



TINTORIA CROMOS SRL

Case study: APEO's investigation report

Prato, August 2016

Detox Commitment of 27 mills in Prato Textile district

TINTORIA CROMOS SRL hereby acknowledges the relevant importance to remove all hazardous chemicals during whole production process. For this reason, February 2016, we subscribe to Detox commitment starting a significant improvement.

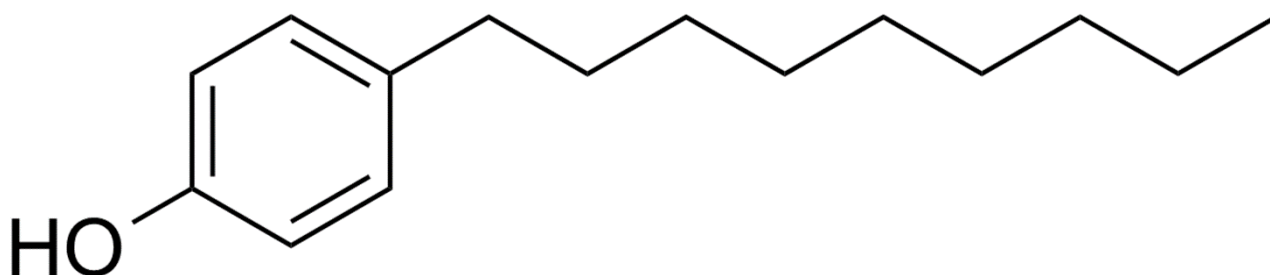
We share Detox Commitment with other companies in Prato Industrial Textile area, and we are all coordinate by Confindustria Toscana Nord.

This agreement will enhance our commitment to the environment and health of workers and consumers through quality products and processes.

In this roadmap, TINTORIA CROMOS SRL is committed to eliminate Alkylphenols away from its own supply- chain.

Applications of Ethoxylated Alkylphenols (APEOS)

Ethoxylated alkylphenols (APEOS) are a large category of non-ionic surfactants which have good performances as detergents, emulsifiers, disperdents and so on.



APEOS and especially ethoxylated nonylphenols (NPEO) had a large use in textile industry (detergents, emulsifiers) but also in home and domestic use.

Other industrial branches that can use APEOS are leather industry, cosmetics, health-care products and home products; furthermore, some nonylphenols derivatives were found in plastics as antioxidants.

Regarding ethoxylated octylphenols, despite less trusty data are available, they seem to have the same uses as nonylphenols.

Environment arrangement

Ethoxylated (APEOS) and non-ethoxylated (AP) alkylphenols are present in ground and sea water, in sediment because of their gathering capability, in sludge and waste disposal. Even studies on fauna are still poor, high level of APEOS were detected in birds and fishes living near rivers that flow in regions where there are APEOS production plants.

It's foreseeable the presence of APEOS in finished textiles products because of probable contamination of chemical products (surfactants, emulsifiers, dyestuffs) and/or in raw materials (wool, cashmere, and so on).

Recent studies show the presence of APEOS in some food in Germany, but clinical effects on human body are not still well explained



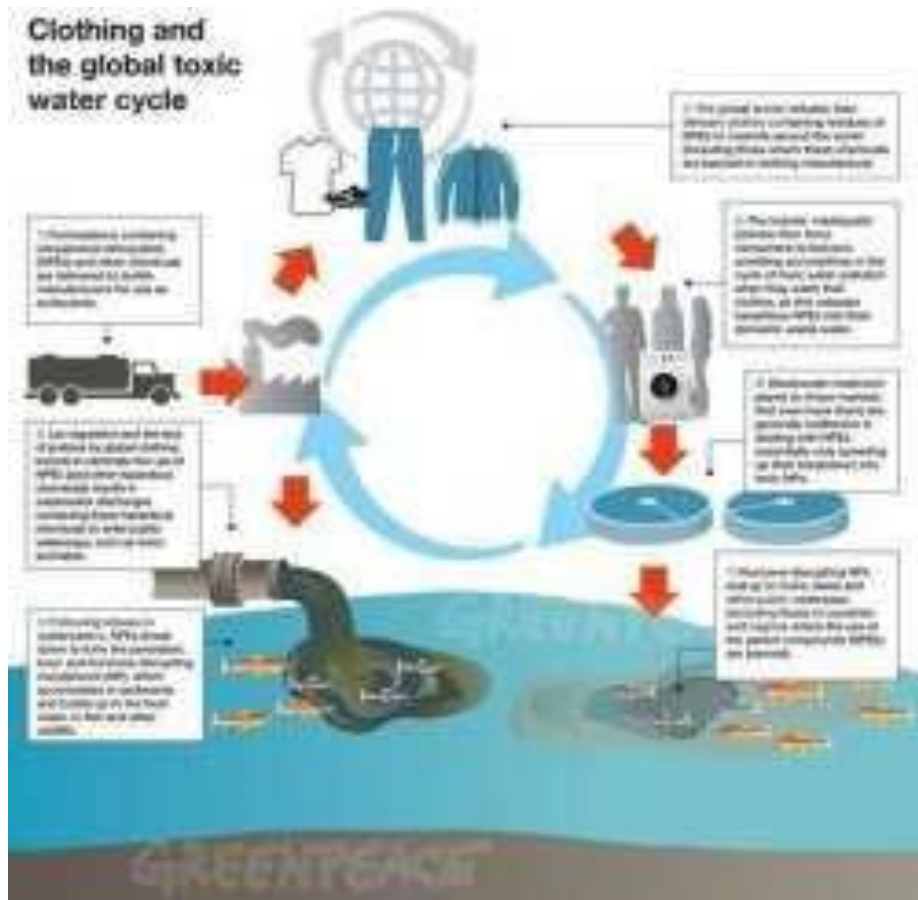
Risks due to APEOS:

Dangerousness of APEOS derived from their degradation in less-ethoxylated short chain derivatives and in non-ethoxylated original phenols (e.g nonylphenol and octylphenol).

Risk assessment made by EU reveal that use of APEOS cause high risks to aquatic organisms because of their oestrogen activity that can mimic natural hormones.

This can lead to abnormal sexual behaviour of many organisms: the most important example is “femminisation” of fishes reported in United Kingdom (Jobling et al. 2002).

Human risks still remain unclear, although recent studies pointed out a feasible disease in mammalian spermatogenic function and some damages in human lymphoid cell’s DNA.

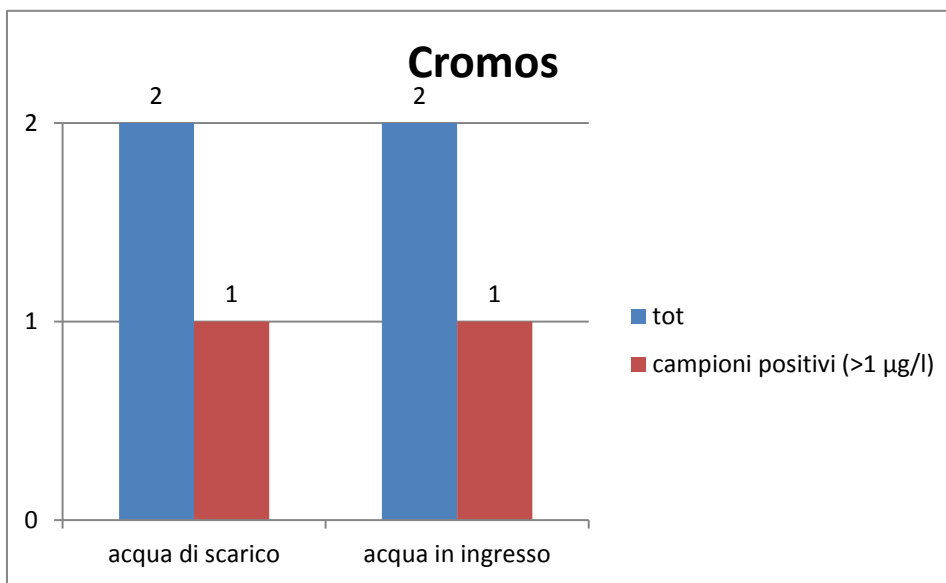


APEOS investigation plan results

TINTORIA CROMOS SRL started an investigation plan of chemical tests in order to monitoring its own supply chain and internal manufacturing processes to identify the raw materials, the products and the processes where there is greater risk of APEOS and AP. More information and details on the aggregated results of investigation plan of the Detox committed companies:

<https://www.confindustriatoscananord.it/sostenibilita/detox>

Here the results of the investigations made by TINTORIA CROMOS SRL. The graphs show the trend of the tested samples positive for the presence of APEO's compared to the values of MRSL (1 mgr/Kg).



Measure to improve quality and conclusions

TINTORIA CROMOS SRL monitored the presence of the APEOS by analyzing the incoming water and outgoing with encouraging results.

TINTORIA CROMOS SRL will continue in monitoring this parameter in order to evaluate any critical topics and to start efficient improving measurements.