Environmental & Chemical Policy

Minimum Standards

Manufacturing Restricted Substances List (MRSL) V2.0
Restricted Substances List (RSL) V3.0

Released: March 2020

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INTRODUCTION

Marks & Spencer have an Environmental and Chemical Policy (ECP) in place to ensure that all products manufactured meet the strictest legal requirements and to restrict or eliminate specific chemicals of concern. This is part of our commitment to source responsibly and to protect consumers, workers and the environment.

It is our supplier's responsibility to share this policy with their supply chain and ensure that all chemicals and materials used in the manufacture of M&S products are compliant. We expect our primary suppliers to nominate a competent technical person as having clear responsibility for compliance to the ECP and the MRSL / RSL..

This document lays out our minimum standards for chemical compliance and contains the following guidance:

- M&S Manufacturing Restricted Substances List (MRSL) - restricts the input of hazardous chemicals to the manufacturing process. The chemicals listed are banned from deliberate use in formulations. This list has been developed in conjunction with the Zero Discharge of Hazardous Chemicals Group (ZDHC) of which M&S is a signatory member.

- M&S Restricted Substances List (RSL) - defines the limits for residues of hazardous chemicals allowed on the finished product.

- Risk assessment table – guidance regarding the restricted substances associated with different types of fibres and materials and for use in selecting due diligence tests.

We expect that suppliers will carry out appropriate, risk based Due Diligence Testing to ensure compliance with the Restricted Substances List, and to request evidence that their upstream suppliers also carry out Due Diligence Testing and checks as appropriate.

Failure to comply with the Marks & Spencer's Environmental and Chemical Policy may result in a fine or the rejection of your product. We reserve the right to RTM the product at the supplier's cost, according to our Terms and Conditions.

Legal Considerations

It is our suppliers' responsibility to ensure that chemicals and finished products comply with all applicable local and global legislative standards.

ZDHC Signatory brand

As a signatory brand of the Zero Discharge of Hazardous Chemicals foundation we are committed to the use of safer chemical inputs.

ZDHC is a collaboration of global fashion brands, chemical suppliers, manufacturers and other organisations that share the same vision. We are working together to reduce the fashion industry's chemical footprint. M&S environmental and chemical policy is aligned with the guidelines established by ZDHC and we are working to implement the key chemical management tools across our wet processing network.

The ZDHC MRSL goes beyond the traditional approaches to chemical restrictions, which only apply to finished products (Restricted Substances List - RSL). This approach helps to protect consumers while minimising the possible impact of banned hazardous chemicals on production workers, local communities, and the environment.

By supporting good chemical management, we aim to avoid the use of banned substances during production and manufacturing.

The release of the M&S Environmental & Chemical Policy coincides with the release of the ZDHC Manufacturing Restricted Substances List (ZDHC MRSL) Version 2.0. These substances are banned from intentional use in facilities processing textile materials, leather, rubber, foam, adhesives and trim parts in textiles, apparel, and footwear.

Chemical formulations covered by restrictions in the ZDHC MRSL include, but are not limited to, cleaners, adhesives, paints, inks, detergents, dyes, colourants, auxiliaries, coatings and finishing agents used during raw material production, wet processing, process machinery maintenance, wastewater treatment, sanitation, and pest control. ZDHC MRSL limits apply to substances in commercially available formulations, not those from earlier stages of chemical synthesis.

Version 2.0 applies to textiles, leather, rubber, foam and adhesives, recognising that these materials use different processes. As with the introduction of any updated guideline, a transition period has been provided to put the latest version into action. The chemical industry will have a transition period of 12 months to implement ZDHC MRSL V2.0, within which all certifications will be updated.

Find out more about the work of ZDHC at their website:
https://www.roadmaptozero.com/about

1. Manufacturing Restricted Substances List (MRSL)

1.1 Implementation and Compliance

Marks & Spencer has adopted the **Manufacturing Restricted Substances List (MRSL)** developed by the Zero Discharge of Hazardous Chemicals Group (ZDHC), of which we are a signatory brand**.** The purpose of the MRSL is to restrict the input of hazardous chemicals to the manufacturing process, reduce effluent loading in waste water and avoid residual chemicals in finished product. The chemicals listed are banned from deliberate use in formulations.

It is possible that some chemicals may be used within the manufacturing process which may not be present in the final product but are of concern to worker safety and the environment. For example, chemicals which are applied at an earlier stage of manufacture may be washed out of the substrate during wet processing. While residues of these chemicals on the final product may be compliant with the RSL (Restricted Substance List), their use may provide a risk to workers and their presence in effluent may cause local environmental problems. Also, there may be chemicals (for example machine cleaning chemicals), which have no direct contact with the substrate, but which may cause worker exposure and environmental issues.

In general, the MRSL reflects the requirements of the RSL, and therefore compliance with the MRSL will lead to more certain compliance with the RSL.

Important Notes:

THE MRSL DOES NOT REPLACE THE RSL. Compliance with the RSL is required as part of the business Terms and Conditions.

THE MRSL DOES NOT REPLACE APPLICABLE NATIONAL AND LOCAL ENVIRONMENTAL OR WORKPLACE SAFETY RESTRICTIONS.

The content of the Marks and Spencer MRSL is based on the ZDHC MRSL V2.0.

1.1.1 PRIMARY SUPPLIER

Responsibility

It is the responsibility of the Primary Supplier to ensure that the wet processing mill has a current copy of the MRSL.

The MRSL applies to all textile and leather goods processed for Marks and Spencer.

Compliance with the MRSL is a minimum requirement for overall compliance with the Environmental and Chemical Policy (ECP).

A suitably qualified member of each primary supplier's management team should take responsibility to ensure that all chemicals deliberately applied by **all suppliers** to products contracted for M&S conform to the MRSL and the RSL.

1.1.2 WET PROCESSOR

Responsibility

Compliance with the MRSL depends on good chemical management by the wet processing facility (Dyer, Finisher, Printer, Laundry, Tannery etc). This compliance must be confirmed as a minimum requirement in the **ECP Self Audit for Wet Processors and Tanneries.**

It is the responsibility of the wet processing mills to share the MRSL with their chemical suppliers, and only to use formulations compliant with the MRSL. This includes all dyes, pigments and auxiliary formulations, chemicals used in processing and chemicals used for ancillary activities such as machine cleaning, print screen cleaning etc.

Demonstrating compliance

Marks & Spencer participates in the **ZDHC programme** and requires wet processing suppliers to demonstrate that all formulations within its chemical inventory meet the requirements of the MRSL

There are several ways to check compliance:

- Written declarations obtained from the chemical suppliers. The written confirmation should be obtained **directly** from the dye or chemical supplier, **not through an agent.**
- **'Positive Lists' -** Some suppliers issue lists of dyes and auxiliaries that are compliant with the limits stated on the MRSL. Formulations in these lists are declared to be compliant.
- ZDHC Gateway – conformance can be checked using the Chemical module which contains a database of over 30,000 verified chemicals. Level 1 conformance gives the assurance of a 3rd party review of documentation or analytical test report.

All wet processors must register on the ZDHC Gateway and use the Chemical module.

Follow the link to learn more:
https://www.roadmaptozero.com/input#Gateway-Chemical-Module

The wet processor should retain the right to have any formulation analysed for MRSL content as a form of Due Diligence and discuss the results with the chemical supplier. Please refer to the general analysis techniques in the MRSL table.
On request, we expect to be provided with the details of all chemicals and dyes used on any M&S product eg. Chemical name, supplier, evidence of MRSL compliance etc.

For more details regarding how chemicals are tested and verified compliant, please follow the link to see the ZDHC MRSL Conformance Guidance document:
https://www.roadmaptozero.com/input

Chemical Inventory

To comply with the Minimum Standards of the Marks and Spencer Environmental and Chemical Policy (ECP), the mill must have a robust chemical sourcing policy and a full, current Chemical Inventory (please refer to the Minimum Standards question of the ECP Self Audit for Wet Processors and Tanneries). For transparency**,** all dyes and chemicals used in the mill's processing must be recorded. The Chemical Inventory must be available on demand.

The Chemical Inventory should take the format of the ZDHC Chemical Inventory List found at the following link:
https://www.roadmaptozero.com/process#cil

Alternatively, the mill can enter to a ZDHC approved Chemical Inventory system such as CleanChain, BV E3, Blue sign etc. and submit an InCheck report demonstrating their compliance.

Definition of inventory categories

The following categories, as specified by ZDHC, should be used in the chemical inventory

Dyes: Dyes and pigments used in any colouration process.

Auxiliaries: Proprietary formulations from auxiliary manufacturers used for specific process applications, such as scouring agents, levelling agents, lubricants, resins, water repellents, softeners etc.

Chemical substances: Non-formulated individual chemicals from local chemical suppliers, such as sodium hydroxide, acetic acid, hydrogen peroxide, sodium chloride etc.

1.1.3 CHEMICAL SUPPLIER

Responsibility

It is the responsibility of the chemical supplier, on the request of the wet processor, to provide up-to-date information on the compliance of their formulations with the MRSL i.e. the chemicals in their formulations are within the limits specified in the MRSL.
On request, the chemical supplier must provide in-house or third-party test reports to confirm the claims in their declarations of compliance.
Alternatively, chemicals which are uploaded to the ZDHC Gateway Chemical Module, with a conformance level 1 or above, will be accepted. To achieve level 1, a third-party review of documentation or analytical test report are required to decide conformance to the ZDHC MRSL.

Material Safety Data Sheet - caution

Please note that chemical suppliers are obliged only to declare concentrations of hazardous chemicals of over 1000 ppm on the Material Safety Data Sheet (MSDS) for their formulations. The MSDS is therefore not a reliable guide for the purpose of identifying the hazardous chemical content of a formulation, and the MRSL requires **no intentional presence of the chemicals listed**. Written confirmation of compliance must be requested.

1.1.4 MATERIAL & COMPONENT SUPPLIERS

Responsibility

It is the responsibility of the Primary Supplier to ensure that they have a robust sourcing policy in place and seek confirmation from material and component suppliers that their products comply with the MRSL. All suppliers should be provided with a current copy of the MRSL.

