

EURATEX submission to ECHA consultation on the U-PFAS restriction

Proposal for best-available technology (BVT) in the context of the BREF process textile
industry

September 2023

Description

Technical solution for the retention of residual padding liquors to avoid emissions into wastewater.

Technical description

In the pre-treatment, dyeing and finishing of textiles is often done by impregnating the fabric with a padding liquor. If this liquor contains particularly wastewater-related substances, discharge into the wastewater may not be possible. The liquor must then be retained and possibly disposed of. Better and more resource-efficient, however, is re-use provided that the remaining liquor is stable in storage and is not contaminated by lint or dyes.

Modern low-volume chassis are designed, among other things, to minimize the residual liquors in such a way that only the amount of liquors that is actually required for the desired effect is provided in the chassis. The filling volume is minimized by displacement bodies and low distances of the chassis walls to the fabric. This narrow design causes that residual liquors cannot be extracted from above these must be pumped out via the drain. However, the arrangement of the piping, valves and pumps must be designed in such a way that after the pumping and rinsing, no residues remain in the piping, which may contaminate the liquors of the follow-up processes.

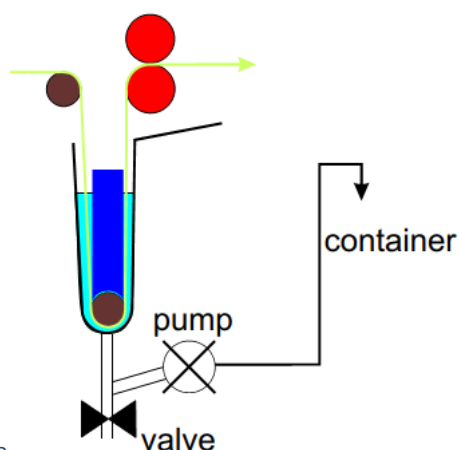


Figure 1 Schematic drawing retention residual liquors

At the end of the process, the pump is switched on and conveys residual liquor and if necessary, the first rinsing water into a container. The pipe piece rising towards the pump prevents that liquor remains in the pipe system which can contaminate the liquor of subsequent processes. when the pump is shutdown. For further cleaning, the pump is switched off and the valve is opened so that the lowly contaminated rinsing water can be drained.

Achievements for the environment

Concentrated, low-volume partial streams can be quantitatively removed from the wastewater stream. The operation for the machine personnel is simple.

Environmental benefits and operational data

Irrespective of the pollutants contained in the liquor, the described technology allows the waste water to be discharged. Depending on the amount of rinsing water used, so an almost quantitative retention of pollutants is possible. In addition, the process is conserving resources, as under certain conditions the separated residual liquor can be re-used for the next process. However, this requires a separate collection of different residual liquors, which is only possible if there is sufficient storage space available for several containers.

Impact on other environmental media

The retained residual liquors are reused or disposed of as waste.

Technical framework conditions for applicability

In principle, the technology is applicable to all padding processes found in the textile industry.

In the case of swing chassis, which are turned to the side for cleaning under the pressing unit and travel a long way, it may be difficult to implement the piping of the pump in such a way that residues do not contaminate the liquors of the follow-up processes. Especially with fixed chassis, the described system is easy to integrate.

Economy

The purchase and installation of the pump and the pipes incurs only low costs, maintenance and operating costs (i.e. electricity for the pump) are low. The reuse of the residual liquors can bring financial benefits for expensive textile agents.

The disposal of the remaining liquors is sometimes associated with considerable costs.

Causes of application

By retenting the concentrated residual padding liquors in low volume flows, pollutants in the waste water can be avoided efficiently.

Date of implementation

The technique has been used for over ten years