

# H&M GROUP CHEMICAL RESTRICTIONS 2018

MANUFACTURING RESTRICTED SUBSTANCES LIST (MRSL)

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Global Sustainability Department  
Valid for all brands in the H&M Group

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## General

H&M group has with concern for the health of customers as well as for the environment and working conditions, established H&M group Chemical Restrictions for all products. H&M group Chemical Restrictions consist of several parts with regards to product types. All products must fulfill their corresponding parts in Chemical restriction and its production processing must also fulfill H&M group Manufacturing Restricted Substance List (MRSL).

This H&M group Manufacturing Restricted Substance List (MRSL) is applied for the whole production site, not only limited to H&M group production lines.

The official and valid version of this document is in English. Any translation of the document is prepared for reference only. H&M group accepts no liability for any mistakes done in the translation.

## Commitment

By accepting H&M Standard Purchase Conditions, the Supplier commits to comply with H&M Chemical Restrictions. It is the Supplier's responsibility to assure compliance with H&M group Chemical Restrictions and to inform all their upstream suppliers and subcontractors about the content of H&M group Chemical Restrictions. By accepting H&M Standard Purchase Conditions, each Supplier acknowledges that H&M 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 the Safety Data Sheets (SDS) for all substances and preparations (dyes, colorants, solvents, chemicals etc.) used in the production of a specific Order.*

In the case of contradictory test results, H&M test result will prevail.

## Definitions

Usage ban	The substance must not be used in production and it must not be added to the product <sup>1</sup> .
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 tested sample at concentrations above the analytical reporting limits.
Reporting Limit	Describes the level of detection times a safety factor selected by the laboratory that ensures repeatability and reproducibility.
Self-declaration	All chemicals used should have Safety Data Sheets, SDS, showing that no restricted substance is included.  Upon request supplier must be able to present the SDS for the chemicals used in the production of the requested product. Other supporting documents such as certificates from subcontractors etc. can also be considered as a part of the SD.
Substances defined as hazardous due to intrinsic properties.	Persistent, bio accumulative and toxic (PBT), very persistent and very bio accumulative (vPvB), carcinogenic, mutagenic and toxic for reproduction (CMR), endocrine disruptors (ED) or equivalent concern

## Abbreviations

CAS no	Chemical Abstracts Service number, an identification number for chemicals in this database.
CI no	Color Index number
MRSL	Manufacturing Restricted Substances List
Ppm	Parts per million, which is the same as mg/kg.
Percentage	Percentage is weight by weight, % w/w
REACH	Registration, Evaluation, Authorisation 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.

## Approach

Reaching zero discharge in all supply chains means restricted substances should not be used in manufacturing processes and found in products. There is no absolute zero and the best available detection limit should always be used whenever there is a need to verify the presence of restricted substances. Test methods and best available detection limits could be found in reference session.

In line with our ambition to work towards a clean factory approach in our supply chain by 2020, we will guide and support our facilities to phase out restricted chemicals used in production by setting up specific timelines.

## Requirement

The Manufacturing Restricted Substances List (MRSL) consists of hazardous substances potentially used in manufacturing. These substances may be especially harmful for workers and/or the environment if not handled properly. To protect workers' health and minimize environmental impact, restricted chemicals are not allowed to be intentionally used in the production.

Restricted substances are classified into two groups as listed below:

**Group 1:** Substances are not allowed to be found in whole production sites and used in H&M production lines. We continuously monitor to secure complete phase out in whole production site.

**Group 2:** Substances are not allowed to be used in H&M production lines. These substances shall be phased out in the whole production site latest by 2020, and hence work towards a clean factory approach.

GROUP	Restricted Level	
	Production Sites	H&M Production Lines
1	USAGE BAN	USAGE BAN
2	TO BE PHASED OUT IN THE WHOLE PRODUCTION SITE BY THE LATEST 2020	USAGE BAN

