

*Canepa*

**Canepa SpA**  
APEO Investigation Report

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## **1.0 APEOS IN TEXTILE PROCESSES**

Alkylphenol ethoxylates (APEO) are a group of nonionic surfactants, the most commonly used being nonylphenol ethoxylates (NPEO) and octylphenol ethoxylates (OPEO).

The chemical structure of these molecules makes them particularly useful in textile industry wet processes (owing to their dispersant, detergent and emulsifying action), but particularly hazardous for the environment and for aquatic organisms.

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

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

To safeguard the health and safety of consumers, producers and local communities, Canepa SpA starting **from May 2014** has introduced the ban on APEO the Manufacture Restricted Substances List (M-RSL) that suppliers are required to comply with.

In line with its Greenpeace Detox Commitment, Canepa SpA conducted an investigation into APEO usage in its products and in the supply chain to map the current situation.

## 2.0 OVERVIEW OF CANEPA SPA PROCESSES

**Canepa SpA** is a manufacturer of fine fabrics. Main fibre used are silk and fine wool. The company does not directly carry out wet processes in the company's factory. Direct consumption of chemicals is limited mainly to sizing materials and surfactants. Wet processes, yarns and fabric dyeing, finishing and printing, are carried out upstream by selected and established suppliers, in some case by second tier sub-suppliers.

Possible ways APEOs can find their way into Canepa SpA products are chemical auxiliaries, namely in formulation of:

- lubricants;
- antistatic agents;
- dispersants;
- emulsifiers;
- silicon based softeners;
- levelling agents;
- surfactants;
- and auxiliaries with high content of dispersants or emulsifiers.

Few of these auxiliaries were APEOs can potentially be used to improve the functional performances, are directly used in Canepa SpA own processes namely: lubricants, emulsifiers and surfactants.

APEOs can however be found on yarns especially in raw materials sourced in Countries where the use of APEOs is allowed<sup>1</sup>. The risk is especially high in the first stage of fibre production as APEOs can be found in surfactants formulations used for scouring greasy of wool and in the de-gumming of raw silk. The use of APEOs in the first stages of raw material processing is currently a major issue as we do not have direct relationship with the fibres producers as fibres are sourced by our suppliers of yarn.

Lubricants; antistatic agents; dispersants; emulsifiers; silicon based softeners; levelling agents; surfactants; and other auxiliaries with high content of dispersants or emulsifiers can also be used in wet processing by our suppliers (*yarn dyeing, fabric dyeing, printing and other wet finishings*). All of our suppliers of wet processes are based in Italy, thus subject to the APEOs European regulation, that however can be used, in some formulations of dyestuffs or chemical auxiliaries, even though the use is not disclosed by dyestuffs or chemical auxiliaries suppliers.

### 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 January 2005 the EU directive 2003/53/ EG has forbidden the use of NPEO in higher concentrations than 0.1% in product formulations.

## **3.0 APEOS USE IN THE COMPANY AND BY SUPPLIERS**

The investigation and the testing plan focused on products manufactured by Canepa SpA (fabrics), products outsourced (fabrics), intermediates (raw yarns) and in chemicals the company directly uses (**lubricants, emulsifiers and surfactants.**) to check if any APEO enters, intentionally or unintentionally, in the supply chain.

### **3.1 methodology**

#### ***Sampling***

The investigation tested 130 samples:

- 96 test on fabrics
  - 39 tests on fabrics manufactured by Canepa SpA
  - 57 tests on fabrics outsourced to suppliers
- 30 test on raw yarns
- 4 test on chemical auxiliaries (surfactants/sequestrants and suzubg waxes)

Timing of testing was:

- 23 tests on fabrics performed before the DETOX commitment in September 2013
- 73 test on fabrics performed since the DETOX commitment up to July 2015
- 30 test on raw yarns performed since the DETOX commitment up to July 2015
- 4 test on chemical auxiliaries performed since the DETOX commitment up to July 2015

The articles (type of fabrics) tested account for over half of Canepa SpA yearly production.

#### ***Testing***

The chemical tests on fabrics have been conducted according to the best testing methods available at the laboratories. After the DETOX Commitment (107 tests) detection limits **were 1ppm**.

