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DIENPI S.r.l.

APEOs Elimination Investigation Report

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The APEOs Elimination Investigation Report is in fulfillment of the [Dienpi Srl](#) commitment to the DETOX solution which was made public on 1st June, 2016.

Dienpi Srl supports the Detox solution to ban hazardous chemicals from fashion



This report was prepared on behalf of Dienpi Srl by Blumine Srl, an independent consulting company specialized in supporting textile and fashion companies in sustainability projects.



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1 APEOs in textile processes

Alkylphenol ethoxylates (APEOs) are a group of nonionic surfactants, the most commonly used being nonylphenol ethoxylates (NPEOs) and octylphenol ethoxylates (OPEOs).

The chemical structure of these molecules has led to a widespread use in textile processes, especially in wet processes, owing to their dispersant, detergent and emulsifying action.

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

APEOs are already subject to restrictions in Europe since 2005. The EU 2003/53/EG directive has prohibited the use of the main group of APEOs, 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 semi-finished and chemicals produced in countries where the use of APEOs is allowed.

Dienpi Srl understands that there are multiple supply-chain pathways for potential APEO contamination, including chemical formulations, and is committed to enhancing both training and auditing of its supply chain to ensure that suppliers have the latest information on APEOs, highlighting where there is a risk that APEOs may enter in the undocumented contamination of chemical supplier formulations.

To safeguard the health and safety of consumers, producers and local communities, **Dienpi Srl** starting from **June 2016** has introduced the ban on APEOs in the Manufacture Restricted Substances List (M-RSL) that suppliers are required to comply with.

2 Overview of Dienpi Srl processes

Dienpi is a producer of fashion accessories located in San Benedetto del Tronto (AP), at the heart of the Val Vibrata denim cluster. The Company is dedicated to the research, graphic design and production of fashion labels and tags for apparel made with always new techniques and materials: paper, cloth, leather, eco-leather, jacron. The leather products are made exclusively in Italy and all the labels have a lot of identification, to allow clients to track the batch of leather from which they come from.

Internal processes are typographic and serigraphic printing, mainly with water-based dyes., various processes on real leather, engravings and 3D reliefs.

All other operations are carried out by a selected range of Italian suppliers.

No wet process being carried out directly by **Dienpi Srl**, there is no risk of APEO use in the company's internal processes.

3 Risk of APEOs use in the Dienpi Srl supply chain

Possible ways APEOs can find their way into **Dienpi Srl** products are chemical auxiliaries such as: lubricants, antistatic agents, dispersants, emulsifiers, silicon based softeners, leveling agents, surfactants, and other auxiliaries with high content of dispersants or emulsifiers that can be used by suppliers of grey or dyed yarns and fabrics and of dyeing, printing, tanning and finishing services. APEOs can also be found on fibers, especially when raw materials are sourced in Countries where the use of APEOs is allowed¹, as APEOs can be found in surfactants formulations used at various stages and due to the large use of detergents for paper pulping, leather tanning but also in cotton and other natural fibers production.

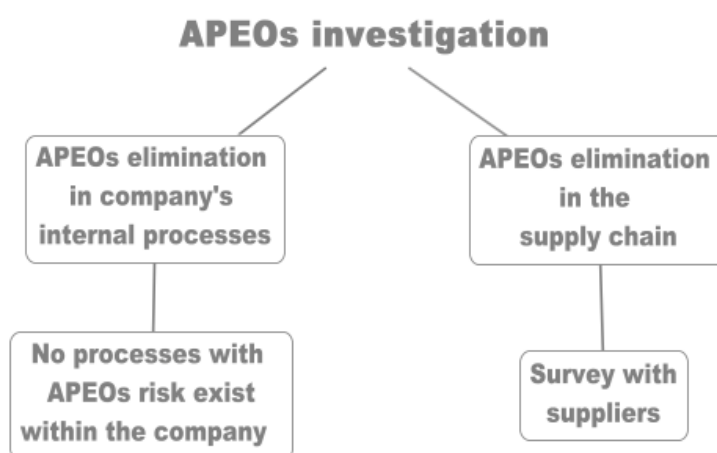
4 The investigation plan

Consistent with the Detox commitments signed in **June 2016**, and as part of a program of work to eliminate APEOs and all hazardous chemicals, **Dienpi Srl** carried out a fact-finding investigation about APEOs use in the supply chain.

¹ In Europe, the use of NPEO has been banned or voluntarily restricted since 1986. Since 1998, the use of APEO in detergents has been forbidden in Germany – and since 2005 the EU directive 2003/53/ EG has forbidden the use of NPEO in higher concentrations than 0.1% in product formulations.

See: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:178:0024:0027:en:PDF> (last seen Nov. 2016)

Figure 1 APEOs investigation plan



No process takes place inside the company's premises with a risk of direct APEOs use, thus no investigation was necessary on chemicals used by the company.

APEOs can enter the supply chain through both the raw materials and the fabrics finishing, the best check-point is thus the finished fabric sold by the company.

