



# H&M GROUP CHEMICAL RESTRICTIONS 2021

MRSL and RSL

*External version*

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Textile Products

Accessories

Footwear, Bags and Belts

Valid for all brands in H&M Group.

Global Product Compliance Department (GPCD) and Global Sustainability Department



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## General

H&M Group Chemical Restrictions consists of 12 parts:

- i. Aerosol Dispensers
- ii. **Textile products, Accessories, Footwear, Bags and Belts (including [ZDHC MRSL 2.0](#) and [AFIRM RSL 2021](#))**
- iii. Candles
- iv. Chemical Products
- v. Cosmetic Products
- vi. Electrical and Electronic Products and Batteries
- vii. Food Contact Products
- viii. Furniture
- ix. Hardline
- x. Medical Devices
- xi. Non-Commercial Goods (NCG), Construction and Packaging
- xii. Toys

**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 takes precedence.**

Please read more about H&M Group Chemical Management [here](#).

## Commitment

By accepting H&M Group Standard Purchase Conditions, the Supplier commits to comply with H&M Group Chemical Restrictions. The Supplier is responsible to assure compliance and to inform all their upstream suppliers and subcontractors about its content.

By accepting H&M Group Standard Purchase Conditions, each Supplier acknowledges that H&M Group reserves the right to:

- Inspect and test any product, any part of production and/or packaging, by any listed or appropriate method, at any time or at any stage of production.
- Cancel the Order, or, if the products are already delivered, return the products to the Supplier if the product, production and/or packaging do not correspond to the H&M Group Chemical Restrictions.
- Hold the Supplier responsible for any damage caused by the ordered product if the product, production and/or packaging do not correspond to the H&M Group Chemical Restrictions.
- Receive Safety Data Sheets (SDS) for all substances and preparations (dyes, colorants, solvents, chemicals, etc.) used in the production of a specific Order.

- Request the Supplier to change substances and preparations (dyes, colorants, solvents, chemicals, etc.) used in the production to comply with H&M Group Chemical Restrictions.

**In case of contradictory test results, H&M Group's test results will prevail.**

## 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 Sheets	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 the same as mg/kg.
REACH	Registration, Evaluation, Authorization and Restriction of Chemicals
SVHC	Substances of Very High Concern

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<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 2.0* (ZDHC MRSL 2.0), found at [//mrsl.roadmaptozero.com/](http://mrsl.roadmaptozero.com/).

## 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)*, found at [www.afirm-group.com/afirm-rsl/](http://www.afirm-group.com/afirm-rsl/)

## 3. H&M Group – Additional Requirements

Table 1. H&M Group additional requirements.

Restricted substance/material	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
<b>Antimony content (total) in polyester textiles</b>	7440-36-0	For products, restriction limit total amount: 260 ppm	EN 16711-1, microwave digestion followed by ICP determination.	1 ppm
<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	For all products, total content: 1 ppm.  In polycarbonate (PC) plastics, extractable content: 1 ppm.	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).	0.1 ppm
Bisphenol S (BPS)	80-09-1	Total content shall be tested for informational purposes, for all products considered to have an increased risk. Candidates for product restrictions in 2022.	Extractable content (PC): Extraction with artificial sweat solution ISO 105 E04 and LC-MS analysis.	1 ppm each
Bisphenol F (BPF)	620-92-8			
Bisphenol AF (BPAF)	1478-61-1			

Restricted substance/material	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
<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>Chromium (Cr), total amount, in textile materials</b>	7440-47-3	For products: Restriction limit 100 ppm. Except for polyamide, polyamide blends and polyester blends (min 5%). For all other textile materials, chromium-based dyes are not accepted, and the total Cr limit applies.	EN 16711-1, microwave digestion followed by ICP determination.  Input control	1 ppm
<b>Chromium-free tanned leather, total chromium</b>	18540-29-9	In addition to restriction in AFIRM RSL: For products for children aged 0-3 years: general material ban on chrome tanned leather <sup>2</sup>  Linings/skin contact leather products: general material ban on chrome tanned leather <sup>2</sup>	According to AFIRM RSL For metal-free and vegetable-tanned leather: ISO 17072-2 <sup>3</sup>	
<b>Dimethylformamide (DMFa) in polyurethane (PU)</b>	68-12-2	For products and in production process: General usage ban.	According to AFIRM RSL and input control. Follow <i>Verification routine for Better PU</i> .	5 ppm
<b>Flame retardants</b>				
All flame retardants	Various	General ban for chemicals used for this function.	Input control	5 ppm
Flame retardants in AFIRM RSL	Various	Not detected	Product testing according to methods specified in AFIRM RSL	
Tri-o-cresyl phosphate	78-30-8			
Triphenyl phosphate (TPhP)	115-86-6			
Tris(1-chloro-2-propyl)phosphate (TCPP)	13674-84-5			
<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	Various	For products: General usage ban.	Input control (e.g. BVE3)	