Compliance with the MRSL is a minimum requirement for overall compliance with the Environmental and Chemical Policy (ECP). Suppliers who are not required to complete an ECP self-audit should complete a declaration of compliance. This form can be found in the ECP Due Diligence section on the supplier exchange:

https://supplierexchange1.marksandspencer.com/articles/due-diligence

1.1.5 NON-COMPLIANCE WITH THE MRSL

Compliance with the MRSL is a minimum requirement for overall compliance with the Environmental and Chemical Policy (ECP). **(Please refer to the Minimum Standards questions of the ECP Self Audits for Textile Wet Processing and for Tanneries).**

Examples of non-compliance

- A formulation containing listed chemicals greater than the specified limits
- Non-disclosure of formulation limits by a chemical supplier.

In the case of non-compliance, please contact the relevant Marks and Spencer Technologist **immediately** for advice.

1.1.6 Using the MRSL Table

The table is divided into chemical groups and provides information regarding where these chemicals might be present and the recommended limits in formulations.

The data applies to chemical formulations and substances used during the creation and wet processing of textile fibres, and during the creation and processing of (coated) fabrics, leather, rubber, foam and adhesives.

Information is displayed as follows:

- Use – key properties and expected uses of the chemical
- CAS Number - the unique numerical identifier assigned by the Chemical Abstracts Service (CAS) to the chemical substance.
- Chemical Name – the commonly used name for this chemical. Synonyms can be cross checked using the CAS number.
- Applicability – indicates which substrates the chemical could be use in:
    - Textile
    - Leather
    - Polymers (RFA) – Rubber, Foam, Adhesives
- Supplier Guidance – Most chemicals are set at "No intentional use". In some cases "no limit" is specified which indicates that this chemical is not expected to be found in a particular substrate.
- Formulation Limit - concentration limits in chemical formulations commercially available from chemical suppliers. These limits ban intentional use while allowing for reasonable expected manufacturing impurities, which should be consistently achievable by responsible chemical manufacturers.
- Test method (preferred) – the recommended method for extraction and analysis. Where appropriate an EN ISO test method will be specified.

Manufacturing Restricted Substance List (MRSL)

ALKYLPHENOLS (AP) and ALKYLPHENOL ETHOXYLATES (APEO)						
Use	CAS Number	Chemical Name	Applicability	Supplier Guidance	Formulation limit	Test method (preferred)
APEOs can be used as or found in: detergents, scouring agents, spinning oils, wetting agents, softeners, emulsifier/dispersing agents for dyes and prints, impregnating agents, de-gumming for silk production, dyes and pigment preparations, polyester padding and down/feather fillings NP and OP are not used by the leather industry, but could be present as contaminants	104-40-5 11066-49-2 25154-52-3 84852-15-3	Nonylphenol (NP) Mixed isomers	Textile Leather Polymers (R, F, A)	No intentional use	250ppm	With Reference To DIN EN ISO 18857 And Followed by Liquid Chromatography – Mass Spectrometry (LC-MS) Analysis. NPEO(1+2): GC/MS
	140-66-9 1806-26-4 27193-28-8	Octylphenol (OP) Mixed isomers	Textile Leather Polymers (R, F, A)	No intentional use	250ppm	
	9016-45-9 26027-38-3 37205-87-1 68412-54-4 127087-87-0	Nonylphenol ethoxylates (NPEO)	Textile Leather Polymers (R, F, A)	No intentional use	500ppm	
	9002-93-1 9036-19-5 68987-90-6	Octylphenol ethoxylates (OPEO)	Textile Leather Polymers (R, F, A)	No intentional use	500ppm	

ANTI-MICROBIALS & BIOCIDES						
Use	CAS Number	Chemical Name	Applicability	Supplier Guidance	Formulation limit	Test method (preferred)
These substances have biocidal properties, making it useful for multiple preservation applications	90-43-7	o-Phenylphenol (+salts) (OPP) Biphenyl-2-ol	Textile Leather Polymers (R, F, A)	No intentional use Permitted No Limit	5000ppm Permitted as preservation in formulations NA	Solvent extraction LC MS, LC DAD, GC MS
	Various	Permethrin	Textile Leather Polymers (R, F, A)	No intentional use	250ppm	Solvent extraction, LC MS/MS, GC MS/MS
	624-49-7	DMFu – dimethyl fumarate	Textile Leather Polymers (R, F, A)	No intentional use	0.1ppm	Solvent extraction followed by GC-MS
	3380-34-5	Triclosan	Textile Leather Polymers (R, F, A)	No intentional use	250ppm	Solvent extraction LC MS, DAD

CHLORINATED PARAFFINS						
Use	CAS Number	Chemical Name	Applicability	Supplier Guidance	Formulation limit	Test method (preferred)
Short-chain and Medium-chain chlorinated paraffins can be found as contaminants within longchain chlorinated paraffins and sulfo-chlorinated paraffin's, used as fat liquoring agents.	85535-84-8	Short chain chlorinated paraffins (SCCPs) C10-C13	Textile Leather Polymers (R, F, A)	No intentional use No intentional use No limit	50 ppm 250ppm NA	prEN ISO 22699-2
	85535-85-9	Medium-chain Chlorinated paraffins (MCCPs) C14-C17	Textile Leather Polymers (R, F, A)	No intentional use	500ppm	prEN ISO 22699-2

CHLOROBENZENES and CHLOROTOLUENES						
Use	CAS Number	Chemical Name	Applicability	Supplier Guidance	Formulation limit	Test method (preferred)
Chlorobenzenes and chlorotoluenes (chlorinated aromatic hydrocarbons) can be used as carriers in the dyeing process of polyester or wool/polyester fibres. In Leather they can be used for degreasing sheep and pig skins. They can also be used as solvents.	95-50-1	1,2-Dichlorobenzene	Textile Leather Polymers (R, F, A)	No intentional use	500ppm	Solvent extraction GCMS analysis.
	Multiple	Other isomers of mono-, di-, tri-, tetra-, penta- and hexa-chlorobenzenes and mono-, di-, tri-, tetra- and penta- chlorotoluenes			Sum = 200ppm Tetrachlorotoluene and Trichlorotoluene 5 ppm each	

CHLOROPHENOLS						
Use	CAS Number	Chemical Name	Applicability	Supplier Guidance	Formulation limit	Test method (preferred)
CHLOROPHENOLS Chlorophenols are polychlorinated compounds used as preservatives or pesticides. Pentachlorophenol (PCP) and tetrachlorophenol (TeCP) are sometimes used to prevent mould and kill insects when growing cotton and when storing/transporting fabrics. They have also been used in the past to prevent mould when storing and transporting raw hides and leather. PCP/TeCP can also be used as a preservative in print pastes. They are now regulated and should not be used.	25167-83-3	Tetrachlorophenol (TeCP)	Textile Leather Polymers (R, F, A)	No intentional use	Sum of substances 20ppm	GC-MS EN ISO 17070
	4901-51-3	2,3,4,5-tetrachlorophenol				
	58-90-2	2,3,4,6-tetrachlorophenol				
	935-95-5	2,3,5,6-tetrachlorophenol				
	87-86-5	Pentachlorophenol (PCP)				
	95-57-8	2-chlorophenol			Sum of substances 50ppm	
	120-83-2	2,4-dichlorophenol				
	583-78-8	2,5-dichlorophenol				
	87-65-0	2,6-dichlorophenol				
	95-95-4	2,4,5-trichlorophenol				
	88-06-2	2,4,6-trichlorophenol				
	591-35-5	3,5-dichlorophenol				
	576-24-9	2,3-dichlorophenol				
	95-77-2	3,4-dichlorophenol				
	108-43-0	3-chlorophenol				
	106-48-9	4-chlorophenol				
	15950-66-0	2,3,4-trichlorophenol				
	933-78-8	2,3,5-trichlorophenol				
	609-19-8	3,4,5-trichlorophenol				
	933-75-5	2,3,6-trichlorophenol				

DYES - AZO (FORMING RESTRICTED AMINES)						
Use	CAS Number	Chemical Name	Applicability	Supplier Guidance	Formulation limit	Test method (preferred)
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. (See Appendix 1)	101-14-4	4,4'-methylene-bis-(2-chloroaniline)	Textile Leather Polymers (R, F, A)	No intentional use	150ppm	With Reference To EN ISO 14362:1&3 And Followed By Gas Chromatography – Mass Spectrometry (GC-MS) And High Performance Liquid Chromatographic (HPLC) Analysis.
	101-77-9	4,4'- methylenedianiline				
	101-80-4	4,4'-oxydianiline				
	106-47-8	4-chloroaniline				
	119-90-4	3,3'-dimethoxylbenzidine				
	119-93-7	3,3'-dimethylbenzidine				
	120-71-8	6-methoxy-m-toluidine				
	137-17-7	2,4,5-trimethylaniline				
	139-65-1	4,4'-thiodianiline				
	60-09-3	4-aminoazobenzene				
	615-05-4	4-methoxy-m-phenylenediamine				
	838-88-0	4,4'-methylenedi-o-toluidine				
	87-62-7	2,6-xylidine				
	90-04-0	o-anisidine				
	91-59-8	2-naphthylamine				
	91-94-1	3,3'-Dichlorobenzidine				
	92-67-1	4-aminodiphenyl				
	92-87-5	Benzidine				
	95-53-4	o-toluidine				
	95-68-1	2,4-Xylidine				
	95-69-2	4-chloro-o-Toluidine				
	95-80-7	4-methyl-m-phenylenediamine				
	97-56-3	o-aminoazotoluene				
	99-55-8	5-nitro-o-toluidine				
	3165-93-3	4-chloro-o-toluidinium chloride				
	553-00-4	2-Naphthylammoniumacetate				
	39156-41-7	4-methoxy-m-phenylene diammonium sulphate				
		2, 4-diaminoanisole sulphate				
	21436-97-5	2, 4, 5-trimethylaniline hydrochloride				

DYES - CARCINOGENIC OR EQUIVALENT CONCERN						
Use	CAS Number	Chemical Name	Applicability	Supplier Guidance	Formulation limit	Test method (preferred)
Most of these substances are regulated and should no longer be used for dyeing of textiles.	1937-37-7	Direct Black 38	Textile Leather Polymers (R, F, A)	No intentional use	250ppm	DIN 54231
	2602-46-2	Direct Blue 6				
	3761-53-3	Acid Red 26				
	569-61-9	Basic Red 9				
	573-58-0	Direct Red 28				
	632-99-5	Basic Violet 14				
	82-28-0	Disperse orange 11				
	2475-45-8	Disperse Blue 1				
	2475-46-9	Disperse Blue 3				
	2580-56-5	CI Basic Blue 26 (with Michler's Ketone >0.1%)				
	569-64-2	CI Basic Green 4 (Malachite green Chloride)				
	2437-29-8	CI Basic Green 4 (Malachite green Oxalate)				
	10309-95-2	CI Basic Green 4 (Malachite green cation)				
	1694-09-3	C.I.Acid Violet 49				
	548-62-9	Basic violet 3 (with Michler's Ketone >0.1%)				

