

TARONI



Taroni SpA
APEOs Elimination Investigation Report

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The APEOs Elimination Investigation Report is in fulfillment of the **Taroni SpA** commitment to the DETOX solution which was made public on 1st June, 2016.

Taroni SpA supports the Detox solution to ban hazardous chemicals from fashion.



The report was prepared on behalf of **Taroni SpA** 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 are 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.

Taroni SpA 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, **Taroni SpA** 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 Taroni SpA processes

Taroni SpA is a high quality luxury silk fabrics mill located in the heart of the Como silk district. The company has always considered the textile tradition as a strength without giving up to be a careful interpreter of cultural, aesthetic and technology changes taking place in the market

The most important products are: yarn dyed fabrics, jacquard and print fabrics. Main fiber used is silk but also other natural and manmade fibers are present in different fabrics.

All operations are carried out in the Grandate (Italy) mill owned by **Taroni SpA**. Being exclusively a weaver, no wet process take place inside Taroni SpA premises, thus there is no risk of APEO use in the company's internal processes.

3 Risk of APEOs use in the Taroni SpA supply chain

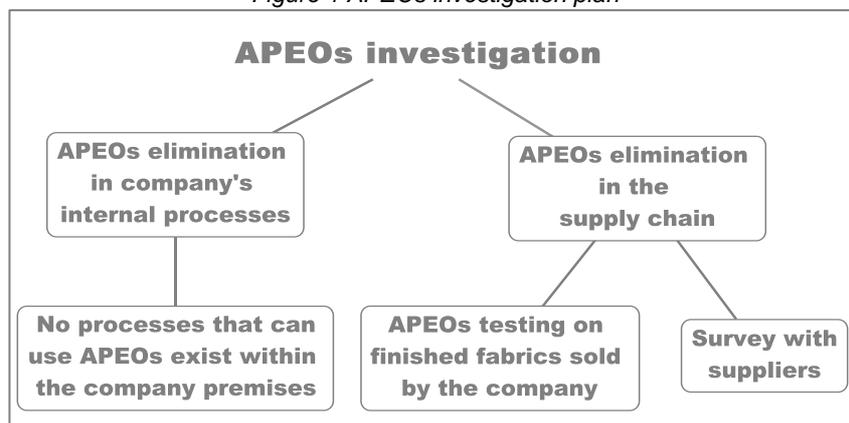
Possible ways APEOs can find their way into **Taroni SpA** products are chemical auxiliaries such as: lubricants, antistatic agents, dispersants, emulsifiers, silicon based softeners, leveling agents, surfactants, and other auxiliaries with high content of

dispersants or emulsifiers that can be used by suppliers of grey or dyed yarns and fabrics and of dyeing, printing 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 in the degumming of the silk fiber.

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, the company implemented a fact-finding investigation about APEOs use in the supply chain.

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.

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 [month] 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)

5 APEOs elimination in the Taroni SpA supply chain

An APEOs testing campaign has been implemented on a sample of finished fabrics sold by the company. Three products were sampled representing different supply chains as per the below table:

Table 1 – Tested Products

Test Code	Product
15/34926	ART. P16849 GEORGETTE COL. NERO 100% SE
15/34927	ART. F02569 COL. 0156 100% SE
16/20384	ART. F01319 COL. 791 FAILLE SETA

The sampled items covered around 50% of our production in 2016 and are the products with the highest risk of APEOs use.

A test is considered “Pass” if the substance is “not detectable” at the specific method LOD. Best testing methods available at independent certified laboratories were used. The LOD is set at 1,0 mg/kg for NPEOs and OPEOs and for NPs and OPs. LODs of the other DETOX 10 priority chemicals groups can be found in the full test reports at this link: <http://www.taroni.it/il-nostro-impegno-per-una-moda-libera-da-sostanze-chimiche-pericolose> in the **Taroni SpA** website.

The testing was made in **December 2015 and May 2016**.

Results of the APEOs testing are summarized in the table below.

Table 2 - Test results

Substance tested	Cas n.	Sample	LOD	Pass/ Fail
NPEO (1-20)	Various	All samples	1,0 mg/kg	Pass
OPEO (1-20)	Various	All samples	1,0 mg/kg	Pass
Nonylphenol (NP)	Various	All samples	1,0 mg/kg	Pass
Octylphenol (OP)	Various	All samples	1,0 mg/kg	Pass

In all the samples APEOs were “Non-detectable” at the LOD.

5.1 Survey with Taroni Spa’s suppliers

Taroni SpA 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**, **Taroni SpA** conducted a survey with suppliers to assess:

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

A survey questionnaire was sent to 34 suppliers accounting for 90% of relevant company's suppliers, 28 of the involved suppliers answered, all of them located in Europe. The survey redemption rate was around 80%, corresponding to 85% of relevant company's purchases.