<b>GROUP 1</b>		
<b>Restricted substance</b>	<b>CAS No.</b>	<b>Remark</b>
<b>Alkylphenol Ethoxylates / Alkylphenols (APEOs/APs)</b>		
Nonylphenol Ethoxylates (NPEO)	9016-45-9 26027-38-3 37205-87-1 68412-54-4 127087-87-0	
Nonylphenoethoxylates (NP1EO)	104-35-8	
Octylphenol Ethoxylates (OPEO)	9002-93-1 9036-19-5 68987-90-6	
Octylphenoethoxylates (OP1EO)	51437-89-9	
Nonylphenol (NP)	104-40-5 11066-49-2 25154-52-3 84852-15-3	
Octylphenol (OP)	140-66-9 1806-26-4 27193-28-8	
2-(2H-Benzotriazol-2-yl)-4,6-bis(1,1-dimethylpropyl)phenol	25973-55-1	
<b>Chlorinated Aromatic Hydrocarbons</b>		
1,2-dichlorobenzene	95-50-1	
Other isomers of mono-, di-, tri-, tetra-, penta- and hexa-chlorobenzene, chlorotoluene, chloronaphthalene, chloroxylene		
<b>Chlorinated Bleaching Agents</b>		Finishing treatments with chlorinated bleaching agents can only be used in denim production.

<b>GROUP 1</b>		
<b>Restricted substance</b>	<b>CAS No.</b>	<b>Remark</b>
<b>Organic solvents</b>		
• <b>Chlorinated Organic Solvents</b>		
Chloroform	67-66-3	
1,1-Dichloroethane	75-34-3	
1,2-Dichloroethane	107-06-2	
1,1-Dichloroethylene	75-35-4	
cis-1,2-Dichloroethylene	156-59-2	
trans-1,2-Dichloroethylene	156-60-5	
1,1,1-Trichloroethane	71-55-6	
1,1,2-Trichloroethane	79-00-5	
Trichloroethylene	79-01-6	
1,1,1,2-Tetrachloroethane	630-20-6	
1,1,2,2-Tetrachloroethane	79-34-5	
Tetrachloroethylene	127-18-4	
Pentachloroethane	76-01-7	
Methylene Chloride	75-09-2	
Carbon Tetrachloride	56-23-5	
1,2,3-Trichloropropane	96-18-4	
• <b>Brominated Organic Solvent</b>		
1-bromopropane (n-propyl bromide)	106-94-5	
2-bromopropane	75-26-3	
• <b>Dimethylformamide (DMF)</b>		
Dimethylformamide (DMF)	68-12-2	Usage ban except during PU production. Please see below for more info about PU production.

<b>GROUP 1</b>		
<b>Restricted substance</b>	<b>CAS No.</b>	<b>Remark</b>
<b>Organic solvents</b>		
• <b>Others</b>		
Benzene (Benzol)	71-43-2	
1,4-Butanediol <sup>2</sup>	110-63-4	
Dimethylacetamide (DMAC)	127-19-5	
Ethylene glycol monoethyl ether	110-80-5	
n-Hexane	110-54-3	
4,4'-Methylene-bis-(2-chloroaniline) (MOCA)	101-14-4	
Phenol	108-95-2	
Toluene (Toluol)	108-88-3	
Xylene <sup>3</sup>	1330-20-7, 95-47-6, 108-38-3, 106-42-3	
o-cresol <sup>3</sup>	95-48-7	
p-cresol <sup>3</sup>	106-44-5	
m-cresol <sup>3</sup>	108-39-4	
Cyclododecane	294-62-2	
hexamethylphosphoramide (HEMPA)	680-31-9	
N-methylformamide	123-39-7	
Furan	110-00-9	
N-methyl-2-pyrrolidone	872-50-4	

<sup>2</sup> 1,4-Butanediol, xylene, o-cresol, p-cresol, m-cresol are exempted in cosmetic products. The cosmetic products here refer to the content of product, it is not including cosmetic accessory items or packaging of cosmetic product.



