



Besnate, September 2015

Besani Srl APEO Investigation Report

APEOs in textile processes

Alkylphenol ethoxylates (APEO) are a group of nonionic surfactants, the most commonly used being nonylphenol ethoxylates (NPEO) and octylphenol ethoxylates (OPEO).

The chemical structure of these molecules makes them particularly useful in textile industry wet processes (owing to their dispersant, detergent and emulsifying action), but particularly hazardous for the environment and for aquatic organisms.

Recent research confirms that APEO are potential endocrine disruptors, as well as being highly bio-accumulative and persistent. APEO contamination has been detected in riverbeds, water tables and even in the human food chain.

The APEOs are already subject to stringent restrictions in Europe where since January 2005, the EU 2003/53/EG directive has prohibited the use of the main group of APEO, the NPEOs, in concentrations greater than 0.1% in chemical intermediates. The presence of this group of substances in the processes of European companies and the final products can however be induced by the use of semi-finished produced in countries where the use of APEO is still allowed.

To safeguard the health and safety of consumers, producers and local communities, Besani Srl starting from July 2015 has introduced the ban on APEO the Manufacture Restricted Substances List (M-RSL) that suppliers are required to comply with. In line with its Greenpeace Detox Commitment, Besani Srl recently conducted an investigation into APEO usage in its products and in the supply chain to map the current situation.

B. Investigation

Overview of Besani Srl processes

Besani Srl is a manufacturer of knitted fabrics. Main fibre used is cotton, silk is the second fibre and represents less than 5% of total fibres used. The company does not directly carry out wet processes in the company's factory and does not release any wastewater from industrial processes.

Consumption of chemicals by Besani Srl is limited to the lubricant for the circular knitting machines.

Wet processes, yarns and fabric dyeing, finishing and printing, are carried out upstream by selected and established suppliers, in some case by second tier sub-suppliers.

Possible ways APEOs can find their way on our products are:

- Dyed yarns suppliers. All of Besani suppliers of dyed yarns are based in Italy. Use of APEOs is banned in Europe, potential risk of APEOs detection is mainly thus relevant to the use of semi-finished materials produced in countries where the use of APEOs is allowed, especially in the first stage of fibre production as APEOs can be used in the washing of raw fibres. Besani Srl does not have direct relationship with the fibres producers as fibres are sourced by yarn suppliers¹. Cotton is a case in point as it mostly originates from countries where the use of APEOs is allowed or not severely controlled: Peru, Egypt and, for a minor share, India and China,
- Wet processes suppliers (*mercerizing, sanforising, dyeing, printing and overprinting*). All of Besani suppliers of wet processes are based in Italy, thus the same argument put forward in the previous bullets holds. However APEOs can be used, in some formulations of dyestuffs or chemical auxiliaries, even though dyestuffs or chemical auxiliaries suppliers do not disclose the use.

¹ It cannot be excluded that a percentage of APEOs less than 0.1% is found also in yarns produced in Europe, as allowed by European standards (EU 2003/53/EG directive)

APEOs use in the company and by suppliers

1.1 action taken

Since Besani Srl does not release wastewater from industrial processes, we decided to perform an extensive testing plan on our output products (knitted fabrics) to check if any APEO is used, intentionally or unintentionally, in the supply chain.

1.2 methodology

Sampling

A selection of our final products was tested for the presence of APEOs:

- The sample of fabrics tested covers over 90% (in quantity) of our range of fabrics,
- The raw materials used in the tested fabrics covers over 90% (in quantity) of our suppliers, in detail: over 90% of dyed yarn suppliers and over 90% of wet processes suppliers.

Testing

The chemical tests on fabrics have been conducted according to the best Lab technologies and methodologies available by LT Srl laboratory which in turn made use of Intertek laboratory in Scandicci.

Detection limits of the tests were 1 mg/Kg and 2 mg/Kg, a “pass” result means APEOs are not detected on the samples. To date, three test sessions have been conducted in the dates, with the detection limits and on the detected list of substances available in the test report at the download page <http://besani.eu/download/>.

1.3 results

The entire sample scored a “Pass”, i.e. the tests on fabrics showed no detection of APEOs.

