

# Cleaning up behind the fashion industry

July 31 2013, by Sorina Buzatu

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A reagent capable of removing colour left in the waste water used in the textile industry is an improvement, but choosing quality dyes would lead to less pollution altogether.

The European [fashion industry](#) is a huge consumer of [fresh water](#). [Estimates](#) point to 600 million cubic meter of fresh water being consumed yearly in Europe by the textile and clothing industry; not a negligible amount. To reduce the [water consumption](#) and the coloured mass effluent, researchers have developed a flocculating agent. Called [TEXAFLOK DCL 41](#), it is able to separate and remove the dyes from the water. It is a highly [viscous liquid](#), which works by reacting with

dyestuffs and forming precipitates, leaving a small volume of sludge. This sludge can be then destroyed in the waste waters [treatment plants](#).

This agent was created in 2004 by the Czech sustainable development consultancy [Inotex](#), located in the town of Dvůr Králové. Although it shows good results, its use by textile companies may be limited, due to its high price. "We know that this flocculant is expensive, more expensive than using the fresh water, but other decolourisation technologies are still more expensive," says Olga Chybová, researcher at the department of ecology at Inotex, which is also one of project partners.

But this technology alone is not sufficient. It needs to be combined with other treatments to obtain good processed water quality. Now, thanks to an EU funded project called [AquaFit4Use](#), it has been subjected to [laboratory experiments](#) within the overall water treatment process. "We verified in the lab scale if the general quality standards required for the [water reuse](#) in the textile process can be reached," Chybová tells youris.com. In addition to the flocculating agent, the project scientist subjected the [waste water](#) to two additional processes to further clean the water.

Namely, "we used a treatment train which consists in decolourisation of waste water by TEXAFLOK, conventional biological treatment, which eliminates in the cheapest way the organic non-coloured pollutants that are present, and an additional advanced oxidation process." explains Chybová. The project team managed to get completely discoloured waste water meeting current water cleanliness standards. Moreover, the tests showed that the quality of textiles treated with the reused water was practically the same as they were treated with fresh water.

This flocculating technology is welcomed by some chemists due to its approach. "[This agent] should be efficient for the textile industry, due

to its cationic character. It facilitates the collecting of the small particles of colour, which can be later removed from the waste water," says Mircea Ioan Popescu, a chemical engineer at [BiotehnoI](#), a research centre in applied biochemistry and biotechnology, based in Bucharest, Romania. But he nuances his comments by saying: "I suppose that it is not the only method to remove dyes from the waste [water](#). There are also ultrasonic systems, which are expensive but efficient," he adds.

To minimise the pollution effects on the environment, others believes, the textile industry should also use dyes of known composition that are conform with the restricted substance lists of various brands. "The regulations we have here in Europe, such as the REACH and the Integrated Pollution prevention and Control Directives, stipulate which dyes you can use, but some of those laws don't exist in [non-EU] countries," Andrew Filarowsky tells youris.com. He is the technical director of a professional organisation known as the Society of Dyers and Colourists, based in Bradford, UK.

Although the dyes are usually neither massive, nor harmful polluters, Filarowsky contends, the [textile industry](#) needs to use good quality dyes so that "the amount of colorants that goes down into the treatment plant is reduced." This is an issue with chemical industries worldwide, he claims: "the problem is not about using best practices in the actual processing, but using poor quality products instead."

Provided by Youris.com

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