<b>GROUP 2</b>		
<b>Restricted substance</b>	<b>CAS No.</b>	<b>Remark</b>
<b>Chloroparaffins</b>		
Short chained (SCCPs) C10-C13	85535-84-8	
<b>Chlorophenols</b>		
Pentachlorophenol (PCP)	87-86-5	
Tetrachlorophenol (TeCP)	25167-83-3	
2,3,4,6-Tetrachlorophenol (2,3,4,6 TeCP)	58-90-2	
2,3,5,6 Tetrachlorophenol (2,3,5,6 TeCP)	935-95-5	
2,3,4,5-Tetrachlorophenol (2,3,4,5 TeCP)	4901-51-3	
2,3,4-Trichlorophenol (2,3,4 TriCP)	15950-66-0	
2,3,5-Trichlorophenol (2,3,5 TriCP)	933-78-8	
2,3,6-Trichlorophenol (2,3,6 TriCP)	933-75-5	
2,4,5-Trichlorophenol (2,4,5 TriCP)	95-95-4	
2,4,6-Trichlorophenol (2,4,6 TriCP)	88-06-2	
3,4,5-Trichlorophenol (3,4,5 TriCP)	609-19-8	
2,3-dichlorophenol (2,3 DiCP)	576-24-9	
2,4-dichlorophenol (2,4 DiCP)	120-83-2	
2,5-dichlorophenol (2,5 DiCP)	583-78-8	
2,6-dichlorophenol (2,6 DiCP)	87-65-0	
3,4-dichlorophenol (3,4 DiCP)	95-77-2	
3,5-dichlorophenol (3,5 DiCP)	591-35-5	
2-chlorophenol	95-57-8	
3-chlorophenol	108-43-0	

<b>GROUP 2</b>		
<b>Restricted substance</b>	<b>CAS No.</b>	<b>Remark</b>
<b>Chlorophenols</b>		
4-chlorophenol	106-48-9 <sup>3</sup>	
<b>Dyes – Azo releasing following amines</b>		
4-Aminodiphenyl	92-67-1	
2-Amino-4-nitrotoluene	99-55-8	
Benzidine	92-87-5	
4-Chloro-o-toluidine	95-69-2	
2,4-Diaminoanisole	615-05-4	
3,3'-Dichlorobenzidine	91-94-1	
3,3'-Dimethoxybenzidine (o-Dianisidine)	119-90-4	
3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0	
3,3'-Dimethylbenzidine (o-Tolidine)	119-93-7	
4,4'-Diaminodiphenylmethane	101-77-9	
4,4'-Methylene-bis-(2-chloroaniline) (MOCA)	101-14-4	
2-Naphtylamine	91-59-8	
o-Aminoazotoluene	97-56-3	
o-Anisidine	90-04-0	
o-Toluidine	95-53-4	
m-Toluidine	108-44-1	
p-Toluidine	106-49-0	

<sup>3</sup> p-chlorophenol with CAS 106-48-9 is exempted in cosmetic products. The cosmetic products here refer to the content of product, it is not including cosmetic accessory items or packaging of cosmetic product.

<b>GROUP 2</b>		
<b>Restricted substance</b>	<b>CAS No.</b>	<b>Remark</b>
<b>Dyes – Azo releasing following amines</b>		
4,4'-Oxydianiline	101-80-4	
4,4'-Thiodianiline	139-65-1	
2,4-Toluediamine	95-80-7	
2,4,5-Trimethylaniline	137-17-7	
p-Aminoazobenzene	60-09-3	
p-Chloroaniline	106-47-8	
2-Chloroaniline	95-51-2	
p-Cresidine	120-71-8	
2,4-Xylidine	95-68-1	
2,6-Xylidine	87-62-7	
Diaminobenzidine (biphenyl-3,3',4,4'-tetrayltetraamine)	91-95-2	
Diaminotoluene	25376-45-8	
N,N'-Diacetylbenzidine	613-35-4	
Toluene-2,4-diammonium sulphate	65321-67-7	
3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	
Diazene-1,2-dicarboxamide (C,C'-azodi(formamide), ADCA)	123-77-3	
5-Nitro-o-anisidine	99-59-2	

<b>GROUP 2</b>		
<b>Restricted substance</b>	<b>CAS No.</b>	<b>Remark</b>
<b>Dyes – Azo releasing following amines</b>		
N,N-Diethylaniline	91-66-7	
N-Ethylaniline	103-69-5	
N-Methylaniline	100-61-8	
<b>Other dyes/ CI no</b>		
4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol	561-41-1	
C.I. Acid Red 26	3761-53-3	
C.I. Basic Blue 26	2580-56-5	
C.I. Basic Red 9	569-61-9	
C.I. Basic Violet 3	548-62-9	
C.I. Basic Violet 14	632-99-5	
C.I. Basic Green 4	569-64-2 2437-29-8 10309-95-2	
C.I. Direct Black 38	1937-37-7	
C.I. Direct Blue 6	2602-46-2	
C.I. Direct Brown 95	16071-86-6	
C.I. Direct Red 28	573-58-0	
C.I. Solvent Blue 4	6786-83-0	
C.I. Solvent Yellow 2	60-11-7	
C.I. Pigment Black 25	68186-89-0	
C.I. Pigment Yellow 157	68610-24-2	