A component of the investigation on suppliers was a questionnaire based survey about the suppliers' awareness of the APEOs toxic features, the risk of APEOs. The survey was undertaken at individual supplier level, and was based on suppliers' self-declaration and self-assessment. All the measures were taken to incentivize the supplier to provide an open and honest evaluation. It is however important to note that the self-assessment nature of the survey brings some limitations to survey results and ensuing conclusions.

The survey played also the role to inform the suppliers about the health risks relevant to APEOs and to reinforce information about the company's APEOs ban policy.

5 APEOs elimination in Dienpi Srl's supply chain

5.1 Survey with Dienpi Srl's suppliers

Dienpi Srl recognizes that all suppliers must be involved in the process of elimination of APEOs from the supply chain. Therefore, an investigation on the use of APEOs by suppliers was launched in October 2016.

5.1.1 Method: survey frame

In **October 2016**, **Dienpi Srl** conducted a survey with its suppliers with the double aim to make a step further in the collaboration with its supply chain and to assess:

- the risk of APEOs (intentional) use
- the cooperation of all suppliers to investigate the presence of APEOs in the supply chain

All Dienpi Srl suppliers are Italian. A survey questionnaire was sent to 6 suppliers of raw materials, accounting for 70% of relevant **Dienpi Srl's** suppliers.

3 of the involved suppliers participated. The survey redemption rate was 50%, corresponding to 55% of relevant **Dienpi Srl's** purchases.

The survey was based on suppliers' self-declaration and self-assessment. All the measures were taken to incentivize the supplier to provide an open and honest evaluation. It is however important to note that the self-assessment nature of the survey brings some limitations to survey results and ensuing conclusions.

5.1.2 Risk of APEOs Intentional use by suppliers

The intentional use of APEOs by suppliers was investigated with a funnel questioning approach:

- Q7. Does Your Company use water in any manufacturing stage?
- Q8. (if yes to Q7) Does Your Company use cleansing detergents?
- Q9. (If yes to Q8) Does Your Company use surfactants?
- Q10. (If yes to Q9) Does Your Company use APEO based cleansing detergents?

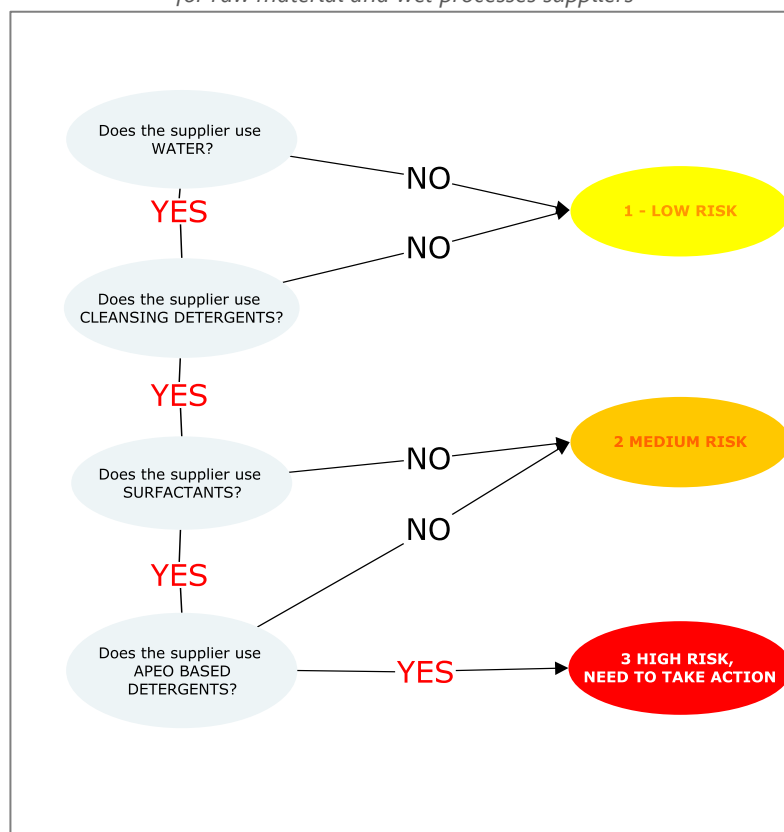
The risk assessment model, assumes that supplier not using water in the industrial processes makes the potential risk of intentional use of APEOs very low. The model however suffers from a limitation: the supplier (1st tier) can be unaware of APEOs use by its own suppliers (2nd or 3^d tiers), short of information about suppliers' own supply chain the limitation cannot be overcome. The assessment model, shown in Low risk. Action: ask supplier to investigate its own wet processes suppliers

Medium risk. Action: check supplier APEOs awareness, set monitoring plan
High risk. Action: request the supplier to eliminate APEOs or change supplier

Figure 2 , identifies 3 level of risk:

- **Low risk.** Action: ask supplier to investigate its own wet processes suppliers
- **Medium risk.** Action: check supplier APEOs awareness, set monitoring plan
- **High risk.** Action: request the supplier to eliminate APEOs or change supplier

Figure 2 suppliers' APEOs intentional use risk assessment model for raw material and wet processes suppliers



