



# H&M GROUP CHEMICAL RESTRICTIONS 2025

MRSL and RSL

*Internal and supplier version*

---

Textile Products

Accessories

Footwear, Bags and Belts

Valid for all brands in H&M Group.

Product Compliance and Global Sustainability Department



## Table of Contents

1. Chemical Restrictions – Production.....	5
2. Chemical Restrictions – Products .....	5
3. H&M Group – Additional Requirements .....	6
4. More Information and Guidelines.....	15
Annex 1. AZO DYES AND PIGMENTS.....	16
Annex 2. BIOCIDAL COMPOUNDS AND BIOCIDAL CLAIMS.....	17
Annex 3. BISPHENOLS.....	18
Annex 4. CHLORINATED BLEACHING AGENTS.....	19
Annex 5. DIMETHYLFORMAMIDE (DMFa).....	20
Annex 6. FLAME RETARDANTS .....	21
Annex 7. LEATHER TANNED PRODUCTS .....	22
Annex 8. NANOMATERIALS .....	24
Annex 9. PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) .....	25
Annex 10. POLYCARBONATE (PC).....	27
Annex 11. POLYVINYLCHLORIDE (PVC) AND OTHER CHLORINATED POLYMERS.....	28
Annex 12. POTASSIUM PERMANGANATE .....	29
Annex 13. REACH SVHC .....	30
Annex 14. STYRENE-BASED POLYMERS .....	31
Annex 15. STYRENE-BASED THERMOPLASTIC RUBBER (TPR).....	32
Annex 16. RECYCLED NATURAL AND SYNTHETIC TEXTILE MATERIALS .....	33
Annex 17. UV ABSORBERS/STABILIZERS/FILTERS.....	34

## General

H&M Group Chemical Restrictions consist of several parts regarding different product types; this document concerns Chemical Restrictions for Textile products, Accessories, Footwear, Bags and Belts.

An introduction to and general information about the H&M Group Chemical Restrictions are available in a separate document: *H&M Group Restricted Substance List (RSL) Introduction and Commitment - All Product Types*. Please read that document and refer to the examples provided there, before proceeding with the product specific restrictions.

Each limit specified in this document is valid for homogeneous parts of the concerned product if not otherwise stated. Test methods are specified when relevant in this document. In case of undated test method, the latest version is valid.

**Please note: If other requirements than those listed in H&M Group Chemical Restrictions exist for the same substances and product groups in ZDHC MRSL or AFIRM RSL, the requirements specified in H&M Group Chemical Restrictions take precedence.**

This is the **internal and supplier version, with annexes**, of this document. It contains supplemental information that is only relevant to those directly working in H&M Group's supply chain. Please make sure this version and its annexes are not being spread beyond this scope. A version for external use, without the annexes, can be found [here](#).

## Definitions

Ban	The substance must not be used in production, and it must not be added to the product <sup>1</sup> .
Concentration limit	The substance must not be present in the product at concentrations above this limit.
Homogeneous	Uniform composition throughout, i.e., a material that cannot be mechanically disjointed into different materials.
Not detected	The substance must not be present in the finished product at concentrations above the analytical reporting limit.
Reporting limit	Describes the level of detection times a safety factor selected by the laboratory that ensures repeatability and reproducibility.
Safety Data Sheet (SDS)	All chemicals used for H&M Group products shall have Safety Data Sheets (SDS) that meet current GHS requirements, please see AFIRM Toolkit Appendix H for guidance.

## Abbreviations

CAS no	Chemical Abstracts Service number, identification number for chemicals.
cl	Centilong
Percentage	Part weight by weight, % w/w.
ppm	Parts per million, which is equivalent to mg/kg.

---

<sup>1</sup> Impurities at low concentrations of these substances may be accepted only if technically unavoidable due to e.g., raw materials, formation in the manufacturing process, storage, or packaging.

## 1. Chemical Restrictions – Production

For Textile and Leather supply chains, manufacturing shall comply with the *Zero Discharge of Hazardous Chemicals Manufacturing Restricted Substance List 3.1* (ZDHC MRSL 3.1). ZDHC MRSL 3.1 is retrieved here: [mrs1-30.roadmaptozero.com](https://mrs1-30.roadmaptozero.com)

Compliance to ZDHC MRSL is a Minimum Requirement (MR). Therefore, if the production unit is found to intentionally use chemicals listed on ZDHC MRSL in the production process, it will result in MR Violation.

## 2. Chemical Restrictions – Products

Products within the scope of H&M Group Chemical Restrictions Textile products, Accessories, Footwear, Bags and Belts shall comply with *AFIRM's Restricted Substances List (RSL) 2025*, found at [www.afirm-group.com/afirm-rsl/](https://www.afirm-group.com/afirm-rsl/)

### 3. H&M Group – Additional Requirements

#### General Requirements

Table 1. H&M Group additional requirements.

Substances and/or materials	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
<b>Azo dyes and pigments</b>	Various	20 ppm each	Product testing according to methods specified in AFIRM RSL	5 ppm each
<b>Biocidal compounds and biocidal claims</b>	Various	For products: Biocide-treated articles according to definition in European Biocidal Products Regulation (BPR, Regulation (EU) 528/2012), including biocidal claims “antimicrobial”, “antibacterial”, “anti-odour”, etc. General ban for class of chemicals/treatments used for this function and their claims.	1. Input control. 2. Some biocidal substances are restricted in ZDHC MRSL and AFIRM RSL; test methods for those are specified there.	-
<b>Bisphenols</b>				
Bisphenol A (BPA)	80-05-7	All materials: 1 ppm total content. Polycarbonate (PC) plastics: 1ppm extractable content	Total content, all materials: Extraction: 1 g sample/20 ml THF, sonication for 60 minutes at 60 degrees C, analysis with LC/MS (same as AFIRM RSL). BPA, extractable content (only PC): Extraction with artificial sweat solution ISO 105 E04 and LC/MS analysis. Leather: ISO 11936 (same as AFIRM RSL)	1 ppm
Bisphenol B (BPB)	77-40-7	All materials:		
Bisphenol S (BPS)	80-09-1	100 ppm (sum)		
Bisphenol F (BPF)	620-92-8	100 ppm (individual) Leather		
Bisphenol AF (BPAF)	1478-61-1	1000 ppm (sum) 500 ppm (individual)		
<b>Chlorinated bleaching agents</b>	-	In production process: General usage ban. Finishing treatments with chlorinated bleaching agents can only be used in denim production.	Input control.	-
<b>Dimethylformamide (DMFa)</b>	68-12-2	For products and in production process: General usage ban. DMFa is also included in ZDHC MRSL 3.1	According to AFIRM RSL and input control. For polyurethane (PU) materials, follow <i>Verification routine for Better PU</i> .	5 ppm

