction: 1 g sample / 20 ml THF, sonication for 60 minutes at 60°C, analysis with LC/MS	
80-09-1	Bisphenol S (BPS)	Info only No limit applied	Applicable to food and drink containers, and items intended to come into contact with the mouth. BPA alternatives with known or suspected similar hazards are used in the production of epoxy resins, polycarbonate plastics, flame retardants, and PVC.		
620-92-8	Bisphenol F (BPF)				
1478-61-1	Bisphenol AF (BPAF)				

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CAS No.	Substance	Limits Raw material and finished product	Potential uses Textile processing for apparel and footwear	Suitable test method Sample preparation and measurement	Pentland modification
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 as a plasticiser in polymer production.	Combined CADS/ISO 18219:2015 method V1:06/17 Extraction: ISO 18219 and analysis by GC-NCI-MS. More information on the test available here.	
85535-85-9	Medium-chain chlorinated Paraffins (MCCP) (C14-C17)	1000 ppm			
Chlorophenols					
15950-66-0	2,3,4-Trichlorophenol	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.	1 M KOH extraction, 16 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)				
Chlororganic Carriers					
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.	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				
877-11-2	Pentachlorotoluene				

Table 1: RSL

CAS No.	Substance	Limits Raw material and finished product	Potential uses Textile processing for apparel and footwear	Suitable test method Sample preparation and measurement	Pentland modification
Chlororganic Carriers (continued)					
541-73-1	1,3-Dichlorobenzene	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.	DIN 54232:2010	
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			
Dimethylfumarate					
624-49-7	Dimethylfumarate (DMFu)	0.1 ppm	DMFu is an anti-mould agent used in sachets in packaging to prevent the build-up of mould, especially during shipping.	CEN ISO/TS 16186:2012	
Dyes, Forbidden and Disperse					
2475-45-8	C.I. Disperse Blue 1	50 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.	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				

Table 1: RSL

CAS No.	Substance	Limits Raw material and finished product	Potential uses Textile processing for apparel and footwear	Suitable test method Sample preparation and measurement	Pentland modification
Dyes, Forbidden and Disperse (continued)					
12223-33-5	C.I. Disperse Orange 37/76/59	50 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).	DIN 54231:2005	
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				
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				
Dyes, Navy Blue					
118685-33-9	Component 1: C39H23ClCrN7O12S.2Na	50 ppm each	Navy blue colourants are regulated and are prohibited from use for dyeing of textiles (Index 611-070-00-2).	DIN 54231:2005	Do not test unless specifically requested by Pentland Brands.
Not allocated	Component 2: C46H30CrN10O20S2.3Na				

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CAS No.	Substance	Limits Raw material and finished product	Potential uses Textile processing for apparel and footwear	Suitable test method Sample preparation and measurement	Pentland modification
Flame Retardants					
32534-81-9	Pentabromodiphenyl ether (PentaBDE)	Total: 10 ppm	Flame-retardant chemicals are rarely used to meet flammability requirements in children's clothing and adult products. They should no longer be used in apparel and footwear.	EN ISO 17881-1:2016	
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)			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)				
Fluorinated Greenhouse Gases					
Various	See Regulation (EC) No 842/2006 for a complete list.	0.1 ppm each		Sample preparation: Purge and trap - thermal desorption or SPME Measurement: GC/MS.	
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.	Textile: JIS L 1041-1983 A (Japan Law 112) or EN ISO 14184-1:2011. Leather: prEN ISO 17226-2:2017 with prEN ISO 17226-1:2017 confirmation method in case of interferences. Alternatively, prEN ISO 17226-1:2017 can be used on its own.	

