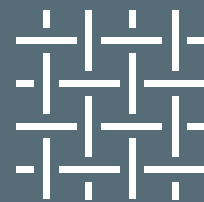


# Textile Auxiliaries

## **Eco logic!**

Because Eco is more than  
just a word



**ZSCHIMMER & SCHWARZ**  
MOHSDORF

# At a glance Eco logic!



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# Eco logic!

With our innovative Eco logic! product line, we are offering customers products and process solutions that contribute to sustainable development, combining profitability and company success with environmental conservation.

Eco logic! includes environmentally friendly products and process solutions that can be used throughout the textile finishing chain; ranging from conditioning agents for the production of textile fabrics to pre-treatment, dyeing and finishing aids, right through to functional finishes and coatings for high-quality textiles.

With Eco logic! we are setting high standards for the active, sustainable protection of our environment!

All products comply with the legal requirements and current environmental directives of the textile industry (e.g. ZDHC, Oeko-Tex® Standard 100, bluesign®, GOTS 4.0, SVHC). The use of natural raw materials and the ready biodegradability of Eco logic! products are key aspects of our current product selection as well as future products.

The development of a phosphorus-free complexing agent, formaldehyde-free after-treatment and finishing products as well as coating compounds, a halogen-free flame retardant and fluorine-free water-repellents are further results of our efforts to be able to recommend environmentally friendly products to our customers.

Our innovative Eco logic! process technologies offer optimally tailored solutions for the textile user and lead to considerable savings in water and waste water as well as lower energy consumption and reduced process times in comparison with conventional processes.

So Eco logic! processes not only enable the responsible stewardship of our environment, but also address economic aspects, such as high production reliability, consistent product quality and enhanced competitiveness for our customers.

Because Eco is more than just a word for us.



# Bleaching agents

**TISSOCYL COD** is an ecological bleaching compound for the peroxide bleaching of yarns and knitted fabrics made from cotton and its blends. The product, based on natural raw materials, is phosphonate- and phosphate-free and has a very low COD and BOD content.

**OPTAVON LTB** is used as a peroxide activator for the bleaching of cotton in the low temperature range (**COLD WHITE**); traditional peroxide stabilisers, which often contain phosphorous, are not required. The low bleaching temperature protects the cotton (no fibre damage) and increases crease resistance (fewer crease prevention and softening agents required). The low-temperature bleach with **OPTAVON LTB** leads to considerable energy and water savings as well as faster process times.

**SETACID AB conc** is used to neutralise alkaline finishing processes (scouring, bleaching). The product ensures the adjustment of mildly acidic to neutral pH values, as required by the Oeko-Tex® Standard 100 for example.

**SETACID AB conc** is a concentrated preparation, making it particularly resource-efficient.

The environmentally friendly **REDUSTAB KOS** stabiliser is used in the discontinuous hydrogen peroxide bleaching of wool and silk. **REDUSTAB KOS** contains no phosphorus or silicate additives, making it ideally suited to protecting the environment.

product	ZDHC MRSL requirements	Oeko-Tex® Standard 100	bluesign®	GOTS 4.0	SVHC	natural resources	readily biodegradable
<b>TISSOCYL COD</b>	compliant	conforms to classes I - IV	✓	✓	free	✓	clay*
<b>OPTAVON LTB</b>	compliant	conforms to classes I - IV	✓		free		inorganic substances
<b>SETACID AB conc</b>	compliant	conforms to classes I - IV	✓	✓	free	✓	✓
<b>REDUSTAB KOS</b>	compliant	conforms to classes I - IV	✓	✓	free		✓

\* The product contains an inorganic component, which is non-biodegradable



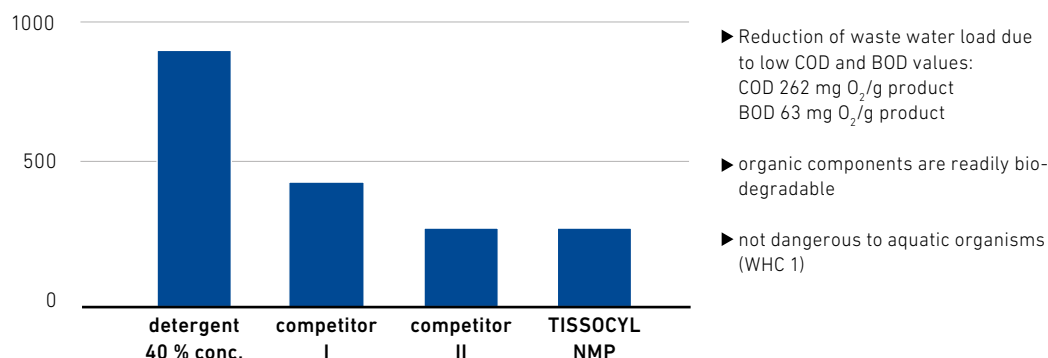


# Detergents

The special detergent **TISSOCYL NMP** contains natural micro-particles that are capable of absorbing oily substances. This enables efficient cleaning of synthetic products. Compared to conventional detergents, **TISSOCYL NMP** is characterised by a considerably lower COD and BOD content, which helps protect our environment.

