

## Towards zero discharge of hazardous chemicals

### Summary report 2011-2021

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## Background

H&M Group together with Adidas Group, C&A, Li Ning, NIKE, Inc. and Puma formed the [Zero Discharge of Hazardous Chemicals \(ZDHC\) Program](#) in 2011 with a mission of catalysing the awareness and driving more responsible practices within industry. Since then, more brands, different value-chain affiliates and associates have also joined this program.

As part of our shared commitment to eliminating hazardous chemicals the programme developed a joint roadmap in 2011.

## Our approach

Since the early 1990s, we have applied the precautionary principle in our chemical management to ensure safe products, a safe working environment for workers in our supply chain and to limit environmental impacts.

This report summarises our actions towards Zero Discharge from 2011 to 2017 and is divided into four parts covering: “Disclosure & Transparency”, “Phase Out/Manufacturing restricted list (MRSL)”, “Systemic Change” and “100% Circular”.

## Disclosure and transparency

Below is a list of the main actions completed by H&M Group and our suppliers related to disclosure & transparency:

### 2012

Together with C&A and G-Star, we conducted a pilot benchmark study to verify the use and discharge of the 11 priority chemicals. The pilot study verified that five out of the 11 chemicals were still present in wastewater after discharge.

### 2013

Scaled up the benchmark study to include strategic suppliers with wet processes. Chemical audits and verification tests were completed at 37 factories across Bangladesh, Cambodia, China, Indonesia and India. The data was disclosed on IPE platform. We also published our [supplier factory list](#).

### 2014

Continued to increase the number of wet process units in discharge data disclosure on IPE platform. In total, 50 factories across Bangladesh, Cambodia, China, Indonesia and India were involved.

## 2015

- A total of 59 factories with wet processes disclosed data through IPE.
- Through extensive research we found that the Pollution Release Transfer Register (PRTR) is an effective method to prevent intentional use of hazardous chemicals in the manufacturing process. Inspired by the PRTR methodology, we developed mathematical modelling together with Bureau Veritas, one of the global leaders in Testing, Inspection and Certification (TIC), to determine the chemical discharge performance in factories in a more comprehensive way.
- We launched the first pilot project for using this method in eight factories located in China and Bangladesh. All factories were trained and required to submit all the relevant information for evaluation. This modelling method allows acquisition of comprehensive discharge information of factories.

## 2016

- 2016 ZDHC wastewater guideline released and H&M Group was one of the supporting brands to streamline the implementation in a ZDHC pilot program.
- 67 factories with wet processes disclosed their discharge data through IPE.
- H&M Group worked together with Bureau Veritas to develop Environmental Emission Evaluator (Ecube) to measure chemical management performance in a factory based on the PRTR work in 2015. A pilot project was performed at 29 suppliers.

## 2017

- 140 facilities with wet processes disclosed their discharge data through IPE.
- 49 business partners used Ecube for chemical usage and discharge performance.

## 2018

- 204 business partners used Ecube. We also allowed the use of CleanChain for units shared with fellow ZDHC brands.
- By the end of 2018, 227 suppliers participated in wastewater testing according to the ZDHC wastewater guideline and the results were published on ZDHC Gateway and IPE platform.

## 2019-2020

- 611 business partners used input chemical tools, with a majority in BVE3.
- 80% ZDHC compliance of input chemicals.
- The key findings and conclusions from discharge analysis were:
  - We enrolled and tested 100% of our ZDHC scope factories (T1 with wet processing units and strategic T2 in textile and leather supply chain). This means 530 units in our production countries.
  - We tested for 183 chemical analytes from 14 MRSL Chemical Groups, according to ZDHC Wastewater Guidelines 2016.
  - All these results are published on ZDHC Gateway and IPE Platform.