DYES - SKIN SENSTITISING DISPERSE DYES						
Use	CAS Number	Chemical Name	Applicability	Supplier Guidance	Formulation limit	Test method (preferred)
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 should no longer be used for dyeing of textiles.	3179-90-6	Disperse Blue 7	Textile Leather Polymers (R, F, A)	No intentional use	250ppm	Solvent extraction and analysis by LC/DAD
	3860-63-7	Disperse Blue 26				
	12222-75-2	Disperse Blue 35				
	12222-97-8	Disperse Blue 102				
	12223-01-7	Disperse Blue 106				
	61951-51-7	Disperse Blue 124				
	119-15-3	Disperse Yellow 1				
	2832-40-8	Disperse Yellow 3				
	6373-73-5	Disperse Yellow 9				
	12236-29-2	Disperse Yellow 39				
	54824-37-2	Disperse Yellow 49				
	2581-69-3	Disperse Orange 1				
	730-40-5	Disperse Orange 3				
	13301-61-6	Disperse Orange 37/59/76				
	2872-52-8	Disperse Red 1				
	2872-48-2	Disperse Red 11				
	3179-89-3	Disperse Red 17				
	23355-64-8	Disperse Brown 1				
	56524-77-7	Disperse Blue 35				

DYES - NAVY BLUE COLOURANT						
Use	CAS Number	Chemical Name	Applicability	Supplier Guidance	Formulation limit	Test method (preferred)
Navy Blue colourants are regulated and should no longer be used for dyeing of textiles.	118685-33-9	Component 1: C39H23ClCrN7O12S:2Na	Textile Leather Polymers (R, F, A)	No intentional use	250ppm	Solvent extraction and analysis by LC/DAD
	Not allocated	Component 2: C46H30CrN10O20S2:3Na				

FLAME RETARDANTS						
Use	CAS Number	Chemical Name	Applicability	Supplier Guidance	Formulation limit	Test method (preferred)
FLAME RETARDANTS 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. All Halogenated Flame Retardants are banned from intentional use.	3194-55-6	Hexabromocyclododecane (HBCCD)	Textile Leather Polymers (R, F, A)	No intentional use	250ppm	By Toluene Extraction And Followed By Liquid Chromatography - Mass Spectrometry (LC-MS) And Gas Chromatography - Mass Spectrometry (GC-MS) Analysis
	126-72-7	Tris-(2,3,-dibromopropyl)-phosphate (TRIS)				
	13674-87-8	Tris(1,3-dichloro-isopropyl) phosphate (TDCP)				
	32534-81-9	Pentabromodiphenyl ether (PentaBDE)				
	32536-52-0	Octabromodiphenyl ether (OctaBDE)				
	1163-19-5	Decabromodiphenyl ether (DecaBDE)				
	5412-25-9	Bis(2,3-dibromopropyl) phosphate (BDBPP)				
	59536-65-1	Polybrominated biphenyls (PBB) / Polybrombiphenyle (polybromierte Biphenyle) (PBBs)				
	79-94-7	Tetrabromobisphenol A (TBBPA)				
	545-55-1	Tris(1-aziridinyl) phosphine oxide (TEPA)				
	115-96-8	Tris(2-chloroethyl) phosphate (TCEP)				
	3296-90-0	2,2-Bis(bromomethyl)-1,3-propanediol (BBMP)				
	10043-35-3	Boric Acid				
	11113-50-1					
	13654-09-6	Decabromobiphenyl (DecaBB)				
	1303-86-2	Diboron trioxide				

FLAME RETARDANTS continued						
Use	CAS Number	Chemical Name	Applicability	Supplier Guidance	Formulation limit	Test method (preferred)
FLAME RETARDANTS 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. All Halogenated Flame Retardants are banned from intentional use.	Multiple	Dibromobiphenyls (DiBB)	Textile Leather Polymers (R, F, A)	No intentional use	250ppm	By Toluene Extraction And Followed By Liquid Chromatography - Mass Spectrometry (LC-MS) And Gas Chromatography - Mass Spectrometry (GC-MS) Analysis
	21850-44-2	Tetrabromobisphenol A bis (dibromopropyl ether)				
	12008-41-2	Disodium octaborate				
	1303-96-4	Disodium tetraborate, anhydrous				
	1330-43-4					
	68928-80-3	Heptabromodiphenyl ether (HeptaBDE)				
	36483-60-0	Hexabromodiphenyl ether (HexaBDE)				
	Multiple	Monobromobiphenyls (MonoBB)				
	Multiple	Monobromodiphenylethers (MonoBDEs)				
	Multiple	Nonabromobiphenyls (NonaBB)				
	63936-56-1	Nonabromodiphenyl ether (NonaBDE)				
	Multiple	Octabromobiphenyls (OctaBB)				
	59536-65-1	Polybromobiphenyls (Polybrominated biphenyls) / Polybrombiphenyle (polybromierte Biphenyle) (PBBs)				
	12267-73-1	Tetraboron disodium heptaoxide, hydrate				
	40088-47-9	Tetrabromodiphenyl ether (TetraBDE)				
	Multiple	Tribromodiphenylethers (TriBDEs)				
	13674-84-5	Tris-(2-chloro-1-methylethyl) phosphate (TCPP)				

GLYCOLS / GLYCOL ETHERS						
Use	CAS Number	Chemical Name	Applicability	Supplier Guidance	Formulation limit	Test method (preferred)
In apparel and footwear, glycols have a wide range of uses including as solvents for finishing/cleaning, printing agents, and dissolving and diluting fats, oils and adhesives (e.g., in degreasing or cleaning operations). Some polar solvents (glycol ethers) are necessary for the use of water-based leather finishing systems. The mentioned glycol ethers are classified as carcinogenic, mutagenic or reprotoxic substances and should not be used in processing leather.	111-96-6	Bis(2-methoxyethyl)-ether	Textile Leather Polymers (R, F, A)	No intentional use	50ppm	High-performance liquid chromatography (HPLC), LC- MS
	110-80-5	2-Ethoxyethanol				
	111-15-9	2-Ethoxyethyl acetate				
	110-71-4	Ethylene glycol dimethyl ether				
	109-86-4	2-Methoxyethanol				
	110-49-6	2-Methoxyethylacetate				
	112-49-2	Triethylene glycol dimethyl ether				
	70657-70-4	2-Methoxypropylacetate	Textile Leather Polymers (R, F, A)	No intentional use	50ppm 100ppm 50ppm	

HALOGENATED SOLVENTS						
Use	CAS Number	Chemical Name	Applicability	Supplier Guidance	Formulation limit	Test method (preferred)
In apparel and footwear, solvents are used as finishing/cleaning and printing agents, for dissolving and diluting fats, oils and adhesives (e.g., in degreasing or cleaning operations).	107-06-2	1,2-dichloroethane	Textile Leather Polymers (R, F, A)	No intentional use	5ppm	By Headspace Gas Chromatography Mass Spectrophotometric (HS-GCMS) analysis
	75-09-2	Dichloromethane, Methylene chloride				
	127-18-4	Tetrachloroethylene				
	100-44-7	Benzylchloride	Textile Leather Polymers (R, F, A)	No intentional use	5ppm Dyes 100ppm	
	79-01-6	Trichloroethylene	Textile Leather Polymers (R, F, A)	No intentional use	40ppm	

ORGANOTINS						
Use	CAS Number	Chemical Name	Applicability	Supplier Guidance	Formulation limit	Test method (preferred)
Organotins are a 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. Polyurethane thickeners, which could contain traces of DBT, are commonly used for viscosity adjustments of leather chemicals formulations.	Multiple	Dibutyltin (DBT)	Textile Leather Polymers (R, F, A)	No intentional use No intentional use No intentional use	20ppm 20ppm (exception - 100ppm for PU based thickeners used at <20% loading) 20ppm	Solvent extraction, GC MS, ISO TS 16179
	Multiple	Mono-, di- and tri-methyltin derivatives	Textile Leather Polymers (R, F, A)	No intentional use	5ppm	
	Multiple	Mono-, di- and tri-butyltin derivatives				
	Multiple	Mono-, di- and tri-phenyltin derivatives				
	Multiple	Mono-, di- and tri-octyltin derivatives				
	Multiple	Dipropyltin compounds (DPT)				
	Multiple	Tripropyltin compounds (TPT)	Textile Leather Polymers (R, F, A)	No intentional use	1ppm	
	Multiple	Tetraethyltin Compounds (TeET)				
	Multiple	Tetrabutyltin compounds (TeBT)				
	Multiple	Tetraoctyltin compounds (TeOT)				
	Multiple	Tricyclohexyltin (TCyHT)				

OTHER / MISCELLANEOUS						
Chemical / Use	CAS Number	Chemical Name	Applicability	Supplier Guidance	Formulation limit	Test method (preferred)
BORATE / ZINC SALT Used as a flame retardant and in paints, pigments and adhesives	12767-90-7	Borate, zinc salt	Textile Leather Polymers (R, F, A)	No intentional use	1000ppm	Acid digestion, ICP
BISPHENOL A A precursor chemical used along with other chemicals to create some plastics and resins. It is commonly used to harden plastics	80-05-7	Bisphenol A	Textile Leather Polymers (R, F, A)	No intentional use	100ppm	Solvent extraction, LC MS/MS, GC MS
THIOUREA Used in many formulations to increase solubility	62-56-6	Thiourea	Textile Leather Polymers (R, F, A)	No intentional use	1000ppm	Solvent extraction, LC MS/MS
QUINOLINE Contaminant of dispersing agents in disperse dyes	19-22-5	Quinoline	Textile Leather Polymers (R, F, A)	No intentional use	100ppm	DIN54231
SILICA Respirable particles of silica are often generated during the process of sand blasting	14464-46-1	Silica (particles or respirable size)	Textile Leather Polymers (R, F, A)	No intentional use	No use of sandblasting	Process due diligence, no test method available
AEEA Used in chelating agents, surfactants and fabric softeners	111-41-1	AEEA (2-(2-aminoethylamino) ethanol)	Textile Leather Polymers (R, F, A)	No intentional use	100ppm	Solvent extraction, LC MS/MS

