



## APEOS Case Study

Investigation into the current compliance to Apeos ban

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By Detox Commitment, Miroglio Fashion committed to erase APEOS from the Supply Chain , either from producing processes and products (raw materials and finished items).

Alkylphenolic compounds, which contain nonylphenols and octylphenols and the etoxylates - in particular (NPEOs) and (OPEOs) – are largely used compounds for their surface-active properties. Alkylphenoletoxylates (APEOs) have been largely used in washing and dyeing. Since the early '00s, their use has been banned in EU due to their toxicity to water system. In particular, we are talking about molecules whose demolition products coming from industrial water purification are toxic to water life, and they persist into the environment because they don't downgrade easily and they can accumulate in living organisms as long as reaching man through food chain contamination. Their similarity to natural oestrogens can interfere with sexual development of some organisms. In particular fish can be affected by feminization.

In Europe, commercialisation and use of nonylphenoletoxylates in chemical formulations in a concentration greater than 0,1% weightwise is forbidden since 2005 ( Directive 2003/53/EC) and REACH rules forbid its disposal in water.

Miroglio Fashion, which always cares about consumer's health, in 2013 conducted an investigation about bought materials, introducing, on its RSL, voluntary limits more strict than all suppliers have to respect.

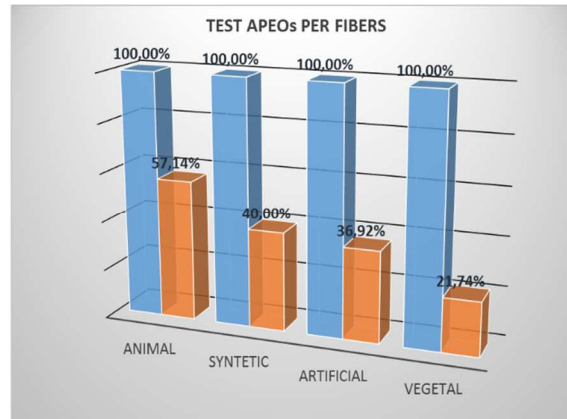
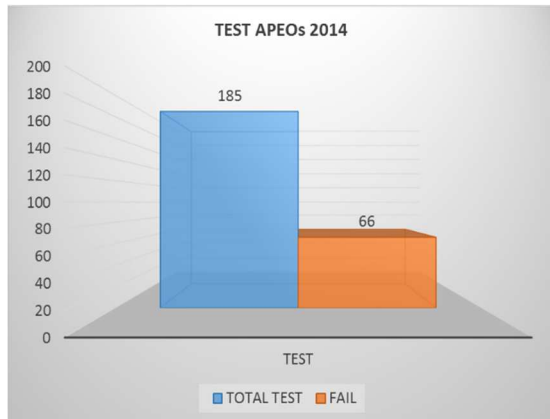
## **SCREENING RESULT**

We made a first screening at the end of 2014 after picking 185 pieces produced in the year and the result was a 35% failure of the reports.

Fibers with more criticalities are animal ones (wool) followed by synthetics.

Test reports are done by a certified lab using a method based on a direct determination of APEOS through liquid chromatography-mass spectrometry (LC-MS/MS).

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The most consistent screening, which represents better the APEOS quantity present in production, is for sure the one identified by data collection in 2015.

The whole of samples examined has been divided into three parts: the first one is about the analysis done on the deliveries in the first 4 months of the year, the second one on the items received from May to July and the last one collecting the results as a sum in the year.