Substances and/or materials	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
<b>Flame retardants</b>				
All flame retardants	Various	General ban for chemicals with this function.	Input control.	
Flame retardants in AFIRM RSL	Various	Not detected	Product testing according to methods specified in AFIRM RSL.	5 ppm
Tri-o-cresyl phosphate	78-30-8	In addition to the flame retardants listed in AFIRM RSL, these substances are also included in H&M Group testing protocol.		
Triphenyl phosphate (TPhP)	115-86-6			
Tris(1-chloro-2-propyl)phosphate (TCPP)	13674-84-5	Not detected		
<b>Leather tanned products</b>				
Chromium-free tanned leather	7440-47-3, 18540-29-9	<ul style="list-style-type: none"> <li>• 250 ppm<sup>12</sup> total chromium</li> <li>• For products for children aged 0-3 years: chromium-free from S3 2020</li> <li>• 100% of linings/skin contact are chromium-free from S3 2020</li> </ul>	According to AFIRM RSL. Total content according to EN ISO 17072-2 <sup>12</sup>	
Metal-free tanned leather		500 ppm <sup>13</sup> total metal content	For metal-free and vegetable-tanned leather: Total content according to EN ISO 17072-2 <sup>13</sup>	
<b>Nanomaterials</b> “‘Nanomaterial’ means a natural, incidental, or manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and where, for 50% or more of the particles in the number size distribution, one or more external dimensions is in the size range 1 nm-100 nm.” <sup>2</sup>	Various	For products: General usage ban.	Input control.	

Substances and/or materials	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
<b>Per- and Polyfluoroalkyl Substances (PFAS)</b>				
All Per- and Polyfluoroalkyl Substances	Various	Not detected.  Usage ban. Certain PFAS are included in the ZDHC MRSL.	1. Total fluorine test method: EN 14582:2016 or ASTM D7359:2018  2. If test 1 shows detections proceed with testing below.  Input control.	50 ppm
Per- and Polyfluoroalkyl Substances in AFIRM RSL Appendix A.	Various	Not detected	Product testing according to methods specified in AFIRM RSL.	50 ppm
Perfluoroheptane Sulfonate (PFHpS)	375-92-8	Not detected		
Perfluorodecane Sulfonate (PFDS)	335-77-3 or 2806-15-7 or 2806-16-8			
Perfluorobutane Acid (PFBA)	375-22-4			
Perfluoropentane Acid (PFPA)	2706-90-3			
Perfluoroheptane Acid (PFHpA)	375-85-9			
7H-dodecanefluoroheptane Acid (HPFHpA)	1546-95-8			
1H,1H,2H,2H-Perfluorooctylacrylate (6:2 FTA)	17527-29- 6			
1H,1H,2H,2H-Perfluoro-1-hexanol (4:2 FTOH)	2043-47-2			
Perfluorohexyl ethyl methacrylate (6:2 FTMAC)	2144-53-8			
Perfluorobutanesulfonic Acid PFBS	375-73-5			
<b>Polycarbonate (PC)</b>	80-05-7	Usage ban for Accessories.  The ban will be extended to FBB, trims and intimates by the end of 2025.  This restriction applies to both virgin and recycled PC.	Input control.	



Substances and/or materials	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
<b>Polyvinyl chloride (PVC), polychloroprene (e.g. Neoprene) and other similar chlorinated polymers</b>	Various	For products and in production process: General material ban.	Input control.	
<b>Potassium permanganate</b>	7722-64-7	Usage ban.	Input control.	
<b>REACH SVHC and Substances defined as hazardous due to intrinsic properties Criteria for hazardous as defined in REACH Article 57.</b>	Various	For products: General restriction of 0.1% (w/w) for all SVHC substances.  Certain substances may be subjected to additional, stricter limits according to H&M Group Chemical Restrictions. Make sure such limits are met. Confirmation is required.	Input control.  Safety Data Sheet (SDS) according to Reach Regulation 1907/2006 article 31. Each chemical substance and/or chemical mixture must be classified according to the CLP Regulation, Regulation (EC) No 1272/2008.	
<b>Styrene-based polymers</b>	Various	Usage ban for Accessories.  The ban will be extended to FBB, trims and intimates by the end of 2025.  This restriction applies to both virgin and recycled styrene-based polymers.	Input control.	
<b>Styrene-based Thermoplastic Rubber (TPR)</b>	Various	Usage ban for Accessories.  The ban will be extended to FBB, trims and intimates by the end of 2025.  This restriction applies to both virgin and recycled styrene-based TPR.	Input control.	
<b>Recycled natural and synthetic textile materials</b> Products made of <b>recycled</b> fibers should meet H&M Group Chemical restrictions.				
<b>UV absorbers/stabilizers/filters</b>	Various	For textile products: General ban for chemicals used for this function.	Input control. Certain substances are included in ZDHC MRSL. Certain substances are included in AFIRM RSL, i.e., can be product tested.	

See Annexes 1-17 for more information on each substance/material (internal version only).

## **Additional Requirements – GOTS-certified products**

In addition to H&M Group Chemical Restrictions for Textile Products and for Production (H&M Group Requirements, AFIRM RSL and ZDHC MRSL 3.1), GOTS-certified products shall also comply with requirements in the latest version of [Global Organic Textile Standard](#), in particular the requirements specified in **Table 5.2.7.2** (Limit values for residues in GOTS Goods) **and 5.2.8.1** (Limit values for residues in additional fibers materials and accessories).

