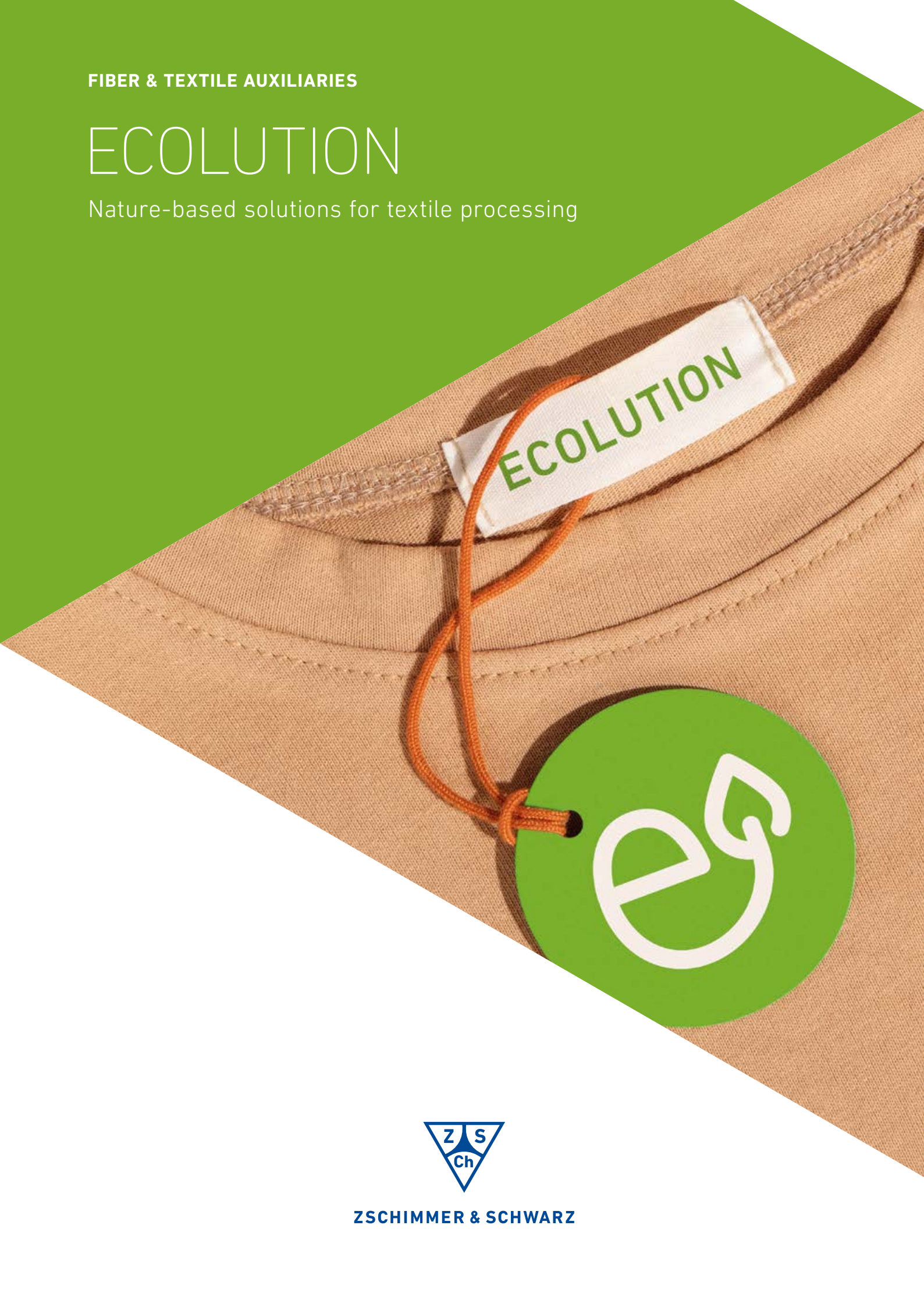


FIBER & TEXTILE AUXILIARIES

ECOLUTION

Nature-based solutions for textile processing



ZSCHIMMER & SCHWARZ



Zschimmer & Schwarz has been a bluesign® system partner since 2012. bluesign® is driving sustainable textile production to protect mankind, the environment and resources.

e^g ECOLUTION

Nature-based solutions for textile processing

With its innovative ECOLUTION range, Zschimmer & Schwarz is setting highest standards for the active, sustainable protection of our environment. All products are based on natural raw materials and comply with the legal requirements and current environmental directives of the textile industry (ZDHC, bluesign®, STANDARD 100 by OEKO-TEX® (product classes I to IV), Global Recycled Standard GRS, GOTS). Our ECOLUTION product line includes sustainable, nature-based products that can be used for pretreatment, dyeing and functional finishes.

- ▶ ZETESAL ECO-FIX PA / PA Liq
- ▶ HYDROSET ECO-DRY
- ▶ CEFASOFT ECO-SEW
- ▶ TISSOCYL ECO-WASH S



ZETESAL ECO-FIX PA

The ECOLUTION of polyamide fixing

Currently used fixing agents are based on phenol, bisphenol and formaldehyde. Therefore, residues of these harmful substances are found in the products and on finished textiles as well. The aforementioned chemical compounds will be banned soon.