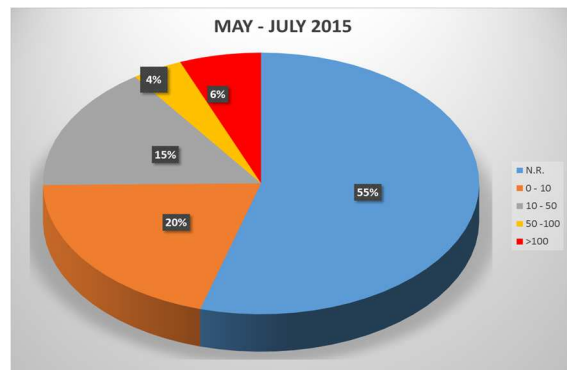
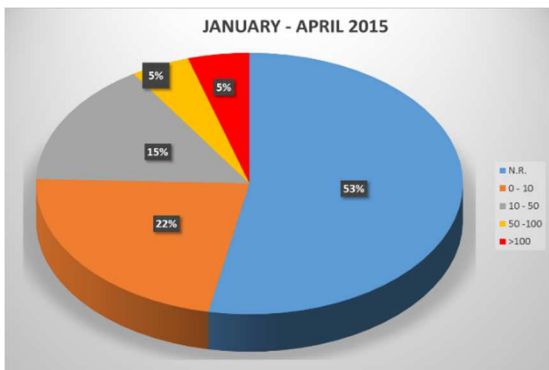
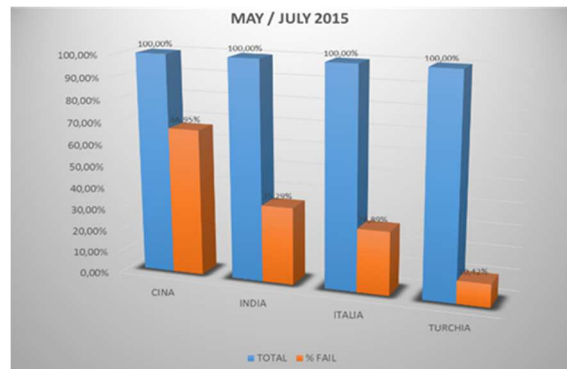
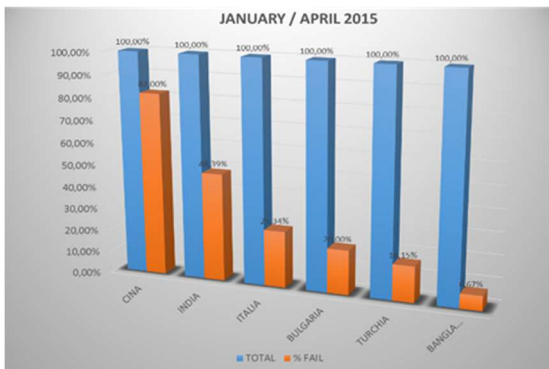
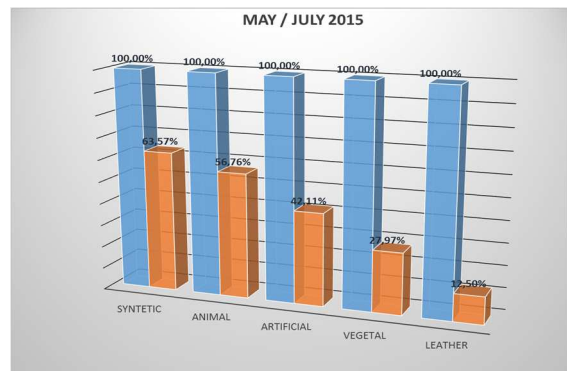
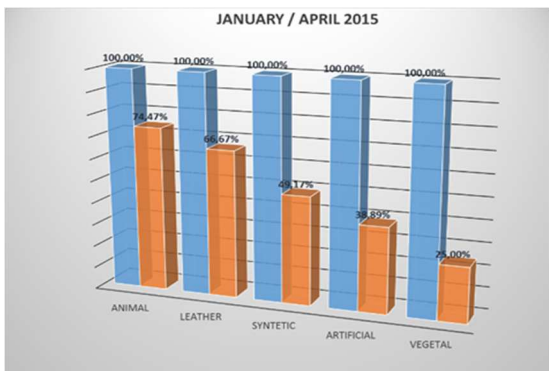
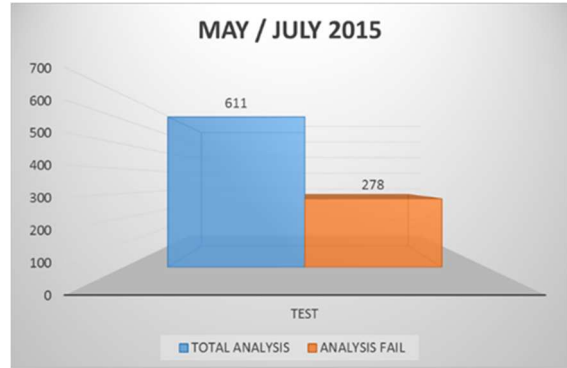
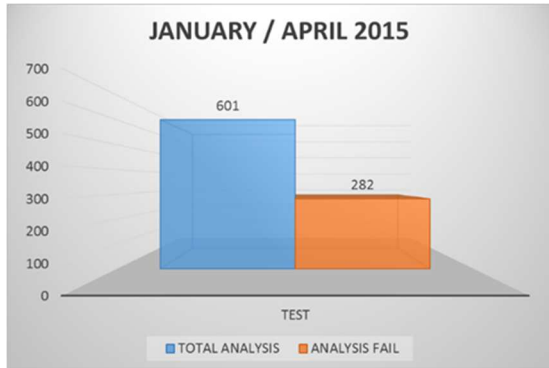
We are considering, as an acceptance limit, 1 mg/kg APEOS concentration. All the samples having an APEOS concentration greater than that have to be considered as failed.