Products: Where H&M Group Chemical Restrictions, AFIRM RSL and GOTS-tables list requirements for the same substances, the strictest requirement shall always take precedence.

Production: Where H&M Group Chemical Restrictions, ZDHC MRSL and GOTS-tables list requirements for the same substances, the strictest requirement shall always take precedence.

**Direct link to version 7 (current latest version) of the standard: [GOTS 7.0 SIGNED .pdf \(global-standard.org\)](#)**

### Additional Requirements – Self-adhesive products for skin contact

Table 2. Additional requirements Self-adhesive products for skin contact.

Restricted substance/property	CAS	Limit/Requirement	Test method	Reporting limit
<b>Self-adhesive products for skin contact including, but not limited to body tape, self-adhesive bras, and nipple covers.</b>				
Adhesive/Glue	Various	All compliance documents must be submitted for approval to <a href="mailto:dlcompliancechemicalspecialistsconsumerarticles@hm.com">dlcompliancechemicalspecialistsconsumerarticles@hm.com</a> at the development stage for all articles, minimum once per season.	<p>In addition to normal chemical compliance assurance (risk assessment and related testing), the documents listed in Test method are required.</p> <ol style="list-style-type: none"> <li>1. Full Material Declaration (FMD).</li> <li>2. Safety Data Sheet (SDS) according to Reach Regulation 1907/2006 article 31. Each chemical substance and/or chemical mixture must be classified according to the CLP Regulation (EC) No 1272/2008.</li> <li>3. Third-party Toxicological Risk Assessment (TRA) according to General Product Safety Regulation (GPSR) (EC) No 2023/988.</li> <li>4. Third-party Use Test - Product applied to a defined skin area with volunteers selected by sex, age, and skin type. Includes:                             <ul style="list-style-type: none"> <li>- Auto-evaluation (Questionnaire)</li> <li>- Dermatological examination</li> </ul> </li> </ol>	

### Additional Requirements – Preglued stickers/decorations/stencils - For use on eye, face, body, and hair

Table 3. Additional requirement Preglued stickers/decorations/stencils - For use on eye, face, body, and hair

Restricted substance/property	CAS	Limit/Requirement	Test method	Reporting limit
<b>Preglued stickers/decorations/stencils - For use on eye, face, body, and hair</b>				
Adhesive/Glue	Various	All compliance documents must be submitted for approval to <a href="mailto:dlcompliancechemicalspecialistsconsumerarticles@hm.com">dlcompliancechemicalspecialistsconsumerarticles@hm.com</a> at the development stage for all articles, minimum once per season.	<p>In addition to normal chemical compliance assurance (risk assessment and related testing), the documents listed in Test method are required.</p> <ol style="list-style-type: none"> <li>1. Full Material Declaration (FMD).</li> <li>2. Safety Data Sheet (SDS) according to Reach Regulation 1907/2006 article 31. Each chemical substance and/or chemical mixture must be classified according to the CLP Regulation (EC) No 1272/2008.</li> <li>3. All the stickers must be produced according to the latest version of GMP ISO 22716.</li> <li>4. Cosmetic Product Safety Report (CPSR) according to the EU Cosmetic Regulation (EC) No 1223/2009.</li> <li>5. Third-party Use Test - Product applied to a defined skin area with volunteers selected by sex, age, and skin type. Includes:                         <ul style="list-style-type: none"> <li>- Auto-evaluation (Questionnaire)</li> <li>- Dermatological examination</li> </ul> </li> </ol>	

### Additional Requirements – Preglued false nails/nail decorations/nail wraps

Table 4. Additional requirement Preglued false nails/nail decorations/nail wraps

Restricted substance/property	CAS	Limit/Requirement	Test method	Reporting limit
<b>Preglued false nails/nail decorations/nail wraps</b>				
Adhesive/Glue	Various	All compliance documents must be submitted for approval to <a href="mailto:dlcompliancechemicalspecialistsconsumerarticles@hm.com">dlcompliancechemicalspecialistsconsumerarticles@hm.com</a> at the development stage for all articles, minimum once per season.	<p>In addition to normal chemical compliance assurance (risk assessment and related testing), the documents listed in Test method are required.</p> <ol style="list-style-type: none"> <li>1. Full Material Declaration (FMD).</li> <li>2. Safety Data Sheet (SDS) according to Reach Regulation 1907/2006 article 31. Each chemical substance and/or chemical mixture must be classified according to the CLP Regulation (EC) No 1272/2008.</li> <li>6. Third-party Toxicological Risk Assessment (TRA) according to CLP Regulation (EC) No 1272/2008.</li> </ol>	

## Additional Requirements – Cosmetic accessories

Table 5. Additional requirements Cosmetic accessories

Restricted substance/property	CAS	Limit/Requirement	Test method	Reporting limit
<b>Cotton swabs and pads, sheet mask, pimple patch and wet wipes.</b>				
Plastic materials	-	Usage Ban		
Fluorescent brightening agent	-	Usage Ban	UV-lamp	-
Total viable count of yeast and mold	-	< 300 CFU/g	EN ISO 16212 / European Pharmacopeia (Ph. Eur.), 2.6.12. "Microbiological examination of non-sterile products."	
Total viable count of aerobic mesophilic bacteria	-	< 300 CFU/g	EN ISO 21149 / European Pharmacopeia (Ph. Eur.), 2.6.12. "Microbiological examination of non-sterile products."	
<b>Other cosmetic accessories</b>				
<i>Metals extractable amount</i>				
Antimony (Sb)	7440-36-0	30 ppm	EN ISO 16711-2	3 ppm
Arsenic (As)	7440-38-2	0.2 ppm		0.1 ppm
Barium (Ba)	7440-39-3	1000 ppm		100 ppm
Cadmium (Cd)	7440-43-9	0.1 ppm		0.02 ppm
Chromium (Cr)	7440-47-3	1 ppm		0.3 ppm
Lead (Pb)	7439-92-1	0.2 ppm		0.1 ppm
Mercury (Hg)	7439-97-6	0.02 ppm		0.02 ppm
Selenium (Se)	7782-49-2	460 ppm		50 ppm

