



Progress Report - P2 Planning and Textile Mills that use Wet Processing

Pollution Prevention (P2) Planning is a process by which organizations can improve their environmental protection by strategically planning to reduce or eliminate pollution before it is created.

Last updated: October 2007

Textile mills **surpassed the 97% reduction targets** for annual use of nonylphenol and its ethoxylates.

Despite these significant reductions, effluent tests reveal that 78% of the facilities are still struggling to maintain acceptable toxicity levels.

P2 planning Notice requirements

In December 2004, Environment Canada published a Pollution Prevention (P2) Planning Notice in the *Canada Gazette*. Persons subject to this Notice include all wet processing textile mills that discharge their effluents to a municipal wastewater treatment system and have had an average daily effluent discharge, calculated on a yearly basis, greater than 30 m³/day at least once between 1999 and 2003. To date, 63 facilities have reported meeting these criteria. Affected persons must prepare and implement a P2 plan that takes into consideration the following two objectives:

1. **reduce the annual use of NP and NPEs by at least 97% relative to the annual use for 1998 by 2009, and;**
2. **reduce the toxicity of effluent to a maximum acute toxicity of 13% IC₅₀ (50 % inhibiting concentration) by 2009.**

In addition, individual facilities are required to periodically submit information to Environment Canada until their P2 plan is fully implemented. Much of the following information is derived from these submissions, which are made available to the public at www.ec.gc.ca/cepap2.

Subject Mills

The wet processing segment of the textile industry is mainly concentrated in Quebec and Ontario representing approximately 61% and 36% of facilities respectively. The

remaining 3% are located in Nova Scotia. Over three-quarters of wet processing activities consist of dyeing, scouring, bleaching and wet finishing (Chart 1).

Textile Mill Wet Processing Activities

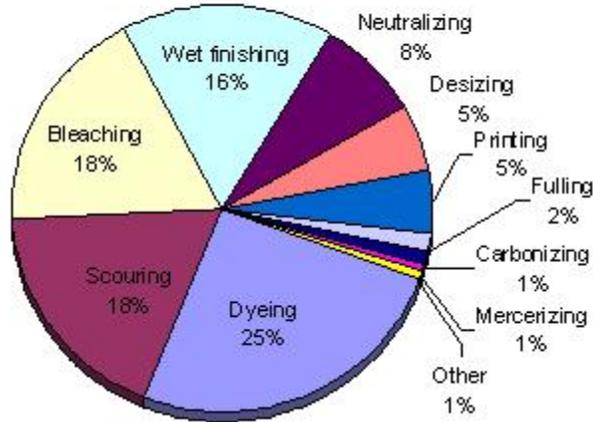


Chart 1: Types of activities performed in textile mill wet processing activities

P2 planning Notice Results to Date

Nonylphenols and its ethoxylates

The first objective outlined in the P2 planning Notice is to reduce the use of NP and NPEs by 97% from 1998 levels by 2009. Chart 2 illustrates the overall reduction to date of NP and NPEs used by textile mills. By 2005, NP and NPEs use dropped 95.4%. By 2006, facilities reported using less than 700 kilograms, surpassing the objective established in the P2 planning Notice with a **total reduction of 99.7%**.

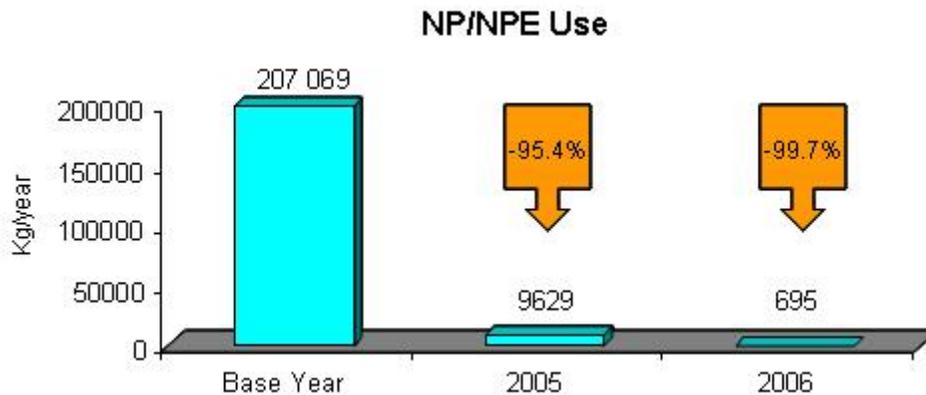


Chart 2: Reported use of NP and NPEs

Note: The base year typically refers to the 1998 calendar year and the preparation year typically refers to the 2005 calendar year.