<b>GROUP 2</b>		
<b>Restricted substance</b>	<b>CAS No.</b>	<b>Remark</b>
<b>Disperse (Sensitizing)</b>		
C.I. Disperse Blue 1	2475-45-8	
C.I. Disperse Blue 3	2475-46-9	
C.I. Disperse Blue 7	3179-90-6	
C.I. Disperse Blue 26	3860-63-7	
C.I. Disperse Blue 35	12222-75-2, 56524-77-7	
C.I. Disperse Blue 102	12222-97-8	
C.I. Disperse Blue 106	12223-01-7	
C.I. Disperse Blue 124	61951-51-7	
C.I. Disperse Brown 1	23355-64-8	
C.I. Disperse Red 1	2872-52-8	
C.I. Disperse Red 11	2872-48-2	
C.I. Disperse Red 17 <sup>4</sup>	3179-89-3	
C.I. Disperse Red 151	61968-47-6	
C.I. Disperse Orange 1	2581-69-3	
C.I. Disperse Orange 3	730-40-5	
C.I. Disperse Orange 11	82-28-0	
C.I. Disperse Orange 37	12223-33-5	
C.I. Disperse Orange 59	13301-61-6	
C.I. Disperse Orange 76	51811-42-8	
C.I. Disperse Orange 149	85136-74-9	

<sup>4</sup> Disperse Red 17 is exempted in cosmetic products. The cosmetic products here refer to the content of product, it is not including cosmetic accessory items or packaging of cosmetic product.

<b>GROUP 2</b>		
<b>Restricted substance</b>	<b>CAS No.</b>	<b>Remark</b>
<b>Disperse (Sensitizing)</b>		
C.I. Disperse Yellow 1	119-15-3	
C.I. Disperse Yellow 3	2832-40-8	
C.I. Disperse Yellow 7	6300-37-4	
C.I. Disperse Yellow 9	6373-73-5	
C.I. Disperse Yellow 23	62550-22-3	
C.I. Disperse Yellow 39	12236-29-2	
C.I. Disperse Yellow 49	54824-37-2	
C.I. Disperse Yellow 56	54077-16-6	
<b>Navy Blue Colorant</b>		
Component 1: C <sub>39</sub> H <sub>23</sub> ClCrN <sub>7</sub> O <sub>12</sub> S <sub>2</sub> Na	118685-33-9	
Component 2: C <sub>46</sub> H <sub>30</sub> CrN <sub>10</sub> O <sub>20</sub> S <sub>2</sub> ·3Na	Not Allocated	
<b>Anilines</b>		
Aniline	62-53-3	

<b>GROUP 2</b>		
<b>Restricted substance</b>	<b>CAS No.</b>	<b>Remark</b>
<b>Flame retardants</b>		
2,2-Bis(bromomethyl)-1,3-propanediol (BBMP)	3296-90-0	
Bis(2,3-dibromopropyl)phosphate (BDBPP/BIS)	5412-25-9	
Decabromodiphenyl ether (DecaBDE)	1163-19-5	
Hexabromocyclododecane (HBCDD)	3194-55-6	
Octabromodiphenyl ether (OctaBDE)	32536-52-0	
Pentabromodiphenyl ether (PentaBDE)	32534-81-9	
Polybromobiphenyls (PBB)	59536-65-1	
Tetrabromobisphenol A (TBBP A)	79-94-7	
Tetrabromobisphenol A bis(2,3-dibromopropyl ether) (TBBPA-DBPE)	21850-44-2	
Tri-o-cresyl phosphate	78-30-8	
Triphenyl phosphate (TPhP) <sup>5</sup>	115-86-6	
Tris(1,3-dichloroisopropyl)phosphate (TDCP)	13674-87-8	
Tris(2,3-dibromopropyl)phosphate (TRIS)	126-72-7	
Tris(2-chloroethyl)phosphate (TCEP)	115-96-8	
Tris-(aziridiny)-phosphineoxide (TEPA)	545-55-1	
Tri(1-chloro-2-propyl) phosphate (TCPP)	13674-84-5	
Trixylyl phosphate (TXP)	25155-23-1	
<b>Glycols</b>		
Bis(2-methoxyethyl)-ether	111-96-6	

<sup>5</sup> Triphenyl phosphate (TPhP) is exempted in cosmetic products. The cosmetic products here refer to the content of product, it is not including cosmetic accessory items or packaging of cosmetic product.

