



Imbotex Srl
APEOs Elimination Investigation Report

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

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



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



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Table of Contents

1	APEOs in textile processes.....	4
2	Overview of Imbotex Srl processes	5
3	Risk of APEOs use in the Imbotex Srl supply chain.....	5
4	The investigation plan	5
5	APEOs elimination in Imbotex Srl supply chain	6
5.1	APEOs Testing	6
5.2	Survey with Imbotex Srl's suppliers	7
5.2.1	Method: survey frame.....	7
5.2.3	Cooperation in investigating APEOs in the supply chain.....	9
6	Conclusions from the investigation and Imbotex Srl next steps.....	10

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.

Imbotex 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, **Imbotex 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 Imbotex Srl processes

Founded in 1955, Imbotex Srl is a leading manufacturer of natural and technological textile padding. Our products range from furniture to high fashion and professional sport to textiles for body wellness.

The company is organized into two main divisions: padding for bedding and furnishings and wadding/high-performance materials for fashion and sportswear.

All operations are carried out in one production site located in Cittadella (PD), Italy.

All processes are purely mechanical, the only water used is in the spraying of diluted antistatic salts to avoid electrostatic charge throughout the production. No other wet processes take place inside Imbotex Srl premises, thus there is no risk of APEO use in the Imbotex Srl internal processes.

3 Risk of APEOs use in the Imbotex Srl supply chain

No dyeing or finishing processing are carried out by the Company's suppliers on **Imbotex Srl** products except for shrink resistant and anti-felting treatments on fibers of animal origin.

Possible ways APEOs can find their way into **Imbotex 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 yarns and fabrics and of 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 the first treatments of natural and chemical fibers and surfactants formulations used in different production stages and due to the large use of detergents for pulping wastes, and other natural fibers production like silk.

Imbotex Srl has chosen to purchase all its silk from a Detox committed supplier, namely **Ongetta Srl**.

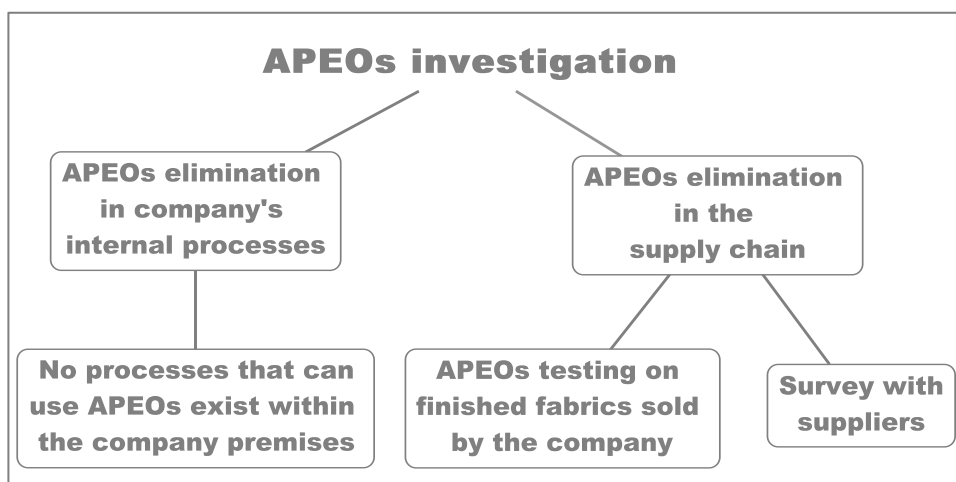
4 The investigation plan

Consistent with the Detox commitments signed in **June 2016**, and as part of a program of work to eliminate APEOs and all hazardous chemicals, **Imbotex 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 Jan. 2017)

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 **Imbotex Srl** APEOs ban policy.

5 APEOs elimination in Imbotex Srl supply chain

5.1 APEOs Testing

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

Table 1 – Tested products

Test Code	Product	Raw material origin	Finishing Supplier
16RA05600	LAMBSWOOL PADDING	ASIA/EUROPE	EUROPE
16RA05605	CELLIANT HEAT PADDING	ASIA/EUROPE	EUROPE
16RA05608	NATIVA SILK PADDING	ASIA/EUROPE	EUROPE
16RA05613	MULTILAYER PADDING WO/PL/CO	ASIA/EUROPE	EUROPE
16/34994	TWINS PADDING PA/PES/PP	ASIA/EUROPE	EUROPE

The first four tests were made in **May 2016** and the fifth and last test in **October 2016**.