A “Pass” result means APEOs are not detected on the sample.

### 3.2 results

Overall, 82% (107 tests) of the tested sample scored a “Pass”, i.e. the tests on fabrics showed no detection of APEOs. 18% (23 tests) of the tested sample scored a “Fail”. Nonylphenoles were detected in 23 tests, moreover Octylphenoles also were detected in 2 tests.

APEOs were not detected on 95% of the samples of articles manufactured by Canepa. APEOs (Nonylphenoles) were detected on 2 samples (May 13d 2013, 13ppm and July 24th 2015, 2,4ppm).

Chart. 1 Summary of all tested samples, APEO detections, % of samples

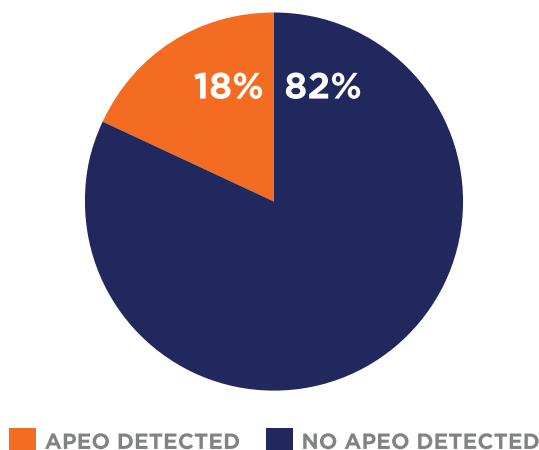
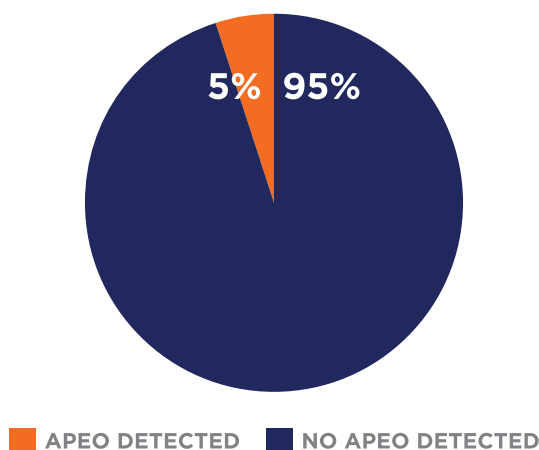
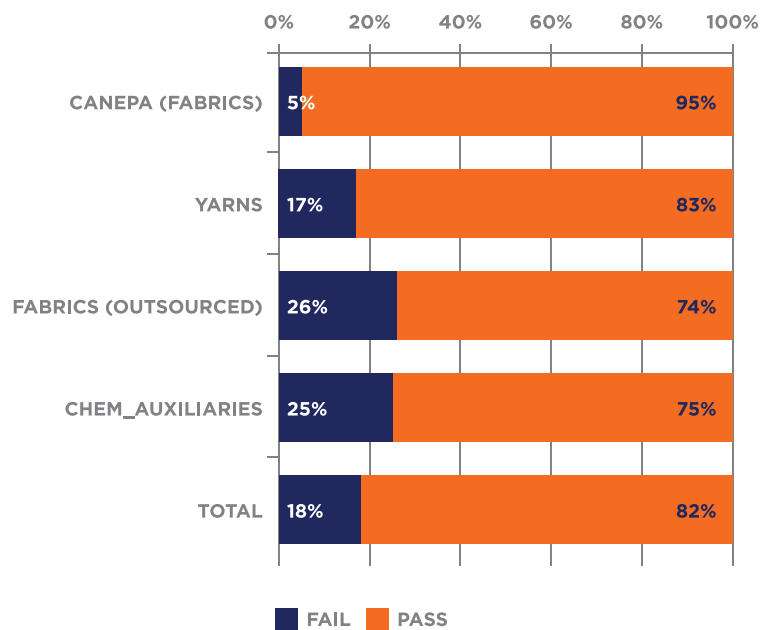


