CLEANCHAIN

How Textile and Apparel Suppliers Promote and Validate Safer Chemistry

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Textile chemicals account for a significant amount of global chemical use, with global consumption predicted to reach US$33.1 billion by 2026.[1]

Consequently, mills, dye houses and laundries are responsible for a large quantity of chemical formulations, often leading to hazardous chemicals leaching into local environments.[2] From a spectrum of dyes coloring the local wildlife in Mumbai[3] to contaminated rice paddies in Bangladesh[4] and "dead" rivers destroyed by pollution,[5] these toxic chemicals find their way into local rivers and food supplies worldwide, causing often irreparable damage to communities and natural environments. To avoid causing harm and to take steps toward responsible chemical management, many textile suppliers are adopting programs to reduce the amount of hazardous chemicals used in production.

Compounding this effort, recent growth in consumer awareness of sustainability and environmental health has led to increased demand for transparency and environmental responsibility in manufacturing supply chains.[6] As a result, the apparel industry has begun focusing its efforts on building a responsible approach to chemical use and supply chain management. Brands, suppliers and third-party regulators utilize a multitude of different solutions, including new vetting techniques, detailed chemical product indexes, innovative technologies and bespoke software platforms. It is crucial for every apparel supplier to be able to validate and promote their successes in reducing their use of hazardous chemicals in order to maintain sustainable operations and demonstrate their commitment to the environment on a wider scale.

Establishing Chemical Standards

The first step a supplier should take toward minimizing hazardous chemical use is assessing the chemical toxicity of the formulations used in production. This allows a supplier to determine toxicological and wastewater risks. As most suppliers source chemical products from a wide range of manufacturers, performing this manually is often costly and time-consuming.

Suppliers looking to streamline this process work with specialized third-party organizations to pinpoint hazardous chemicals and facilitate effective operational decision-making. The widely recognized ZDHC Foundation's Manufacturing Restricted Substances List (MRSL), for example, indexes chemical substances that are banned from intentional use in textile processing facilities.[7] The list also imposes strict limits on the amount of restricted substances that can be present in a chemical formulation. Formulations are considered ZDHC MRSL-compliant only if they adhere to these limits.[8]

Reliable chemical indexes, such as the ZDHC MRSL, are recognized internationally by apparel brands, their suppliers and chemical manufacturers. By outsourcing the collation and analysis of chemical data via these lists, suppliers are given the opportunity to build a program of compliant, safe chemistry without the major logistical challenges of in-house analysis.

ZDHC MRSL-accepted Certification Standards

The ZDHC Program incorporates existing certification standards as indicators of ZDHC MRSL conformance. Formulations certified by these standards are also directly verified and officially ranked within the ZDHC Gateway – Chemical Module.[9]

- BLC Chem-MAP
- bluesign® bluefinder
- Clean Production Action's (CPA) GreenScreen
- Certified™ Standard for Textile Chemicals Control Union
- ECO PASSPORT by OEKO-TEX®
- Global Organic Textile Standard (GOTS) NimkarTek Detox Laboratory (NDL)
- NSF International
- SciveraLENS®
- ToxServices' Full Materials Disclosure Screened Chemistry™ (ToxFMD®) Program

Managing Supply Chains and Measuring Improvement

Verified product indexes set standards of safer, more responsible chemical use for apparel suppliers to adhere to. However, chemistry is a constantly changing industry and, to assure compliance, an organization must monitor chemical use over time while assessing and reassessing changes to formulations in its supply chain.[10] Further, to demonstrate commitment to sustainability, it is vital for suppliers to use those indexes holistically to measure their own improvement and progress toward chemical management goals.

Third-party organizations provide a library of software and tools to aid in this effort. For example, the ZDHC Gateway – Chemical Module is a database that provides safety and compliance information for registered chemical products, including compliance with the ZDHC MRSL. It allows formulators to demonstrate compliance and safety and gives suppliers the opportunity to search for and identify more sustainable chemical options.

CleanChain, an ADEC Innovation, is a value chain chemical management system that works in conjunction with the ZDHC Gateway. Expanding on databases like the ZDHC MRSL, it tracks a user progress toward sustainable and safe chemical use over time and gives users full control to manage their supply chain relationships, inventories and chemical and discharge data. The application includes performance benchmarking and chemical conformance reporting as well as communication tools and real-time accreditation updates to foster relationships within the supply chain.[11]

Real-time analysis, conformance tracking and effective supply chain management are essential steps on the road toward eliminating toxic chemical use in apparel production. Once chemical safety and value chain goals have been achieved, tracking this information serves an additional, external purpose: disclosure and the promotion of progress.

