

# H&M GROUP CHEMICAL RESTRICTIONS2024

## **RESTRICTED SUBSTANCES LIST (RSL)**

#### Furniture

Product Compliance

Valid for all brands in the H&M Group.



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H&M Group Chemical Restrictions consist of several parts regarding different product types; this document concerns Chemical Restrictions for Furniture.

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, document ID 00432*. 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.

Concentration Limit	The substance must not be present in the product at concentrations above this limit.
Not Detected	The substance must not be present in the finished product at concentrations above the analytical reporting limit.
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.
Furniture	All furniture products such as small tables, shelves, cabinets, stools and large mirrors.
Substances defined as hazardous due to intrinsic properties.	Persistent, bioaccumulative and toxic (PBT), very persistent and very bioaccumulative (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.
CFR	Code of Federal Regulations
ppm	Parts per million, which is the same as mg/kg.
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
SVHC	Substances of Very High Concern

<sup>&</sup>lt;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.

#### **Requirements – All Materials**

All Materials					
Requirement	CAS no	Limit/ Requirement	Test method	Reporting limit	
Biocidal compounds	Various	Are not allowed to be used without approval by H&M Group	Input control	N/A	
Flame retardants <sup>2</sup>			•	·	
Tris(2,3-dibromopropyl)phosphate (TRIS)	126-72-7	Not detected	Methanol extraction and	10 ppm	
Bis(2,3-dibromopropyl)phosphate	5412-25-9		analysis with GC- MS and LC-MS		
Trixylyl phosphate (TXP)	25155-23- 1				
Tris-(aziridinyl)-phosphineoxide (TEPA)	545-55-1	Not detected	Potassium Hydroxide digestion followed by GC-MS Headspace analysis of Ethyleneimine	10 ppm	
Tetrabromobisphenol A (TBBP A)	79-94-7	Not detected	Acetonitrile extraction and analysis by LC- DAD-MS and confirmation with GC-MS	10 ppm	
Polybrominated Diphenyl Ethers (PBDE)	Various	Not detected	Methanol extraction and	10 ppm	
Polybrominated Biphenyls (PBB)	Various		analysis by GC- MS and LC-MS		
Tri-o-cresyl phosphate	78-30-8				
Tris(2-chloroethyl)phosphate (TCEP)	115-96-8				
Hexabromocyclododecane (HBCDD)	3194-55-6, 25637-99- 4, 134237- 50-6, 134237- 51-7, 134237- 52-8				
2,2-Bis(bromomethyl)-1,3- propanediol	3296-90-0				
Decabromodiphenyl ethane (DBDPE)	84852-53- 9				
Octabromodiphenyl ether (OctaBDE)	32536-52- 0				
Decabromodiphenyl ether (DecaBDE)	1163-19-5				

<sup>&</sup>lt;sup>2</sup> H&M Global Product Compliance Department must approve the usage of flame retardant on any kind of product. Any other flame retardant must be approved by H&M Global Product Compliance Department before using.

All Materials				
Requirement	CAS no	Limit/ Requirement	Test method	Reporting limit
Pentabromodiphenyl ether (PentaBDE)	32534-81- 9			
Tris(1,3-dichloroisopropyl)phosphate (TDCP)	9 13674-87- 8			
Tris(1-chloro-2-propyl)phosphate (TCPP)	13674-84- 5			
Triphenyl phosphate (TPhP)	115-86-6	-		
Lead (Pb), Total Amount	7439-92-1	90 ppm	Coating: CPSC- CH-E1003-09.1 Metal: CPSC-CH- E1001-08.3 Non-metal: CPSC- CH-E1002-08.3	1 ppm
Nanomaterials	Various	Usage ban <sup>4</sup>	Input control	N/A
"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: (a) one or more external dimensions of the particle are in the size range 1 nm to 100 nm; (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; (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>3</sup>				
Perfluorinated Compounds ( Perfluorobutane Sulfonate (PFBS)	( <b>PFCS</b> ) <sup>3</sup>	Not detected	For FTOHs –	10 µg/m2
	3		Solvent extraction	το μγ/πε
Perfluorohexane Sulfonate (PFHxS)	3871-99-6	and analysis Gas		
Perfluoroheptane Sulfonate (PFHpS)	375-92-8		Chromatograph Mass	
Perfluorooctane Sulfonate (PFOS)	56773-42- 3			

<sup>&</sup>lt;sup>3</sup> European commission recommendation on the definition of nanomaterial ((2022/C 229/01), Official Journal of the European Union, 14.06.2022.