PER and POLYFLUORINATED CHEMICALS (PFCs)						
Chemical / Use	CAS Number	Chemical Name	Applicability	Supplier Guidance	Formulation limit	Test method (preferred)
PFOA and PFOS may be present as unintended by-products in long-chain commercial water, oil and stain repellent agents. PFOA also may be in use for polymers like polytetrafluoroethylene (PTFE).	1763-23-1 2795-39-3, 56773-42-3	Perfluorooctane sulphonate (PFOS) and derivatives	Textile Leather Polymers (R, F, A)	No intentional use	2ppm	Solvent extraction, LC/MS-MS
	335-67-1	Perfluorooctanioc acid (PFOA) and derivatives	Textile Leather Polymers (R, F, A)	No intentional use	PFOA = 25 ppb PFOA-related substances = 1000 ppb	Solvent extraction, LC/MS-MS
	754-91-6	Perfluorooctane Sulfonamide (PFOSA)				
	24448-09-7	2-(N-methylperfluoro-FASE 1 octanesulfonamido) – ethanol (MeFOSE)				
	1691-99-2	2-N-ethylperfluoro-1-octanesulfonamido) – ethanol (EtFOSE)				
	31506-32-8	N-methylperfluoro -1-octanesulfonamide (MeFOSA)				
	4151-50-2	N-ethylperfluoro-1-octanesulfonamide (EtFOSA)				
	335-67-1	Perfluorooctanioc acid (PFOA) and derivatives				
	27854-31-5	2H, 2H-perfluorodecane Acid (H2PFDA)				
	34598-33-9	2H, 2H, 3H, 3H-Perfluoroundecanoic Acid (H4PFUnA)				
	27905-45-9	1H, 1H, 2H, 2H-Perfluorodecylacrylate (8:2 FTA)				
	678-39-7	1H, 1H, 2H, 2H-Perfluoro-1-decanol (8:2 FTOH)				
	376-27-2	Methyl perfluorooctanoate (Me-PFO)				
	3108-24-5	Ethyl perfluorooctanoate (Et-PFO)				
	1996-88-9	1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMA)				
	39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)				
	Various	All other Perfluorinated or Polyfluorinated compounds (fully or partially fluorinated compounds)				

PHTHALATES						
Chemical / Use	CAS Number	Chemical Name	Applicability	Supplier Guidance	Formulation limit	Test method (preferred)
Including all other esters of ortho-phthalic acid M&S restricts all Ortho-phthalates. The Phthalates listed are those most commonly used and regulated across industry sectors. Esters of ortho-phthalic acid (phthalates) are a class of organic compounds commonly added to plastics to increase flexibility. They are sometimes used to facilitate moulding of plastic by decreasing its melting temperature. Polymeric coatings for leather finishing, dedusting agents in colourants, fat liquors and greases could be a source for phthalates in formulations for leather processing. Phthalates can be found in: • Flexible plastic components (e.g., PVC) • Print pastes • Adhesives • Plastic buttons • Plastic sleevings • Polymeric coatings	117-81-7	Di-(ethylhexyl) phthalate; DEHP	Textile Leather Polymers (R, F, A)	No intentional use	Individual = 100ppm Sum of all phthalates = 250ppm	Toluene Extraction And Followed by Gas Chromatography- Mass Spectrometry (GC -MS) Analysis resp. LC/MS. Extraction with toluene at pH6, GC/MS*
	117-82-8	Bis(2-methoxyethyl) phthalate (DMEP)				
	117-84-0	Di-n-octyl phthalate (DnOP)				
	26761-40-0	Di-isodecyl phthalate (DIDP)				
	28553-12-0	Di-sononyl phthalate (DINP)				
	84-75-3	Di-n-hexyl phthalate (DnHP)				
	84-74-2	Di-n-butyl phthalate (DBP)				
	85-68-7	Butyl benzyl phthalate (BBP)				
	84-76-4	Dinonyl phthalate (DNP)				
	84-66-2	Diethyl phthalate (DEP)				
	131-16-8	Di-n-propyl phthalate (DPRP)				
	84-69-5	Di-isobutyl phthalate (DIBP)				
	84-61-7	Di-cyclohexyl phthalate (DCHP)				
	27554-26-3	Di-isooctyl phthalate (DIOP)				
	68515-42-4 68515-50-4	1,2-Benzenedicarboxylic acid, di C7-C11 branched and linearalkyl esters (DHNUP)				
	71888-89-6 84777-06-0	1,2-Benzenedicarboxylic acid, di C6-C8 branched alkyl esters, C7 rich (DIHP)				
	605-50-5	Diisopentylphthalates				
	131-18-0	Di-n-pentylphthalates				
	776297-69-9	N-pentyl-isopentylphthalate (NPIPP)				
	131-11-3	Dimethylphthalate (DMP)				
	71850-09-4	Diisohexyl phthalate				

POLYCYCLIC AROMATIC HYDROCARBONS (PAH)						
Chemical / Use	CAS Number	Chemical Name	Applicability	Supplier Guidance	Formulation limit	Test method (preferred)
Polycyclic aromatic hydrocarbons (PAHs) are natural components of crude oil and are a common residue from oil refining. PAHs have a characteristic smell similar to the smell of car tyres 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 of 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). In the leather chemical industry, naphthalene is used as a raw material for manufacture of synthetic tanning agents (syntans) and for manufacture of active substances in dispersing agents used during leather processing.	50-32-8	Benzo(a)pyrene	Textile Leather Polymers (R, F, A)	No intentional use	20ppm	Solvent extraction and GC-MS analysis
	120-12-17	Anthracene				
	129-00-0	Pyrene				
	191-24-2	Benzo(ghi)perylene				
	192-97-2	Benzo(e)pyrene				
	193-39-5	Indeno(1,2,3-cd)pyrene				
	205-82-3	Benzo(j)fluoranthene	Textile	No intentional use	Sum of substances = 200ppm	
	205-99-2	Benzo(b)fluoranthene				
	206-44-0	Fluoranthene				
	207-08-9	Benzo(k)fluoranthene	Leather	No intentional use	Sum of substances = 200ppm	
	208-96-8	Acenaphthylene				
	218-01-9	Chrysene	Polymers (R, F, A)	No limit	-	
	53-70-3	Dibenz(a,h)anthracene				
	56-55-3	Benzo(a)anthracene				
	83-32-9	Acenaphthene				
	85-01-8	Phenanthrene				
	86-73-7	Fluorene				
	91-20-3	Naphthalene	Textile Leather Polymers (R, F, A)	No intentional use No intentional use No limit	200ppm 300ppm -	

TOTAL HEAVY METALS						
Chemical / Use	CAS Number	Chemical Name	Applicability	Supplier Guidance	Formulation limit	Test method (preferred)
Listed metals are banned from intentional use in textile manufacturing/ finishing unless stated differently. In addition, residual traces of antimony, barium, chromium, cobalt, copper, iron, manganese, nickel, selenium, silver, tin and zinc are expected to comply with the Ecological and Toxicological Association of Dye and Organic Pigment Manufacturers (ETAD) concentration limits as listed. The ETAD trace metal limit recommendations do not refer to metal complex colorants where the metal is an inherent part of the dyestuff molecule. For Pigments, the total content of Cadmium, Lead, Chromium (VI) and Mercury is not to exceed 100ppm.	7440-36-0	Antimony	Textile Leather Polymers (R, F, A)	No intentional use	Dyes 50ppm Pigment 250ppm	Acid digestion, ICP
	7440-38-2	Arsenic (As)			50ppm	Inductively coupled plasma-optical emission spectrometry (ICP-OES), atomic absorption spectroscopy (AAS)
	7440-39-2	Barium			100ppm	Acid digestion, ICP
	7440-43-9	Cadmium (Cd)			Dyes 20ppm Pigment 50ppm	Inductively coupled plasma-optical emission spectrometry (ICP-OES), atomic absorption spectroscopy (AAS)
	7440-47-3	Chromium			100ppm	Acid digestion, ICP
	18540-29-9	Chromium VI			10ppm	Inductively coupled plasma-optical emission spectrometry (ICP-OES), atomic absorption spectroscopy (AAS)
	7440-48-4	Cobalt			500ppm	Acid digestion, ICP
	7440-50-8	Copper			250ppm	Acid digestion, ICP
	7439-89-6	Iron			2500ppm	Acid digestion, ICP
	7439-92-1	Lead (Pb)			100ppm	Inductively coupled plasma-optical emission spectrometry (ICP-OES), atomic absorption spectroscopy (AAS)
	7439-96-5	Manganese			1000ppm	Acid digestion, ICP
	7439-97-6	Mercury (Hg)			Dyes 4ppm Pigment 25ppm	Inductively coupled plasma-optical emission spectrometry (ICP-OES), atomic absorption spectroscopy (AAS)
	7440-02-0	Nickel			250ppm	Acid digestion, ICP
	7782-49-2	Selenium			Dyes 20ppm Pigment 100ppm	Acid digestion, ICP
	7440-22-4	Silver			100ppm	Acid digestion, ICP
	7440-31-5	Tin			250ppm	Acid digestion, ICP
	7440-66-6	Zinc			1500ppm	Acid digestion, ICP

UV ABSORBERS						
Chemical / Use	CAS Number	Chemical Name	Applicability	Supplier Guidance	Formulation limit	Test method (preferred)
UV Absorbers These are frequently used in formulations to be stable to the influences of light and UV	25973-55-1	2-(2H-benzotriazol-2-yl)-4, 6-ditertpentylphenol (UV-328)	Textile Leather Polymers (R, F, A)	No intentional use	1000ppm	Solvent extraction, LC MS/MS, GC MS
	36437-37-3	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl) phenol (UV-350)	Textile Leather Polymers (R, F, A)	No intentional use	1000ppm	Solvent extraction, LC MS/MS, GC MS
	3846-71-7	2-benzotriazol-2-yl-4, 6-di-tert-butylphenol (UV320)	Textile Leather Polymers (R, F, A)	No intentional use	1000ppm	Solvent extraction, LC MS/MS, GC MS
	3864-99-1	2, 4-Di-tert-butyl-6-(5-chlorobenzotriazole -2-yl) phenol (UV-327)	Textile Leather Polymers (R, F, A)	No intentional use	1000ppm	Solvent extraction, LC MS/MS, GC MS

VOLATILE ORGANIC COMPOUNDS (VOC)						
Chemical / Use	CAS Number	Chemical Name	Applicability	Supplier Guidance	Formulation limit	Test method (preferred)
VOLATILE ORGANIC COMPOUNDS (VOC) These volatile organic compounds should not be used in textile and leather auxiliary chemical preparations. They are associated with solvent-based processes like solvent-based polyurethane coatings and glues/adhesives. They should not be used for any kind of facility cleaning or spot cleaning.	71-43-2	Benzene	Textile Leather Polymers (R, F, A)	No intentional use	50ppm	Direct analysis by Headspace GC-MS
	1330-20-7	Xylene			500ppm	
	95-48-7	o-cresol				
	106-44-5	p-cresol				
	108-39-4	m-cresol				

2. Restricted Substances List (RSL)

2.1 Implementation and Compliance

The M&S Restricted Substances List (RSL) defines the limits for residues of hazardous chemicals allowed on the finished product.