The sampled items cover 80% of the company's production in 2016 and are the products with the highest risk of APEOs use.

✓ Pass / Fail threshold

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 0,7 mg/kg for all NPEOs and OPEOs in the first four tests and at 1,0 mg/kg for all NPs, OPs, NPEOs and OPEOs in the fifth and last test. LODs of the other 10 priority groups can be found in the full test report [at this link](#) in the **Imbotex Srl** website.

✓ Results

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

Table 2 - Test results by product

Substance name	Test Code	Cas n.	LOD	Pass/ Fail
Nonylphenol (NP)	16/34994	various	1,0 mg/kg	Pass
Octylphenol (OP)	16/34994	various	1,0 mg/kg	Pass
NPEO (1-2)	All tests	various	0,7/1,0 mg/kg	Pass
NPEO (3-20)	16RA05600	various	1,0 mg/kg	Pass
	16RA05605			
	16RA05608			
	16RA05613			
OPEO (1-20)	All tests	various	0,7/1,0 mg/kg	Pass

Test were Pass for all APEOs in all samples except for NPEO₍₃₋₂₀₎ that were found with a concentration higher than the LOD (1,2 parts per million) in the sample 16/34994.

While the very low level of NPEO₍₃₋₂₀₎ and the absence of all other APEOs found by the tests confirm that no systematic or intentional use of APEOs is carried out by **Imbotex Srl**, a supplement of investigation is due to spot the source of contamination.

5.2 Survey with Imbotex Srl's suppliers

Imbotex 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**.

5.2.1 Method: survey frame

In October 2016, **Imbotex Srl** conducted a global survey with its suppliers to assess:

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

A survey questionnaire was sent to 12 suppliers accounting for 85% of relevant **Imbotex Srl's** suppliers, and for 80% of purchased materials and 85% of finishing services.

6 of the involved suppliers participated. The survey redemption rate was 50%, corresponding to 60% of relevant **Imbotex 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.

5.2.2 *Risk of APEOs Intentional use by suppliers*

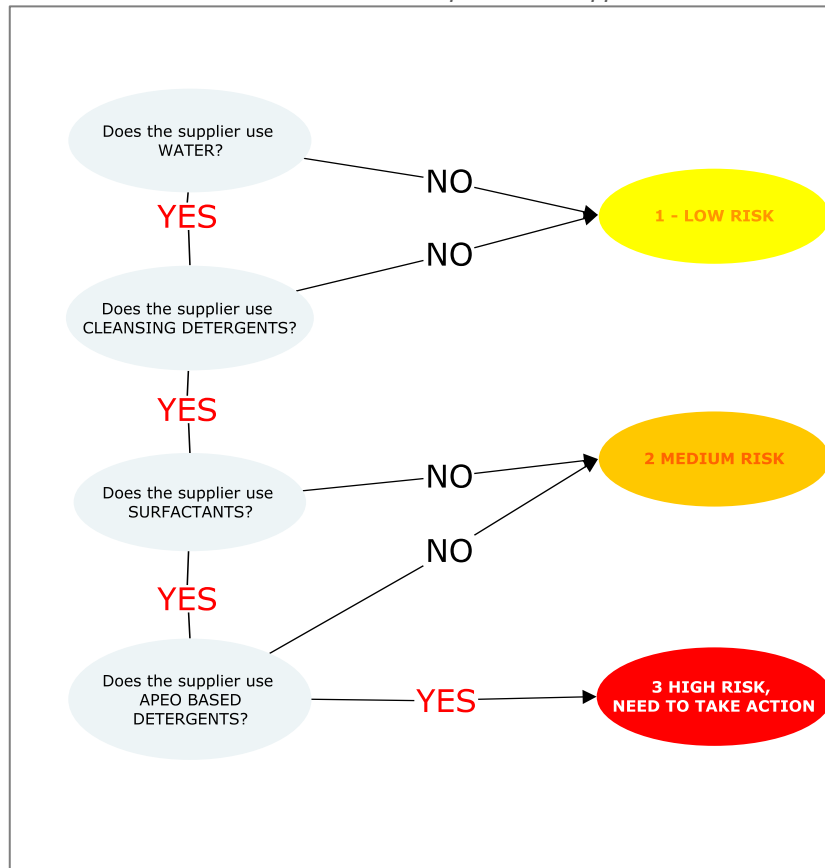
The intentional use of APEOs by suppliers was investigated with a funnel questioning approach:

- 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 Figure 2, 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 suppliers



✓ Results

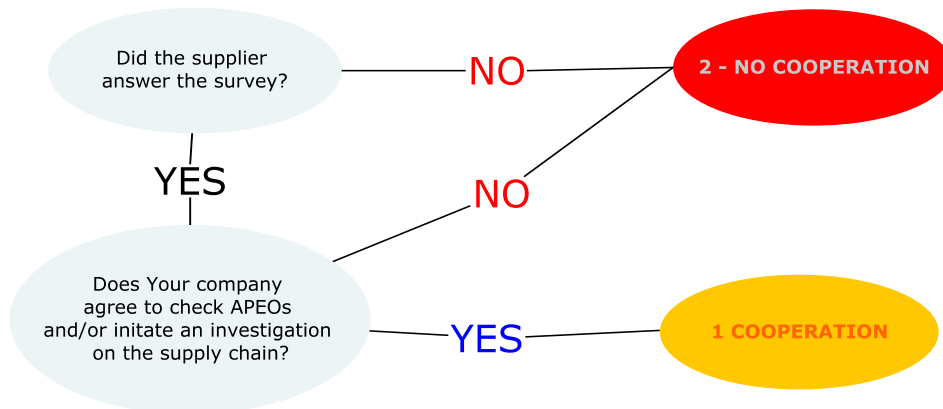
- 1 **Imbotex Srl** supplier is a Detox committed company, **Ongetta Srl**, and was classified NO RISK. APEOs were absent from last **Ongetta Srl** test reports available [here](#).
- 4 suppliers were classified LOW RISK because not using water (3) or not using Cleansing Detergents (1), they will all be asked to investigate their own wet processes suppliers.
- 1 supplier was classified MEDIUM RISK because of surfactants use and will be monitored.

5.2.3 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 6 APEOs cooperation assessment model of all suppliers



✓ Results

- 8 suppliers involved in the survey were classified as “NO COOPERATION” as 6 did not participate and 2 did not agree to initiate an investigation, monitoring will be strengthened for these suppliers.
- 4 suppliers agreed to initiate an investigation on APEO in case APEOs were found in their products, and were classified as “COOPERATION” and do not need any further action.

6 Conclusions from the investigation and Imbotex Srl next steps

Imbotex 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 the company. Initiatives are already in progress or implemented to ensure no APEOs can enter the company’s products at different stages in the supply chain:

- The public M-RSL bans the use of APEOs since **June 2016**.
- Supply contracts have been reformulated to reinforce full supply chain compliance with **Imbotex Srl** APEOs elimination commitment.
- An APEOs focused testing program was implemented in **May 2016** and **October 2016** on a sample of products sold by the company.
- on **Imbotex Srl** products.
- A questionnaire survey was delivered to relevant suppliers in **October 2016**, to investigate:

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

Main findings

- Tests provided no evidence of APEOs being used in **Imbotex Srl** processes.
- Traces of APEOs – 1,2 mg/kg of NPEO₍₃₋₂₀₎ - Ethoxylated Nonylphenols were found on one of **Imbotex Srl** products. A very low result that does not depend on intentional use, as per the collected chemicals suppliers' declarations.
- The supplier survey was answered by 6 of the 12 suppliers involved in the survey
- The survey highlighted an overall low risk of APEOs intentional use in the supply chain, with 1 NO RISK, Detox committed supplier, **Ongetta Srl**, 4 LOW RISK suppliers that will be asked to investigate their own wet processes and chemicals suppliers, and 1 MEDIUM RISK supplier which monitoring will be strengthened.
- The survey found that cooperation for APEOs elimination is to be improved, with 4 suppliers classified "COOPERATION", and 8 "NO COOPERATION". An action aimed to improve cooperation of the latter will be set up in 2017 to foster risk prevention.

Imbotex Srl 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.

Imbotex 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, Cotonificio Olcese Spa, Ditta Gaetano Lanfranchi Spa, Fellicolor Spa, Mabo Spa, Itaclab Srl, Taroni Spa, Alesilk Sas, Dienpi Srl, Filmar Spa, Filmar Nile Textile S.A.E., 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.