For more information, please see <https://hmgroup.com/sustainability/circularity-and-climate/chemicals/>

## 2021

- We achieved 95 % ZDHC MRSL compliance and will continue to work towards our goal of 100%. Full ZDHC MRSL compliance is proving challenging due to the variety and complexity of our supply chain. Our wide and dynamic product assortment means that our suppliers must use many variations of recipes in production. Achieving 100% is a complex and concerted effort between us, our suppliers, their chemical suppliers and the certification bodies that evaluate chemical compliance.
- 81% ZDHC Gateway utilisation. We believe that the best way to reach 100% ZDHC MRSL compliance is by using the chemicals that are listed on ZDHC's Gateway database. These chemicals are tested and reviewed against ZDHC's standards. This achievement is based on the ZDHC Performance InCheck of our collective supply chain.
- We reached 99.9 % ZDHC MRSL compliance for wastewater across our supply chain.

- 98% of our tier one and two suppliers that have on-site effluent treatment plant (ETP) achieved or exceeded ZDHC foundational level discharge limits for BOD, COD and TSS— indicating functionality of their ETP system.
- We have root cause analysis routines in place to handle each failure and to help us and our suppliers reach 100%. By sharing our results, we encourage transparency. All wastewater results are also published [on ZDHC's platform, DetoxLive](#).
- For more specific information on our wastewater testing and the results, please also see our latest [discharge analysis](#).

## Phase out/Manufacturing Restricted Substance List (MRSL)

In 1995, we created our first list of restricted chemicals.

### 2011

- H&M Group made a detailed APEO investigation to assess the presence and source of APEO in the supply chain.

### 2012

- An alternative list of water repellent finishes free from PFC was published in 2012 for suppliers to use.

### 2013

- We banned the usage of perfluorinated compounds (PFC) for all orders placed from 1st January 2013.
- We included the idea to base on stepwise approach in eliminating the hazardous chemicals from production line level and whole factory level. Clause 1: Substances are not allowed to be found in H&M Group production sites and used in H&M Group production and Clause 2: Substances are not allowed to be used in H&M Group production.

### 2014-2015

- Expanded the MRSL scope to include chemicals beyond the 11 Priority Chemical groups.

### 2016

- Worked actively with ZDHC Group to align on a single industry standard and achieve the H&M Group MRSL goal to reach “clean factories”.
- PFC- phase out published on Subsport.
- H&M Group Positive List expanded to 15 chemical suppliers who commit that they fulfill the requirements of ZDHC and H&M Group's Chemical Restrictions.
- Investigated Green Screen, a scientific methodology to evaluate the hazard assessment of better alternatives and a user-friendly tool for supply chain to access. Piloted a Green Screen Hazard Assessment of available alternatives at a supplier for some of the leading brands within ZDHC.
- We conducted nearly 44,500 chemical tests at third party labs to ensure compliance with our Restricted Substances List (RSL). Further tests were conducted on our supplier's initiative at third party labs.

### 2017

- Adopted screened chemistry as a method for hazard assessment
- H&M Group conducted 48,700 chemical tests at third party labs to ensure compliance with our RSL. Further tests were conducted on our supplier's initiative at third party labs.

## 2018

- H&M Group's Positive List is re-launched, containing all chemical products which conform to the latest H&M Group Chemical Restrictions (MRSL and RSL) and ZDHC MRSL. Screened chemistry was used in building the Positive List.
- Screened chemistry was limited to non-colorants products and we supported the ongoing method development for colorants products by Scivera and Toxservices.
- H&M Group conducted 48 700 chemical tests at third party labs to ensure compliance with our RSL. Further tests were conducted on our supplier's initiative at third party labs.

## 2019-2020

- We aligned our chemical restrictions with the industry:
  - The Manufacturing Restricted Substances List (MRSL) with the Zero Discharge of Hazardous Chemicals Manufacturing Restricted Substance List 2.0 (ZDHC MRSL 2.0)
  - The Restricted Substances List (RSL) for Textile products, Accessories, Footwear, Bags and Belts with Apparel and Footwear RSL Management Group's Restricted Substances List (AFIRM RSL).