## Ecological aspects by using TISSOCYL NMP:

COD - value [mg O<sub>2</sub>/g]



**TISSOCYL RC 9** is a special detergent for synthetic fibres and fabric blends containing elastane; it achieves exceptional washing results, even at low processing temperatures. When suitable qualities are present, it is possible to speed up the process via single-bath washing and dyeing (**ECONDye**) or washing and optical brightening (**ECONBright**), which significantly reduces the amount of water and energy consumed per batch.

The highly concentrated **NEWALOL PFN** wetting agent has a versatile range of uses in the textile chain, such as speeding up the wetting of spools or increasing pick-up during coating. It works within a wide pH range, is extremely low-foaming and is readily biodegradable.

product	ZDHC MRSL requirements	Oeko-Tex® Standard 100	bluesign®	GOTS 4.0
TISSOCYL NMP	compliant	conforms to classes I - IV	✓	✓
TISSOCYL RC 9	compliant	conforms to classes I - IV	✓	✓
NEWALOL PFN	compliant	conforms to classes I - IV	✓	✓

TISSOCYL RC 9 displays excellent silicone oil emulsifying properties even at temperatures starting from 40 °C

Emulsifying properties of different detergents



**emulsifying test:**

5 g/l coloured silicone oil  
3 g/l detergent formulation  
1 g/l soda ash

**conditions:**

liquor temperature 40 °C,  
assessment after 60 min at room temperature

	SVHC	APEO free	natural resources	readily biodegradable
	free	✓	✓	clay*
	free	✓		✓
	free	✓		✓

\* The product contains an inorganic component, which is non-biodegradable





# COLD WHITE

- ▶ relaxed bleaching with Zschimmer & Schwarz
- ▶ provides savings in water and waste water
- ▶ significant reduction of COD in the waste water load
- ▶ less energy consumption
- ▶ shorter process time



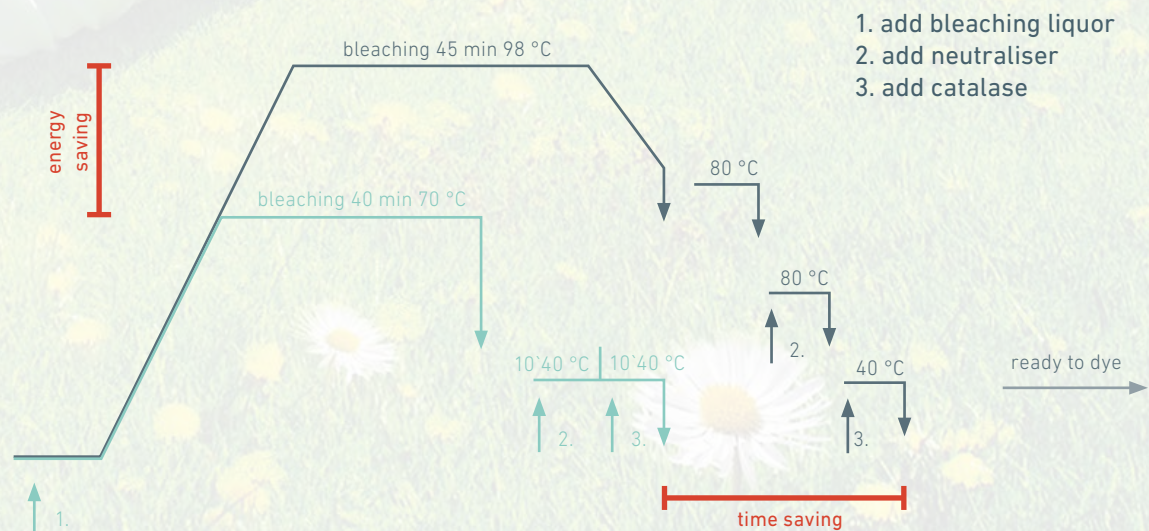


## COLD WHITE

### The sustainable bleaching technology

Standard bleaching vs. low temperature ecological COLD WHITE bleaching

■ Standard bleaching ■ COLD WHITE





# Lubricants and conditioning agents

**FLEROL KFC** is a highly concentrated, readily biodegradable conditioning agent for woollen yarn spinning and non-woven products made from wool and its blends with other fibres. **FLEROL KFC** is characterised by excellent smooth/adhesive properties, enhances the wettability of the treated products and is made from renewable raw materials.