FAILED percentage is common to all the periods we analyzed and its value is about 46%.

During the year, we notice a decrease in value on animal fibres, especially in Middle/Far East countries, even though the most critical values remain the same, identified as >50 mg/kg

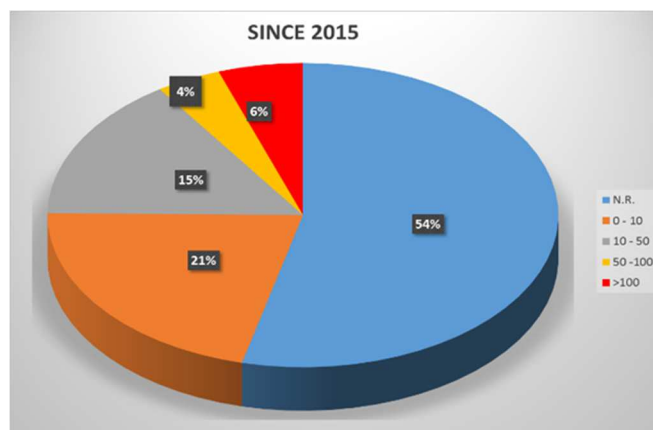
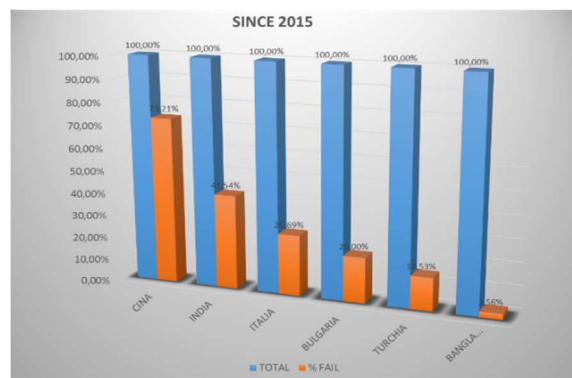
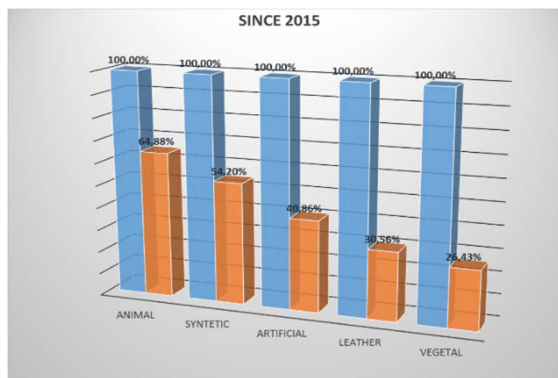
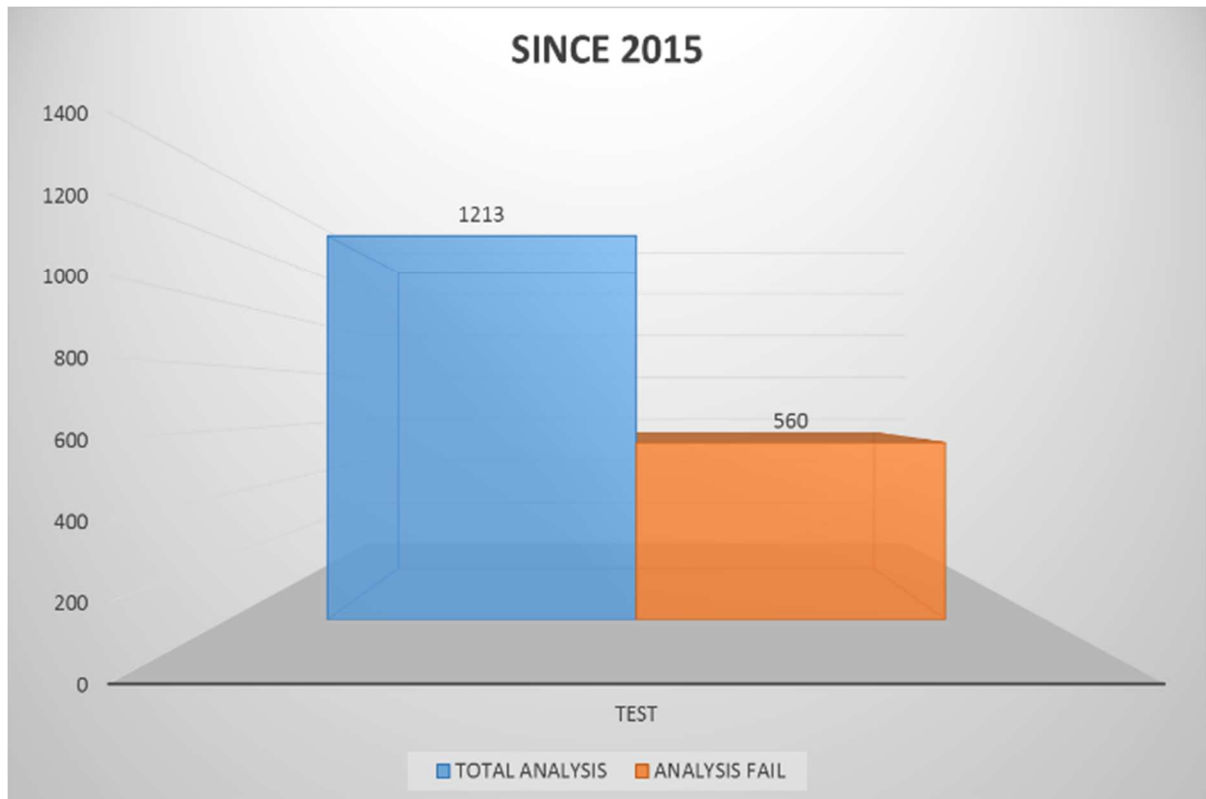
NB: in the analysis the garments indicated as of Italian origin are related to purchase on local market but their real origin is Far East.

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The results until the end of July are the following:



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## **CONCLUSION AND NEXT STEPS**

The screening pointed out that in the supply chain is very likely to find items contaminated by APEOS.

This situation has remarked the criticalities to work on in order to totally erase APEOS, according to Greenpeace Detox commitment.

That's why, for year 2016, we have planned the below activities:

- a) Information and formation for all the supply and sub-supply chain to reach the fixed goals.
- b) Creation of an audit program at production structures of supply chain, paying a special attention to wet process.
- c) Review of M-RSL and P-RSL inputting quantification limits according to the best technologies available.
- d) Verification of chemical formulations containing APEOS (also in a contamination level) still used in order to find out alternative substances which can guarantee the same performance standards.

Miroglio Fashion, as in the past, is aware that only sharing and actively participating with all the “ fashion quality chain” will be able to reach common results on a wide range scale.

Miroglio Fashion will take part to all global initiatives (formation and round table meetings) in order to share the efforts done and lived experiences.