<sup>&</sup>lt;sup>4</sup> The substance(s) must not be used in production and must not be added to the product

<sup>&</sup>lt;sup>5</sup> Impurities of Perfluorinated Compounds (PFCs) in functional finishes are accepted if technically unavoidable in the manufacturing process.

All Materials					
Requirement	CAS no	Limit/ Requirement	Test method	Reporting limit	
Perfluorodecane Sulfonate (PFDS)	126105- 34-8		Spectrometer (GC-MS).		
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	-	For Others – CEN/TS 15968	1 µg/m2	
Perfluorodecane Acid (PFDA)	335-76-2		Solvent extraction and analysis by		
Perfluoroundecanoic Acid (PFUnA)	4234-23-5, 2058-94-8		Liquid Chromatograph		
Perfluorododecanoic Acid (PFDoA)	307-55-1		Tandem Mass		
Perfluorotridecanoic Acid (PFTrA)	72629-94-	Spectrometer (LC-MS-MS)			
Perfluorotetradecanoic Acid (PFTeA)	376-06-7				
Perfluo-3,7-dimethyloctanoic Acid (PF-3,7-DMOA)	172155- 07-6				
7H-Dodecanefluoroheptane Acid (HPFHpA)	-				
2H,2H-perfluorodecane Acid (H2PFDA)	-				
2H,2H,3H,3H-Perfluoroundecanoic	34598-33-				
Acid (H4PFUnA) 1H,1H,2H,2H-Perfluorooctylacrylate	9 17527-29-				
(6:2 FTA) 1H,1H,2H,2H-Perfluorodecylacrylate	6 27905-45-				
(8:2 FTA) 1H,1H,2H,2H-	9				
Perfluorododecylacrylate (10:2 FTA)	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)	24448-09- 7				
2-(N-ethylperfluoro-1- octanesulfonamido)-ethanol (EtFOSE)	1691-99-2				
N-methylperfluoro-1- octanesulfonamide (MeFOSA)	31506-32- 8				

All Materials					
Requirement	CAS no	Limit/ Requirement	Test method	Reporting limit	
N-ethylperfluoro-1- octanesulfonamide (EtFOSA)	4151-50-2				
All other Perfluorinated or Polyfluorinated compounds (fully or partially fluorinated compounds)	Various				
Ammoniumpentadecafluor ootanoate (APFO)	3825-26-1	1000 ppm	Solvent extraction and analysis by LC-MS-MS	100 ppm	
Polymers		•	L	l .	
Polycarbonate (PC)	80-05-7	Usage ban will come into force by OPD Feb 1 <sup>st</sup> 2030. Applies to both virgin and recycled material.	Input control	N/A	
Polystyrene (PS) Expanded Polystyrene (EPS) High Impact Polystyrene (HIPS)	9003-53-6, 9003-55-8, etc.	Usage ban will come into force by OPD Feb 1 <sup>st</sup> 2030. Applies to both virgin and recycled material.	Input control	N/A	
Styrene-based Thermoplastic Rubber (TPR) Styrene-based Thermoplastic Elastomer (TPE)	Various	Usage ban will come into force by OPD Feb 1 <sup>st</sup> 2030. Applies to both virgin and recycled material.	Input control	N/A	
Acrylonitrile Styrene/Styrene Acrylonitrile (AS/SAN)	Various	Usage ban will come into force by OPD Feb 1 <sup>st</sup> 2030. Applies to both virgin and recycled material.	Input control	N/A	
<b>Polyvinylchloride (PVC)</b> and similar chlorinated polymers, e.g.		1			
Polyvinylchloride (PVC)	9002-86-2	Not detected	Beilstein's test and infrared	Qualitative	
Polyvinylidenchloride	9002-85-1		spectroscopy (IR) with or without		
Polychloroprene	9010-98-4		chemical separation		
Phthalates					
Butyl benzyl phthalate (BBP)	85-68-7	500 ppm	CPSC-CH-C1001-	50 ppm	
Dibutyl phthalate (DBP)	84-74-2	500 ppm	09.3 Analysis by GC-MS		
Diethyl phthalate (DEP)	84-66-2	500 ppm			
Di-(2-ethylhexyl) phthalate (DEHP)	1cv-81-7	500 ppm	1		
Diisobutyl phthalate (DIBP)	84-69-5	500 ppm	1		
Diisodecyl phthalate (DIDP)	26761-40- 0	500 ppm			
Diisononyl phthalate (DINP)	28553-12- 0	500 ppm			