Both are linked to, and form the basis of, H&M Group's Chemical Restrictions for Textile products, Accessories, Footwear, Bags and Belts. In addition to the restrictions in MRSL and RSL, H&M Group strategically phased out, and/or will phase out, some specific chemical substances and/or material groups relevant for these supply chains.

- H&M Group's Positive List merged with Gateway. When choosing chemicals, we encourage suppliers to use the [ZDHC Gateway Chemical Module](#). This is a web-based industry-wide platform providing information on MRSL compliant chemicals.
- H&M Group has a long-term strategy that by 2030 all Polyurethane (PU) used should be defined as sustainable, for example bio based. However, already at the end of 2020 we have moved away from conventional PU containing the hazardous solvent DMFa and instead use DMFa free options that are better for human health and the environment. We call it "Better PU".
- H&M Group was one of the first companies to sign ChemSec's corporate PFAS commitment in 2020, agreeing to:
  - call on policy makers to regulate PFAS efficiently, without the possibility for manufacturers to simply swap one PFAS chemical for an unregulated "cousin";
  - call on the chemical industry to put money into innovation and develop safer alternatives to PFAS for all kinds of products;
  - recognise that PFAS are a major health and environmental problem;
  - be serious about the commitment to phase out PFAS in products and supply chains;
  - call on other brands to join this commitment and work towards a phase-out of PFAS in all kinds of consumer products.
- Product testing by H&M Group showed that 99% complied to H&M Group's Chemical Restriction Product Compliance. Products that do not comply with the Chemical Restrictions are not sold.

## 2021

- We follow strict industry standards for our [H&M Group Chemical Restrictions](#), which is based on the [AFIRM RSL](#) and [ZDHC MRSL 2:0](#).
- In addition to these industry restrictions, H&M Group has strategically phased out, and/or will phase out, some specific chemical substances or materials such as:
  - DMF solvent (by 2021 we achieved 100% phase out), commonly used in synthetic leather production
  - Substances on the REACH Candidate List are always restricted
  - Complete ban for biocide treated articles
  - Complete ban for flame retardants
  - Complete PFC /PFAS ban
  - Potassium Permanganate (PP) used to distress denim will be banned from January 2023. During 2021 we already reached 79 % free of PP. We also advocated for PP to be included in ZDHC MRSL 3:0.

# Systemic change to create awareness and drive more responsible industry practice

## 2011

- H&M Group together with Adidas Group, C&A, Li Ning, NIKE, Inc. and Puma formed the [Zero Discharge of Hazardous Chemicals \(ZDHC\) Program](#) with a mission of catalysing awareness and driving more responsible practices within industry.

## 2012

- H&M Group together with Adidas Group, C&A, G-Star, Li Ning, NIKE, Inc. and Puma released their first update on the progress in implementing the joint roadmap towards zero discharge of hazardous chemicals (ZDHC) in the supply chain by 2020.

## 2013

- H&M Group joined 17 other brands in organising two CNTAC ZDHC conferences to facilitate industry dialogue, promote industry collaboration, gain support from industry associations and engage with textile supply chains in China.
- The ZDHC Group continued to strengthen engagement and discussion around disclosure with IPE through direct, face-to-face meetings and discussions at key events.
- Sustainability Apparel Coalition (SAC) and the ZDHC group further aligned a chemical management module and ZDHC audit protocol.

## 2014

- H&M Group and the ZDHC brands strengthened engagement with the Institute of Public and Environmental Affairs (IPE) to discuss pollution disclosure
- ZDHC MRSL was released
- ZDHC created standard testing (collection, sampling, analysis) and reporting methods to provide consistent direction to the supply chain, where tremendous crossover between brands exists.
- H&M Group organised a stakeholder engagement event in Bangladesh to drive green chemicals import.
- H&M Group advocated for the EU commission to strengthen regulatory requirements for hormone disrupting chemicals
- H&M Group launched the BMI (Better Mill Initiative) project in China

## 2015

- Partnered with SGS (one of the world's leading inspection, verification, testing and certification company) to develop Hazardous Substance Control (HSC) training. This training is designed for factory professionals to secure the foundational knowledge and know-how on chemical management.
- The ZDHC MRSL was reviewed, and the latest version included leather products.
- H&M Group continued to assist the Swedish Government to push for tougher EU regulations on chemicals in textiles.