The survey was based on suppliers' self-declaration, 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

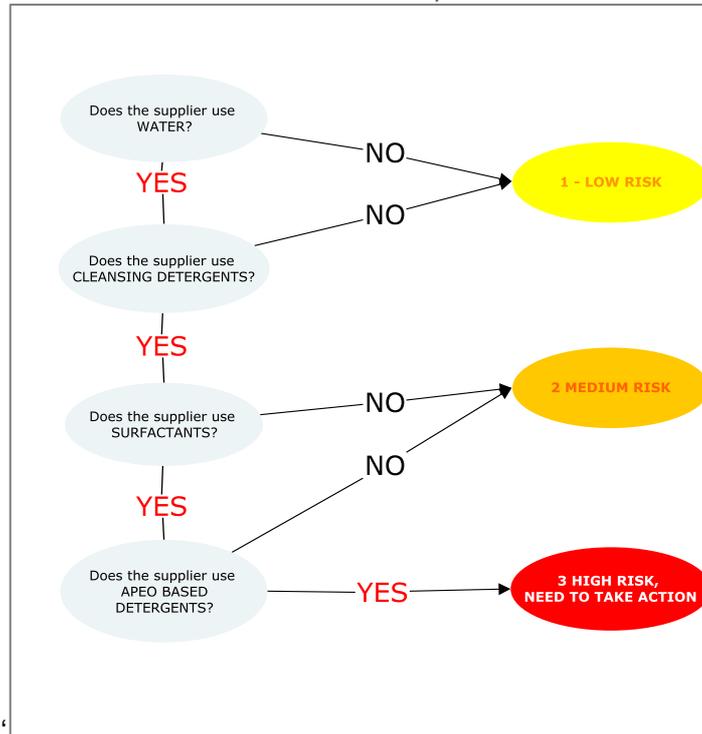
The intentional use of APEOs by suppliers was investigated with a funnel questioning approach:

- 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 3rd tiers), short of information about suppliers' own supply chain the limitation cannot be overcome. The assessment model, shown in Figure 2 suppliers APEOs intentional use risk assessment model, identifies three levels of risk and the relevant actions to implement:

- **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



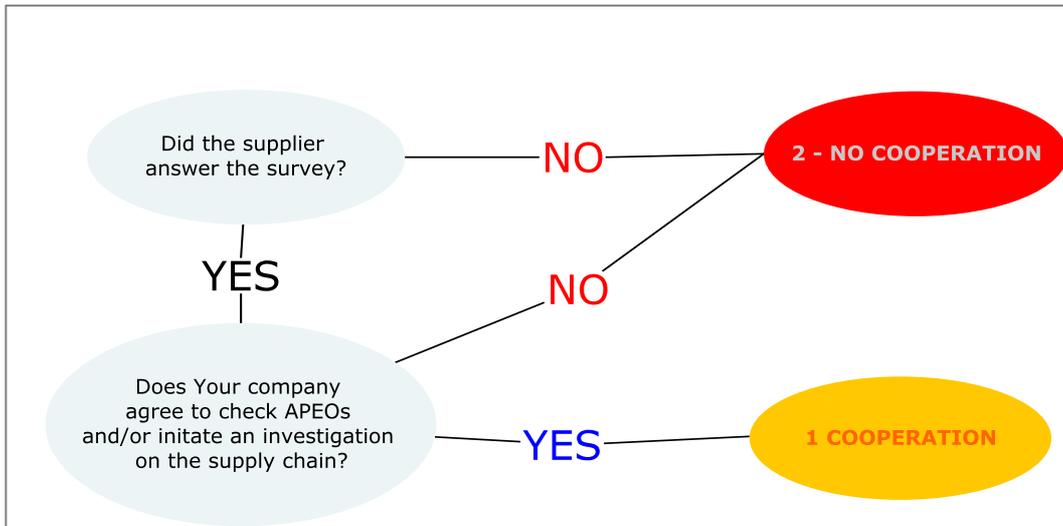
- 3 suppliers are Detox committed and classified NO RISK
- 16 suppliers classified LOW RISK because not using water (7) or not using cleansing detergents (9), they will be asked to investigate their wet processes suppliers.
- 9 suppliers were MEDIUM RISK because not using surfactants (2) or APEOs (7). A monitoring plan will be launched for MEDIUM RISK suppliers.

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 4 - APEOs cooperation assessment model of all suppliers



- 12 suppliers were classified as “NO COOPERATION” 9 of those involved in the survey did not answer and three did not agree to initiate an investigation; monitoring will be strengthened for these suppliers
- 25 suppliers were classified as “COOPERATION”: 24 because agreed to initiate an investigation on APEO and one in case APEOs were found in it products.

6 Conclusions from the investigation and Taroni SpA next steps

Taroni SpA 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 the company. Initiatives are already in progress or implemented to ensure no APEOs can enter **Taroni SpA** products at different stages in the supply chain:

- the public M-RSL bans the use of APEOs since **March 2016**.
- supply contracts have been reformulated to reinforce full supply chain compliance with APEOs elimination commitment;
- an APEOs focused testing program was implemented in **December 2015 and May 2016** on a sample of products sold by the company.
- 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, including chemicals', to investigate the presence of APEOs in the supply chain

Main findings

- Tests provided evidence that no APEOs are used in **Taroni SpA** processes
- The survey was answered by 28 of 34 involved suppliers.

- The survey highlighted an overall low risk of APEOs intentional use in the supply chain.
- Cooperation for APEOs elimination is satisfactory. An action aimed to improve cooperation with nine less cooperative suppliers will be planned in 2017.
- All suppliers but three disclose or are open to disclose full information about APEOs related water testing to **Taroni SpA** and to initiate further investigations with the supply chain if necessary.

Taroni SpA is working to achieve active involvement across the supply chain 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.

Taroni SpA, as part of the Italian DETOXLeader Group together with Canepa Spa, Miroglio Group, Italdeni m Spa, Besani Srl, Berbrand Srl, Tessitura Attilio Imperiali Spa, Zip Gfd Spa, Cotonificio Olcese Spa, Ditta Gaetano Lanfranchi Spa, Fellicolor Spa, Mabo Spa, Itaclab Srl, Alesilk Sas, Dienpi Srl, 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.