Marks & Spencer launched its first Restricted Substances List (RSL) in the late 1990's – the first major UK retailer to do so. The current edition of the RSL is a mandatory requirement of our Garment Makers' Terms & Conditions.

The RSL ensures compliance with chemical legislation in the UK, EU and our global markets and reflects M&S policy in proactively phasing out certain hazardous chemicals, as defined in the MRSL.

The RSL applies to all finished goods produced for Marks and Spencer.

In the RSL table, details are provided of the chemical, its risk, acceptable levels of presence **in the finished product**, and the preferred test method for identification and quantity present.

2.1.1 PRIMARY SUPPLIER

Responsibility

It is the responsibility of the Primary Supplier to ensure that the wet processing mill has a current copy of the RSL.

Compliance with the RSL is a minimum requirement for overall compliance with the Environmental and Chemical Policy (ECP). **(Please refer to the Minimum Standards questions of the ECP Self Audits for Textile Wet Processing and for Tanneries).**

A suitably qualified member of each primary supplier's management team should take responsibility to ensure that all chemicals deliberately applied by the Wet Processor to products contracted for M&S conform to the MRSL and the RSL.

2.1.2 WET PROCESSOR

Responsibility

Wet Processors should ensure that their own chemical, dyestuff, print and laundry chemical suppliers understand our requirements and can supply proof of compliance in relation to their products. Wet Processors should check the Material Safety Data Sheet (MSDS) against the RSL requirements for each product used to assist in the selection of chemicals which will ensure compliance with the RSL.

All wet processors should follow the guidelines detailed in the implementation of the MRSL to ensure that their chemical sourcing and management procedure is compliant with M&S minimum standards.

2.1.3 COMPLIANCE

To ensure ongoing compliance with this RSL, Marks & Spencer carries out random, unannounced Due Diligence testing of product in our stores. If any product is found to be non-compliant with the RSL, there is a fine chargeable to the Garment Maker (see T&Cs). We reserve the right to RTM the product at the supplier's cost. In cases where non-compliance leads to a Product Recall, associated responsibilities or charges will be applied to the Garment Maker.

We expect that suppliers will carry out appropriate, risk based Due Diligence Testing to ensure compliance with the Restricted Substances List and should ensure that their upstream suppliers also carry out Due Diligence Testing as appropriate. Risk assessment should be based on the aptitude of the facility and the security of their chemical purchasing policy as well as the risk level of the substrate.

Please refer to the Due Diligence section of the M&S Supplier Exchange website. http://supplierexchange.marksandspencer.com

Important Note:

There are many thousands of chemicals that are not mentioned in the RSL that are known to be harmful to humans or the environment. They are not mentioned because there is little chance that they would ever be used on the type of products we sell.

However, we do not expect any harmful chemicals to be present in our products.

Marks and Spencer will continue to promote the minimisation of harmful chemicals in our products and the responsible use of safer technology.

Restricted Substance List (RSL)

Chemical	Status	What M&S products are most likely to be affected?	What is the origin of the controlled chemical?	Why is it banned or restricted?	Maximum limit on finished product	'Practical' Limit of Detection	Test method (preferred method)
REACH - the use of products or preparations containing SVHCs (Substances of Very High Concern) as listed on the current edition of REACH is not permitted by Marks & Spencer where viable alternatives are available. M&S must be notified of the presence of any SVHCs in product at the time of contract; these must be less than 0.1% W/W (1000ppm).							
Alkyl phenol ethoxylates and Alkyl phenols (APEOs, APs)	**No deliberate use**	All fibre types	In widespread use as detergents, wetting agents, and as emulsifying agents	PBT Endocrine disruptors (sex change chemicals) for aquatic species	**100 ppm combined total of NPEO and OPEO** **10ppm NP and OP**	NP/OP/NPEO/OPEO : 10 ppm	Test Method for AP/APEO Textile: EN ISO 21084:2019; EN ISO 18254-1:2016 Leather: EN ISO 18218-1:2015
APEO technical notes - Refer to Chemical Guidance and Best Practice for APEOs and APs of the Environmental & Chemical Policy for Textile Processing							
Biocidal Finishes	**Consent required** **Not permitted in Childrenswear unless by consent** **Triclosan is not permitted for use in any M&S product**	All fibre types Leather	Deliberate application on fabrics	Toxic Can cause severe skin irritation e.g. DMFu (see below)	**Limit of detection unless agreed in writing by technologist**	Varies according to type. Report result as ppm	Analytical – Solvent extraction (test lab own method) followed by GC-MS
Biocidal finish notes - Deliberately applied biocidal finishes to impart customer benefit must be permanent, non-leaching, work only on the fabric and not on customers' skin. They must not be implicated in antibiotic resistance. Biocidal finishes should not be confused with odour absorbers such as cyclodextrins. Refer to the M&S Biocide Policy for guidelines regarding regulation, approval and labelling.							
Bisphenol A (BPA)	**No deliberate use**	Plastics / Thermal paper	Used along with other chemicals to create some polycarbonate plastics, epoxy resins, flame retardants and PVC. Commonly used to harden plastics.	Toxic to reproduction, Skin Sensitising, Endocrine Disrupting	**1 ppm**	0.1ppm	1 g sample/20 ml THF, sonication for 60 minutes at 60 degrees C, analysis with LC/MS

Chemical	Status	What M&S products are most likely to be affected?	What is the origin of the controlled chemical?	Why is it banned or restricted?	Maximum limit on finished product	'Practical' Limit of Detection	Test method (preferred method)
Chlorinated Paraffins **Short Chained & Medium Chained Chlorinated Paraffins SCCP & MCCP**	**No deliberate use**	Leather, Natural and Coated	Used in flame retardants, plasticisers, adhesives. Fat liquoring agent in leather processing.	Toxic to aquatic organisms	**SCCP - 100ppm** **MCCP - 500ppm**	100 ppm	Combined CADS/ISO 18219:2015 method V1:06/17 (extraction by ISO 18219 and analysis by GC-NCI-MS).
Chlorophenols Including PCP and derivatives, TeCP	**No deliberate use**	Cotton, Viscose	Preservative for cotton and viscose. Main risk is on imported greige fabrics Also used as preservative for print pastes and other chemicals	Highly Toxic	**Total of PCP plus TeCP** **Adults and Leather 0.5ppm** **Childrenswear 0.05ppm**	0.05ppm	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
DMFa - dimethyl formamide	**By consent**	PU coated fabrics	Used in plastics, rubber and solvent-based polyurethane coating. Use water based alternatives where possible.	Toxic to reproduction	**500ppm**	50ppm	Textile: EN 17131:2019 All other materials: CEN ISO/TS 16189:2013
DMFu – dimethyl fumarate	**Not permitted for use in any M&S products**	Leather for furniture, footwear, or accessories etc.	Used as mould prevention on leather. Silica gel sachets may also contain banned DMFu to stop mould growth in transit	Causes severe irritation when in human skin contact	**0.1 ppm**	0.05 ppm	Textiles: EN 17130:2019 All other materials: CEN ISO/TS 16186:2012
Dyes - Banned Azo dyes and pigments	**No deliberate use**	All fibre types	Banned amines listed in MRSL. Examples of dyes that can form such amines listed in appendix 1	Dyes can split to form carcinogenic amines	**20 ppm (each listed substance)**	5 ppm (each listed substance)	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

Chemical	Status	What M&S products are most likely to be affected?	What is the origin of the controlled chemical?	Why is it banned or restricted?	Maximum limit on finished product	'Practical' Limit of Detection	Test method (preferred method)
Dyes - Carcinogenic dyes & dyes of equivalent concern	**No deliberate use**	All fibre types	Carcinogenic dyes & dyes of equivalent concern listed in MRSL	Carcinogenic	**20 ppm (each listed substance)**	5 ppm (each listed substance)	DIN 54231:2005-11
Dyes - Skin Sensitising Disperse Dyes	**No deliberate use**	Polyester, Acetate, and disperse-dyed nylon	Disperse Dyes listed in MRSL	Once sensitised to a dye, people can react violently to trace quantities	**20 ppm (each listed substance)**	5 ppm (each listed substance)	DIN 54231:2005-11
Dye Carriers including Chlorobenzenes, Chlorotoluenes and OPP	**No deliberate use**	Polyester	Used to dye polyester and blends at low temperatures in machinery not capable of being pressurised	Various depending on type of carrier - generally toxic, irritants or carcinogens	**1 ppm total**	0.2ppm each	EN 17137:2018
Flame retardants	**Consent required** **Not permitted in Childrens and Adult Clothing**	Cotton	Deliberate application on fabrics	Depends on exact chemistry - Toxic, not biodegradable and suspected health risks	**5ppm for penta-, hexa-, octa- and deca-brominated biphenyl ethers, PCB's and PCT's**	5 ppm	EN ISO 17881-1:2016
Flame retardant notes - Flame retardant finishes should only be applied where there is a legislative need and with written consent from M&S. Penta, Hexa, Octa and Deca-brominated types must not be deliberately applied and must not be present above 5 ppm.							
Formaldehyde	**Not permitted in any Children's wear** **Adults - Restricted use**	Resinated Cotton and Viscose	Most commonly found in resinated products (and in lower levels in fixing agents for cotton and nylon). Non-iron and Easy to Iron finishes	Known irritant to skin and mucous membranes Reclassified as carcinogen by WHO	Adults: Free 75ppm Released 300ppm Childrenswear: Free 20ppm (contamination)	Less than 20 ppm	Textiles: BS EN ISO 14184:2011 Parts 1 and 2. Leather: EN ISO 17226-1:2019
Formaldehyde notes: No formaldehyde to be used in Childrens products, including adding and washing off. Any exceptions to be discussed and agreed in advance with the departmental technologist and must meet free and released Formaldehyde standards. Children's non-iron school shirts - limits as adults - Free 75ppm, Released 300ppm							