## 2016

- H&M Group joined the CNTAC ZDHC conferences in China, to strengthen our synergy with our supply chain in China.
- To drive common practice within industry, H&M Group worked closely with developing industry standards, systems and tools (e.g. ZDHC Gateway, wastewater guideline and alignment of HIGG index tool with ZDHC audit protocol).
- H&M Group became part of the ChemSec<sup>1</sup> business group - a collaboration between companies to inspire progress on the reduction of toxic chemical use.
- H&M Group actively engaged in the EU public consultation on the restriction of certain hazardous substances in textiles and clothing and endorsed the restriction of the use of CMR (carcinogenic, mutagenic, or toxic for reproduction) substances in consumer products.

- Developed Hazardous Substance Control (HSC) training with SGS. 124 factory professionals participated in HSC training on wet processing module. We published the Best Chemical Management Practice (BCMP) guideline in our supplier portal.

## 2017 - May 2018

- H&M Group hosted an event together with Levi's and C&A and ZDHC in Hong Kong. Chemical companies were invited to take part in the brands' long-term chemical vision as well as to discuss benefits and challenges of screened chemistry approach. H&M Group actively engaged in the EU public consultation in relation to the REACH REFIT Evaluation. The importance of addressing groups of substances for the identification of SVHCs to the candidate list was highlighted.
- We continued to secure our suppliers' capability on chemical management by extending HSC training with SGS to cover all suppliers with significant chemical use.
- We rolled out the Best Chemical Management Practice (BCMP) guideline to all suppliers to provide guidance on developing and implementing correct management practice in their units and minimizing the use of hazardous chemicals.

## 2018- May 2019

- In the beginning of 2019, ZDHC Safer Chemistry Task Team was established. The brands in the task team Safer / Screened Chemistry also agreed on a seven-month grace period with immediate effect, to align methodology
- H&M Group and other brands initiated a dialogue with service providers (SciVera and ToxServices and NSF) and the chemical industry to develop a screening method for colorants. Continued work on a project with Nimkartek about including commodities in screened chemistry.
- We invested in train-the-trainer program based on Best Chemical Management Practice, (BCMP), to implement clean production. We also cooperated with ZDHC task team to create a common chemical management system. In February 2019, we collaborated with Sustainable Textile Solutions for advanced capacity building with our chemical team in production sustainability to secure implementation across our regions.

## 2019-2020

- As signatory members of ZDHC, we were active in all workstreams - input, process and output. We believe developing shared industry tools is key to success. We contributed to the ZDHC Safer Chemistry Task Team to share our perspective as a fashion brand. A section for dyes / pigments was included in version 3 of screened chemistry and has been submitted to ZDHC.
- We included goals for 100% toxic free fashion in our chemical management roadmap.

## 2021

- We have adopted screened chemistry methodology as a way to assure safer alternatives in substitutions for textile and leather.
- In line with our approach, we have engaged with peers and experts to pilot version three of the screened chemistry methodology, which includes prints and dyes.
- We also mapped prevalence of screened chemistry certified chemicals in our denim supply chain and will use the learnings to scale coverage with these suppliers.

# Towards becoming 100% circular

## 2016

- H&M Group set out the vision to become 100% circular and promoted a circular approach to how products are made and used. We set a long-term goal to only use recycled or other more sustainably sourced materials. We also implemented a voluntary

Extended Producer Responsibility (EPR) system that includes, for example, take-back and consumer textile waste collection systems.

- H&M Group published its approach to hazardous chemicals in recycled materials.
- H&M Group lowered our limits in final products for APEO and phthalates as a step towards zero discharge and 100% circularity.