## Additional Requirements – Carpets and Mats (all materials)

Table 6. Additional requirements Carpets and Mats

Restricted substances	CAS	Limit/Requirement	Test method	Reporting limit
4-Phenylcyclohexene	4994-16-5	≤ 0.050 mg/m <sup>2</sup> /h	GB 18587-2001 Grade B (products qualified in respect of limitations of emitted harmful substances)	As specified in test standard
Formaldehyde	50-00-0	≤ 0.050 mg/m <sup>2</sup> /h		
Styrene	100-42-5	≤ 0.500 mg/m <sup>2</sup> /h		
Volatile Organic Compounds, Total (TVOC)	-	≤ 0.600 mg/m <sup>2</sup> /h		

### 4. More Information and Guidelines

The *AFIRM Group Chemistry Toolkit* shares valuable information about RSL compliance, RSL failure resolution, chemicals management, SDS and other online educational resources. More information about substances in *AFIRM RSL* can be found in *AFIRM Chemical Information Sheets*: [www.afirm-group.com/publications/](http://www.afirm-group.com/publications/).

Supporting material for *H&M Group – Additional Requirements* (Table 1) is found in annexes to this document. H&M Group specific test guidelines are found in *H&M Group Chemical Testing Guideline*.

## Annex 1. AZO DYES AND PIGMENTS

### Requirement

Substances and/or materials	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
Azo dyes and pigments	Various	20 ppm each	Product testing according to methods specified in AFIRM RSL	5 ppm each

### Background

Azo dyes and pigments are used as colourants in textile and leather and other consumer products. Thousands of azo dyes exist, but only certain ones can degrade and release aromatic amines which are known carcinogens and classified as skin sensitisers. Azo dyes are regulated in several chemical legislations and standards, which include the Appendix 8 and 9 of REACH<sup>3</sup>, China GB Standards<sup>4</sup> and California Proposition 65<sup>5</sup>.

Several markets have or have updated requirements for imports of consumer products to include aromatic amines originating from restricted azo dyes<sup>6</sup>.

More information about azo-amines and arylamine salts can be found in AFIRM's Chemical Information Sheet<sup>7</sup>.

---

<sup>3</sup> <https://echa.europa.eu/sv/substances-restricted-under-reach/-/dislist/details/0b0236e1807e2abe>

<sup>4</sup> [https://www.gbstandards.org/index/standards\\_search.asp?word=azo](https://www.gbstandards.org/index/standards_search.asp?word=azo)

<sup>5</sup> <https://oehha.ca.gov/proposition-65/proposition-65-list>

<sup>6</sup> <http://cepc.co.in/wp-content/uploads/2023/06/Gazette-Azo-Dyes-246559.pdf>

<sup>7</sup> [afirm\\_azo\\_amines\\_v3.pdf \(afirm-group.com\)](#)



## Annex 2. BIOCIDAL COMPOUNDS AND BIOCIDAL CLAIMS

### Requirement

Substances and/or materials	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
<b>Biocidal compounds and biocidal claims</b>	Various	For products: Biocide-treated articles according to definition in European Biocidal Products Regulation (BPR, Regulation (EU) 528/2012), including biocidal claims “antimicrobial”, “antibacterial”, “anti-odour”, etc.  General ban for class of chemicals/treatments used for this function and their claims.	1. Input control 2. Some biocidal substances are restricted in ZDHC MRSL and AFIRM RSL; test methods for those are specified there.	-

Always check the SDS of chemicals used in production of H&M Group products to assure that it is not a biocidal treatment. Also check the Technical Data Sheet and other product information for any biocidal claims. Substances listed in the BPR can be found on the ECHA website, either by searching the BPR inventory or checking the substance information through a general search.

### Background

*“The Biocidal Products Regulation (BPR) concerns the placing on the market and use of biocidal products, which are used to protect humans, animals, materials or articles against harmful organisms like pests or bacteria, by the action of the active substances contained in the biocidal product.”<sup>8</sup> “Biocidal product’ means*

- *any substance or mixture, in the form in which it is supplied to the user, consisting of, containing or generating one or more active substances, with the intention of destroying, deterring, rendering harmless, preventing the action of, or otherwise exerting a controlling effect on, any harmful organism by any means other than mere physical or mechanical action,*
- *any substance or mixture, generated from substances or mixtures which do not themselves fall under the first indent, to be used with the intention of destroying, deterring, rendering harmless, preventing the action of, or otherwise exerting a controlling effect on, any harmful organism by any means other than mere physical or mechanical action.*

*A treated article that has a primary biocidal function shall be considered a biocidal product.”<sup>9</sup>*

<sup>8</sup> <https://echa.europa.eu/regulations/biocidal-products-regulation/understanding-bpr>

<sup>9</sup> EU Regulation 528/2012 (BPR), article 3, section 1 (a)

The inherent effect of biocidal substances is associated with severe environmental and health hazards; there is also growing evidence that an increased use of certain biocidal substances may lead to increased resistance to antibiotics among microorganisms. Due to the associated increased risks for our customers and the environmental impact (biocides have been shown to leach out from textile products during wash), H&M Group does not allow biocide-treated articles in its assortment of textile products, accessories, footwear, bags and belts.

### Annex 3. BISPHENOLS

#### Requirement

Substances and/or materials	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
Bisphenol A (BPA)	80-05-7	All materials: 1 ppm total content. Polycarbonate (PC) plastics: 1ppm extractable content	<ul style="list-style-type: none"> <li>Total content, all materials: Extraction: 1 g sample/20 ml THF, sonication for 60 minutes at 60 degrees C, analysis with LC/MS (same as AFIRM RSL).</li> <li>BPA, extractable content (for PC): Extraction with artificial sweat solution ISO 105 E04 and LC/MS analysis.</li> <li>Leather: ISO 11936 (same as AFIRM RSL)</li> </ul>	1 ppm each
Bisphenol B (BPB)	77-40-7	All materials: 100 ppm (sum) 100 ppm (individual)		
Bisphenol S (BPS)	80-09-1	Leather		
Bisphenol F (BPF)	620-92-8	1000 ppm (sum) 500 ppm (individual)		
Bisphenol AF (BPAF)	1478-61-1			

#### Background

Bisphenols are key building blocks in the production of many synthetic polymers. As such, they can be used in production of flame retardants (e.g. TBBPA), in production and processing of some plastic materials (PVC, PP, PE, PC, PET, PES) and as antioxidants or UV-stabilisers in various synthetic polymer materials. Examples of materials and resins that may contain bisphenols: polycarbonate (PC), polyether sulphone/polysulphone, epoxy, phenoxy and polyarylate resins. It may also be found as a contaminant in recycled polyester and its blends, as well as in recycled paper. Polyamide dye-fixing agents for optimal fiber colour-fastness contain intentionally added BPS and/or BPF; Sulfone- and phenol-based synthetic tanning agents contain intentionally added BPS and BPF as an impurity.