Chemical	Status	What M&S products are most likely to be affected?	What is the origin of the controlled chemical?	Why is it banned or restricted?	Maximum limit on finished product	'Practical' Limit of Detection	Test method (preferred method)
Mothproofing: Permethrin & Analogues of these	**No deliberate use**	Wool, (Cashmere, Angora)	Commonest chemical is permethrin - found on wool and cashmere. Refer to list in Appendix 2.	Nerve agent, and toxic to aquatic species	**Contamination limit 10ppm**	1 ppm	Solvent extraction + GCMS/LCMS
Nitrosamines	**No deliberate use**	Vulcanised rubber	Can be formed as by-product in the production of rubber.	Carcinogenic	**<0.5ppm each (not detected)**	0.5ppm	EN 19577: 2019
Organic solvents / VOCs Including chlorinated solvents	**Consent required**	Panel Printed or solvent-scoured fabrics Adhesives	Organic solvents listed in Appendix 3. Used in some adhesives, print formulations, solvent scouring and spot cleaning	Various depending on type of solvent	**Limit of detection 1ppm**	Varies according to chemical type	Head Space Gas Chromatographic – Mass Spectrometric (HS GS-MS) Analysis.
Organic solvent technical notes	Where solvents are used suppliers should always work to change to water based alternatives. Where this is not possible e.g. dry pigment discharge printing there must be adequate extraction of fumes, good ventilation, and workers must be provided with appropriate Personal Protective Equipment. Solvents are permitted for scouring greige, but these must be in fully enclosed zero emission systems. No residual solvent is permitted on any finished product.						
	Trichloroethylene is classified as a carcinogen (REACH article 57a). It can be found in preparations for spot cleaning, and the MSDS may quote one of many synonyms used for trichloroethylene. Do not use the product if it has the CAS number 79-01-6. Alternative preparations for spot cleaning ,eg citrus- or water-based products are recommended						
Organotin compounds **No deliberate use**	**No deliberate use**	All fibre types	Preservative for fabrics and chemical formulations. Occasionally used as stabilizers and catalysts	Tributyl tin is highly toxic, and related products have toxicity issues	**0.5 ppm TBT, TPhT (in extract) 1ppm DBT, DOT and MBT (in extract)**	0.1ppm each	All materials: CEN ISO/TS 16179:2012

Chemical	Status	What M&S products are most likely to be affected?	What is the origin of the controlled chemical?	Why is it banned or restricted?	Maximum limit on finished product	'Practical' Limit of Detection	Test method (preferred method)
Perfluorocarbons PFOS	**No deliberate use** **Banned for use in apparel and footwear**	All fibre types	PFOA and PFOS may be present as unintended byproducts in long-chain and short-chain commercial water-, oil-, and stain-repellent agents.	Proven health risks, and persistent in the environment	**1 µg/m2**	1 ug/m2 or 10 ppb	Leather: EN 23702-1: 2018 All other materials: CEN/TS 15968:2010
Perfluorocarbons PFOA	**No deliberate use** **Banned for use in apparel and footwear**	All fibre types	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).	Persistent in the environment and suspected health risks	**25ppb**	1 ug/m2 or 10 ppb	
Pesticides / Insecticides	**No deliberate use**	Wool (and lower levels on cotton)	Used to protect sheep and cotton crops from parasite infestation. Refer to list in Appendix 2.	Toxic & Carcinogenic	**Total 0.5ppm**	0.5 ppm	Solvent extracion + GCMS/LC-MS
Phthalates **(as softener for eg PVC)**	**Not permitted in ALL Clothing, Footwear and Accessories**	PVC mock leather and plastisol prints	Used as a plasticizer to soften rigid PVC and other plastics. Also found in Print pastes, Adhesives, Plastic buttons, Plastic sleevings, Polymeric coatings - See listed phthalates in MRSL	Suspected sex change chemicals /suspected carcinogen	**250 ppm combined total of phthalates** **100 ppm maximum for each phthalate**	50 ppm	EN ISO 14389:2014
Phthalate and PVC notes	It is essential that all suppliers, who are using PVC based products and other products with the potential to contain phthalates, familiarise themselves with and comply with the current M&S Phthalates and PVC policy and chemical guidance.						
pH of Textiles and Leather	**Control in production**	All fibre types. Leather	Acidity or alkalinity arising from the final process	Extreme values can cause skin irritation	**pH 4.0 – 7.5**	-	Textiles: EN ISO 3071:2006 Leather: EN ISO 4045:2018

Chemical	Status	What M&S products are most likely to be affected?	What is the origin of the controlled chemical?	Why is it banned or restricted?	Maximum limit on finished product	'Practical' Limit of Detection	Test method (preferred method)
Polycyclic Aromatic Hydrocarbons	**No deliberate use**	Footwear outsoles, screen prints	Oil residues containing PAHs are used to soften rigid rubber and plastic materials. Can be found in print pastes.	Toxic Some PAHs are carcinogens	**Benzo(a)pyrene 1ppm** **Combined total of all other PAHs 10ppm**	0.1ppm	AFPS GS 2019
Quinoline	**No deliberate**	Polyester	Found as an impurity in polyester and some disperse dyes	Carcinogenic	**50 ppm**	10ppm	DIN 54231:2005 with methanol extraction at 70 degrees C
Styrene	Restricted	Present in various Styrene copolymers eg. plastic buttons.	A precursor for polymerization, primarily used in the production of polystyrene plastics and resins	Known irritant to skin and mucous membranes. Toxic to reproduction	**Free: 500 ppm**	50 ppm	Extraction in Methanol GC/MS, sonication at 60 degrees C for 60 minutes
UV Absorbers / Stabilizers	No intentional use	PU foam materials, plastics, rubber, polyurethane	These are frequently used in formulations to be stable to the influences of light and UV	Persistent, Bioaccumulative and Toxic.	**1000ppm**	500ppm	DIN EN 62321-6:2016-05 (Extraction in THF, analysis by GC/MS)

Chemical	Status	What M&S products are most likely to be affected?	What is the origin of the controlled chemical?	Why is it banned or restricted?	Maximum limit on finished product	'Practical' Limit of Detection	Test method (preferred method)
Metals in Textiles / Leather		The figures contained in this section refer to M&S acceptable limits of heavy metals on finished textiles and leather. There is specific legislation relating to some metals in all end uses (e.g. Cadmium Directive) and also legislation for metals in toys (EN71). Please note that acceptable limits in EN71 are significantly higher than for M&S textiles - the standards in this ECP document apply to M&S textile based toys. Metal is used as an integral part of some dye chromophores to impart technical performance. Where metal-free dyes will meet M&S performance requirements these should be used as the preferred option. In addition to these textile standards, M&S have specific policies and standards relating to metal in componentry (Please also refer to the **Nickel Policy and Childrenswear Safety Manual**)					
Antimony	**Restricted**	Various	Found in or used as a catalyst in polymerization of polyester, flame retardants, fixing agents, pigments, and alloys.	Toxic	**Extractable: 30 ppm**	3ppm	EXTRACTABLE: All materials except leather: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017
Arsenic	**Restricted**	Various	Arsenic and its compounds can be used in preservatives, pesticides, and defoliants for cotton, synthetic fibers, paints, inks, trims, and plastics.	Toxic	**Extractable: 0.2 ppm** **Total: 100ppm**	Extractable: 0.1ppm Total: 10ppm	EXTRACTABLE: All materials except leather: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017 TOTAL: All materials except Leather: DIN EN 16711-1:2016 Leather: DIN EN ISO 17072-2:2017
Barium	**Restricted**	Various	Barium and its compounds can be used in pigments for inks, plastics, and surface coatings, as well as in dyeing, mordants, filler in plastics, textile finishes, and leather tanning.	Toxic	**Extractable: 1000ppm**	100ppm	EXTRACTABLE: All materials except leather: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017
Cadmium (Cd)	**Restricted**	Various	Cadmium compounds are used as pigments (especially in red, orange, yellow and green); as a stabilizer for PVC; and in fertilizers, biocides, and paints.	Toxic	**Extractable: 0.1 ppm** **Total: 40ppm**	Extractable: 0.05 ppm Total: 5 ppm	EXTRACTABLE: All materials except leather: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017 TOTAL: All materials except Leather: DIN EN 16711-1:2016 Leather: DIN EN ISO 17072-2:2017

Chemical	Status	What M&S products are most likely to be affected?	What is the origin of the controlled chemical?	Why is it banned or restricted?	Maximum limit on finished product	'Practical' Limit of Detection	Test method (preferred method)
Chromium (Cr)	**Restricted**	Various	Chromium compounds can be used as dyeing additives; dye-fixing agents; color-fastness aftertreatments; dyes for wool, silk, and polyamide (especially dark shades); and leather tanning.	Toxic	**Adults: 2 ppm** **Infants: 1ppm**	0.5 ppm	PROPOSED All materials except leather: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017
Chromium VI	**Consent required**	Wool, (Cashmere, Angora) Leather	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).	Highly toxic / carcinogenic both to humans and aquatic species	**Textiles: 1ppm** **Leather: 3ppm**	Textiles: 0.5ppm Leather: 3ppm	Textiles: DIN EN 16711-2:2016 with EN ISO 17075-1:2017 if Cr is detected Leather: EN ISO 17075-2 Conditions for leather ageing: 24 hours, 80 degrees C, maximum 5% relative humidity (Will accept EN ISO 17075-1 if lab cannot do the -2 version)
Cobalt	**Restricted**	Various	Cobalt and its compounds can be used in alloys, pigments, dyestuff, and the production of plastic buttons.	Skin & respiratory sensitising	**Extractable:** **Adults: 4 ppm** **Children & infants: 1 ppm**	0.5ppm	EXTRACTABLE: All materials except leather: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017
Copper	**Restricted**	Various	Copper and its compounds can be found in alloys and pigments, and in textiles as an antimicrobial agent.	Toxic	**Extractable** **Adults: 50ppm** **Children & Infants: 25ppm**	5ppm	EXTRACTABLE: All materials except leather: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017
Lead	**Restricted**	Various	May be associated with plastics, paints, inks, pigments and surface coatings.	Toxic	**Extractable:** **Adults & Children: 1 ppm** **Infants: 0.2ppm**	0.1 ppm	EXTRACTABLE: All materials except leather: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017