Chart. 2 Fabrics manufactured by Canepa, APEO detections, % of samples



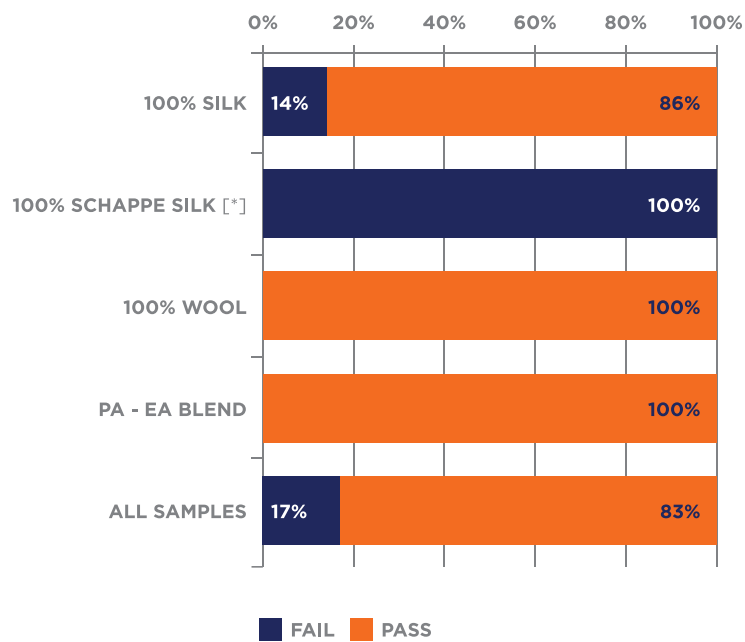
The % share of “Fails” in fabrics Canepa outsources to suppliers was limited (26%) but, as expected, higher than in fabrics manufactured directly by Canepa. Detections of APEO on raw yarns was 17%. All detection were in 100% silk Yarns (see below [Chart. 4](#) and [Chart. 7.](#)). APEOs were found in 1 sample of sizing wax.

Chart. 3 - Samples tested by type of product. % of Passes and Fails



APEOs were found on raw silk yarns, as expected. APEOs are often used in raw silk processing especially at the de-gumming stage and in Countries (China is the largest producer of silk) where APEOs use is permitted.