Table 1: RSL

CAS No.	Substance	Limits Raw material and finished product	Potential uses Textile processing for apparel and footwear	Suitable test method Sample preparation and measurement	Pentland modification
Heavy Metals					
7440-36-0	Antimony (Sb)	Extractable: 30 ppm	Found in or used as a catalyst in polymerisation 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)	Extractable: 0.2 ppm Total: 100 ppm	Arsenic and its compounds can be used in preservatives, pesticides and defoliants for cotton, synthetic fibres, paints, inks, trims and plastics.	Extractable: Textiles: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017 Total: Textiles: DIN EN 16711-1:2016 Leather: DIN EN ISO 17072-2:2017	
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.	Textiles: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017	
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: Textiles: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017 Total: Textiles, plastics, and metal: DIN EN 16711-1:2016 Leather: DIN EN ISO 17072-2:2017	
7440-47-3	Chromium (Cr)	Extractable for textiles: 2 ppm Leather footwear for babies: 60 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.	Textiles: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017	Pentland Brands aims to have a limit of 60ppm for all leather. Results above 60ppm must be reported to track progress towards this goal.

Table 1: RSL

CAS No.	Substance	Limits Raw material and finished product	Potential uses Textile processing for apparel and footwear	Suitable test method Sample preparation and measurement	Pentland modification
Heavy Metals (continued)					
18540-29-9	Chromium VI	Extractable: Leather: 3ppm Textiles 1 ppm	Though typically associated with leather tanning, Chromium VI also may be used 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. Ageing test: ISO 10195:2018 Method A2 is used at brand discretion.	
7440-48-4	Cobalt (Co)	Extractable: Adults: 4ppm Children and babies: 1ppm	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)	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.	Textiles: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017	
7439-92-1	Lead (Pb)	Extractable: Adults and children: 1 ppm Babies: 0.2 ppm Total: 90 ppm	May be associated with plastics, paints, inks, pigments and surface coatings.	Extractable: Textiles: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017 Total: 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	

Table 1: RSL

CAS No.	Substance	Limits Raw material and finished product	Potential uses Textile processing for apparel and footwear	Suitable test method Sample preparation and measurement	Pentland modification
Heavy Metals (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.	Extractable: Textiles: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017 Total: Textiles, plastics, metal: DIN EN 16711-1:2016 Leather: DIN EN ISO 17072-2:2017	
7440-02-0	Nickel (Ni)	Extractable: 1ppm Release: 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 corrosion-resistance and hardness of alloys. They can also occur as impurities in pigments and alloys.	Extractable: Textiles: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017 Release: EN 12472:2005+ A1:2009 and EN 1811:2015	Results <0.88 µg/cm²/week are considered a pass due to known variation in test procedure.
7782-49-2	Selenium (Se)	Extractable: 500 ppm	May be found in synthetic fibres, paints, inks, plastics and metal trims.	Textiles: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017	
Monomers					
100-42-5	Styrene	500 ppm	Styrene is a precursor for polymerization and may be present in various styrene-copolymers like plastic buttons.	GC/MS Headspace 120˚C for 45 minutes or Extraction in Methanol GC/MS, sonication at 60˚C for 60 minutes	
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 6401:2008	

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CAS No.	Substance	Limits Raw material and finished product	Potential uses Textile processing for apparel and footwear	Suitable test method Sample preparation and measurement	Pentland modification
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. 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)				
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.	CEN ISO/TS 16179: 2012	
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)				
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: 1 M KOH extraction, 16 hours at 90 degrees C, derivatization and analysis § 64 LFGB B 82.02-08 or DIN EN ISO 17070:2015	
Ozone-depleting Substances					
Various	See Regulation (EC) No 1005/2009 for a complete list.	5 ppm	Ozone-depleting substances are prohibited from use.	GC/MS headspace 120 C for 45 minutes.	