<b>GROUP 2</b>		
<b>Restricted substance</b>	<b>CAS No.</b>	<b>Remark</b>
<b>Glycols</b>		
2-Ethoxyethyl acetate	111-15-9	
Ethylene glycol dimethyl ether	110-71-4	
2-Methoxyethanol	109-86-4	
2-Methoxyethylacetate	110-49-6	
2-Methoxypropylacetate	70657-70-4	
Triethylene glycol dimethyl ether	112-49-2	
1,2-diethoxyethane	629-14-1	
2-methoxypropanol	1589-47-5	
methoxyacetic acid	625-45-6	
<b>Heavy metals<sup>6</sup></b>		
Arsenic (As)	7440-38-2	
Cadmium (Cd)	7440-43-9	
Chromium VI (Cr VI)	18540-29-9	
Lead (Pb)	7439-92-1	
Mercury (Hg)	7439-97-6	
Beryllium and Beryllium oxide	7440-41-7, 1304-56-9	
Cobalt and Cobalt compounds	Various	
Nickel and Nickel compounds	Various	
Antimony and Antimony compounds	Various	
<b>Organotin Compounds</b>		
Dibutyltin (DBT)	1002-53-5	

<sup>6</sup> Lead is allowed in a few applications due top regulatory exceptions in REACH Annex XVII, RoHS-directive 2011/65/EU and US regulation 16 CFR 1303



<b>GROUP 2</b>		
<b>Restricted substance</b>	<b>CAS No.</b>	<b>Remark</b>
<b>Organotin Compounds</b>		
Dibutyltin dichloride (DBTC)	683-18-1	
Dibutyltin hydrogen borate (DBB)	75113-37-0	
Diocetyl tin (DOT)	15231-44-4	
Dimethyltin (DMT)	23120-99-2	
Diphenyltin (DPhT)	Various	
Monobutyltin (MBT)	Various	
Monooctyltin (MOT)	Various	
Monomethyltin (MMT)	Various	
Monophenyltin (MPhT)	Various	
Other tri-substituted organotins	Various	
Tetrabutyltin (TebT)	Various	
Tetraethyltin (TeET)	597-64-8	
Tributyltin (TBT)	56573-85-4	
Tributyltin oxide (TBTO)	56-35-9	
Tricyclohexyltin (TCyHT)	6056-50-4	
Trimethyltin (TMT)	1631-73-8	
Triocetyl tin (TOT)	250252-89-2	
Triphenyltin (TPhT)	668-34-8	
Tripropyltin (TPT)	761-44-4	

<b>GROUP 2</b>		
<b>Restricted substance</b>	<b>CAS No.</b>	<b>Remark</b>
<b>Perfluorinated Compounds (PFCs) <sup>7</sup></b>		
Perfluorobutane Sulfonate (PFBS)	29420-49-3	
Perfluorohexane Sulfonate (PFHxS)	3871-99-6	
Perfluoroheptane Sulfonate (PFHpS)	375-92-8	
Perfluorooctane Sulfonate (PFOS)	56773-42-3	
Perfluorodecane Sulfonate (PFDS)	126105-34-8	
Perfluorooctane Sulfonamide (PFOSA) 1H,1H,2H,2H H4PFOS; 6:2	754-91-6	
Perfluorobutane Acid (PFBA)	375-22-4	
Perfluoropentane Acid (PFPA)	2706-90-3	
Perfluorohexane Acid (PFHxA)	307-24-4	
Perfluoroheptane Acid (PFHpA)	375-85-9	
Perfluorooctanoic Acid (PFOA)	335-67-1	
Perfluorononane Acid (PFNA)	375-95-1	
Perfluorodecane Acid (PFDA)	335-76-2	
Perfluoroundecanoic Acid (PFUnA)	4234-23-5	
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	

<sup>7</sup> For cosmetic products, follow the requirements in the RSL for cosmetics. The cosmetic products here refer to the content of product, it is not including cosmetic accessory items or packaging of cosmetic product.