BPA, BPB, and BPS are classified as a Substance of Very High Concern (SVHC) and included on the Candidate list as being toxic for reproduction and having endocrine disrupting properties for humans and for the environment. Other bisphenols are already known to have, or suspected of having, similar properties. To avoid regrettable substitutions of BPA taking place at our suppliers, H&M Group encourages testing of also BPB, BPS, BPF and BPAF in any product with increased risk. More information can be found in AFIRM’s Chemical Information Sheet for Bisphenols.<sup>10</sup>

## Annex 4. CHLORINATED BLEACHING AGENTS

### Requirement

Substances and/or materials	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
Chlorinated bleaching agents	-	In production process: General usage ban. Finishing treatments with chlorinated bleaching agents can only be used in denim production.	Input control.	-

Input control – check SDS on all chemical products used for H&M Group products. This is secured through checking of Chemical Inventory List (CIL) through incoming chemical tool (BVE3). Chlorinated bleaching agents also have a strong smell and therefore they can easily be distinguished in a factory tour. For denim production: Appropriate Personal Protective Equipment (PPE) must be available and used. PPE can include for example gloves, safety eyewear and respirator mask. More information about PPE can be found in ZDHC Chemical Management System (CMS).

### Background

H&M Group has restricted the use of chlorinated bleaching agents mainly from a worker’s health perspective to avoid unnecessary use and exposure.

<sup>10</sup> <https://www.afirm-group.com/chemical-information-sheets/>

## Annex 5. DIMETHYLFORMAMIDE (DMFa)

### Requirement

Substances and/or materials	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
Dimethylformamide (DMFa)	68-12-2	For products and in production process: General usage ban. DMFa is included in ZDHC MRSL 3.1	According to AFIRM RSL and input control. For polyurethane (PU) materials, follow <i>Verification routine for Better PU</i> .	5 ppm

Input control – check SDS on all chemical products used for H&M Group products. This is secured through checking the Chemical Inventory List through incoming chemical tool (BVE3). For polyurethane materials, follow *Verification routine for Better PU*. If a material or product is assessed to have an increased risk of DMFa, test according to method specified in the AFIRM RSL.

### Background

DMFa is a solvent that can be found in plastics, glue, rubber, prints, foams and in the production of polyurethane (PU) coated materials, such as synthetic leathers. **All DMFa, including contamination, is included in the scope of the phase-out and the usage ban is applicable for all products in scope.** Regarding PU coatings, water-based PU does not contain DMFa and is therefore preferable. However, DMFa could be present as contaminant in water-based PU. DMFa is also included in ZDHC MRSL 3.1 (<https://mrsl.roadmaptozero.com>).

DMFa is a Substance of Very High Concern (SVHC) classified as toxic to reproduction (Reproductive toxic Cat 1B per EU 1272 / 2008 EC). More information can be found in AFIRM's Chemical Information Sheet for Solvents/Residuals.<sup>11</sup>

<sup>11</sup> <https://www.afirm-group.com/chemical-information-sheets/>

## Annex 6. FLAME RETARDANTS

### Requirement

Substances and/or materials	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
<b>Flame retardants</b>				
All flame retardants	Various	General ban for chemicals used for this function.	Input control.	
Flame retardants in AFIRM RSL	Various	Not detected	Product testing according to methods specified in AFIRM RSL	5 ppm
Tri-o-cresyl phosphate	78-30-8	In addition to the flame retardants listed in AFIRM RSL, these substances are also included in H&M Group testing protocol.		
Triphenyl phosphate (TPhP)	115-86-6			
Tris(1-chloro-2-propyl)phosphate (TCPP)	13674-84-5	Not detected		

Input control – check SDS on all chemical products used for H&M Group products. This is secured through checking the Chemical Inventory List (CIL) through incoming chemical tool (BVE3).

### Background

Flame retardants are chemicals added to materials to decrease their inherent flammability. Many chemicals used as flame retardants are associated with severe environmental and health hazards and there is increasing regulatory activity around the world concerning their use. Due to the high risk of regrettable substitution and because flame retardancy can be achieved safely by other means (e.g. choice of material, construction) H&M Group restricts the use of all flame retardants.

## Annex 7. LEATHER TANNED PRODUCTS

### Requirement

H&M Group has decided to use only chromium-free tanned leather<sup>12</sup> originating from more sustainable sources by 2025. In addition to restriction in AFIRM RSL, the following applies during the phase-out period:

Substances and/or materials	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
<b>Chromium-free tanned leather</b>	7440-47-3, 18540-29-9	<ul style="list-style-type: none"> <li>• 250 ppm total chromium</li> <li>• For products for children aged 0-3 years: chromium-free from S3 2020</li> <li>• 100% of linings/skin contact are chromium-free from S3 2020</li> </ul>	According to AFIRM RSL. Total content according to EN ISO 17072-2 <sup>12</sup>	
<b>Metal-free tanned leather</b>		500 ppm total metal content	For metal-free and vegetable-tanned leather: Total content according to EN ISO 17072-2 <sup>13</sup>	

### Step-by-step approach to reach chromium-free tanned leather goal:

Total chromium limits:

- 500 ppm for total chromium from Season 5 2021 to February 2023
- 250 ppm from February 2025
- 100 ppm from February 2030

<sup>12</sup> EN 15987 defines chromium-free tanned leather. At H&M Group a leather containing <250 ppm is considered as chromium-free tanned leather. The standard EN ISO 17072-2 is applicable to determine chromium in chromium-free tanned leathers.