Table 1: RSL

CAS No.	Substance	Limits Raw material and finished product	Potential uses Textile processing for apparel and footwear	Suitable test method Sample preparation and measurement	Pentland modification
Perfluorinated and Polyfluorinated Chemicals (PFCs)					
Various	Perfluorooctane Sulfonate (PFOS) and related substances	1 µg/m2 each	PFOA and PFOS may be present as unintended byproducts in long-chain and short-chain commercial water-, oil-, and stain-repellent agents. PFOA may also be used in polymers like Polytetrafluoroethylene (PTFE). The area-based limit for PFOA will be superseded by Commission Regulation (EU) 2017/1000 and removed in 2023.	All materials: prISO FDIS 23702-1: 2018	
Various	Perfluorooctanoic Acid (PFOA) and its salts	1 µg/m2 25 ppb total			
Various	PFOA-related substances	1000 ppb total			
Pesticides, Agricultural					
Various	See ***Table 4*** for a complete list.	0.5 ppm each	May be found in natural fibres, primarily cotton.	ISO 15913/DIN 38407 F2 or EPA 8081/EPA 8151A or BVL L 00.00-34:2010-09.	
Phthalates					
117-81-7	Di(2-ethylhexyl)-phthalate (DEHP)	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 components (e.g., PVC) • Print pastes • Adhesives • Plastic buttons • Plastic sleevings • Polymeric coatings The listed phthalates are those most commonly used across industry sectors. Find more information about phthalates restricted by legislation in the REACH SVHC list, which is updated frequently.	Sample preparation for all materials: CPSC-CH-C1001-09.4 Measurement: Textiles: GC-MS, EN ISO 14389:2014 (7.1 Calculation based on weight of print only; 7.2 Calculation based on weight of print and textile if print cannot be removed). All materials except textiles: GC/MS	Pentland restricts any phthalates restricted by legislation or classified as an SVHC under Reach. The use of PVC must be approved by Pentland in writing.
117-82-8	Di(2-methoxyethyl) phthalate (DMEP)				
117-84-0	Di-n-octylphthalate (DNOP)				
131-11-3	Dimethylphthalate (DMP)				
131-16-8	Dipropyl phthalate (DPRP)				
131-18-0	Di-n-pentylphthalate (DPP)				
26761-40-0	Diisodecylphthalate (DIDP)				
27554-26-3	Diisooctyl phthalate (DIOP)				
28553-12-0	Di-iso-nonylphthalate (DINP)				
605-50-5	Diisopentylphthalate (DIPP)				
68515-42-4	Di(C7-C11 alkyl) phthalate (DHNUP) linear + branched				
68515-50-4	Dihexylphthalate, branched + linear				

Table 1: RSL

CAS No.	Substance	Limits Raw material and finished product		Potential uses Textile processing for apparel and footwear	Suitable test method Sample preparation and measurement	Pentland modification
Phthalates (continued)						
71888-89-6	Di(C6-C8 alkyl) phthalate (DIHP) branched, C7 rich	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 components (e.g., PVC) • Print pastes • Adhesives • Plastic buttons • Plastic sleevings • Polymeric coatings The listed phthalates are those most commonly used across industry sectors. Find more information about phthalates restricted by legislation in the REACH SVHC list, which is updated frequently.	Sample preparation for all materials: CPSC-CH-C1001-09.4 Measurement: Textiles: GC-MS, EN ISO 14389:2014 (7.1 Calculation based on weight of print only; 7.2 Calculation based on weight of print and textile if print cannot be removed). All materials except textiles: GC/MS	Pentland restricts any phthalates restricted by legislation or classified as an SVHC under Reach. The use of PVC must be approved by Pentland in writing.
776297-69-9	n-Pentylisopentylphthalate (NPIPP)					
84-61-7	Dicyclohexyl phthalate (DCHP)					
84-66-2	Diethylphthalate (DEP)					
84-69-5	Diisobutylphthalate (DIBP)					
84-74-2	Dibutylphthalate (DBP)					
84-75-3	Di-n-hexylphthalate (DnHP)					
84777-06-0	1,2-Benzenedicarboxylic acide, dipentylester, branched + linear					
85-68-7	Butylbenzylphthalate (BBP)					
Poly Aromatic Hydrocarbons (PAHs)						
83-32-9	Acenaphthene	No individual restriction	Total: 10ppm	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 2014	Any results for naphthalene over 2ppm must be reported to Pentland.
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.	All materials: AFPS GS 2014	