All Materials					
Requirement	CAS no	Limit/ Requirement	Test method	Reporting limit	
Di-n-hexyl phthalate (DnHP)	84-75-3	500 ppm			
Di-n-octyl phthalate (DnOP)	117-84-0	500 ppm			
All other phthalates (all other esters of o-phthalic acid) including phthalates included in the Candidate List of REACH regulation (EC) No 1907/2006 as SVHC	Various	500 ppm			
Sum of phthalates		≤ 1000 ppm			
Chloroparaffins					
Short chained chloroparaffins (SCCPs) C10-C13	85535-84- 8	1000 ppm (in each homogenous part of the product)	ISO 18219 n-hexane extraction, ultrasound (60°C, 60 min) and analysis by GC- MS using NCI (Negative Chemical Ionization)	30 ppm	
Organotin Compounds					
Dibutyltin (DBT)	1002-53-5	1 ppm	ISO/TS 16179	0.05 ppm	
Dioctyltin (DOT)	94410-05- 6	1 ppm		For High matrix	
Tributyltin (TBT)	56573-85- 4			samples: 0.5 ppm	
Tricyclohexyltin (TCyHT)	6056-50-4	Sum = Not			
Trioctyltin (TOT)	250252- 89-2	detected			
Triphenyltin (TPhT)	668-34-8				
Other not listed trisubstituted organotins	Various	Sum<1 ppm			
<b>SVHC</b> Check the ECHA website for the updated Candidate List of Substances of Very High Concern for Authorisation <sup>6</sup>		1000 ppm in each homogenous part of the product, except if lower limit applies as per other parts of this document.	Combined Screening using ICP-MS, GC-MS and LC-TOF		

<sup>&</sup>lt;sup>6</sup> <u>http://echa.europa.eu/chem\_data/authorisation\_process/candidate\_list\_table\_en.asp</u>

All Materials						
Requirement	CAS no	Limit/ Requirement	Test method	Reporting limit		
Substances defined as hazardous due to intrinsic properties		1000 ppm, except if lower limit applies as per other parts of this				
Criteria for hazardous as defined in REACH Article 577		document.				

### Surface coating, Surface treatment & Adhesives

Surface coating, Surface treatment & Adhesives						
Requirement	CAS no	Limit/Requirement	Test method	Reporting limit		
Chromium VI	7440-47-3	Not detected	EN ISO 17075	3 ppm		
Formaldehyde	50-00-0	Usage ban	ISO 14184-1	16 ppm		
Shall not be added to the surface coating of the product or be formed during curing (for textiles only)						
Isocyanates	•					
Diphenylmethane diisocyanate (MDI)	101-68-8	Not detected, sum of listed isocyanates	ISO 10283 (modified)	3 ppm		
Hexamethylene diisocyanate (HMDI)	822-06-0	-				
Isophorone diisocyanate (IPDI)	4098-71-9					
Tetramethylxylene diisocyanate (TMXDI)	2778-42-9					
2,4-Toluene diisocyanate (2,4 TDI)	584-84-9					
2,6-Toluene diisocyanate (2,6 TDI)	91-08-7					
Metals, Total Amou	int					
Cadmium (Cd)	7440-43-9	100 ppm	DIN EN 16711-	1 ppm		
Mercury (Hg)	7439-97-6	0.5 ppm	1/DIN EN 14602	0.1 ppm		
Polyaromatic Hydro	ocarbons (P/	AH)		-		
Benz[a]anthracene	56-55-3	0.5 ppm	AfPS GS	0.1 mg/kg		
Chrysene	218-01-9	0.5 ppm	2014:01			

<sup>7</sup> REACH Regulation (EC) No 1907/2006 <u>http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:02006R1907-20150601&from=EN</u>