<sup>13</sup> EN 15987 defines metal-free leather (Cr, Al, Ti, Zr, Fe). At H&M Group metal-free leather containing <500 ppm is considered as metal-free leather. The standard EN ISO 17072-2 is applicable to determine the content of tanning metals. EN 15987 defines vegetable-tanned leather. At H&M Group using vegetable tanning agents containing <500 ppm metals (Cr, Al, Ti, Zr, Fe) is considered as vegetable-tanned leather. The standard EN ISO 17072-2 is applicable to determine the content of tanning metals.

## All leather tanned products:

- **100% of linings/skin contact** are **chromium-free** from S3 2020
- **All leather products for children aged 0-3 years** are **chromium-free** from S3 (2020)
- From Season 5 2021, **all leather products being shipped to the US** (for example footwear, bags, gloves, watch straps and leather apparel) must be **chromium-free** leather due to high risk in the US Customs.
- **By 2030** our ambition and long-term strategy is to **completely phase out chromium in leather**. All our animal-derived leather will be **chromium-free** and originate from more sustainable sources.

## Alternatives

Information on viable alternatives to chromium tanning can be read [here](#). H&M Group does not consider Glutaraldehyde to be a viable alternative since it is facing regulation under EU REACH and it may also not be a viable alternative for EU-based tanneries without a specific authorization in the future. Glutaraldehyde is hazardous to workers in tanneries and to the environment, including being very toxic to the aquatic life.

## Background

Exposure to hexavalent chromium (CrVI) has been linked to many health problems in humans. Acute and long-term exposure to CrVI has been linked to allergic skin reactions, gastrointestinal and respiratory issues, and damage to the male reproductive system. CrVI is considered a carcinogen by the International Agency for Research on Cancer (IARC).

CrVI itself is not used in the leather tanning process but can be formed from the commonly used trivalent chromium (Cr III). Cr III salts are not considered to be harmful when in leather. However, Cr III can under certain production and storage conditions transform to CrVI.

Our quality management organization ensures safe levels of CrVI in our products. However, due to the chemical nature of chromium and the transformation that can occur, we cannot guarantee compliant levels throughout a product's life cycle. More information can be found in AFIRM's Chemical Information Sheet for Chromium VI.<sup>14</sup>

---

<sup>14</sup> <http://www.afirm-group.com/chemical-information-sheets/>

## Annex 8. NANOMATERIALS

### Requirement

Substances and/or materials	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
<p><b>Nanomaterials</b></p> <p>“Nanomaterial” means a natural, incidental or manufactured material consisting of solid particles that are present, either on their own or as identifiable constituent particles in aggregates or agglomerates, and where 50 % or more of these particles in the number-based size distribution fulfil at least one of the following conditions:</p> <p>(a) one or more external dimensions of the particle are in the size range 1 nm to 100 nm;</p> <p>(b) the particle has an elongated shape, such as a rod, fibre or tube, where two external dimensions are smaller than 1 nm and the other dimension is larger than 100 nm;</p> <p>(c) the particle has a plate-like shape, where one external dimension is smaller than 1 nm and the other dimensions are larger than 100 nm<sup>15</sup></p>	Various	For products: General usage ban.	Input control.	

Input control – check SDS on all chemical products used for H&M Group products. This is secured through checking the Chemical Inventory List (CIL) through incoming chemical tool (BVE3).

### Background

*“Due to the increased specific surface area by volume, nanomaterials may have different characteristics compared to the same material without nanoscale features. Therefore, the physico-chemical properties of nanomaterials may differ from those of the bulk substances or particles of a larger size. Nanotechnology is rapidly expanding. A large number of products containing nanomaterials are already on the European market (e.g. batteries, coatings, anti-bacterial clothing, cosmetics and food products). Nanomaterials offer technical and commercial opportunities but may pose risks to the environment and raise health and safety concerns for humans and animals.”<sup>16</sup>*

<sup>15</sup> European commission recommendation on the definition of nanomaterial (2022/C 229/01), Official Journal of the European Union, 14.06.2022.

<sup>16</sup> <https://echa.europa.eu/regulations/nanomaterials>



## Annex 9. PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

### Requirement

Substances and/or materials	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
<b>Per- and Polyfluoroalkyl Substances (PFAS)</b>				
All Per- and Polyfluoroalkyl Substances	Various	Not detected.  Usage ban. Certain PFAS are included in the ZDHC MRSL.	1. Total fluorine test method: EN 14582:2016 or ASTM D7359:2018  2. If test 1 shows detections proceed with testing below.  Input control.	50 ppm total
Perfluorinated compounds in AFIRM RSL	Various	Not detected.	Product testing according to methods specified in AFIRM RSL.	50 ppm
Perfluoroheptane Sulfonate (PFHpS)	375-92-8	Not detected		
Perfluorodecane Sulfonate (PFDS)	335-77-3 or 2806-15-7 or 2806-16-8			
Perfluorobutane Acid (PFBA)	375-22-4			
Perfluoropentane Acid (PFPA)	2706-90-3			
Perfluoroheptane Acid (PFHpA)	375-85-9			
7H-dodecanefluoroheptane Acid (HPFHpA)	1546-95-8			
1H,1H,2H,2H-Perfluorooctylacrylate (6:2 FTA)	17527-29-6			
1H,1H,2H,2H-Perfluoro-1-hexanol (4:2 FTOH)	2043-47-2			
Perfluorohexyl ethyl methacrylate (6:2 FTMAC)	2144-53-8			
Perfluorobutanesulfonic Acid PFBS	375-73-5			

Input control – check SDS on all chemical products used for H&M Group products. This is secured through checking the Chemical Inventory List through incoming chemical tool (BVE3). **Approved water repellent treatments for H&M Group can be found in ZDHC Gateway, in the Use Category *Textile Finishing Assistants and Use Type Fluorine free Water, stain and oil repellents*.**

## Background

PFAS are inherently stable compounds and therefore not readily degradable. In fact, many are known to be highly persistent and have high bioaccumulation potential and some are also known to have detrimental effects on both environment and human health. Some PFAS are included in the ZDHC MRSL (only a few in the present version, but more substances are on the MRSL candidate list).