Table 2: Pentland Brands requirements additional to the AFIRM RSL

CAS No.	Substance	Limits Raw material and finished product	Potential uses Textile processing for apparel and footwear	Suitable test method Sample preparation and measurement	Pentland modification
Solvents / residuals					
68-12-2	Dimethylformamide (DMFa)	500 ppm	Solvent used in plastics, rubber, and polyurethane (PU) coating. Water- based PU does not contain DMFa and is therefore preferable.	All materials: DIN CEN ISO/TS 16189:2013	To enable us to understand the presence of DMFa in our supply chain: all results above 100ppm in mock leather must be reported. All results above 5 ppm in other end uses must be reported
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-pyrrolidone (NMP)		Industrial solvent used in production of water-based Polyurethanes and other polymeric materials. May also be used as a surface treatment for textiles, resins, and metal-coated plastics, or as a paint stripper.		
UV Absorbers / Stabilizers					
3846-71-7	UVUV 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.	ADIN EN 62321-6:2016-05 (Extraction in THF, analysis by GC/MS)	
3864-99-1	UV 327				
25973-55-1	UV 328				
36437-37-3	UV 350				
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	All results above 5ppm must be reported so that Pentland Brands can map solvent usage in the supply chain.
75-15-0	Carbon disulfide	Total: 1000 ppm			
56-23-5	Carbon tetrachloride				
67-66-3	Chloroform				
108-94-1	Cyclohexanone				
107-06-2	1,2-Dichloroethane				
75-35-4	1,1-Dichloroethylene				
100-41-4	Ethylbenzene				
76-01-7	Pentachloroethane				
630-20-6	1,1,1,2- Tetrachloroethane				
79-34-5	1,1,2,2- Tetrachloroethane				
127-18-4	Tetrachloroethylene (PERC)				
108-88-3	Toluene				
71-55-6	1,1,1- Trichloroethane				
79-00-5	1,1,2- Trichloroethane				
79-01-6	Trichloroethylene				
1330-20-7	Xylenes (meta-, ortho-, para-)				
108-38-3					
95-47-6					
106-42-3					

Table 2: Pentland Brands requirements additional to the AFIRM RSL

CAS No.	Substance	Limits Raw material and finished product	Potential uses Textile processing for apparel and footwear	Suitable test method Sample preparation and measurement	Pentland modification
Isocyanates					
multiple	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	
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)				
Anti-microbials					
The use of anti-microbial finishes or components containing anti-microbials is not permitted unless agreed in writing. See *Other guidelines and policies* section for more details.					
Substances of Very High Concern (SVHC)					
The use of any chemicals listed as an SVHC under REACH legislation is not permitted unless agreed in writing. The list of SVHCs can be found here: https://echa.europa.eu/candidate-list-table It must be understood that the list is subject to change and some SVHCs may become the subject of authorisation requirements or more stringent legislation.					

Table 3: Agricultural pesticides detailed list

CAS No.	Pesticide name
93-72-1	2-(2,4,5-trichlorophenoxy) propionic acid, its salts and compounds
93-76-5	2,4,5-T
93-72-1	2,4,5-TP
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
57648-21-2	DTTB (Timiperone)
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

CAS No.	Pesticide name
51630-58-1	Fenvalerate
1336-36-3	Halogenated biphenyls, including Polychlorinatedbiphenyl (PCB)
53469-21-9	
Various	
Various	Halogenated terphenols, including polychlorinated terphenyl (PCT)
Various	Halogenated naphthalenes, including polychlorinated naphthalenes (PCNs)
Various	Halogenated diarylalkanes
99688-47-8	Halogenated diphenyl methanes, including Monomethyl-dibromo-diphenyl methane, Monomethyl-dichloro-diphenyl methane, and Monomethyl-tetrachloro-diphenyl methane
81161-70-8	
76253-60-6	
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
297-78-9	Telodrine
8001-35-2	Toxaphene
731-27-1	Tolylfluanide
1582-09-8	Trifluraline

Risk matrix

In the apparel and footwear supply chain, certain types of fibres and materials are more likely to contain restricted substances than others.

The risk matrix highlights the restricted substance risks associated with different fibres and materials, and is presented as a tool to guide suppliers in their efforts to manage restricted substances.

It is based on the combined knowledge of the AFIRM group brands over many years of experience in manufacturing and management of restricted substances across a wide range of materials.