APEOs use in our supply chain

2.1 action taken

The “pass” result tests for APEOs detection we performed on our final products of course imply no APEOs entered our manufacturing processes either through the raw material we use or the dyeing or finishing treatments we buy from external suppliers.

We thus:

- Requested a statement letter about the non-use of APEOs and the commitment to not use APEOs to all our suppliers
- Conducted a survey on all our wet processes and yarns suppliers.

2.2 methodology

Survey:

Following the April declaration letter of no APEOs use, in September 2015 a CATI survey on a selection of suppliers of yarns and wet processes covering 98% of our purchases was launched about the use of surfactants in the processes.

2.3 results

Statement letter and commitment: the statement letter of no current use and the commitment to ban the use of APEOs was underwritten by suppliers accounting for 98% of the total value of our purchases

Survey: The detailed CATI questionnaire delivered in September scored a 100% redemption.

None of the yarn suppliers uses any surfactant based cleansing detergent in their internal processes and do not discharge any wastewater from industrial processes. All the yarn suppliers are OEKO-TEX® 100 certified on relevant products/processes².

All the wet-processes suppliers of Tiers 1 and 2 consume surfactant based cleansing detergents. All of them have signed the declaration of no APEOs use. *Reminder:* all of them subject to Italian law and Reach regulation that ban the use of APEOs. 75% of them are OEKO-TEX® 100 certified on relevant products/processes³.

Surfactants are used in the following manufacturing stages: yarns purging bleaching and soaping, fabric pre-mercerizing, bleaching and soaping. Chemical products containing surfactant based cleansing detergents are: detergents, wetting agents, and dispersants.

² OEKO-TEX® standard 100 certifications refers also to some APEO substances, with limit values (for all categories I to IV) of 10 mg/kg for OP, NP and their sum, and 100 mg/kg for the sum of OP, NP, OP(EO)1-20, NP(EO)1-20 https://www.oeko-tex.com/en/manufacturers/test_criteria/limit_values/limit_values.html.

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Further to the declaration of non-use, most of wet-processes suppliers do not test for APEOs presence in discharge water. Out of the 75% check for the presence of APEOs on the final product, according to the OEKO-TEX® 100 standard.

All the wet-processes suppliers are available, if requested, to check for the presence of APEOs in discharge waters and disclose results, with the exception of one who would prefer Besani Srl to check the product before and after their processing instead.

100% of the suppliers are available, in case APEOs are detected on the products sold to Besani Srl, or processed on Besani SRL behalf, to initiate an investigation to have them eliminated, and the APEOs based detergents substituted with environmentally friendly cleansing detergents.

C. Summary of investigation results both internal and on the supply chain, conclusions & next steps

A number of initiatives are already in progress or implemented to ensure no APEOs can enter Besani Srl products at different stages in the supply chain.

- APEOs are included in the public Besani Srl M-RSL with specific detection limits in line with best available technology;
- Supply contracts are being reformulated to ensure full supply chain compliance with Besani Srl APEO elimination commitment;
- A statement and commitment letter of no APEOs use has been requested to suppliers, to date, 98% of our purchase come from suppliers that signed the statement and commitment letter;
- Wastewater testing for the presence of APEOs has been carried out by Besani main wet processing supplier that found no detectable traces of APEOs
- An investigation has been carried out about the use of surfactants cleansing chemicals in the supply chain

On the basis of these encouraging results, we will proceed with our program of periodical product testing.

Besani Srl is working to achieve active involvement across the supply chain in order to:

- disseminate information about APEOs substitutes;
- identify chemical formulations containing APEO still in use;
- identify alternative formulations or substances that guarantee equivalent results in industrial processing;
- undertake systematic substitution to achieve total elimination across the supply chain.

Besani Srl, as part of the Italian DETOXLeader Group together with Berbrand Srl , Canepa Spa, Ditta Giovanni Lanfranchi Spa, Italdenim Spa, Miroglio Spa, Tessitura Attilio Imperiali Spa, Zip Gfd Spa, is fully aware that only with the active participation of the entire fashion industry it is possible to deliver the desired outcomes on a global scale.