ZETESAL ECO-FIX PA is the latest sustainable, plant-based premium fixing agent for polyamide fibers. The product is free of any bisphenol, phenol, cresol and formaldehyde.

ZETESAL ECO-FIX PA is vegan, eco-friendly and made out of renewable raw materials which are not used as food or feed. The plant-based fixing agent has been designed in order to achieve highest fastness levels and to avoid "aging".

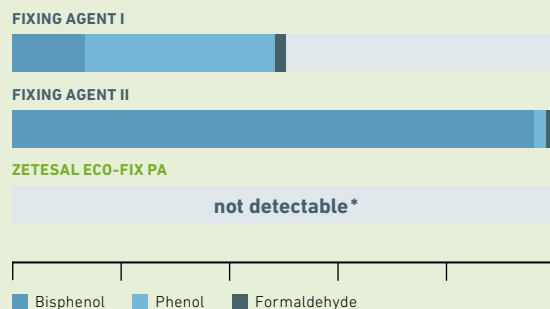
ZETESAL ECO-FIX PA liq is offered as a more economic version of the fixing agent.

BENEFITS

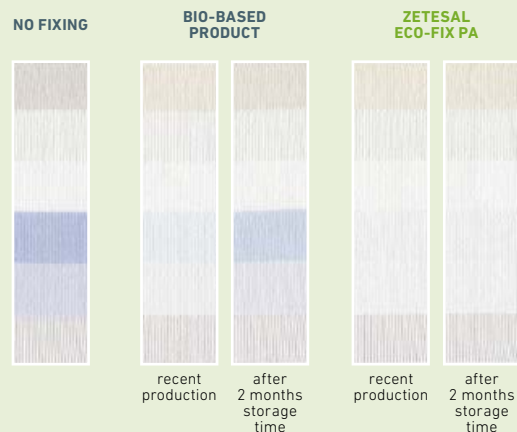
- ▶ Free of bisphenol, phenol, cresol and formaldehyde*
- ▶ Excellent improvement of wash fastness (as ZETESAL NR)
- ▶ Very good improvement of contact fastness
- ▶ Very good acid stability
- ▶ No aging effect (no drop down of performance)
- ▶ Suitable for automatic dosing systems
- ▶ Very low foaming
- ▶ No irritating odor
- ▶ Drop-in application
- ▶ Vegan, sustainable and plant-based

* Certified by Hohenstein Textile Testing Institute

CONTENT OF HARMFUL SUBSTANCES



REDUCTION IN PERFORMANCE BY STORAGE (AGING)



Wash fastness on navy shade

HYDROSET ECO-DRY

The ECOLUTION of moisture management

The speed and efficiency of the wicking process has a decisive impact on the comfort offered by a garment. Functional fabrics that promote moisture transport ("wicking") make sure that sweat and moisture are transported away from the body to the outer surface of the clothing where it can evaporate, thus keeping the body dry and warm.

With our innovative HYDROSET technology, our natural moisture-wicking agent HYDROSET ECO-DRY based on bio-polymer and microalgae helps ensure optimum moisture management on synthetic fibers. The result: fast-drying, breathable sportswear that offers long-lasting freshness and odor control in every move.

BENEFITS

- ▶ Excellent moisture transport
- ▶ Very good breathability
- ▶ Odor control and long-lasting freshness
- ▶ For all synthetic fibers and blends
- ▶ Excellent durability and fast drying
- ▶ Supports the natural well-being of humans
- ▶ Reduces carbon footprint

ABSORBENCY (WICKING TEST)



Standard finish



HYDROSET ECO-DRY

TEGEWA DROP TEST

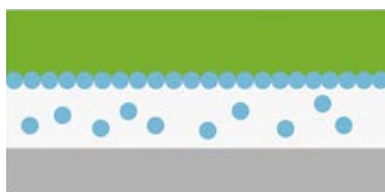


Standard finish



HYDROSET ECO-DRY

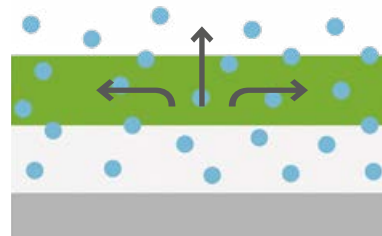
NO MOISTURE TRANSPORT



T-shirt treated in conventional way

Skin

MOISTURE TRANSPORT



T-shirt treated with HYDROSET ECO-DRY

Skin

CEFASOFT ECO-SEW

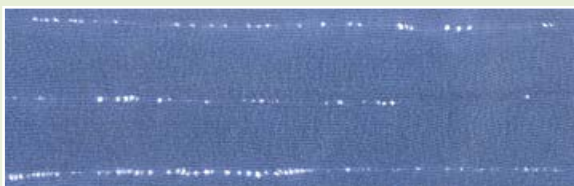
The ECOLUTION of sewability

Our sustainable and plant-based CEFASOFT ECO-SEW improves the sewability properties of knitted goods. Due to its distinctive smoothing effect, this sewing agent prevents hole formation during sewing. Furthermore, CEFASOFT ECO-SEW imparts typical gliding properties to strings, zippers, ropes and similar articles, thus improving wear quality.