✓ Results

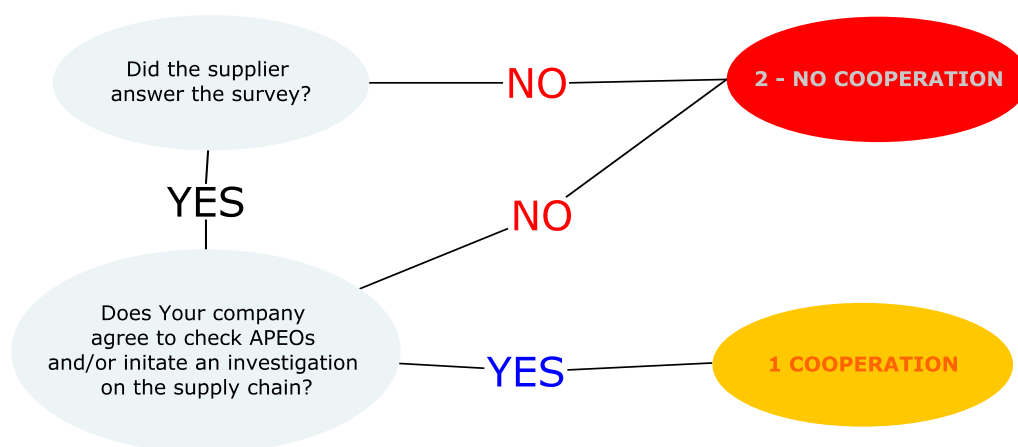
- 3 **Dienpi Srl** suppliers were classified LOW RISK because not using water (1) or not using Cleansing Detergents (2), they will all be asked to investigate their own wet processes suppliers.
- No suppliers were classified MEDIUM RISK.

5.1.3 Cooperation in investigating APEOs in the supply chain

The suppliers' level of cooperation was surveyed with two specific questions:

- Q26. Will You agree to initiate an investigation on the presence of APEOs in the cleansing detergents consumed by Your Company and/or by your suppliers?
- Q27. In case APEOs are detected on the products You sell to our company will You agree to initiate an investigation to eliminate them and to have APEOs based detergents substituted?

Figure 3 APEOs cooperation assessment model of all suppliers



✓ Results

- 3 suppliers involved in the survey did not participate and 1 did not agree to initiate an investigation, and were classified as "NO COOPERATION". An action aimed to improve cooperation of these suppliers will be set up in 2017 to foster risk prevention.
- 2 suppliers agreed to initiate an investigation on APEO in case APEOs were found in their products, and were classified as "COOPERATION".

6 Conclusions from the investigation and Dienpi Srl next steps

Dienpi Srl understands that there are multiple supply-chain pathways for potential APEO contamination (including chemical formulations) and is committed to enhancing

both training and auditing of the supply chain to ensure suppliers have the latest information on APEOs, highlighting where there is a risk that APEOs may enter the undocumented contamination of chemical supplier formulations. The elimination of APEOs across the supply chain is a key success metric for the individual action plans of **Dienpi Srl**. Initiatives are already in progress or implemented to ensure no APEOs can enter **Dienpi Srl** products at different stages in the supply chain:

- the public M-RSL bans the use of APEOs since **June 2016**.
- Dienpi is reformulating the supply contracts to reinforce full supply chain compliance with Dienpi Srl APEOs elimination commitment;
- A questionnaire survey was delivered to relevant suppliers in **October 2016**, to investigate:
 - o the risk of APEOs (intentional) use
 - o the cooperation willingness of all suppliers to investigate the presence of APEOs in the supply chain

Main findings

- The survey was answered by 3 of the 6 involved suppliers in the survey
- The survey highlighted an overall low risk of APEOs intentional use in the supply chain, with three LOW RISK suppliers that will be asked to investigate their own wet processes and chemicals suppliers, and no MEDIUM RISK suppliers.
- The survey found that cooperation for APEOs elimination is to be improved, with two suppliers classified "COOPERATION", and four "NO COOPERATION". The survey marked a significant progress in the difficult relationships with the company's suppliers. Further actions aimed to improve cooperation of the latter will be set up in 2017 to foster risk prevention.

Next step

In 2017 **Dienpi Srl** will involve its supply chain in a testing program on the suppliers' raw materials, to foster cooperation and risk assessment.

The company is working to achieve active involvement across the supply chain in order to:

- Disseminate information about APEOs substitutes;
- Identify chemical formulations containing APEOs 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.

Dienpi Srl, as part of the Italian DETOXLeader Group together with Canepa Spa, Miroglio Group, Italdenim Spa, Besani Srl, Berbrand Srl, Tessitura Attilio Imperiali Spa, Zip Gfd Spa, Cottonificio Olcese Spa, Ditta Gaetano Lanfranchi Spa, Fellicolor Spa, Mabo Spa, Itaclab Srl, Taroni Spa, Alesilk Sas, Filmar Spa, Filmar Nile Textile S.A.E., Imbotex Srl, Italtexil Sarata Srl, Maglificio Ripa Spa, Monticolor Spa, Ongetta Srl, 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.