Due to the high general concern for all PFAS and the prevalence of good water repellent alternatives without fluoro chemistry, H&M Group has a complete usage ban for this class of chemicals.

Total fluorine test method in step 1 is to be conducted to determine compliance to regulations that set limits on total organic fluorine rather than specific PFAS substances such as California AB 1817<sup>17</sup> which sets a limit of 100 ppm by 2025 and 50 ppm by 2027.

The following step, which consists of an organic solvent extraction is conducted to verify and maintain compliance with restrictions on specific PFAS compounds defined by EU REACH<sup>18</sup> and The Persistent Organic Pollutant (POPs) Regulation<sup>19</sup>.

A new CEN standard<sup>20</sup> is under review which takes precedence over the existing ISO test method once implemented during early summer 2025.

---

<sup>17</sup> [https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=202120220AB1817](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB1817)

<sup>18</sup> <https://echa.europa.eu/sv/substances-restricted-under-reach>

<sup>19</sup> <https://echa.europa.eu/sv/pops-legislation>

<sup>20</sup> [SS-EN 17681-1:2022 - Swedish Institute for Standards, SIS](#)

## Annex 10. POLYCARBONATE (PC)

### Requirement

Substances and/or materials	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
Polycarbonate (PC)	80-05-7	Usage ban for Accessories. The ban will be extended to FBB, trims and intimates by the end of 2025. This restriction applies to both virgin and recycled PC.	Input control.	

### Background

Polycarbonate (PC) is one of the most widely used engineering thermoplastics. Polycarbonate is a strong, tough materials, and some grades are optically transparent. It is easily worked, moulded, and thermoformed. Because of these properties, PC finds many applications.

Product Compliance and Sustainability have identified PC as one of the polymers to be substituted since it is characterized by limited recyclability and use of high concern substances in the manufacturing process. Furthermore, products made from PC can contain the precursor monomer bisphenol A (BPA) which is a widely studied endocrine-disrupting chemical (EDC) causing adverse health effects in humans.

The substitution of PC is crucial to reach H&M Group 2030 goal on recycled and other sustainably sourced material as well as safe products and production for the environment, workers, and customers.

## Annex 11. POLYVINYLCHLORIDE (PVC) AND OTHER CHLORINATED POLYMERS

### Requirement

Substances and/or materials	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
<b>Polyvinyl chloride (PVC), polychloroprene (e.g. Neoprene) and other similar chlorinated polymers</b>	Various	For products and in production process: General material ban.	Input control.	-

Input control – check SDS on all chemical products used for H&M Group products. This is secured through checking of Chemical Inventory List (CIL) through incoming chemical tool (BVE3).

### Background

Dioxins are unintentionally but unavoidably produced during the manufacture and burning of materials containing chlorine. Dioxins are classified as toxic and have carcinogenic properties. It is also very toxic to aquatic life with long lasting effects. PVC and similar chlorinated polymers (i.e. polyvinylchloride and polychloroprene) are plastics that can be soft or hard, transparent or coloured. PVC is often plasticized with substances like phthalates (also restricted substances).

## Annex 12. POTASSIUM PERMANGANATE

### Requirement

Substances and/or materials	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
Potassium permanganate	7722-64-7	In production processes: General usage ban.	Input control.	

### Background

Potassium permanganate is commonly used to distress denim. Potassium permanganate is classified as toxic to aquatic life, hazardous for health and possibly harming the unborn child. From 2023, potassium permanganate has been substituted in all production processes used for H&M Group's products. It has also been added as a candidate substance to the upcoming ZDHC MRSL.

## Annex 13. REACH SVHC

### Requirement

Substances and/or materials	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
<b>REACH SVHC</b> <b>and Substances defined as hazardous due to intrinsic properties Criteria for hazardous as defined in REACH Article 57.</b>	Various	For products: General restriction of 0.1% (w/w) for all SVHC substances.  Certain substances may be subjected to additional, stricter limits according to H&M Group Chemical Restrictions. Make sure such limits are met. Confirmation is required.	Input control.  Safety Data Sheet (SDS) according to Reach Regulation 1907/2006 article 31. Each chemical substance and/or chemical mixture must be classified according to the CLP Regulation, Regulation (EC) No 1272/2008.	-

Input control – check SDS on all chemical products used for H&M Group products. This is secured through checking the Chemical Inventory List through incoming chemical tool (BVE3).

Product compliance – Product testing according to assessed risk for specific material and product using applicable test method in H&M Group Chemical Restrictions. Many third-party labs also offer screening for all SVHC in final products.

### Background

Substances that are included in the Candidate List have been identified as Substances of Very High Concern (SVHC). Substances on the Candidate List may subsequently become subject to authorization by decision of the European Commission.

SVHC are identified in REACH, which calls for the progressive substitution of the most potentially dangerous chemicals when suitable alternatives have been identified. REACH is the Regulation for Registration, Evaluation, Authorization and Restriction of Chemicals.

According to Article 57 of the REACH Regulation, Substances with the following hazard properties may be identified as SVHC:

- Substances meeting the criteria for classification as carcinogenic, mutagenic or toxic for reproduction (CMR) category 1A or 1B in accordance with the CLP Regulation.
- Substances which are persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) according to REACH Annex XIII.
- Substances on a case-by-case basis, that cause an equivalent level of concern as CMR or PBT/vPvB substances, e.g. endocrine disruptive properties.

## Annex 14. STYRENE-BASED POLYMERS

### Requirement

Substances and/or materials	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
Styrene-based polymers	Various	Usage ban for Accessories. The ban will be extended to FBB, trims and intimates by the end of 2025. This restriction applies to both virgin and recycled styrene-based polymers.	Input control.	

### Background

Styrene-based polymers or Styrenics cover a full range of materials from commodity grades including general-purpose and high-impact polystyrene (GPPS, HIPS), styrene-acrylonitrile (SAN), and acrylonitrile-butadiene-styrene (ABS).