Chart. 4 – Yarns. Samples tested by fiber. % of Passes and Fails

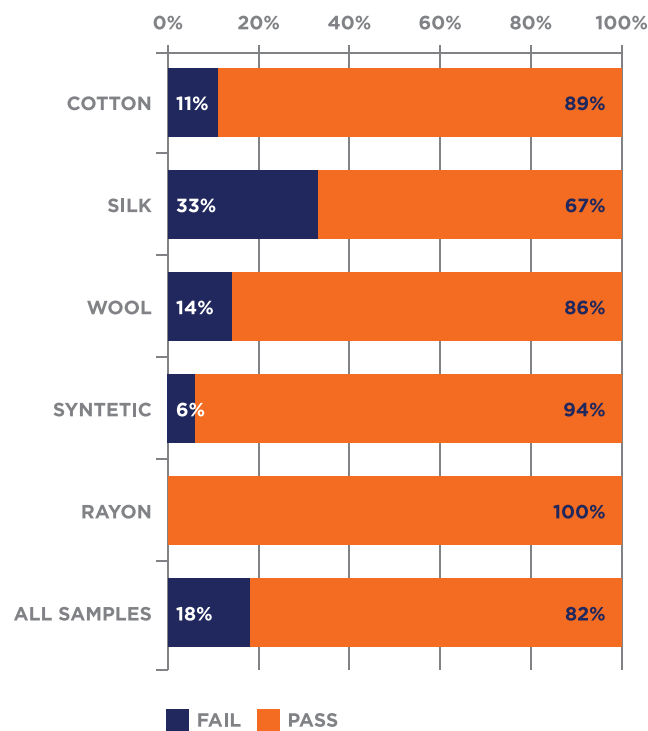


(\*) recycled from pre-consumption waste



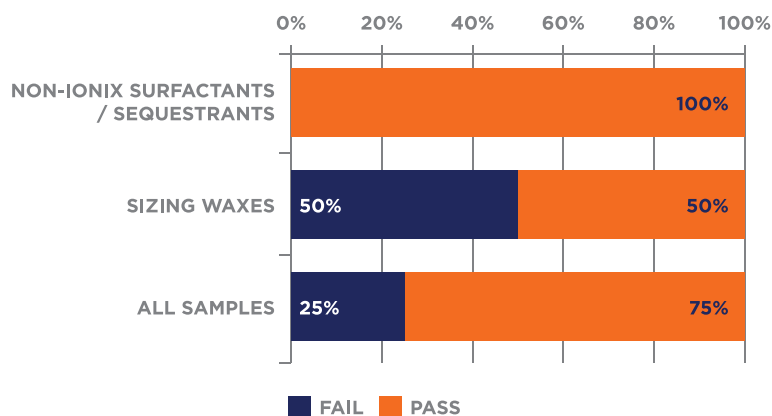
The classification of fabrics by dominant fiber shows APEOs largest share of Fails (33%) was in silk fabrics, followed by other natural fibers fabrics (14% in wool fabrics and 11% in cotton fabrics). Detection in wool and cotton fabrics is mainly originated by use of APEOs in scouring at the very first stage of fiber processing in Countries (mainly Australia for wool) where APEOs use is permitted.

Chart. 5 - Fabrics. Samples tested by fiber. % of Passes and Fails



4 samples of chemical auxiliaries formulations were tested, 2 non ionic surfactants/sequestrants and 2 sizing waxes used in yarn preparation for weaving. A high concentration APEOs was detected on 1 sample of sizing wax.

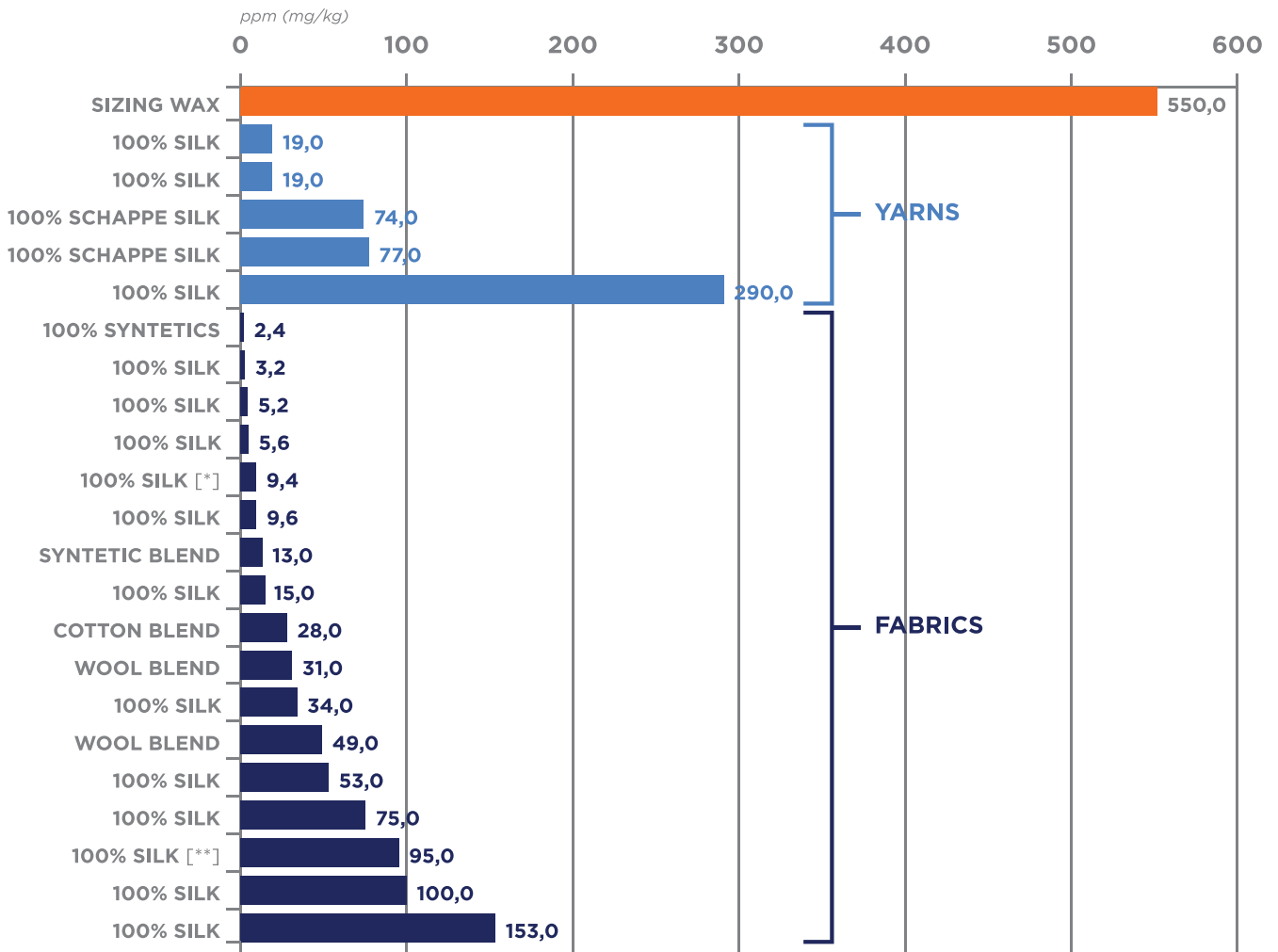
Chart. 6 - Chemical auxiliaries. Samples tested. % of Passes and Fails