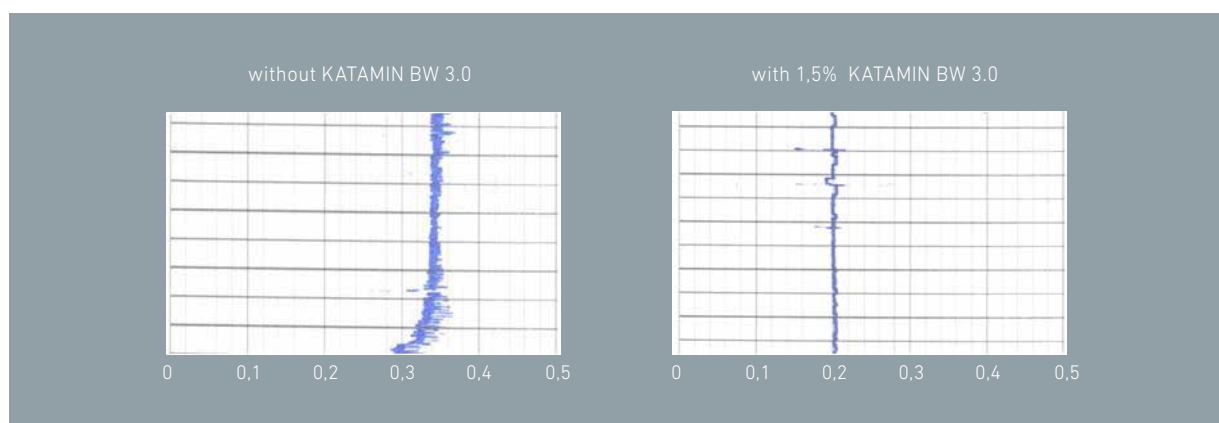
**FLEROL MX21** is used as an environmentally friendly conditioning agent in worsted yarn spinning for wool and its blends with synthetic fibres. The conditioning agent is mineral-oil-free and is based on renewable raw materials; it demonstrates excellent smooth/adhesive properties and is resistant to yellowing.

The universal warp waxing agent **ENSIMOL KW conc** enhances the processing properties of warps made from synthetic yarns and their blends with natural fibres to help reduce production costs. The product's low input quantities and excellent washability increase production efficiency while simultaneously protecting the environment.

The main area of application for **KATAMIN BW 3.0** is the smoothing of cellulosic yarns in the exhaust process to enable significant time savings in the further processing. **KATAMIN BW 3.0** preserves the natural hydrophilic properties of cotton, which conserves resources as smaller quantities of additional hydrophilic softeners are needed.

product	ZDHC MRSL requirements	Oeko-Tex® Standard 100	bluesign®
<b>FLEROL KFC</b>	compliant	conforms to classes I - IV	✓
<b>FLEROL MX21</b>	compliant	conforms to classes I - IV	✓
<b>ENSIMOL KW conc</b>	compliant	conforms to classes I - IV	✓
<b>KATAMIN BW 3.0</b>	compliant	conforms to classes I - IV	✓

**KATAMIN BW 3.0** - Gliding properties, friction values, measured by Zweigle-μ-meter





	GOTS 4.0	SVHC	natural resources	readily biodegradable	FDA-listed*
	✓	free	✓	✓	✓
	✓	free	✓	✓	
	✓	free		✓	
	✓	free		readily eliminable	

\* § 177.2800;  
§ 177.2260





# LT Antiyellowing

- ▶ excellent antiyellowing protection at 40 °C
- ▶ short process time
- ▶ provides savings in energy and time
- ▶ combinable with selected softeners or stiffening agents
- ▶ biodegradable



**PROTELAN LTY** - The highly effective antiyellowing agent for polyamide and mixtures, designed for low temperature application



with 40 g/l PROTELAN LTY



without antiyellowing protection

Phenolic yellowing protection of  
PROTELAN LTY on polyamide/elastane

Test method:  
Phenolic yellowing Test M&S C20B





# Sequestering agents

**OPTAVON BAS** is an ecological sequestering agent for discontinuous peroxide bleaching and water correction, and is characterised by its excellent Ca and Fe binding capacity. It also has a stabilizing effect on peroxide in the bleaching bath. In contrast to conventional phosphonate-based sequestering agents, **OPTAVON BAS** is phosphorus-free and easily biodegradable.