Chemical	Status	What M&S products are most likely to be affected?	What is the origin of the controlled chemical?	Why is it banned or restricted?	Maximum limit on finished product	'Practical' Limit of Detection	Test method (preferred method)
Mercury	**No deliberate use**	Cotton	Mercury compounds can be present in pesticides and as contaminants in caustic soda (NaOH) made by the mercury cell process. They may also be used in paints.	Highly toxic	**Extractable: 0.02 ppm**	0.02ppm	EXTRACTABLE: All materials except leather: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017
Nickel	**Restricted** **No deliberate use in childrens and baby products**	Various	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.	Allergenic	**Extractable 1ppm**	0.1 ppm	EXTRACTABLE: All materials except leather: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017
Selenium	**Restricted**	Various	May be found in synthetic fibres, paints, inks, plastics and metal trims.	Toxic Suspected carcinogen	**Extractable: 500ppm**	Extractable: 50 ppm	EXTRACTABLE: All materials except leather: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017
Metals in Componentry / non-textiles		The figures contained in this section refer to M&S acceptable limits of heavy metals on finished articles, excluding textiles and leather - eg. zips, snaps, buttons, coatings. There is specific legislation relating to some metals in all end uses (e.g. Cadmium Directive). Please refer to Appendix 4 for the full list of metals restricted in EN71 (For further information, also refer to the **Nickel Policy and Childrenswear Safety Manual**)					
Cadmium (Cd)	**Restricted**	Various	Cadmium compounds are used as pigments (especially in red, orange, yellow, green); as a stabilizer for PVC; in fertilizers, biocides, and paints.	Toxic	**Total: 40ppm**	5ppm	TOTAL Total - All materials except Leather: DIN EN 16711-1:2016 Leather: DIN EN ISO 17072-2:2017
Nickel	**Restricted** **No deliberate use in childrens and baby products**	Various	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.	Allergenic	**Release (metal parts): Prolonged skin contact: 0.5 µg/cm²/week Pierced part: 0.2 µg/cm²/week**	0.05 µg/cm²/week	Release: Coated - EN 12472:2005+ A1:2009 Non coated - EN 1811:2011+A1:2015
Lead	**Restricted**	Various	May be associated with plastics, paints, inks, pigments and surface coatings.		**Total: 90ppm**	10 ppm	Total - All materials except Leather: DIN EN 16711-1:2016 Leather: DIN EN ISO 17072-2:2017 Released: EN 16711-3:2019
					Release: 0.05ug/cm2 per hr	0.01ug/cm2 per hr	

3. Risk Assessment Matrix

3.1 Guidance

In apparel and footwear, certain types of fibres and materials are more likely to contain restricted substances.

The Risk assessment table is provided to give guidance regarding the restricted substances most likely to be found on different types of fibres and materials. The information can be used in sourcing and preproduction discussions with the wet processor to ensure that key risk chemicals are identified and eliminated.

The table is also used in the Due diligence testing policy in order to select appropriate tests for each substrate.

3.1.1 Risk Categories

Risk categories are assigned based on industry knowledge of manufacturing and managing restricted substances across a wide range of materials. The table indicates where substances have historically been deliberately used or found as reagent / contaminants in different materials. For compound materials, please refer to the guidance for each material type and check compliance accordingly eg. Coated fabric with polymer coating and polyester base fabric.

Risk table categories:

Red 1	High risk of use – **testing required**
Orange 2	Medium risk of use – **testing recommended**
White	Not expected to be used

Consideration should also be given to the competence of the wet processing facility and their experience and proficiency in managing chemicals. New facilities, or those with previous non-compliances, should be considered as high risk and be subject to increased testing.

NOTE:
The information provided in this table is for guidance only and may vary based on the specific supply chain. Use of this table should be accompanied by compliance checks and due diligence testing for chemicals of concern.

Risk Assessment Matrix

Restricted substance	**Natural Cellulosic Fibres** Cotton, Linen, Viscose, Tencel, Silk, Wool/Hair	**Wool / Hair fibres**	**Synthetic Fibres** Polyester, Polyamide, Acrylic, Acetate	**Natural & Synthetic blends**	**Artificial Leather** PU Coated fabrics	**Natural Leather**	**Coated leather**	**Coatings & Prints** Plastisol print, pigment print, Pigment dye	**Natural materials**	**Polymers, Plastics, Foams, Natural & Synthetic Rubber**	**Metal** Zips, snaps, fasteners	**Feathers & Down**	**Glue / Adhesive**	**Other items** (decorative rhinestones, sequins, beads etc)
APEOs	1	1	1	1	1	1	1	1	1	1		1	1	
Biocidal finishes	Test when biocidal finish is applied													
Bisphenol-A										1				
Chorinated Paraffins - SCCPs / MCCPs					2	1	1			2				
Chlorinated Phenols	2	2	2	2		2	2							
Dimethyl Formamide (DMFa)					1			2						
Dimethyl Fumurate (DMFu)						2	2							
Dyes - Azo Dyes	1	1	1	1	1	1	1	1	1			1		
Dyes - Carcinogenic / banned			1	1	1			2						
Dyes - Disperse dyes			1	1	1			2						
Dye Carriers			2	2	2									
Flame Retardants	Test when flame retardant finish is applied													
Formaldehyde	1	1	2	1	2	1	1	1	1	2			1	
Mothproofing agents		2												
Nitrosamines										2				
Organic solvents					1		1	1		1			1	

Risk Assessment Matrix

Restricted substance	**Natural Cellulosic Fibres** Cotton, Linen, Viscose, Tencel, Silk, Wool/Hair	**Wool / Hair fibres**	**Synthetic Fibres** Polyester, Polyamide, Acrylic, Acetate	**Natural & Synthetic blends**	**Artificial Leather** PU Coated fabrics	**Natural Leather**	**Coated leather**	**Coatings & Prints** Plastisol print, pigment print, Pigment dye	**Natural materials**	**Polymers, Plastics, Foams, Natural & Synthetic Rubber**	**Metal** Zips, snaps, fasteners	**Feathers & Down**	**Glue / Adhesive**	**Other items** (decorative rhinestones, sequins, beads etc)
Organotins			2	2	1	2	2	1		1			1	
PFCs (PFOS/PFOA)	Test when water repellent or stain release finish is applied													
Pesticides	2	2				2	2							
Phthalates					1		1	1		1			1	1
pH	1	1	1	1	1	1	1	1						
PAH (Polycyclic Aromatic Hydrocarbons)					2		1	1		1			1	
Styrene										2				
Quinoline			2	2										
UV absorbers										2				
VOCs					2			2		2			1	
Metals														
Heavy Metals - extractable	1	1	1	1	2	1	1			2	2			2
Cadmium					2			2		2	2			
Chrome VI		1				1	1							
Lead					2			2		2	2		2	2
Nickel								1			1		2	2

4. Chemical testing notes

General

All tests must be conducted in UKAS accredited laboratories or those that operate a mutual recognition scheme (e.g. HOKLAS, COFRAC).

Tests should be conducted following the preferred test method, as stated in the RSL table. Standardised methods are marked with the year in which they were updated eg. BS EN ISO 14184:2011. These are correct at January 2020. If revisions to the method are made, the most recent update should be followed, indicated by the year.

The limit allowed is stated as a maximum result. Detections of the restricted chemical above the maximum limit will be reported as a FAIL

For all tests there is a 'limit of detection' below which a chemical cannot be detected. This sometimes varies between labs, based on the sensitivity of the equipment that they have. The detection limits stated in our RSL should be achievable by all laboratories. Amounts between the detection limit and the allowed maximum limit should be stated on the report. This allows the supplier to investigate the occurrence of the restricted chemical and eliminate from future use.

Where methods use solvent extraction, the limits of detection and permissible levels may refer to the extract and not the test fabric/component. In some tests the M&S 'Acceptable limit' therefore refers to the acceptable limit in the solvent extract and not the total amount on the fabric under test.

Chemicals can be detected in amounts that fall into 3 categories:

Background levels – amounts found in nature
Contamination – low levels present
Deliberate application – higher levels present through deliberate application

Composite testing

Several samples can be tested together as a composite sample in order to reduce testing costs. The number of samples that can be combined will depend on the restricted limit and the detection limit for an individual test. The testing laboratory can advise if composite testing can be performed for a specific test method.

If any amount of the restricted chemical is detected, the laboratory will automatically proceed testing of each sample individually.

Appendix 1 - Examples of dyes with potentially cleave to form BANNED Aromatic Amines under reducing conditions

WARNING: Azo pigments - CI Pigment Orange 13 and CI Pigment Orange 34, when used in combination with CI Pigment Black 7, can release the banned aromatic amine 3,3' – dichlorobenzidine. Do not use these pigments in combination.