## 2017 – May 2018

- Set goal to use 100% recycled or other sustainably sourced materials by 2030.
- In 2017, 35% of the material we used was either recycled or sustainably sourced.
- Set goal to collect 25 000 tons annually through our global garment collecting initiative by 2030. In 2017 17 771 tons was collected.
- Launched Take Care pilot to inspire, educate and enable customers to take better care of their products through guidance, inspiration, services and products.
- In 2017/2018, the H&M Group launched several collections and products made of recycled or sustainably sourced materials. As well as “REMAKE” collections that prolong the lifespan of used garments and home textiles.
- Accelerated innovation towards circular, recycled and sustainably sourced materials, processes and business models. During 2017/2018, the H&M Group invested in innovation companies Re:newcell and Tree to Textile. Through the H&M Foundation, the annual Global Change Award supported five early-stage innovations on circular materials, processes and business models. The H&M Group also engaged in research projects such as Demeto and Effective.

## 2018- May 2019

- Rolled out Take Care to several markets.
- H&M Group launched several collections and products made in upcycled, recycled or sustainably sourced materials.
- H&M Group were involved in research projects such as DEMETO and H&M Foundation’s Hong Kong Research Institute of Textiles and Apparel (HKRITA).
- H&M Group’s the Laboratory joined IDEO’s Circular Economy CoLab, a collaborative innovation lab exploring circular business models.
- H&M Group started to explore the field of re-commerce. &OtherStories commenced a pilot collaboration with Sellpy, a Swedish web-based retailer of pre-used items.
- Through the H&M Foundation, the annual Global Change Award supported early-stage innovations around circular materials, processes and business models.
- H&M Group invested in Colorifix and we participated in the EU project EFFECTIVE for developing bio-based nylon. H&M Group also invested in Ambercycle and Infinited Fiber Company. H&M Group collaborated with the Ellen MacArthur Foundation to develop and launch a circular packaging strategy.

## 2020

- We developed new ways to repair, repurpose and recycle goods wherever possible and encouraged our customers to join us on this journey. New business models and recycling technology will help make this happen. For more information see our [sustainability report](#).
  - H&M offered repair services in selected stores and online markets as part of its Take Care initiative, making it easier for customers to maintain their much-loved items. Invested in companies developing ground-breaking technologies, i.e. [Infinited Fiber Company](#) makes cotton-like fibre from waste textiles.
  - [Re:newcell](#) turns used cotton and viscose into a pulp that can be turned into new fibres for yarn and fabrics. H&M’s Conscious Exclusive collection, launched in March 2020, included a dress made from Re:newcell fabric.
  - Most brands offered garment collection points and in 2019, we collected 29,005 tonnes of garments for reuse and recycling — equivalent to about 145 million T-shirts. Over half the items collected were reused as second hand, and the rest were repurposed or recycled into new textile fibres or insulation materials.

## 2021 - Circular Products

- We [launched the first version of the Circulator](#), our circular design guide and tool.



- First collections launched using the Circulator – [both H&M brand](#) and Monki.
- H&M brand, Weekday and Monki confirmed participation of [Jeans Redesign 2](#)

## 2021 - Circular Supply Chain

- H&M Group and IKEA study, as detailed above
- Joined [Sorting for Circularity project](#) with Fashion for Good
- [Circular Fashion Partnership](#) with GFA and Reverse Resources

## 2021 - Circular Customer Journeys

Access: Offering customers different ways to enjoy and experience fashion, while keeping products in circulation for as long as possible.

We expanded ways for customers to purchase pre-loved products:

- H&M customers in Sweden and Germany can now shop a curated assortment of second-hand garments from Sellpy on the H&M website.
- Customers in three markets can now buy and sell pre-owned clothes through our collaboration with business technology provider Reflaunt. H&M launched H&M Rewear in Canada, while COS offers COS Resell in Germany and the United Kingdom.
- Customers in 24 markets can now shop second-hand garments through Sellpy, and customers in seven markets can sell at Sellpy. H&M Group is a majority shareholder in Sellpy.
- Weekday Curated 2<sup>nd</sup> Hand gives customers the chance to buy and sell pre-owned clothes in-store. It is available in three cities in Sweden, Amsterdam in The Netherlands, Antwerp and Gent in Belgium plus London and Sheffield in the UK.
- Monki's resale service, [Preloved](#), offers customers in Stockholm, Sweden the chance to buy and sell second hand clothing in store.