<b>GROUP 2</b>		
<b>Restricted substance</b>	<b>CAS No.</b>	<b>Remark</b>
<b>Perfluorinated Compounds (PFCs)</b>		
2H,2H-perfluorodecane Acid (H2PFDA)	-	
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-Perfluorodecylacrylate (8:2 FTA)	27905-45-9	
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-decanol (8:2 FTOH)	678-39-7	
1H,1H,2H,2H-Perfluoro-1-dodecanol (10:2 FTOH)	865-86-1	
2-(N-methylperfluoro-FASE 1 octanesulfonamido)-ethanol (MeFOSE)	2448-09-7	
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol (EtFOSE)	1691-99-2	
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	
1H,1H,2H,2H-Perfluorooctanesulphonic acid (H4PFOS 6-2)	27619-97-2	
All other Perfluorinated or Polyfluorinated compounds (fully or partially fluorinated compounds)	Various	
<b>Phthalates- including all other esters of ortho-phthalic acid</b>		
Butyl benzyl phthalate (BBP)	85-68-7	
Dibutyl phthalate (DBP)	84-74-2	

<b>GROUP 2</b>		
<b>Restricted substance</b>	<b>CAS No.</b>	<b>Remark</b>
<b>Phthalates- including all other esters of ortho-phthalic acid</b>		
Diethyl phthalate (DEP) <sup>8</sup>	84-66-2	
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	
Diisobutyl phthalate (DIBP)	84-69-5	
Diisodecyl phthalate (DIDP)	26761-40-0	
Diisononyl phthalate (DINP)	28553-12-0	
Di-n-hexyl phthalate (DnHP)	84-75-3	
Di-n-octyl phthalate (DnOP)	117-84-0	
Butyl octyl phthalate (BOP)	84-78-6	
Diundecyl phthalate (DUP)	3648-20-2	
Bis(2-ethoxyethyl) phthalate (BEEP)	605-54-9	
Bis(2-methoxyethyl) phthalate (DMEP)	117-82-8	
n-Pentylisopentylphthalate (NPIPP)	776297-69-9	
Diisopentylphthalate (DIPP)	605-50-5	
Di-n-pentylphthalate (DPP)	131-18-0	
Dihexylphthalate, branched and linear	68515-50-4	
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	
1,2-benzenedicarboxylic acid, di-C7-11-branched and linearalkyl esters (DHNUP)	68515-42-4	
1,2-benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6	
Di-n-propyl phthalate (DPRP)	131-16-8	

<sup>8</sup> Diethyl phthalate (DEP) is exempted in cosmetic products. The cosmetic products here refer to the content of product, it is not including cosmetic accessory items or packaging of cosmetic product.

<b>GROUP 2</b>		
<b>Restricted substance</b>	<b>CAS No.</b>	<b>Remark</b>
<b>Phthalates- including all other esters of ortho-phthalic acid</b>		
Di-cyclohexyl phthalate (DCHP)	84-61-7	
Dimethylphthalate (DMP)	131-11-3	
Di-iso-octyl phthalate (DIOP)	27554-26-3	
<b>Phenols</b>		
o-Phenylphenol (OPP)	90-43-7	
<b>Polychlorinated Compounds</b>		
Polychlorinated Biphenyls (PCB)	1336-36-3	
Polychlorinated Triphenyls (PCT)	61788-33-8	
<b>Polycyclic Aromatic hydrocarbons (PAHs)</b>		
Acenaphthene	83-32-9	
Acenaphthylene	208-96-8	
Anthracene	120-12-7	
Benzo[a]anthracene	56-55-3	
Benzo[a]pyrene (BaP)	50-32-8	
Benzo[b]fluoranthene	205-99-2	
Benzo[e]pyrene	192-97-2	
Benzo[ghi]perylene	191-24-2	
Benzo[j]fluoranthene	205-82-3	
Benzo[k]fluoranthene	207-08-9	
Chrysene	218-01-9	
Coal tar pitch	65996-93-2	
Anthracene oil	90640-80-5	