The analysis of APEOs levels in the 23 “Fail” samples shows that

- 6 out of 17 “Fail” in fabrics were below 10ppm, possibly due to cross-contamination
- 3 out of the 22 sample (excluding the formulation of sizing wax) were 100ppm or above, the limit de-facto considered currently the industry wide standard

Chart. 7 - Detected NPEO levels in 23 samples. (ppm or mg/Kg)



(\*) In this sample 240ppm of OPEOs were also detected  
 (\*\*) In this sample 2ppm of OPEOs were also detected

The tested samples for yarns and fabric suppliers were drawn from:

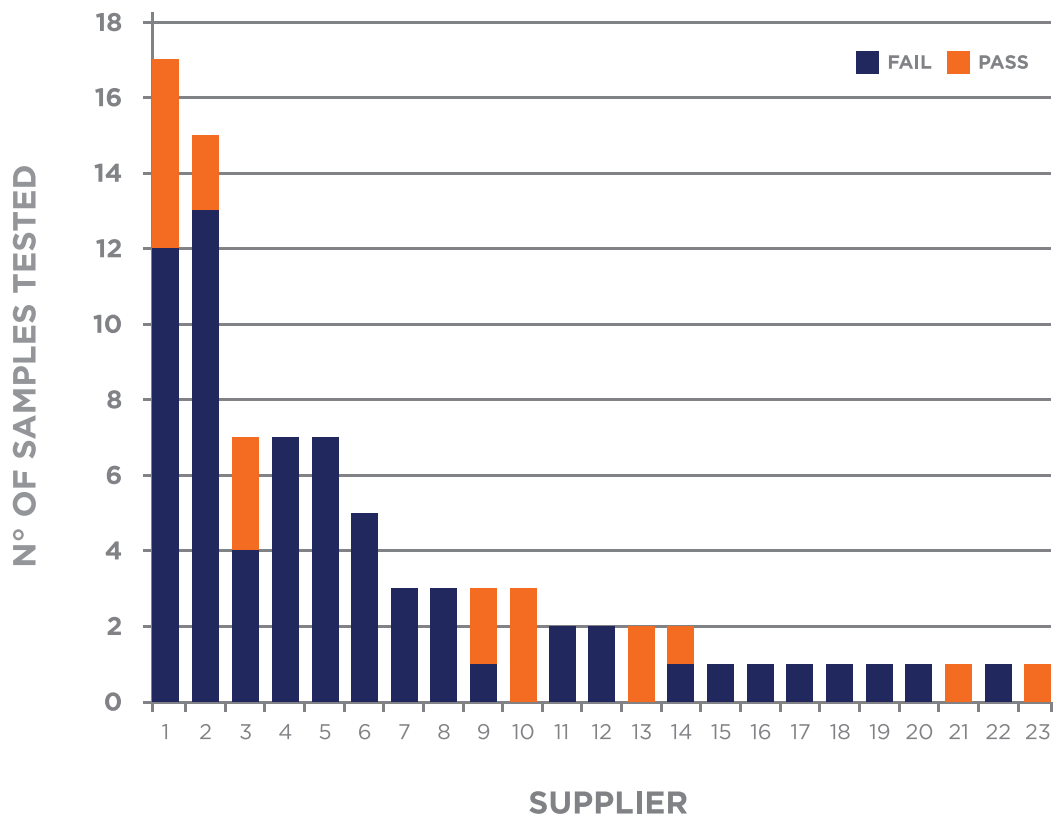
- 22 suppliers
- 1 customer (fabrics received for commission processing)