Rating	Description
1	Red indicates that a chemical has been in widespread use and/or frequently detected in a particular material.
2	Orange indicates that a chemical has been deliberately used and/or detected in a particular material occasionally.
3	Yellow indicates there is a very low but theoretical chance that a chemical could be used and/or detected.
White	White indicates that we believe there is an almost negligible risk of a chemical being used and/or detected.
Border	Boxes with border highlighted have been modified by Pentland to reflect risks observed in its supply chain

The aim of the risk matrix is to provide information on those substances that have historically been deliberately used or found as reagents/contaminants in different materials. The matrix does not represent a recommendation for testing; specific testing requirements will be communicated by Pentland Brands based on risk assessments of their own products and components.

Risk matrix

Substances	Natural fibres	Blended fibres	Synthetic fibres	Artificial leather with fibre backing	Natural leather	Coatings and prints	Natural materials including horns, bones, cork, wood, paper and straw	Polymers, plastics, foams, natural rubber and synthetic rubber	Metal	Feathers and down	Glue
Acetophenone and 2-Phenyl-2-Propanol								2A			
Acidic and Alkaline substances (pH)	1	1	1	1	1			2			
Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs), including all isomers	1	1	1	1	1	1	1	1		3	1
Azo-amines	1	1	1	1	1	1	1			1	
Bisphenol-A								3B			
Chlorinated Paraffins, SCCP (C10-C13) and MCCP (C14-C17)	3	3	3	2	1	2		2			
Chlorophenols (Tri-, Tetra-, and Pentachlorophenols)	3	3		3	3	3				3	
Chlororganic Carriers		2C	2D		3						
Dimethylformamide (DMFa)				2		2					2
Dimethylfumarate (DMFu)	3	3	3	3	3	3		3			
Dyes, Forbidden and Disperse		2	2	2		2					
Dyes, Navy Blue		3	3	3		3					
Flame Retardants	3 - if fire retardant finish is applied										
Fluorinated Greenhouse Gases											
Formaldehyde	1	1	1	1	1	1	1				1
Heavy Metals, Chromium VI	3				1						
Heavy Metals, Nickel Release									1		
Heavy Metals, Cadmium Total				3		2		3	2		

A. EVA foam only
B. Polycarbonate only
C. Only if polyester is in the blend
D. Polyester only
E. Lead in foams is risk level 2
F. Rubber only
G. Styrene based polymers only
H. PVC only
I. PU only

Risk matrix

Substances	Natural fibres	Blended fibres	Synthetic fibres	Artificial leather with fibre backing	Natural leather	Coatings and prints	Natural materials including horns, bones, cork, wood, paper and straw	Polymers, plastics, foams, natural rubber and synthetic rubber	Metal	Feathers and down	Glue
Heavy Metals, Lead Total				3		1		2/3E	1		
Heavy Metals, Additional Total (Hg & As)				3		3		3	3		
Heavy Metals, Extractable	2	2	2	2	2	2		2			
N-Nitrosamines								2F			
Organotin Compounds	3	3	3	3	3	3		3			3
Ortho-phenylphenol (OPP)	3	2	2	3	2	3					
Ozone-depleting Substances	3										
Perfluorinated and Polyfluorinated Chemicals (PFCs)	2 - if water or stain repellent finish is applied										
Pesticides, Agricultural	3	3			3						
Phthalates				1		1		1			1
Polycyclic Aromatic Hydrocarbons (PAHs)				1		1		1			1
Styrene Monomer								2G			
Vinyl Chloride Monomer						2H		2H			
Volatile Organic Compounds (VOCs)	2	2	2	2	2	2		2			2
Isocyanates						2I		2			2

A. EVA foam only
B. Polycarbonate only
C. Only if polyester is in the blend
D. Polyester only
E. Lead in foams is risk level 2
F. Rubber only
G. Styrene based polymers only
H. PVC only
I. PU only

Manufacturing chemistry guidance

In order to ensure compliance with the RSL and minimise the chemical risks to workers and the environment in manufacturing, it is strongly recommended suppliers make use of the systems outlined on the next page, to screen for compliant formulations.

bluesign ®

The bluesign® bluefinder is an online database of bluesign® approved chemicals which can be used to screen for suitable chemistry. Suppliers which are not already a member of the bluesign® system should contact cr@pentland.com for details on how to access bluesign® bluefinder.