Surface coating, Surface treatment & Adhesives						
Requirement	CAS no	Limit/Requirement	Test method	Reporting limit		
Benzo[b]fluoranthene	205-99-2	0.5 ppm	Extraction with			
Benzo[j]fluoranthene	205-82-3	0.5 ppm	toluene followed by GC-			
Benzo[k]fluoranthene	207-08-9	0.5 ppm	MS analysis			
Benzo[a]pyrene	50-32-8	0.5 ppm				
Benzo[e]pyrene	192-97-2	0.5 ppm				
Dibenzo[a,h]anthracene	53-70-3	0.5 ppm				
Benzo(g,h,i)perylene	191-24-2	0.5 ppm				
Indeno(1,2,3-c,d)pyrene	193-39-5	0.5 ppm				
Acenaphthene	83-32-9	The sum < 10 ppm				
Acenaphthylene	208-96-8					
Anthracene	120-12-7					
Fluoranthene	206-44-0					
Fluorene	86-73-7					
Phenanthrene	85-01-8					
Pyrene	129-00-0					
Naphthalene	91-20-3	<2 ppm				
Sum of 18 PAH		<10 ppm				
Triglycidyl isocyanurate (TGIC)	2451-62-9	Powder coating shall not contain hardener.	Self-declaration			
Dimethylfumarate	624-49-7	0.1 ppm For leather only	ISO 16186	0.1 ppm		
VOCs in surface treatment	Various	Applied amounts of actual VOC components should not exceed: 35 g/m <sup>2</sup> for domestic furniture	Input control			

#### Metal

Metal						
Requirement	CAS no	Limit/Requirement	Test method	Reporting limit		
Total metal	•		l			
Cadmium (Cd)	7440-43-9	100 ppm	DIN EN 16711-1/DIN EN	10 ppm		
			14602			
Mercury (Hg)	7439-97-6	0.5 ppm		0.1 ppm		
Lead	7439-92-1	200 ppm		10 ppm		
Nickel (Ni), Extractable Amount						

Metal				
Requirement	CAS no	Limit/Requirement	Test method	Reporting limit
In metal products or parts of products in direct and prolonged skin contact	7440-02-0	Maximum release: 0.5 µg/cm <sup>2</sup> /week	Nickel release by EN 1811+A1 (uncoated surfaces) Nickel release by EN 12472 (coated surfaces)	0.05 μg/cm²/week

## Plastic & Rubber including Foam and Silicone

Plastic & Rubber including Foam and Silicone					
Restricted substance	CAS no	Limit/Require ment	Test method	Reporting limit	
<b>Bisphenol A</b> - Extractable Amount	80-05-7	3 ppm	Extractable Amount: Extraction with artificial sweat solution (ISO 105 E04) and BPA Determination by LC-MS	0.1 ppm	
Chlorofluorocarb ons (CFCs), Hydrochlorofluo rocarbons (HCFCs)	several	Usage ban	Self-declaration	-	
Chlorophenols					
Pentachlorophenol (PCP) and its salts and esters	Various, e.g. 87- 86-5	0.5 ppm	BVL B 82.02-08 (modified) Potassium	0.05 ppm	
Tetrachlorophenol (TeCP) and its salts and esters	58-90-2	0.5 ppm	Hydroxide extraction direct LC-MS analysis or derivatisation followed by GC-MS analysis	0.05 ppm	
Dimethylformam ide (DMFa)	68-12-2	For products and in production process: General usage ban	ISO/TS16189 Ultrasound extraction using ethylacetate followed by GC-MS analysis	5 ppm	
Isocyanates		-		•	
Diphenylmethane diisocyanate (MDI)	101-68-8	Sum= Not detected	ISO 10283 (modified)	3 ppm	
Hexamethylene diisocyanate (HMDI)	822-06-0				
Isophorone diisocyanate (IPDI)	4098-71-9				

