



eoc

evolution of cotton



**A TRUE STORY
TRUE INNOVATION**

"Protects us and our planet"



“EOC - Evolution of Cotton is the story of cotton evolving for a better future”

We had to prevent pollution caused by synthetics destroying our ecosystem.

Together with the textile industry synthetic garments, which are especially preferred due to their technical characteristics have ensured that our waters are seriously contaminated and that many creatures including humans, enter the food chain as Micro Plastics. The disruption of the food chain also means the deterioration of our health and ecosystem.

To stop this disappearance, not only the consumer society, but also the textile industry had to produce sustainable solutions.



For this reason, we are proud to have developed the "Super Cotton" of today thanks to the natural features we have added to the cotton through the EOC process we developed as a result of the research we initiated in 2012. Evtteks also won the 2017 SME Award in Turkey for this innovation.

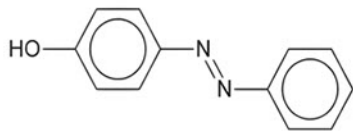
In 2018 Evtteks won Turkey's most prestigious environmental award given by Istanbul Chamber of Industry. And again in 2018, Evtteks has been nominated for the Istanbul Golden Values Award.



The EOC was also the result of the work of an academic team. The articles prepared by the EOC team, including important scientists and designers, attract attention in international symposiums.

In terms of the features it provides, the EOC process can provide many features that are normally provided by separate processes in a single process and permanently. The EOC has successfully passed several tests in the 6-year development process. Despite the numerous properties it provides, no harmful substances or heavy metals were found in the tests.

AZO test, Formaldehyde and many tests passed successfully.




As	Cd	Cu	Hg	Pb
Arsenic	Cadmium	Copper	Mercury	Lead

Although EOC has many positive effects on human health it also prevents many negative effects.

The human body absorbs external factors through the pores along with sweating. Color, washing and sweat fastness is the highest level thanks to the reabsorption with sweat. In particular the babies are absorbing textile products, EOC provides an important measure here.





We use a fully organic process to color the environmentally friendly EOC. Only organic dyes are used in EOC.

- The environmentally friendly EOC is compatible with your skin with its 5.5 Ph level and is anti-allergic.



International Patent: PCT/TR2019/050633

EOC, which provides thermal absorption with its dehumidification feature, has the effect of increasing libido by making electromagnetic shielding in the genital area with underwear.

With the internationally patented EOC we have been able to bring the properties that only synthetic products have to date to 100% cotton.

At the same time, we believe that we have made a significant contribution to the sustainability of our planet with the academic work of EOC.





Green manufacturing process

As a result of pre-treatment with EOC, the fiber structure of cotton is transformed. Thanks to this process, the cotton product obtained superior properties and no heavy metal residue was found in the waste water analysis after the process.

The PH level of the wastewater was 8.00 which was the potable level. As a result of the ICP test performed after the conventional procedure, 80 mg / l Iron, and 300 mg / l Magnesium are encountered and PH level reaches 12. This is the most important proof of how environmentally friendly the EOC process is.

Not only with the clean water discharged by EOC, but also with its award-winning process, it saves energy in production as it reduces fabric processing time; EOC Process (page 15); Heating, Washing, EOC process Washing and Drying

Conventional Process; Heating, Washing Conventional Process, Finishing Process, Fixing Finishing Process, Fixing, Washing and Drying

EOC has been nominated for the most prestigious environmental award of Turkey in 2018, given by the Istanbul Chamber of Industry.

EOC PROCESS

- HEATING
- WASHING
- HT BW BLEACHING
- WASHING + DRYING

PEROXIDE

- HEATING
- WASHING
- HT PEROXIDE BLEACHING
- FINISHING
- FIXING
- FINISHING
- FIXING
- WASHING + DRYING





Anti-Bacterial

The most important change that the EOC process makes on cotton fibers is that it provides a lasting Anti-Bacterial property. Bacteria emerge during our use of textile products, either because of our own skin and sweat, or because of environmental factors, and threaten our quality of life in many areas.

- Escherichia Coli (live in the intestines and cause severe diarrhea)
- Fecal Bacteria (causing typhoid and various infections)
- Rhinovirus (causing colds)
- Norovirus (causing diarrhea in adults and children)
- Candida Albicans (especially genitally threatening health)

As a result of our analysis on bacteria, we have achieved an antibacterial result up to 86%. Anti-Bacterial properties, odors formed after sweating, molds and bacteria caused by ambient humidity, textile products that cannot be cleaned sufficiently threaten our health and comfort in all areas.