For more information visit www.bluesign.com

ZDHC manufacturing Restricted Substances List (MRSL)

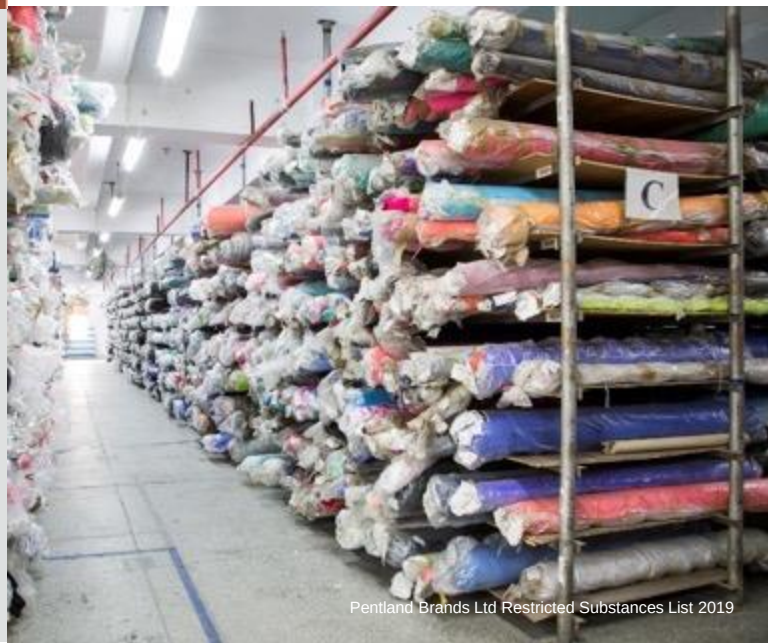
Zero Discharge of Hazardous Chemicals (ZDHC) is promoting a harmonised approach to managing chemicals during the processing of raw materials within the apparel and footwear supply chain through their MRSL. Pentland Brands encourages its supply chain to contact their chemical suppliers and communicate the ZDHC MRSL standard to them. Chemical suppliers should be able to confirm which of their products meet this standard.

A copy of the most current ZDHC MRSL can be downloaded from the ZDHC website www.roadmaptozero.com

Oeko-tex®

The Oeko-tex® Eco-Passport system certifies chemical formulations for compliance against the Oeko-tex RSL and MSRL. This certification can be used to screen chemical formulations.

For more information visit www.oeko-tex.com



Other guidelines and policies

Anti-microbial guidelines

Pentland Brands currently restricts the use of anti-microbial technologies, approval for the use of which must be sought in writing. It applies where a chemical is added to the fabric (as a finish or within the fibre itself) in order to impart anti-bacterial, anti-microbial or anti-odour properties. It does not apply to fibres which have an inherent anti-odour property such as wool.

The most likely scenarios whereby these chemicals could enter Pentland Brands products are:

1) Specified as a performance requirement e.g. anti-odour finishes
2) Used to inhibit growth of mould during storage/transportation

The conditions described below must be met prior to the approval of such chemicals for use within Pentland Brands product:

- Full disclosure of the chemistry used
- Be proven effective for our product types
- No leaching or release of chemicals in order to be effective
- Be registered under the EU Biocidal Products Regulation
- Meet global legislative standards
- Comply with the Pentland Brands Restricted Substances List
- Be listed in the bluesign® bluefinder or Oeko-tex® list of approved products with biological activity

Dimethyl fumarate (DMFu):

Use of DMFu to inhibit growth of mould during storage or transportation is prohibited.

Please contact corporate.responsibility@pentland.com for further guidance on the approval process.

Animal based products

There are additional requirements for the use of animal based products. These are outlined in the Pentland Brands responsible materials policy and can be downloaded from https://pentlandbrands.com/our-responsibility/

For further information about Corporate Responsibility at Pentland Brands, contact corporate.responsibility@pentland.com or visit www.pentlandbrands.com

Pentland Brands Ltd
Squires Lane
London
N3 2QL

Pentland

berghaus
Boxfresh
canterbury
ENDURA
ellesse
KangaROOS
KicKers
KAREN MILLEN
mitre
SEAVEES
Red or Dead
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