<sup>2</sup> As defined in EN 15987, a leather containing <1000 ppm is considered as chromium free tanned leather. The standard ISO 17072-2 is applicable to determine chromium in chromium free tanned leathers.

<sup>3</sup> As defined in EN 15987, metal-free leather (Cr, Al, Ti, Zr, Fe) containing <1000 ppm is considered as metal-free leather. The standard ISO 17072-2 is applicable to determine the content of tanning metals. As defined in EN 15987, vegetable-tanned leather using vegetable tanning agents containing <3000 ppm metals (Cr, Al, Ti, Zr, Fe) is considered as vegetable-tanned leather. The standard ISO 17072-2 is applicable to determine the content of tanning metals.

Restricted substance/material	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
more external dimensions is in the size range 1 nm-100 nm.” <sup>4</sup>				
<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 substances included in either of these. If specified elsewhere in H&M Group Chemical Restrictions, stricter limits apply.	Input control (e.g. BVE3)	
<b>Per- and polyfluorinated compounds (PFC/PFAS)</b>				
All per- and polyfluorinated compounds	Various	Usage ban	Input control (e.g. BVE3)	
Perfluorinated compounds in AFIRM RSL		Not detected	Product testing according to methods specified in AFIRM RSL.	
Perfluorobutane Sulfonate (PFBS)	29420-49-3	For products: not detected.	For FTOH: Extraction: ISO 23702-1; Analysis: GC/MS/MS, GC/MS or LC/MS.  All others: ISO 23702-1	1 ppm
Perfluorohexane Sulfonate (PFHxS)	3871-99-6			
Perfluoroheptane Sulfonate (PFHpS)	375-92-8			
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			
Perfluorohexane Acid (PFHxA)	307-24-4			
Perfluoroheptane Acid (PFHpA)	375-85-9			
Perfluorononane Acid (PFNA)	375-95-1			
Perfluorodecane Acid (PFDA)	335-76-2			
Perfluoroundecanoic Acid (PFUnA)	2058-94-8			
Perfluorododecanoic Acid (PFDoA)	307-55-1			
Perfluorotridecanoic Acid (PFTrA)	72629-94-8			
Perfluorotetradecanoic Acid (PFTeA)	376-06-7			
Perfluoro-3,7-dimethyloctanoic Acid (PF-3,7-DMOA)	172155-07-6			
7H-dodecanefluoroheptane Acid (HPFHpA)	1546-95-8			
2H,2H-perfluorodecane Acid (H2PFDA)	-			

<sup>4</sup> European commission recommendation on the definition of nanomaterial (2011/696/EU), Official Journal of the European Union, 20.10.2011.

