TECHNICAL TUESDAYS

SUSTAINABLE TEXTILES – PART X

REF: TT/ JULY 2022/ WK 1

Chemical management in textile wet processing like dyeing and finishing (Continued)

An updated chemical storage system which has specific information, such as: chemical name, CAS (Chemical abstract service) number, formulation, material safety data sheets (MSDS) helps to prevent the use of **hazardous chemicals** in the production process. Hazardous chemicals can be identified along the entire textile value chain, particularly where they are handled inappropriately. Especially in wet finishing processes like pre-treatment, dyeing, printing and finishing. These substances pose health risk to humans and pollute the environment. Chemicals also play a role in the garment processing/finishing. Regardless of the production step, the aim of careful chemical management is to prevent the use of hazardous chemicals in the textile production process.

The chemical storage system is the basis for setting up a risk assessment and verifies the risk associated to the people exposed. This will help to establish the people protection system with the appropriate personal protective equipment (PPE).

Managing chemicals also helps the industry to reduce chemical loading on to the effluent treatment plant (ETP). Optimizing chemical dosages, selecting chemicals with lower inherent COD (Chemical Oxygen Demand) and BOD (Biological Oxygen Demand) values and reducing chemical discharge can ensure lower loads on ETP.

The textile industry also has different initiatives to restrict the use and discharge of hazardous chemicals in their supply chain, such as Restricted Substances List (RSL) and Manufacturing Restricted Substances List (MRSL).

Restricted Substances List or RSL is used as a tool to aid regulatory compliance to global product safety. It is used as a chemical checklist when testing finished products for the presence of restricted substances. **RSL** is designed to help protect people and the environment from harmful substances. Restricted substance lists help brands comply with laws and initiatives regulate their supply chains and prevent recalls. It bans or restricts certain chemical residues on products. A chemical testing is carried out on finished products to ensure compliance with regulation. RSLs are imposed to ensure that supplier's products meet the acceptable limits of restricted chemicals. The RSL includes acceptable chemical limits and testing protocols and analytical methods.

An RSL is applicable to finished products. It does not take into account the hazardous substances used in the manufacturing process. Prohibiting all restricted chemicals used in the process of apparel making, MRSL is used. This helps in preventing the hazardous chemicals from entering the supply chain. This reduces the need to test for their presence on products and in wastewater.

Manufacturing restricted substance list or MRSL is a list of hazardous chemicals restricted from textile manufacturing. It includes all chemicals used in the manufacturing processes and not just those that may be present on finished products. MRSL testing analyses the chemical formulations which are used to manufacture raw materials that go into the production of consumer goods.

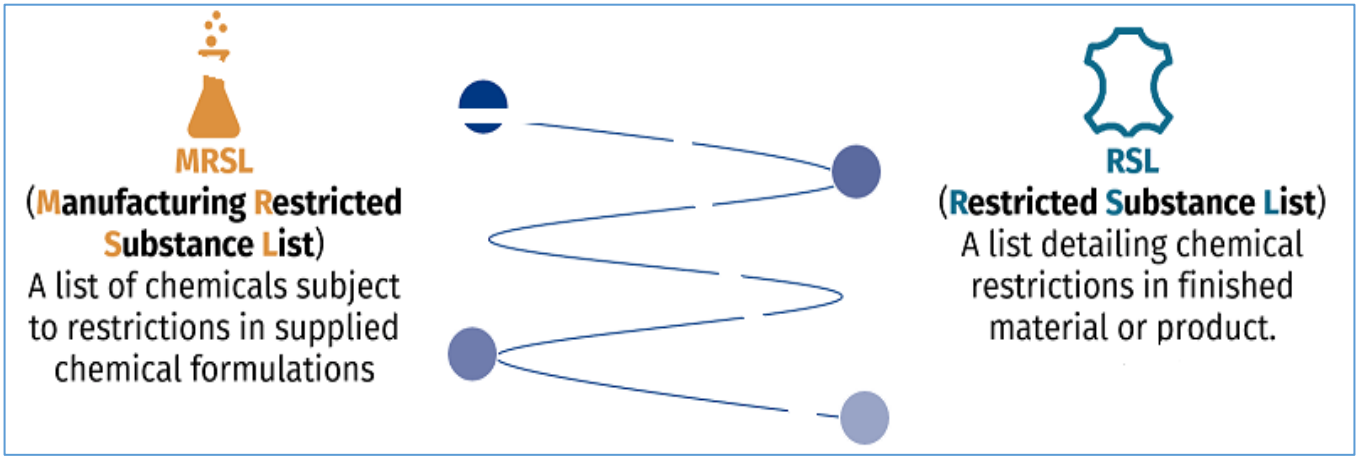

Fig 1.1 Differences between MRSL and RSL
Ref: chem-map.com

It lists acceptable limits for restricted chemicals used in the manufacturing processes regardless of whether the substances remain on the finished product or are washed away. MRSL requires inspections of the supplier's chemicals warehouse and chemical testing of the supplier water effluents before an effluent treatment plant cleans them.

A thorough chemicals management system also includes chemical checks at all production facilities along the supply chain. Wastewater should be checked to see whether the water quality complies with the specific technical standards as per the wastewater regulations. The wastewater test establishes that the production facility is using high-risk or even banned substances or not. This can lead to the introduction of further safety measures.

References:

1. https://chem-map.com/
2. https://www.the-sustainable-fashion-collective.com/
3. https://www.garmonchemicals.com/
4. https://www.sciencedirect.com/
5. https://therunningrepublic.com/

.....To be continued.....

UNSCRAMBLE THE JUMBLE WORDS
CIMLSAHEC
BUSATSNCSE
CUDTIONROP
ISTMLI

Last week`s Answers: 1) BEESWAX 2) MANAGEMENT 3) FEEDSTOCK 4) REFINED

Wishing you a great week ahead!

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