<b>GROUP 2</b>		
<b>Restricted substance</b>	<b>CAS No.</b>	<b>Remark</b>
<b>Polycyclic Aromatic hydrocarbons (PAHs)</b>		
Other Anthracene oil compounds	90640-81-6, 90640-82-7, 91995-15-2, 91995-17-4	
Dibenz[a,h]anthracene	53-70-3	
Fluoranthene	206-44-0	
Fluorene	86-73-7	
Indeno[1,2,3-cd]pyrene	193-39-5	
Naphthalene	91-20-3	
Phenanthrene	85-01-8	
Pyrene	129-00-0	
<b>Polyvinylchloride (PVC) and similar chlorinated polymers, e.g. Polyvinylidenchloride and Polychloroprene (neoprene)</b>		
Polyvinylchloride (PVC)	9002-86-2	
Polyvinylidenchloride	9002-85-1	
Polychloroprene	9010-98-4	
<b>N-nitroso compounds</b>		
N-Nitrosodi-n-propylamine	621-64-7	
N-Nitrosodimethylamine	62-75-9	
N-Nitrosodiethanolamine	1116-54-7	

<b>GROUP 2</b>		
<b>Restricted substance</b>	<b>CAS No.</b>	<b>Remark</b>
<b>Petroleum distillate<sup>9</sup></b>	64742-04-7, 64742-05-8, 64742-11-6, 64742-65-0, 8030-30-6, 64741-41-9, 64742-49-0, 64742-52-5, 64742-54-7, 64741-88-4, 64741-89-5, 64742-95-6, 8009-03-8	
<b>Biocide</b>		
Metam sodium	137-42-8	
Safrole (5-allyl-1,3-benzodioxole]	94-59-7	
Cycloheximide	66-81-9	
<b>Solvent based Glues</b>		
Organic solvent based systems shall be exchanged to water based systems. <sup>10</sup>		
<b>Solvent based Polyurethane, PU</b>		
Shall be exchanged to water based systems in cases where it is technically possible.		

<sup>9</sup> Petroleum distillate with CAS 64742-49-0, 64742-52-5, 64742-54-7, 64741-88-4, 64741-89-5, 64742-95-6, 8009-03-8 are exempted in cosmetic products. The cosmetic products here refer to the content of product, it is not including cosmetic accessory items or packaging of cosmetic product.

Petroleum distillate should follow Annex VI of the EU CLP Regulation 1272/2008 and REACH Annex XVII and if not classified as CMR accordingly, the ban does not apply.

<sup>10</sup> Supplier must always get an approval from H&M Global Sustainability Department before using any non-water based systems

## **REFERENCE: Study on best available limits in testing industry**

To ensure the best available test method and detection limits are always reflected, H&M continuously review the test methods and limits in laboratories, at least annually.

In the following pages, we have summarized the study results of the best available method and detection limits on the restricted substances in the table.



Chemical Groups		Chemicals		Wastewater	
		Test Method	Detection Limit (ppm)	Test Method	Detection Limit (ppm)
APEOs/ APs		Solvent extraction and analysis by HPLC-MS	Each: 10	With reference to ASTM International Standard ASTM D7065	Each: 0.001
Chlorinated Aromatic Hydrocarbons	Chlorobenzenes	Solvent extraction and analysis by GC-MS	Each: 0.1	With reference to U. S. EPA 8260B and U. S. EPA 8270D	Each: 0.00002
	Chloronaphthalenes	Solvent extraction and analysis by GC-MS	0.5	Under development	Under development
	Chlorortoluenes	Solvent extraction and analysis by GC-MS	Each: 0.1	With reference to U. S. EPA 8260B and U. S. EPA 8270D	Each: 0.00002
	Chloroxylenes	Solvent extraction and analysis by GC-MS	0.5	Under development	Under development
Chlorinated Organic Solvents		Solvent Extraction and analysis by GC-MS	Each: 5	With reference to U. S. EPA 8260B	Each: 0.001
Brominated Organic Solvents		Solvent extraction and analysis by GC-MS	Each: 5	With reference to U. S. EPA 8260C	Each: 0.001
Dimethylformamide (DMF)		Solvent extraction and analysis by GC-MS	5	With reference to U. S. EPA 8260B	0.001
Organic Solvents		Solvent extraction and analysis by GC-MS	Each: 5	With reference to U. S. EPA 8260B	MOCA: 0.0001 Each (Others): 0.001