Restricted substance/material	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
2H,2H,3H,3H-Perfluoroundecanoic Acid (H4PFUnA)	34598-33-9			
1H,1H,2H,2H-Perfluorooctylacrylate (6:2 FTA)	17527-29-6			
1H,1H,2H,2H-Perfluorododecylacrylate (10:2 FTA)	17741-60-5			
1H,1H,2H,2H-Perfluoro-1-hexanol (4:2 FTOH)	2043-47-2			
1H,1H,2H,2H-Perfluoro-1-oktanol (6:2 FTOH)	647-42-7			
1H,1H,2H,2H-Perfluoro-1-dodecanol (10:2 FTOH)	865-86-1			
2-(N-methylperfluoro-FASE 1 octanesulfonamido)-ethanol (MeFOSE)	2448-09-7			
<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	From order placement date (OPD) 1 January 2023: usage ban will be implemented for potassium permanganate (PP).		
<b>Recycled natural, synthetic and remade textile materials</b>				
For products: RSL exceptions for all products made of <b>≥ 40% mechanically recycled</b> fibres. Provided that no additional restricted substances, as listed below, have been used after the collection of the waste, the restriction of the chemicals are as follows:				
Chromium (Cr), total amount	7440-47-3	Provided that no additional chromium dyes have been used after the collection of waste, the restriction of total chromium does not apply. (The restriction for extractable chromium in AFIRM RSL applies, regardless of waste type.)		
Perfluorooctane Sulfonate (PFOS) and related substances <sup>5</sup>	Various	According to AFIRM RSL.		
Perfluorooctanoic Acid (PFOA) and its salts <sup>3</sup>	Various			
PFOA-related substances <sup>3</sup>	Various			
<b>Recycled natural, synthetic and remade textile materials</b>				
For products: RSL exceptions for all products made of <b>100% mechanically recycled</b> fibres. Provided that no additional restricted substances, as listed below, have been used after the collection of the waste, the restriction of the chemicals are as follows:				
Nonylphenol Ethoxylates (NPE) Octylphenol Ethoxylates (OPE)	Various	Total 1000 ppm	According to AFIRM RSL.	
<b>UV absorbers/stabilisers/filters</b>	Various	For textile products: General ban for chemicals used for this function.	Input control Some substances are included in ZDHC MRSL 2.0.	-

<sup>5</sup> See listed substances in AFIRM RSL Appendix A. The area-based limit for PFOA will be superseded by Commission Regulation (EU) 2017/1000 and removed in 2023.



Restricted substance/material	CAS	Limit/Requirement	Test/Compliance method	Reporting limit
			Some substances are included in AFIRM RSL and can thus be product tested.	

## Additional Requirements – Cosmetic Accessories

Table 2. Additional requirements Cosmetic Accessories.

Restricted substance/property	CAS	Limit/Requirement	Test method	Reporting limit
<b>Face/Body/Nail and Hair stickers-/decorations</b>				
Glue (pre-applied) <sup>6</sup>		The chemical content of the glue must comply with H&M group Chemical Restrictions Chemical Products and H&M Group Chemical Restrictions Cosmetic Products.		
Stickers for children	-	Stickers for children must comply with the chemical requirements of the European Standard EN 71-3 and EN 71-9.	EN 71-3 EN 71-10 EN 71-11	As specified in test standard
<b>Cotton swabs and pads</b>				
Plastic materials	-	Usage Ban		
Fluorescent brightening agent	-	Usage Ban	UV-lamp	-
Total viable count of yeast and mold	-	< 300 CFU/g	EN ISO 16212:2017 / European Pharmacopeia (Ph. Eur.), 2.6.12. "Microbiological examination of non-sterile products."	
Total viable count of aerobic mezophilic bacteria	-	< 300 CFU/g	EN ISO 21149:2017 / European Pharmacopeia (Ph. Eur.), 2.6.12. "Microbiological examination of non-sterile products."	
<b>Metals extractable amount</b>				
Antimony (Sb)	7440-36-0	30 ppm	EN ISO 16711-2	0.1 ppm
Arsenic (As)	7440-38-2	0.2 ppm		
Barium (Ba)	7440-39-3	1000 ppm		
Cadmium (Cd)	7440-43-9	0.1 ppm		0.02 ppm
Chromium (Cr)	7440-47-3	1 ppm		0.1 ppm
Lead (Pb)	7439-92-1	0.2 ppm		

<sup>6</sup> Upper, should follow restrictions per material. For decorations where glue is separate, the glue must comply with H&M group Chemical Restrictions Chemical Products.

Restricted substance/property	CAS	Limit/Requirement	Test method	Reporting limit
Mercury (Hg)	7439-97-6	0.02 ppm		0.02 ppm
Selenium (Se)	7782-49-2	460 ppm		0.1 ppm

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

Table 3. Additional requirements Carpets and Mats

Restricted substance/property	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		

### 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/).