BENEFITS

- ▶ Improves the sewability of knitwear to avoid needle damage
- ▶ Smooth surface touch
- ▶ Suitable for all fiber types
- ▶ Vegan
- ▶ Raw material not used for food and feed industry
- ▶ Reduces carbon footprint

SEWABILITY COMPARISON



Without additive



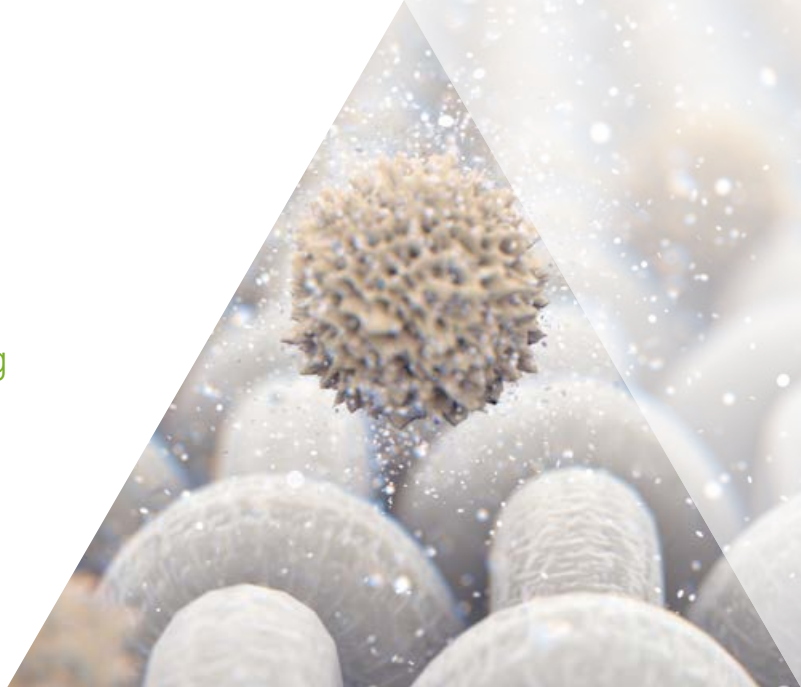
With CEFASOFT ECO-SEW

TISSOCYL ECO-WASH S

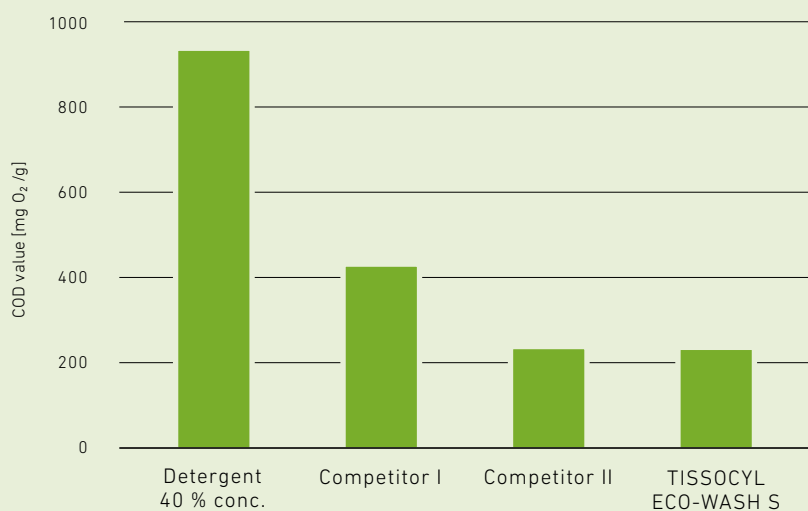
The ECOLUTION of synthetics washing

The special nature-based detergent TISSOCYL ECO-WASH S contains natural microparticles that are capable of absorbing oily substances. This enables the efficient cleaning of synthetic products.

Compared to conventional detergents, TISSOCYL ECO-WASH S is characterized by a considerably lower COD and BOD content, which helps protect our environment.



ECOLOGICAL ASPECTS OF THE USE OF TISSOCYL ECO-WASH S



- ▶ Reduction of wastewater load due to low COD and BOD values:
COD 262 mg O₂/g product
BOD 63 mg O₂/g product
- ▶ Organic components are readily biodegradable
- ▶ Not dangerous to aquatic organisms (WHC 1)

BENEFITS

- ▶ Excellent emulsifying of mineral and silicone oils
- ▶ Oil-absorbing effects caused by natural microparticles
- ▶ Very low foaming
- ▶ Low COD and BOD values
- ▶ Reduces carbon footprint



Chemistry tailor-made

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