Chemical Groups	Chemicals		Wastewater	
	Test Method	Detection Limit (ppm)	Test Method	Detection Limit (ppm)
Chloroparaffins (SCCPs)	Solvent extraction and analysis by GC-MS-NCI	30	With reference to International Standard ISO 12010	0.0004
Chlorophenols	Solvent extraction, derivatization and analysis by GC-MS	0.025	With reference to U. S. EPA 8270D	Each: 0.0005
Aromatic Amines in Azo Colorants	With reference to German Standard DIN 38407-16  With reference to European Standard EN 14362-1 incorporating Corrigendum and European Standard EN 14362-3	Each: 10	With reference to ISO 14362-1 and ISO 14362-3 (p-Aminoazobenzene only)	Each: 0.00001
Other dyes/ CI no	With reference to DIN 54231:2005 and analysis by HPLC-DAD / HPLC-MSD	Each: 15	Solvent extraction and analysis by  LC-MS	Each: 0.0001
Disperse (Sensitizing)	With reference to DIN 54231:2005 and analysis by HPLC-DAD / HPLC-MSD	Each: 15	Solvent extraction and analysis by  LC-MS	Each: 0.0001
Aniline	Solvent extraction and analysis by GC-MS	10	With reference to USEPA 8270D, EN 14362-1  Solvent extraction and analysis by GC-MS and HPLC	0.00001

H&M group Chemical Restriction  
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 Valid for all brands in H&M group

Chemical Groups	Chemicals		Wastewater	
	Test Method	Detection Limit (ppm)	Test Method	Detection Limit (ppm)
Flame retardants	Solvent extraction and analysis by GC-MS, LC-MS and GC-NCI	Each: 5	With reference to U. S. EPA 527 and with reference to U. S. EPA 8321B	Each (PBDE,PBB,Tri-o- cresyl-phosphate, TCEP,TPhP & TCP) : 0.00005  Each(Others): 0.0005
Glycols	Solvent extraction and analysis by GC-MS	Each: 10	With reference to USEPA 8270D Solvent extraction and analysis by GC-MS or LC-MS	Each: 0.001
Heavy metals	Acid digestion and analysis by ICP-MS	Mercury: 0.1 Cr(VI): 0.5 Each(Others): 1	With reference to U. S. EPA 3015A and U. S. EPA 6020A  Cr(VI): With reference to U. S. EPA 7196A	Cd: 0.0001 Hg: 0.00005 Each(Others): 0.001
Organotin Compounds	Solvent extraction, derivatization and analysis by GC-MS	Each: 0.025	With reference to European Standard EN ISO 17363	Each: 0.00001

Chemical Groups	Chemicals		Wastewater	
	Test Method	Detection Limit (ppm)	Test Method	Detection Limit (ppm)
Perfluorinated Compounds (PFCs)	Solvent extraction and analysis by GC-MS and LC-MS/MS	Each(PFOS&PFOA) :0.1 Each (4:2 FTOH& 6:2 FTOH& 8:2 FTOH& 10:2 FTOH): 1 Each(Others): 0.5	Solvent extraction and analysis by LC-MS and GC-MS	Each (PFOS, PFBS&PFOA): 0.00001 Each(Others): 0.0005
Phthalates	Solvent extraction and analysis by GC-MS	Each: 50	With reference to U. S. EPA 8270D	Each: 0.001
Phenols (OPP)	Solvent extraction, derivatization and analysis by GC-MS	0.5	With reference to U. S. EPA 8270D	0.0005
Polychlorinated Compounds	Solvent extraction and analysis by GC-MS	Under development	In-house method, solvent extraction and analysis by GC-MS	Each: 0.0002
Polycyclic Aromatic hydrocarbons (PAHs)	With reference to AfPS GS 2014:01 PAK and analysis by GC-MS	Each: 0.1 Other Anthracene oil compounds: 5	Liquid-liquid extraction and analysis by GC-MS	Each: 0.001
N-nitroso compounds	Solvent extraction and analysis by GC-MS	Each: 0.1	Solvent extraction and analysis by GC-MS	Each: 0.001
Petroleum distillate	Solvent extraction and analysis by GC-MS	5	Liquid-liquid extraction and analysis by GC-MS	1
Biocide	Solvent extraction and analysis by GC-MS or LC-MS/MS	Each: 0.5	Liquid-liquid extraction and analysis by GC-MS or LC-MS/MS	Each: 0.001