The sequestering agent **OPTAVON FE conc** is used as a concentrated complexing agent to eliminate problematic iron ions in the continuous and discontinuous pre-treatment of cotton. The product is highly concentrated, phosphorus-free and very readily biodegradable.

product	ZDHC MRSL requirements	Oeko-Tex® Standard 100	bluesign®	GOTS 4.0	SVHC	phosphorus free	natural resources	readily biodegradable
<b>OPTAVON BAS</b>	compliant	conforms to classes I - IV	✓	✓	free	✓	✓	✓
<b>OPTAVON FE conc</b>	compliant	conforms to classes I - IV	✓	✓	free	✓	✓	✓



**OPTAVONs by Zschimmer & Schwarz are the key to your solution!**



# Antiyellowing agents

**PROTELAN LTY** is used to prevent phenolic yellowing on polyamide, polyester and blends with elastane. Since the product is highly effective even at 40 °C, the process time for the anti-yellowing protective treatment can be shortened, and energy saved. **PROTELAN LTY** is readily biodegradable.

**PROTELAN CF2** is used to reduce thermal yellowing of polyamide and polyamide/elastane, which is caused by fixing or by contact heat during molding. The result is a high degree of whiteness and brilliant colours. Combined with the **ECONBright** process, the process time and production costs can be significantly reduced.

**PROTELAN CF2** is readily biodegradable.

product	ZDHC MRSL requirements	Oeko-Tex® Standard 100	bluesign®	GOTS 4.0	SVHC	formaldehyde free	APEO free	readily biodegradable
<b>PROTELAN LTY</b>	compliant	conforms to classes I - IV	✓		free	✓	✓	✓
<b>PROTELAN CF2</b>	compliant	conforms to classes I - IV	✓	✓	free	✓	✓	✓





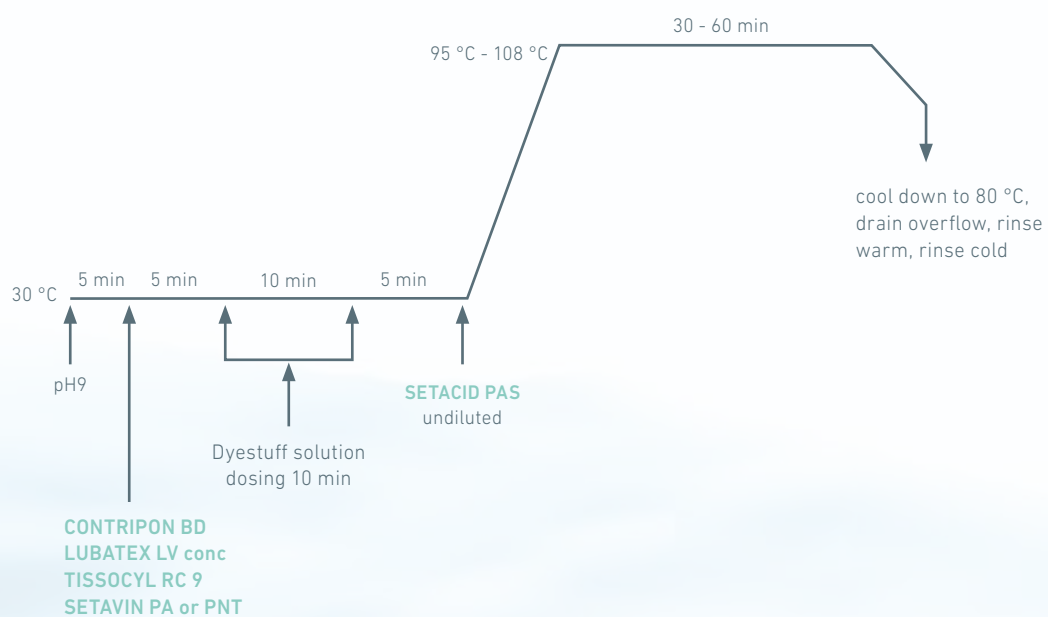
- ▶ water saving up to 65%
- ▶ waste water saving up to 65%
- ▶ time saving up to 45%
- ▶ energy saving up to 55%
- ▶ increased production capacity



## ECONDye

The innovative process for the successful treatment of polyamide fibres and their blends with elastane.

We need water for living not dyeing.





# Dyeing auxiliaries for natural fibres

**SETACID AB conc** is a buffer solution for the pH adjustment of dye baths in the acidic range. The excellent pH consistency ensures reliable reproducibility.

**SETACID AB conc** is a concentrated preparation, making it particularly resource-efficient.

**LUBATEX LV conc**, based on natural raw materials, is a highly concentrated crease-preventing agent for all types of fibres. The use of **LUBATEX LV conc** increases process reliability and reproducibility while saving resources.

