

## Case study: chemical substitution (4-Chloroaniline)

*This case study outlines how a dyestuff containing high residual levels of 4-Chloroaniline was identified and substituted with an alternative containing no banned amines.*

Primark has a stringent chemical management policy in place which complies fully with EU and US legislation. Beyond this, Primark recognises the importance of continuing to evolve its chemical management policy in line with industry best practice and of continuing to minimise the environmental impact of textile manufacturing processes.

As a result, Primark has committed to working with industry and other stakeholders to achieve the goal of 'zero discharge' of hazardous chemicals within the textile and apparel supply chain by 2020.

In line with this, a pilot study was conducted to assess current chemical usage and to identify issues related to chemical management practices in some selected Bangladesh textile dyeing and printing mills.

During the pilot, traces of 4-chloroaniline were detected in one of the mill's sludge.

As the sludge can be a composite of several months of waste from the mill, they do not necessarily represent the current chemical use of the facility. However, by assessing the mill's chemical inventory, the source of the 4-chloroaniline was identified as the reactive dyestuff Black (C.I. Reactive Black 5) and dyes containing C.I. Reactive Black 5 such as Navy, Red and Brown colorants supplied by various chemical suppliers used by the mill.

We recognised that the facility was no longer using these substances and, to avoid any incidence in the future, recommendations regarding how this dyestuff could be substituted were made; Primark is continuing to support the mill to ensure phase-out of possible source of 4-chloroaniline and the effective phase-in of a safer alternative.

There are suitable alternatives to avoid the 4-Chloroaniline detection in waste water, such as DyStar's p-CA free dyes: Levafix ECO Black, Levafix ECO Forest and Levafix ECO Navy, which can be used in combination with other p-CA free dyes from the Remazol and Levafix ranges in order to cover the full gamut of shades required.

Another alternative is Huntsman's Avitera Black SE combining with other Avitera SE series dyestuffs to achieve the full gamut of shades required .

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4-chloroaniline is one of the 24 carcinogenic amines which are banned (as releasable amines from azo colorants under reductive condition) in textile and leather by legislation in many countries worldwide.