+145,000
different textile chemical formulations in the global market[13]

+8,000
types of chemicals used in the textile industry[12]

Validating and Promoting Progress

As public consciousness shifts toward sustainability and global impact, fashion brands across the world are recognizing the importance of supply chain disclosure and ensuring suppliers use safer chemicals in production.[14]

Non-profit organizations, such as CDP[15], the Sustainable Apparel Coalition[16] and other sustainability rating systems, understand the importance of engaging with supply chains and consider transparency, benchmarking techniques and third-party verification within their own scoring systems.[17]

In turn, textile suppliers are seeking ways to better communicate the quality and safety of their products to foster stronger relationships and build trust with their customers. As with chemical management, there are a number of useful tools now available that assist suppliers in working toward these disclosure goals. ZDHC's InCheck report, for instance, serves as an authenticated, short-form benchmark score of MRSL conformance.[18]

CleanChain also allows suppliers to connect with multiple brands, using the ZDHC database to cross-reference chemical safety data and facilitating direct communication of product and formulation changes.[19] By openly demonstrating accountability and transparency through neutral-party chemical certifications and tools, modern apparel suppliers can position themselves as global leaders in sustainability and responsible chemical management.

Steps to Understanding and Managing Your Chemical Supply Chain

Step 1: Take stock of chemical inventory and use
To get started, understand what chemicals you have and how you use them. This allows you to paint a picture of current conditions and facilitates sustainability target setting.

Step 2: Check for Safety Data Sheets
Is an SDS (Safety Data Sheet) available for each stock item? An SDS is a vital component of safe chemical management and workplace health and safety and is an important starting point in understanding your chemical usage and accountability.

Step 3: Remove outdated stock
Based on your stock check, remove any outdated stock and dispose of these items using approved methods.

Step 4: Evaluate potentially hazardous chemicals
Determine whether any chemicals in use are safe or considered hazardous. Chemical management platforms, such as CleanChain, and chemical indexes, like the ZDHC MRSL, help you streamline this process and maintain an updated list in the long term.

Step 5: Identify safer alternatives
For any chemicals deemed hazardous, evaluate safer alternatives by contacting chemical suppliers or consulting chemical management systems and indexes.

Step 6: Maintain a safe environment
Preserve safety standards and responsible chemical management. Ensure that only compatible chemicals are stored together and that appropriate secondary containment is in place (refer to product SDS).

Step 7: Offer transparency, build trust
Encourage trust with customers by providing visibility through disclosure, including information about chemical use and partnerships.

Step 8: Collaborate
Work in partnership with customers, chemical companies and manufacturing staff through measures such as trialing new chemical formulations and measuring impact.

Apparel: Toward a Cleaner Future

The apparel industry has been undergoing marked changes to adjust to shifting global attitudes and will continue to change in the future.

As these global attitudes move toward a focus on sustainability and environmental stewardship, apparel suppliers have begun taking great strides toward sustainable practices and more environmentally safe operations.[20] Every stakeholder in the industry, from consumers and investors to brands and suppliers, has an interest in reducing the use of hazardous chemicals in production to minimize risk to local communities. However, for suppliers the task of manually measuring toxicity conformance, tracking development over time and communicating this progress to clients often entails considerable time and resources. By utilizing widely verified safety certifications and using innovative software systems to manage inventory and measure conformance to these standards, suppliers can improve the safety and sustainability of their chemical use easily and reliably. These steps ease the process of demonstrating improvements and commitment to clients and other stakeholders, ensuring recognition of their part in the work to eliminate hazardous chemical use on the global stage.

CleanChain delivers technology solutions that transform your value chain's sustainability practices. The CleanChain platform monitors the progress of your value chain's sustainability commitments, enhancing communication between brands and facilities to help you manage broader sustainability metrics, such as chemical usage, wastewater and GHG emissions, across your value chain, demonstrating your progress against third party standards, regulatory requirements and your own sustainability goals.

CLEANCHAIN

CleanChain can help your business:

- Eliminate the use of hazardous chemicals and minimize environmental emissions
- Understand the sources of inventory and reduce risks across your value chain
- Improve and ensure your conformance to third-party accreditation schemes and systems, such as MRSL and RSL compliance
- Reduce the costs and burden of aggregating value chain data
- Make more informed procurement decisions
- Align chemical management across broader programs and policies
- Generate consumer confidence by demonstrating progress against commitments
- Understand the regulatory requirements impacting your value chain and their conformance

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