	Reduced (%)
Escherichia coli	85,41
Fecal bacteria	79,21
Rhinovirus	73,05
Norovirus	75,69
Candida albicans	72,30
Staphylococcus aureus	86,20



Anti-Bacterial properties, baby products, sports textiles, hotel-spa and so on. It can be used in public places, hospitals and also in all areas where contact with bacteria occurs in all kinds of conditions and under difficult working conditions.

With all these properties, EOC is Anti-Allergic and Anti-Fungal due to its natural mineral structure and naturally does not produce bad odor.



Products / Uses

Hospital

Spa & Hotel

Baby products

Underwear

Sports textiles

Areas with high humidity and heat, places requiring hygiene

Beach towels (for protection from Fecal Bacteria)





UPF 50+ Ultraviolet Protection

Skin exposed to direct sunlight ages early and carcinogenic effect increases in advanced stages. EOC has the ability to shield harmful rays from the sun. EOC, which obtained UPF (Ultraviolet Protection Factor) 50+ in tests conducted in internationally accredited laboratories is the best result obtained naturally in 100% cotton in this field. EOC gives you close to 99% protection.

Products / Uses

Outdoor babies and children's clothing

Adults with UV sensitivity that should be protected from the sun in terms of health

Nature and outdoor athletes

	UPF value
Untreated surface	38
Terry fabric (380 g/m ²)	99
Polo knitting (240 g/m ²)	97
Interlock knitting (200 g/m ²)	92
Diamond pique (240 g/m ²)	85





Electromagnetic Shielding

Radiation is a package of energy found in nature in the form of photons and particles and living with us. We are exposed to radiation in radio waves that enable our communication with developing technology, at home, in our pocket, in our workplace, in hospital, in short, in all areas of our lives. According to the World Health Organization report, electromagnetic waves mainly affect our nervous system and cause anxiety, headache, increase in body temperature, fatigue, sleep disturbance depression and decrease in sexual desire. Pregnant women in particular should be protected from radioactive areas. (Leukemia in Children)

Cotton fabrics treated with EOC are capable of holding up to 20% neutrons. In this way the radiation shows the absorption feature.

Products / Uses

Anti-Stress

Protective clothing category

Halime clothes

Baby clothes

Hospital personnel

Radioactive personnel

Pilots, cabin attendants

Military radar personnel

Permanent computer workers



	Neutron absorption capacity
Terry fabric (380 g/m ²)	18.4%
Polo knitting (240 g/m ²)	15.1%
Interlock knitting (200 g/m ²)	14.2%
Diamond pique (240 g/m ²)	10.6%



Radon Gas Absorption

Radon gas is a radioactive gas found in nature in indoor places such as home and office. According to the World Health Organization, Radon gas is the second factor causing lung cancer after smoking. According to the smoking rate and the average Radon gas rate of the country its effect on lung cancer is between 3-14%. The rate of exposure of smokers to Radon gas is 25 times higher than normal.

Cotton fabrics treated with EOC were measured to hold up to 22% Radon gas.

Products / Uses

Underwear

Pajamas

Home clothes

Bed Linen

Towels

Bathrobes

Upholstery fabrics

	Absorption (%)
Terry fabric (380 g/m ²)	22,05
Polo knitting (240 g/m ²)	21,13
Interloc knitting (200 g/m ²)	18,74
Diamond pique (240 g/m ²)	20,09



Flame Retardant

Cotton fabrics treated with EOC were found to have 30% late flammable. In the researches it has been determined that textiles are 24% among the first fires in case of a fire hazard. This poses a significant danger. Late flammability is of great importance not only in public spaces but also in our homes. In this respect, the non-toxic late flammability EOC provides significant safety.

Bromine and Florin, which are used under conventional conditions to provide late flammability were not detected in EOC treated fabrics. In addition, the fabric turns yellow and emits unpleasant odor in processes made for late flammability other than EOC.

Products / Uses

Curtains

Sheets

Towels

Bathrobes

Protective clothing

Work clothes

Kitchen clothes





Increased Durability

Especially in textile products which are used in difficult conditions and where the stresses are intense EOC provides nearly two times success in textile products which are worn and torn quickly due to industrial washing conditions. Due to the intensive washing and chemicals in hotel and hospital textiles the products wear out very quickly. While 250 (N) is accepted as the standard, EOC results up to 968 (N). This eliminates one of the most important problems encountered throughout the life of textiles. In a 100% cotton product, it is the highest value that can be achieved without adding any mixture.