CI Acid Orange 45 - 22195	22195	Direct Red 21	23560	Direct Blue 173	
CI Acid Red 24 - 16140	16140	Direct Red 22	23565	Direct Blue 192	
CI Acid Red 85 - 22245	22245	Direct Red 28	22120	Direct Blue 201	
CI Acid Red 114	23635	Direct Red 37	22240	Direct Blue 215	24115
CI Acid Red 115	27200	Direct Red 39	23630	Direct Blue 295	23820
CI Acid Red 128	24125	Direct Red 44	22500	Direct Green 1	30280
CI Acid Red 148	26665	Direct Red 46	23050	Direct Green 6	30295
CI Acid Red 158	20530	Direct Red 62	29175	Direct Green 8	30315
CI Acid Red 167		Direct Red 67	23505	Direct Green 8.1	
CI Acid Red 265	18129	Direct Red 72	29200	Direct Green 85	30387
CI Acid Black 29		Direct Violet 1	22570	Direct Brown 1	30045
CI Acid Black 209		Direct Violet 12	22550	Direct Brown 1:2	30110
Azoic Diazo Component 12	37105	Direct Violet 21	23520	Direct Brown 2	22311
Basic Brown 4 (= Solvent Brown 12)	21010	Direct Violet 22	22480	Direct Brown 6	30140
Developer 14 (=Oxidation Base 20)	76035	Direct Blue 1	24410	Direct Brown 25	36030
Direct Yellow 1	22250	Direct Blue 2	22590	Direct Brown 27	31725
Direct Yellow 24	22010	Direct Blue 3	23705	Direct Brown 31	35660
Direct Yellow 48	23660	Direct Blue 6	22610	Direct Brown 33	35520
Direct Orange 1	22370	Direct Blue 8	24140	Direct Brown 51	31710
Direct Orange 6	23375	Direct Blue 9	24155	Direct Brown 59	22345
Direct Orange 7	23380	Direct Blue 10	24340	Direct Brown 79	30056
Direct Orange 8	22130	Direct Blue 14	23850	Direct Brown 95	30145
Direct Orange 10	23370	Direct Blue 15	23790	Direct Brown 101	31740
Direct Orange 108	29173	Direct Blue 22	24280	Direct Brown 154	30120
Direct Red 1 22310	22310	Direct Blue 25	23790	Direct Brown 222	30368
Direct Red 2	23500	Direct Blue 35	24145	Direct Black 4	30245
Direct Red 7	24100	Direct Blue 76	24411	Direct Black 29	22580
Direct Red 10	22145	Direct Blue 151	24175	Direct Black 38	30235
Direct Red 13	22155	Direct Blue 160		Direct Black 154	
Direct Red 17	22150				

Appendix 2 - Agricultural Pesticides / Insecticides

MOTHPROOFING - These substances may be found in mothproofing formulations for animal fibres such as wool and cashmere.

CAS Number	Name
Various	Permethrin
68359-37-5	Cyfluthrin
52315-07-8	Cypermethrin
52918-63-5	Deltamethrin
Various	Polychloro chloromethyl sulphonamido diphenyl ether
370-50-3	Fluocofuron
24019-05-4	Sulcofuron
60-57-1	Dieldrin

PESTICIDES / INSECTICIDES - These can be found in natural fibres of vegetable origin (eg cotton, linen, ramie) and natural fibres of animal origin (eg wool, cashmere, silk).

CAS Number	Name
93-72-1	2-(2,4,5-trichlorophenoxy) propionic acid, its salts and compounds; 2,4,5-TP
93-76-5	2,4,5-T(richlorophenoxyacetic acid)
94-75-7	2,4-D(ichlorophenoxyacetic acid)
309-00-2	Aldrin
2642-71-9	Azinophosethyl
86-50-0	Azinophosmethyl
4824-78-6	Bromophos-ethyl
2425-06-1	Captafol
63-25-2	Carbaryl
57-74-9	Chlordane
510-15-6	Chlorobenzilate
6164-98-3	Chlorodimeform
470-90-6	Chlorofenvinphos
1897-45-6	Chlorthalonil
56-72-4	Coumaphos
91465-08-6	Cyhalothrin
72-54-8 53-19-0	DDD (Dichlorodiphenyldichloroethane)
3424-82-6 72-55-9	DDE
50-29-3 789-02-6	DDT (dichlorodiphenyltrichloroethane)
333-41-5	Diazinon
97-17-6	Dichlofenthion
1085-98-9	Dichlofluanide
120-36-5	Dichloroprop
115-32-2	Dicofol
141-66-2	Dicrotophos 58-
60-51-5	Dimethoate
88-85-7 + salts	Dinoseb (and its salts)
63405-99-2	DTTB (4, 6-Dichloro-7 (2,4,5-trichlorophenoxy) -2-Trifluoro methyl benz imidazole)
115-29-7	Endosulfan
959-98-8	Endosulfan 1 (alpha)
33213-65-9	Endosulfan II (beta)
72-20-8	Endrin
62230-04-4	Esfenvalerate
106-93-4	Ethylendibromid
56-38-2	Ethylparathione; Parathion
299-84-3	Fenchlorphos

CAS Number	Name
Various	Halogenated naphthalenes, including polychlorinated naphthalenes (PCNs)
51630-58-1	Fenvalerate
76-44-8	Heptachlor
1024-57-3	Heptachloroepoxide
118-74-1	Hexachlorobenzene
Various	Hexachlorocyclohexane
319-84-6	Alpha-Hexachlorocyclohexane (with and without lindane)
319-85-7	Beta- Hexachlorocyclohexane (with and without lindane)
319-86-8	Gamma-Hexachlorocyclohexane (with and without lindane)
465-73-6	Isodrine
4234-79-1	Kelevane
143-50-0	Kepone
58-89-9	Lindane
121-75-5	Malathione
94-74-6	MCPA
94-81-5	MCPB
93-65-2	Mecoprop
10265-92-6	Metamidophos
72-43-5	Methoxychlor
2385-85-5	Mirex
6923-22-4	Monocrotophos
298-00-0	Parathion-methyl
1825-21-4	Pentachloroanisole
72-56-0	Perthane
7786-34-7	Phosdrin / Meninphos
41198-0807	Profenophos
31218-83-4	Propetamphos
13593-03-8	Quinalphos
82-68-8	Quintozene
78-48-8	S,S,S-Tributyl phosphorotrithioate (Tribufos)
8001-50-1	Strobane
297-78-9	Telodrine
731-27-1	Tolylfluanide
8001-35-2	Toxaphene
1582-09-8	Trifluraline

Appendix 3 – Organic Solvents

Depending on their type, organic solvents may be legally restricted eg. as carcinogens. No residual solvent is permitted on any finished product.

Organic solvents include, but are not limited to, the following:

Solvent	CAS Number
Benzene	71-43-2
Phenol	108-95-2
Cresol (and isomers)	1319-77-3
Toluene	108-88-3
Xylene (and isomers)	1330-20-7
Dimethyl formamide (DMF)	68-12-2
Methyl ethyl ketone	78-93-3
Bromodichloromethane	75-27-4
Bromoform 75-25-2	75-25-2
Tetrachloromethane (Carbon tetrachloride)	56-23-5
Chlorodibromomethane 124-48-1	124-48-1
Chloroethane	75-00-3
Chloroform	67-66-3
Dibromomethane	74-95-3
1,1-Dichloroethane	75-34-3
1,2-Dichloroethane	107-06-2
1,1-Dichloroethene	75-35-4
cis-1,2-Dichloroethene	159-59-2
trans-1,2-Dichloroethene	156-60-5
trans-1,3-Dichloropropene	10061-02-6
Dichloromethane	75-09-2
1,1,2,2-Tetrachloroethane	79-34-5
1,1,1-Trichloroethane	71-55-6
Tetrachloroethene (Tetrachloroethylene)	127-18-4
Trichloroethene (Trichloroethylene)	79-01-6
Vinyl chloride	75-01-4
Hexachloroethane	87-68-3

Appendix 4 – Metal content in trims & components

The maximum limits stated below are based on M&S Childrenswear safety standards and EN71-3 – Category III

Element	Limit - ppm
Aluminium	70,000
Antimony	60
Arsenic	25
Barium	500
Boron	15,000
Cadmium	17
Chromium (III)	25
Chromium (VI)	0.053
Cobalt	130
Copper	7,700
Lead	10
Manganese	15,000
Mercury	40
Nickel	No intentional use
Selenium	400
Strontium	56,000
Tin	180,000
Organic Tin	No intentional use
Zinc	46,000

Appendix 5 – Table of changes

Below are the changes made to the MRSL and RSL tables compared with version dated April 2018.

Table	Category	Change
MRSL	ANTI-MICROBIALS & BIOCIDES	New category added
MRSL	CHLORINATED PARAFFINS	Added Medium chain chlorinated paraffins
MRSL	CHLOROBENZENES and CHLOROTOLUENES	Reduce 1,2-Dichlorobenzene to 500ppm Specify 5ppm limit for Tetrachlorotoluene & Trichlorotoluene
MRSL	CHLOROPHENOLS	Added more CAS numbers
MRSL	Dyes - Azo	DYES - AZO - 4 dyes added to the list
MRSL	FLAME RETARDANTS	Additional chemicals added to the list
MRSL	GLYCOLS / GLYCOL ETHERS	Changed limit of 2-Methoxypropylacetate to 100ppm for leather
MRSL	HALOGENATED SOLVENTS	Trichloroethylene and Tetrachloroethylene values corrected
MRSL	ORGANOTINS	Wording and values adjusted
MRSL	OTHER / MISCELLANEOUS	New category added - includes Borate/Zinc Salt, Bisphenol A, Thiourea, Quinoline, Silica & AEEA
MRSL	PESTICIDES / INSECTICIDES	Moved to Appendix 2
MRSL	PHTHALATES	Added newly regulated Phthalates to the list and changed limit to 100ppm individual and 250ppm total
MRSL	POLYCYCLIC AROMATIC HYDROCARBONS (PAH)	Naphthalene 300 ppm individual in leather
MRSL	UV ABSORBERS	New category added
RSL	Throughout	Test methods and detection limits updated
RSL	Bisphenol A	New category
RSL	DMFa - dimethyl formamide	New category
RSL	Dyes - Carcinogenic dyes & dyes of equivalent concern	New Category to align with MRSL
RSL	Formaldehyde	Childrenswear - reduced to 20ppm for all product (except Non-Iron by agreement with technologist)
RSL	Nitrosamines	New category
RSL	Perfluorocarbons (PFOA)	Changed from /m2 to ppb, aligning with new REACH regulation entry 68
RSL	pH	Removed "no direct skin contact" limit as not relavent to clothing
RSL	Quinoline	New category
RSL	Styrene	New category
RSL	UV ABSORBERS	New category
RSL	Metals in Textiles / Leather	Reorganised all metals into one section - added Arsenic, Barium, Cadmium, Cobalt and Selenium
RSL	Chromium VI	Limit reduced to 1ppm for Textiles. Leather remains same at 3ppm
RSL	Metals in components (non textile/leather)	New category containing additional limits for Cadmium, Nickel and Lead
RSL	Nickel (extractable)	Requirement for all textile/ leather product 1ppm