We expanded options to rent our products:

- Selected H&M stores in London, Amsterdam, Berlin and Stockholm offer clothing rental services for specific collections.
- H&M HOME started offering rental for occasions and celebrations. Rent a Christmas offered customers the chance to loan festive decorations in five markets.
- Fashion lovers in the UK can rent selected &Other Stories garments and accessories through [Hurr Collective](#) online and in Selfridges, London.

Use & care: Encouraging customers to love their clothes for longer and extend the life of their fashion favourites through care and repair.

- H&M's Take Care initiative offers customers in 46 markets ways to care, repair and customise their clothing. The Take Care product range, which helps customers extend the life of their clothing, is available in 17 markets. Plus, the brand offers repair services through repair studios in six stores.

Collect: We offer our customers instore collection for post-consumer garments across all our brands. Working with our partners, we sort these garments for rewear, reuse and recycling.

- [COS launched Full Circle, a garment collecting initiative](#) in Austria, Poland, Spain, Italy, France, Sweden, Denmark and The Netherlands that prioritises fixing and repurposing clothes before recycling.
- We showcase new recycling technologies. For example, H&M ran events for customers in Sweden featuring its in-store Looop recycling machine.
- We offer our customers in-store collection for post-consumer garments across all our brands. We work with partners, who sort these garments for rewear, reuse and recycling.



# Chemicals in recycled materials

## 2016

- In 2016, we published our approach to chemicals in recycled materials. This approach is based on precaution and aims to avoid recirculation of hazardous chemicals. We believe that all consumer products should comply with the same chemical requirements regardless of their recycled content. Any exceptions to this should be justified and transparently communicated.

## 2017-May 2018

- During 2017, exceptions in H&M Group's RSL concerning chemicals in recycled materials were removed. Challenges remained around recycled wool on APEO and Cr. Therefore, we collected test results to build more knowledge of chemicals in recycled materials.
- H&M Group cooperated within Re-TEX to test postconsumer denim for risky chemicals. The test result indicated that black postconsumer cotton could contain elevated levels of total chromium. This will be further studied and evaluated.

## 2018 - May 2019

- During 2018, we continued to collect and analysed chemicals in recycled material using pre- and post-consumer cotton samples in assorted colours. Findings from the testing included that 62,5% of the pre-consumer samples had no detection of the tested substances while only 6,4% of the post-consumer samples didn't contain any of the tested substances.
- H&M Group also initiated a cooperation regarding data gathering and information sharing of chemicals in recycled materials within [AFIRM, Apparel and Footwear International RSL Management Group](#).

## 2020

- We launched a large-scale study with IKEA to review the chemical content in pre- and post-consumer textile recycling. With over 8,000 tests conducted, H&M Group will have a better opportunity to develop an action plan for the use of recycled textiles while meeting strict chemical and safety standards.

## 2021

We completed our large-scale study with IKEA and others on [chemicals in recycled textiles](#). Through broad industry collaboration we have been able to create a large-scale database to understand the potentials and challenges presented by recycled textiles from a chemical contamination perspective. Findings included:

- Post-consumer cotton: NPEO had a high detection rate of 62% (but still with values below RSL-limits)
- Post-consumer wool: High detection rate for formaldehyde of just above 50 % (but still with values below RSL-limits). The substance that really stands out here is NPEO which was detected above the RSL limit in 94% of the tests.
- Post-consumer polyester: polycyclic aromatic hydrocarbons had the highest detection rate of 45% (but still with values below RSL-limits). But chlorinated benzene and toluene substances, extractable cadmium, and the phthalate DEHP failed against RSL limits in many of the tested samples.

We will use the findings to raise awareness concerning the chemical content of recycled textiles and to support legislation around the circular economy. We have also used the data to further develop and improve our internal chemical testing strategies and restrictions.