Plastic & Rubber including Foam and Silicone				
Restricted substance	CAS no	Limit/Require ment	Test method	Reporting limit
Tetramethylxylene	2778-42-9			
diisocyanate (TMXDI) 2,4-Toluene	584-84-9			
diisocyanate (2,4 TDI)	304-04-9			
2,6-Toluene	91-08-7			
diisocyanate (2,6 TDI)	_			
Metals, Total Amo	-		•••	
Cadmium (Cd)	7440-43-9	100 ppm	DIN EN 14602 and DIN EN 16711-1	1 ppm
Mercury (Hg)	7439-97-6	0.5 ppm		0.1 ppm
Polyaromatic Hyd	rocarbons (P			
Benzo[a]anthracene	56-55-3	0.5 ppm	AfPS GS 2014:01	0.1 mg/kg
Benzo[a]pyrene	50-32-8	0.5 ppm	Extraction with	0.1 mg/kg
Benzo[b]fluoranthene	205-99-2	0.5 ppm	toluene followed by	
Benzo[e]pyrene	192-97-2	0.5 ppm	GC-MS analysis	
Benzo(g,h,i)perylene	192-97-2	0.5 ppm		
Benzo[j]fluoranthene	205-82-3	0.5 ppm		
Benzo[k]fluoranthene	203-82-3	0.5 ppm		
	218-01-9	0.5 ppm		
Chrysene				
Dibenzo[a,h]anthracen e	53-70-3	0.5 ppm		
Indeno(1,2,3- c,d)pyrene	193-39-5	0.5 ppm		
Acenaphthene	83-32-9			
Acenaphthylene	208-96-8			
Anthracene	120-12-7			
Fluoranthene	206-44-0	The sum < 10 ppm		
Fluorene	86-73-7			
Phenanthrene	85-01-8			
Pyrene	129-00-0			
Naphthalene	91-20-3	<2 ppm		
Sum of 18 PAH		<10 ppm		
Polychlorinated Biphenyls (PCB)	1336-36-3		Solvent extraction and analysis by GC-MS	0.1 ppm
Polychlorinated Triphenyls (PCT)	61788-33-8	— The sum < 0.5 ppm		0.1 ppm

Wood & Composite Wood				
Restricted substance	CAS no	Limit/Requirement	Test method	Reporting limit
Formaldehyde				
In all wood based products Composite wood	50-00-0	150 ppm ≤0.124 mg/m <sup>3</sup> air Composite wood products <sup>10</sup> must comply with TSCA Title VI	EN 717-3 EN 717-1 <sup>9</sup> ASTM E1333 ASTM D6007	20 ppm 0.03 mg/m <sup>3</sup> -
Lindane	58-89-9	Not detected	U.S. EPA Method 8081a, 8151a, 8141a and 8270c or Analysis of organochloro pesticides by GC- MS or LC-MS	0.5 mg/kg
Pentachlorophenol and its salt and esters (PCP)	Various, e.g. 87-86-5	0.5 ppm	CEN/TR 14823	0.5 ppm
Arsenic (As) compounds	Various, e.g. 7440-38-2	Not detected	US EPA 3052	10 ppm
Wood preservatives	-	Cannot be used without approval by H&M group <sup>11</sup>	Self declaration	-

### Wood, Composite Wood<sup>8</sup>, Cork, Rattan, Bamboo

<sup>&</sup>lt;sup>8</sup> Includes furniture made from hardwood, plywood, particleboard, medium density fiberboard, thin medium density fiberboard (thickness ≤ 8mm)

<sup>&</sup>lt;sup>9</sup> The emissions of free formaldehyde from wood-based panels shall not exceed the E1 emissions limit as described in BS EN 13986.

<sup>&</sup>lt;sup>10</sup> Hardwood, plywood, particleboard, medium density fiberboard, thin medium density fiberboard (thickness ≤ 8mm), and also furniture and other finished products made with composite wood products

<sup>&</sup>lt;sup>11</sup> Please contact your local production office.

## Terracotta, Enamel, Concrete, Soapstone<sup>12</sup>, Marble<sup>12</sup>, Ceramic, Porcelain, Glass

Terracotta, Enamel, Concrete, Soapstone, Marble, Ceramic, Porcelain Glass & Crystal				
Restricted substance	CAS no	Limit/Requirement	Test method	Reporting limit
<b>Bisphenol A</b> - Extractable Amount	80-05-7	3 ppm	Extraction with artificial sweat solution (ISO 105 E04), analysis by LC-MS	0.1 ppm
Cadmium (Cd)	7440-43-9	40 ppm	Total digestion, analysis with ICP-MS.	1 ppm
Mercury (Hg)	7439-97-6	2,5 ppm	Total digestion, analysis with ICP-MS. Using HF if silica based pigment is encountered.	1 ppm
Arsenic (As)	7440-38-2	100 ppm	EN 16711-1, analysis by ICP-MS	

#### & Crystal

 $^{\rm 12}$  It is important to ascertain the mining region as it can contain asbestos depending mining location.