Textile mill effluents

The second objective outlined in the P2 planning Notice is to achieve and maintain a maximum acute toxicity of 13 % IC50. **Although the majority of facilities indicated that they intend to meet the toxicity requirements by 2009, toxicity tests performed in 2006 reveal that only 22% of facilities were successful in doing so.** That is to say, nearly three out of four facilities reported at least one poor toxicity reading during the 2006 calendar year.

P2 used to achieve results

The federal government believes that pollution prevention is the most effective means of protecting our environment, eliminating costly waste, and promoting sustainable development. P2 focuses on avoiding the creation of pollutants rather than trying to manage them after they have been created. As a factor to consider in preparing their P2 plan, mills had to give priority to P2 activities. **In 2006, 72% of the actions taken by subject mills in implementing their plan were P2 in nature** (Chart 3). Facilities chose a wide range of P2 activities as good operating practices and training led the way with 15%.

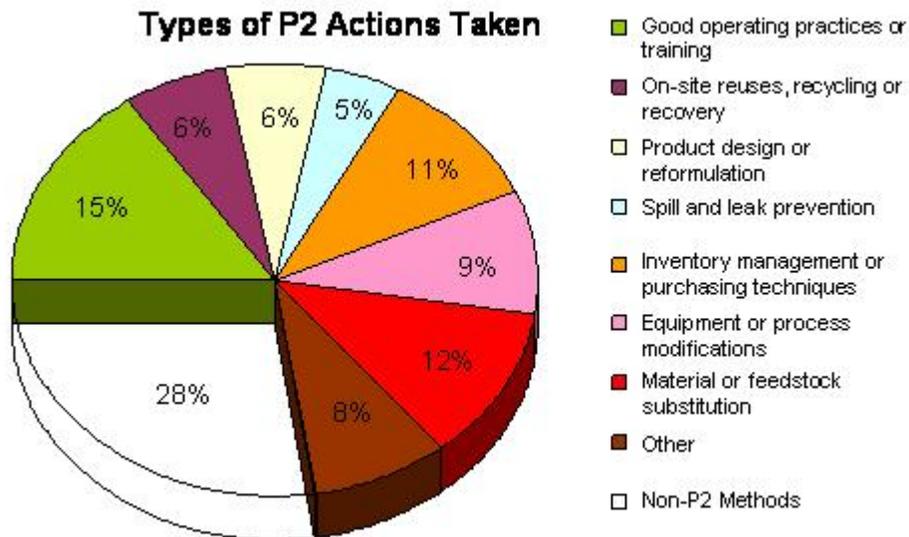


Chart 3: Types of actions taken by facilities to meet the P2 planning Notice objectives in 2006

Continuing progress

Upon analysis of the submissions **it has become apparent that despite significant reductions in NP and NPEs, overall reductions in the toxicity of effluents are still above the targeted level.** In addition, facilities have indicated difficulties in identifying other sources of toxicity. If facilities are to meet the toxicity objective, identifying these sources of toxicity in order to manage them is necessary. In accordance with the risk

management strategy for TMEs, NP and NPEs, Environment Canada will continue to monitor and evaluate the progress of facilities in order to determine whether or not further government action is required.

Textile mill effluents (TMEs) and nonylphenol (NP) and its ethoxylates (NPEs): what are they and why prevent their release into the environment?

TMEs are wastewater discharges from textile mills produced during wet processes such as scouring, neutralizing, desizing, mercerizing, carbonizing, fulling, bleaching, dyeing and printing. They are complex mixtures of chemicals, whose composition varies over time and from one mill to another. Untreated TMEs may include high concentrations of NP and NPEs, suspended solids, metals, and other organic substances. Untreated TMEs can also exhibit extreme pH variations and elevated temperatures.

Prior to the publication of the P2 planning Notice, NP and NPEs constituted a major class of surfactants used in the textile wet processing industry. **It was estimated that the textile sector was responsible for 18% of the NP and NPEs released annually in Canada.**

Assessments of NP, NPEs and TMEs found that they were entering the environment in a quantity or concentration or under conditions that have or may have an immediate or long-term harmful effect on the environment or its biological diversity. As a result, in 2002, NP, NPEs and TMEs were added to the List of Toxic Substances in Schedule 1 of the *Canadian Environmental Protection Act, 1999*.

Sources:

- Pollution Prevention Planning Database and Web site www.ec.gc.ca/cepap2
- Priority Substances List Assessment Report for Textile Mill Effluents www.hc-sc.gc.ca/ewh-semt/pubs/contaminants/psl2-lsp2/textile_effluents/index-eng.php
- Risk Management Strategy in Respect of Effluents from Textile Mills that Use Wet Processing and Nonylphenol and its Ethoxylates www.ec.gc.ca/TOXICS/EN/detail.cfm?par_substanceID=68&par_actn=s1