

ABSTRACT

The Centre for Best Available Techniques (BAT) is founded by the Flemish Government, and is hosted by VITO. The BAT centre collects, evaluates and distributes information on environmentally friendly techniques. Moreover, it advises the Flemish authorities on how to translate this information into its environmental policy. Central in this translation is the concept "BAT" (Best Available Techniques). BAT corresponds to the techniques with the best environmental performance that can be introduced at a reasonable cost.

This report discusses the BAT for the textile industry in Flanders. In particular, the report focuses on the brominated flame retardants Deca-BDE and HBCD, diantimony trioxide (Sb_2O_3), perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA), nonylphenols (NP), nonylphenol ethoxylates (NPE) and polycyclic aromatic hydrocarbons (PAHs). This report completes the Flemish BAT study for the textile finishing industry (Jacobs A. et al., 1998).

The first aim of the study is to select the BAT for preventing and/or minimizing the emissions of the above mentioned pollutants via textile wastewater. In this study more than 20 techniques are selected as BAT for the textile industry. The BAT selection in this study was based on a technical and socio-economic analysis of the textile industry, discussions with industry experts and authorities, plant visits and a comparison with other related studies, for example the BREF for the Textiles Industry (EIPPCB, 2003a).

Most of the BAT for preventing and/or minimizing the emissions of the above mentioned pollutants via textile wastewater are preventative and process integrated measures. When these BAT are inadequate to realize an acceptable discharge level, it is BAT to apply a suitable wastewater treatment installation.

Another main objective of the study was to determine BAT associated emission limits (BAT-AELs) and to propose wastewater discharge limits for the textile industry. Table 2 gives an overview of the BAT associated emission levels (BAT-AELs), the proposal of sectoral discharge conditions for industrial textile wastewater and other recommendations for environmental legislation.

Table 2: Overview of the BAT associated emission levels (BAT-AELs), sectoral discharge conditions for industrial textile wastewater and other recommendations for environmental legislation

| Parameter | BAT-AELs | | Proposal – sectoral discharge conditions | | Recommendation – specific discharge conditions | | Recommendation – additional measurements needed | |
|--|----------|----------|---|--|--|-----|---|-----|
| | OW | RIO | OW | RIO | OW | RIO | OW | RIO |
| Deca-BDE (used in the textile plant) | <20 µg/l | - | 20 µg/l | - | - | + | - | - |
| Deca-BDE (not used in the textile plant) | <10 µg/l | <10 µg/l | 10 µg/l | 10 µg/l | - | - | - | - |
| HBCD (used in the textile plant) | <10 µg/l | <10 µg/l | 10 µg/l | 10 µg/l | - | - | - | - |
| HBCD (not used in the textile plant) | <2 µg/l | <2 µg/l | 2 µg/l | 2 µg/l | - | - | - | - |
| Sb ₂ O ₃ | <1 mg/l | <1 mg/l | 1 mg/l | 1 mg/l | - | - | - | - |
| PFOS/PFOA | - | - | - | - | - | - | + | + |
| NP/NPE | - | - | - | - | + | + | + | + |
| PAHs | - | - | 0,001 mg/l except naphthalene (= existing sectoral discharge condition) | + (remove existing sectoral discharge condition) | - | + | - | - |

Legend: -: no recommendations formulated

+: recommendations formulated

OW: discharge into surface water

RIO: discharge into sewer

Further, this study will be used as an input for the review of the BREF for the Textiles Industry (EIPPCB, 2003a). The European IPPC Bureau will start this review probably in the course of 2010.