Test were 100% “Pass” for 13 suppliers.

3 suppliers scored 100% fail

- 1 was the customer we received the fabrics from for commission processing
- 1 was the supplier of recycled schappe silk

Chart. 8 - Samples tested by supplier. % of Passes and Fails



## SUMMARY OF INVESTIGATION RESULTS, CONCLUSIONS & NEXT STEPS

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A number of initiatives are already in progress or implemented to ensure no APEOs can enter Canepa SpA products at different stages in the supply chain.

- According to the public Canepa SpA M-RSL, that sets detection limits in line with best available technology, APEOs are banned since **May2014**;
  - Supply contracts are being reformulated to ensure full supply chain compliance with Canepa SpA APEO elimination commitment;
- On the basis of these encouraging results from the tests, we will proceed with our program of periodical product testing.

**Canepa SpA** is working to achieve active involvement across the supply chain in order to:

- disseminate information about APEOs substitutes;
- identify chemical formulations containing APEO 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.

**Canepa SpA**, as part of the Italian DETOXLeader Group together with Berbrand Srl, Italdenim SpA, Miroglio SpA, Tessitura Attilio Imperiali SpA, Zip Gfd SpA, Lanfranchi SpA 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.

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*San Fermo della Battaglia, published ex Detox Commitment, September 25th, 2015*

## ANNEX 1, DETAILED TABLES

Tab. 1 - Number of samples tested by type of product

	FAIL	PASS	TOTAL	% FAIL	% PASS
CANEPA (FABRICS)	2	37	39	5,1%	95%
SUPPLIERS					
YARNS	5	25	30	16,7%	83%
FABRICS	14	42	57	26,3%	74%
CHEMICAL AUXILIARIES	1	3	4	25,0%	75%
<b>ALL SAMPLES</b>	<b>23</b>	<b>107</b>	<b>130</b>	<b>18%</b>	<b>82%</b>

Tab. 2 - Yarns, number of samples tested by fiber

	FAIL	PASS	TOTAL	% FAIL	% PASS
100% SILK	3	19	22	14%	86%
100% SCHAPPE SILK <small>(recycled from pre-consumption waste)</small>	2	0	1	100%	0%
100% WOOL	0	5	5	0%	100%
PA - EA BLEND	0	1	1	0%	100%
<b>ALL SAMPLES</b>	<b>5</b>	<b>25</b>	<b>30</b>	<b>17%</b>	<b>83%</b>

Tab. 3 - Fabrics, number of samples tested by fiber

	<b>FAIL</b>	<b>PASS</b>	<b>TOTAL</b>	<b>% FAIL</b>	<b>% PASS</b>
<b>COTTON</b>	1	8	9	11%	89%
<b>SILK</b>	12	24	36	33%	67%
<b>WOOL</b>	2	12	14	14%	86%
<b>SYNTHETIC</b>	2	32	34	6%	94%
<b>RAYON</b>	0	3	3	0%	100%
<b>ALL SAMPLES</b>	<b>17</b>	<b>79</b>	<b>96</b>	<b>18%</b>	<b>82%</b>