Products / Uses

Hotel, Spa and Hospital textiles
(Towels, Bathrobes, Bedlinen)
Daily clothing
Protective clothing

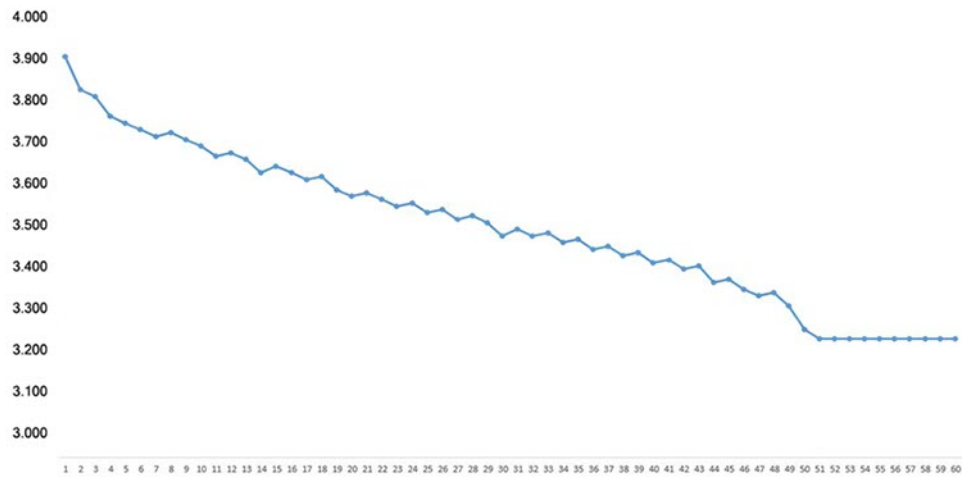




Permanent Features with EOC

All the above-mentioned features are permanent in EOC.

As a result of the washing tests carried out for 45 minutes at 40°C, it was observed that the EOC lost only 18% up to 50 washes, but after 50 washes it completely retained this feature.



1 Washing time; 40°C - 45 min.



Excellent Water Absorbency, Hydrophilicity

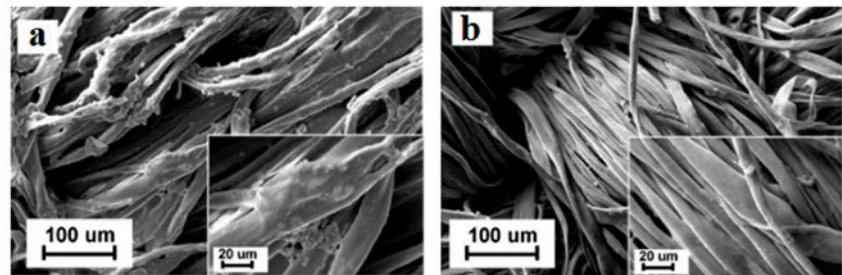
Thanks to the homogeneous surface provided by EOC without damaging the natural surface superior hydrophilicity is provided. The duration of water absorption of cotton products which are accepted as standard is between 5-10 sec is less than 1 sec in EOC.

Due to the high liquid dispersion to the surface the EOC absorbs water faster and dries faster. In this way a significant amount of liquid and moisture control is provided.

Despite its EOC softness, it has excellent water absorption.

Products / Uses

Towels
Bathrobes
Dryers
Sportswear
Underwear
Highly sweating areas
and persons
Damp and warm areas



SEM images (a) untreated surface

(B) EOC treated surface
(more wetttable surface)



Formaldehyde

EOC does not contain formaldehyde.

Formaldehyde is applied to textile products in order to give some properties.
Formaldehyde is accepted up to 16 ppm in infant products and up to 75 ppm in adults.
Formaldehyde is a carcinogen that causes allergic reactions.

Products / Uses

Baby and adult underwear

All skin contact textile products



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HOTEL / SPA



RESTAURANT / CAFE



**HOSPITAL STAFF
PATIENT CLOTHES**



**SECURITY STAFF
MILITARY**



SHIRT AND T-SHIRT



SOCKS / UNDERWEAR



**BABY CLOTHES
SPORTSWEAR**



**TOWEL & BATHROBE
BEDLINEN**

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"EOC" IS A BRAND OF EVTEKS GROUP

www.evteks.com.tr

International Patent
PCT/TR2019/050633



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