Product Compliance and Sustainability have identified:

- Polystyrene (PS)
- Acrylonitrile Butadiene Styrene (ABS)
- Acrylonitrile Styrene/Styrene Acrylonitrile (AS/SAN)
- Other Styrene-based polymers

as polymers to be substituted due to limited recyclability, use of chemicals of high concern in the manufacturing process. Styrene, the building monomer of this polymers group, is suspected to have hormone disrupting properties and can cause cancer. Styrene is regulated in California and has a harmonized classification as Reprotoxic category 2 - Suspected of damaging the unborn child, according to the European Chemicals Agency. Additives that have hazardous properties are commonly used in styrene-based polymers which adds an extra problematic aspect to securing recycled material.

The substitution of Styrene-based polymers is crucial to reach H&M Group 2030 goal on recycled and other sustainably sourced material as well as safe products and production for the environment, workers, and customers.

## Annex 15. STYRENE-BASED THERMOPLASTIC RUBBER (TPR)

### Requirement

Substances and/or materials	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
Styrene-based Thermoplastic Rubber (TPR)	Various	Usage ban for Accessories. The ban will be extended to FBB, trims and intimates by the end of 2025. This restriction applies to both virgin and recycled styrene-based TPR.	Input control.	

### Background

Thermoplastic rubber (TPR) is a semi-crystalline material with both rubber-like and thermoplastic properties. This means it is flexible and can be manufactured using melt processing techniques like injection molding. TPR material is synthesized using block copolymers like SBS (Styrene-Butadiene-Styrene). Thermoplastic rubber can also be described as a thermoplastic elastomer (TPE).

Product Compliance and Sustainability have identified TPR as a class of polymers to be substituted due to the use of Styrene as building monomer. The substitution of TPR is crucial to reach H&M Group 2030 goal on recycled and other sustainably sourced material as well as safe products and production for the environment, workers, and customers.



## Annex 16. RECYCLED NATURAL AND SYNTHETIC TEXTILE MATERIALS

### Requirement

Substances and/or materials	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
<p><b>Recycled natural and synthetic textile materials.</b> Products made of <b>recycled</b> fibers should meet H&amp;M Group Chemical restrictions.</p>				

Testing requirement according to section “*H&M RSL TESTING MATRIX FOR RECYCLED TEXTILES*” listed in H&M Group Chemical Testing Guideline for Textile products, Accessories, Footwear, Bags and Belts must be followed for each article in the product. Product testing according to methods specified in AFIRM RSL.

### Background

The fashion industry weighs heavy on natural resources, which is one reason H&M Group has set up clear goals going ahead: our mission is to only use recycled or other sustainably sourced materials by 2030. The H&M approach for using recycled materials in our garments is based on precaution and aims to avoid recirculation of hazardous chemicals. To ensure customer safety, workers’ health, and environmentally sound materials in all aspects, both short-term and long-term strategies are required for hazardous substances in recycled fibre materials. The H&M objectives regarding hazardous chemicals in recycled materials are:

- Consumer products shall comply with the same chemical requirements regardless of their recycled content. Any exceptions to this will be justified and transparently communicated.
- We have a monitoring program for hazardous chemicals in secondary raw materials as well as in final products containing recycled materials. Based on test data, we constantly work on developing and improving our approach on securing chemicals in recycled materials.
- Dilution by mixing materials with a high content of hazardous chemicals with other materials with lower/no hazardous chemicals should be avoided.
- The process of recycling should not contribute to releases of hazardous chemicals. All recycling processes including any chemical decontamination in secondary raw materials are evaluated in this respect and hazardous releases will be eliminated or safely destroyed.
- We are transparent, share best practice regarding how we work to secure that garment containing recycled materials meets our requirements.
- We support regulation that enables safe recycling.

Chemical tests must be initiated as early on as possible in the product development process. It’s important to test all the articles/colourways in a product, considering the existing feedstock management practices prevailing in the recycle industry. If a test fails at development stage, inform Product Compliance directly. Even if an exception from H&M Group Chemical Restrictions is granted, it is required to test again on production sample.

## Annex 17. UV ABSORBERS/STABILIZERS/FILTERS

### Requirement

Substances and/or materials	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
UV absorbers/stabilizers/filters	Various	For textile products: General ban for chemicals used for this function.	Input control. Certain substances are included in ZDHC MRSL. Certain substances are included in AFIRM RSL, i.e., can be product tested.	

Input control – check SDS on all chemical products used for H&M Group products. This is secured through checking of Chemical Inventory List (CIL) through incoming chemical tool (BVE3). Also check the Technical Data Sheet and other product information for “anti-UV”/SPF claims.

### Background

UV absorbers are chemicals used to achieve UV/sun protection by increasing the product’s sun protection factor (SPF). Except for those in the ZDHC MRSL 3.1 and AFIRM RSL (the first four are also SVHC, see Annex 10): UV 320 (3846-71-7), UV 327 (3864-99-1), UV 328 (25973-55-1), UV 350 (36437-37-3) and UV-P (Drometrizole, 2440-22-4), there are various reasons for concern for their alternatives, e.g.:

CAS	Notes
127519-17-9; 108-65-6	Likely to meet criteria for category 1A or 1B carcinogenicity, mutagenicity or reproductive toxicity; Known as Tinuvin 99-2, Tinuvin 384 or BLS 99-2
70321-86-7	Minnesota Chemicals of High Concern List; Also known as H413 or UV-234
1843-05-6	REACH CoRAP list; May cause an allergic skin reaction; Known as Octabenzone
104810-48-2; 104810-47-1	Toxic to aquatic life with long lasting effects; May cause damage to organs through prolonged or repeated exposure; May cause an allergic skin reaction; Known as Tinuvin-1130
3896-11-5	Potential bioaccumulation/aquatic concerns; Known as UV-326
6197-30-4	REACH CoRAP list; Very toxic to aquatic life with long lasting effects
3147-75-9	High-priority substance for PBT screening; Known as UV-329 and octrizole
103597-45-1	Environmentally hazardous, Chronic aquatic toxicity; May cause long lasting harmful effects to aquatic life; Known as UV-360.

Due to the risk of regrettable substitution and because the function of UV-protection can be achieved by other means (i.e., construction) for textile products, H&M Group has decided to ban chemicals used for this functionality in all textile products.