Tab. 4 - Chemical auxiliaries, number of samples tested by type

	<b>FAIL</b>	<b>PASS</b>	<b>TOTAL</b>	<b>% FAIL</b>	<b>% PASS</b>
<b>NON-IONIC SURFACTANTS / SEQUESTRANTS</b>	0	2	2	0%	100%
<b>SIZING WAXES</b>	1	1	2	50%	50%
<b>ALL SAMPLES</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>25%</b>	<b>75%</b>

## **ANNEX 2, PROFILE OF CANEPA SPA**

### **Made in Italy known all over the World**

Canepa has been creating textile styles for over fifty years. The company was founded as a silk manufacturer and quickly became a world leader on the high-end market. A hallmark of the Canepa group has always been its ability to look towards the future. Consequently, it has augmented its original business by producing a wide range of supreme quality textiles made from other natural fibres, such as cashmere, wool, cotton, linen and hemp. While expanding its range of products, it has managed to retain the expertise, skill and style which, ever since the beginning, have led the company to excel, always making sure its production remains in Italy. The company is characterised by its ability to combine tradition with innovative processes and an awareness of health and the environment.

### **Producers of textiles and clothing accessories, a family business 100% Made in Italy**

Canepa was founded in 1966, but our roots in the silk industry date back to 1930 when the Canepa family joined the Serica Lombarda Company, which itself was the result of the technical know-how and creative skills of a business that had been operating around the Como area since the early 20th century.

With Elisabetta Canepa at the helm, the Group is entirely run by the Canepa and Saibene family. Turnover in 2013 was over €100 million, with an EBITDA of 11%.

Canepa has a presence over the world and maintains solid commercial relationships with major international retail, sportswear and luxury brands. Furthermore, we also produce fabrics for furnishings and we own the brands **Fiorio, La Rana, Gallieni** and Made in Como, which directly sell ties, scarves and swimwear. We also manage distribution licenses for Italian and international brands.

## Production aspects and industrial capacity

The Group has around 750 employees, 25% of whom are creative technicians that are able to make over 25,000 original designs every year. The company annually produces around 3 million linear meters of jacquard fabric, both single-colour and printed (traditional and ink-jet) on over 160 looms in Italy and ensures superior quality through its cutting-edge technology. This guarantees the production and service capacity to create designs and products on demand with excellent time-to-market. In terms of finished garments, annually 1.2 million neckties and 700,000 scarves are produced as well as 300,000 “swim and non-swim” items made by the beachwear division

A library of over 15,000 books with designs for clothes and accessories also offers unique inspiration.

The company has grown significantly of late, characterised by the continual innovation of its processes and products due to the registration of numerous ecological and industrial patents, confirming its position as a “first mover” on the international scene.

Canepa is particularly concerned about the future and the protection of the planet, and accordingly, is guided by this belief in the regions where the company operates.

On that note, Canepa, through the research and development department **CanepaEvolution**, has created the **SAVEtheWATER® Kitotex®** project, which - through the use of non-toxic, biocompatible and biodegradable natural materials, obtained from chitinous matter found in the exoskeletons of arthropods - allows the reduction of water and energy consumption by 95% and enables the total elimination of pollutants (CNR\_Biella certification). The project was developed in Melpignano in the Province of Lecce together with Tessitura del Salento S.r.l, following a contract agreement with the authorities of Puglia as part of a job creation drive.

A further innovation is represented by a new industrial process for the phase of dyeing the yarns. This has allowed a toxic substance to be replaced by a non-toxic substance, with the same levels of quality and quantity, 60% savings in water and energy with a consequent reduction of environmental impact (INRIM certification).



In keeping with its **commitment to sustainable fashion**, Canepa , has become the first textile company in the world to sign up to the Greenpeace Detox campaign for a transparent fashion supply chain, free of toxic substances.

**Canepa** is characterized not only by the quality, creativity and eco-sustainability of its fabrics, but also for the seriousness in its commercial and industrial relations. New materials, special designs and new collections are, in fact, the product of the attention to the many needs of its customers, fairness in relations with its employees and the constant and massive investments in research and development.

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