The readily biodegradable **SETAVIN ECOCEL** is a dispersing and levelling agent for the dyeing of cellulosic fibres with reactive dyes.

**ZETESAL LTS** is an after-soaping agent for reactive dyeings and printings on cellulose fibres. The use of **ZETESAL LTS** allows soaping to take place at 70 °C to achieve excellent wash-fastness. The environmentally friendly, low-temperature soaping using **ZETESAL LTS** leads to significant savings in process time and energy.

For even better wash-fastness, the formaldehyde-free **ZETESAL FIX** is used for the after-treatment of reactive dyeings and printings to enable a faster after-soaping process.

product group	product	ZDHC MRSL requirements	Oeko-Tex® Standard 100	bluesign®	
auxiliaries for cellulose dyeing	SETACID AB conc	compliant	conforms to classes I - IV	✓	
	LUBATEX LV conc	compliant	conforms to classes I - IV	✓	
	SETAVIN ECOCEL	compliant	conforms to classes I - IV	✓	
	ZETESAL LTS	compliant	conforms to classes I - IV	✓	
	ZETESAL FIX	compliant	conforms to classes I - IV	✓	
auxiliaries for dyeing of wool and silk	SETAVIN CNA	compliant	conforms to classes I - IV	✓	
	SETAVIN MSN	compliant	conforms to classes I - IV	✓	
	SETAVIN ZA	compliant	conforms to classes I - IV	✓	
	ZETESAL FPO	compliant	conforms to classes I - IV	✓	



The readily biodegradable **SETAVIN CNA** and **SETAVIN MSN** levelling agents are used for the dyeing of wool, mohair, cashmere and silk with metal complex and acid dyes. **SETAVIN CNA** particularly enables excellent dye migration at final temperature.

In contrast, **SETAVIN MSN** reduces the dye absorption rate in the heating phase and enhances dye migration to achieve an excellent levelling result (specifically developed for Lanaset® dyes by Huntsman).

The product **SETAVIN ZA** completes our range of ecological levelling agents. **SETAVIN ZA** is also used for dyeing with metal complex dyes and demonstrates excellent dispersing effects during the dyeing process.

The main area of application for the formaldehyde-free **ZETESAL FPO** is the after treatment of silk dyeings and printings with acid dyes. The environmentally friendly after-treatment agent significantly improves the wet-fastness of dyeings and printings and exhibits no yellowing tendency.

	GOTS 4.0	SVHC	formaldehyde free	natural resources	readily biodegradable
	✓	free		✓	✓
	✓	free		✓	✓
		free		✓	✓
	✓	free	✓		
	✓	free	✓		readily eliminable
	✓	free		✓	✓
	✓	free		✓	✓
	✓	free		✓	✓
	✓	free	✓		✓



# LT Soaping

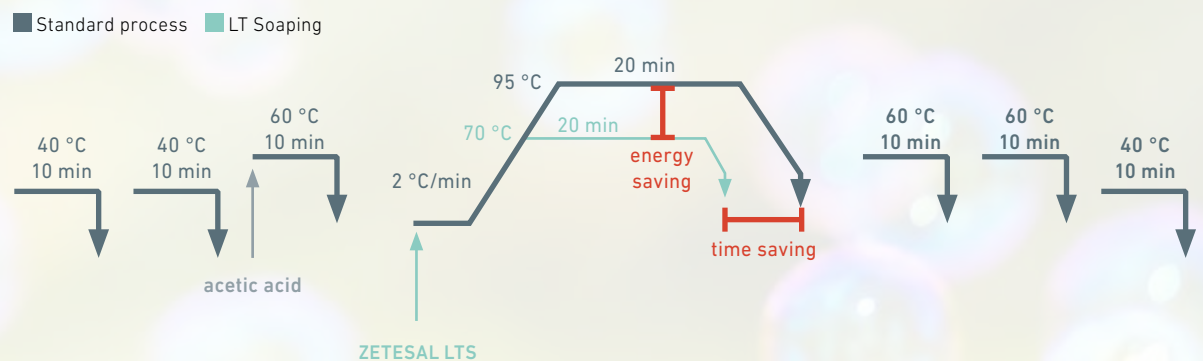
- ▶ excellent soaping effects for reactive dyeings on cellulosics
- ▶ soaping at 70 °C possible
- ▶ provides savings in energy and time
- ▶ improves fastness properties



## LT Soaping

Our sustainable soaping technology after reactive dyeings

Standard soaping vs. eco-friendly low temperature soaping





# Dyeing auxiliaries for synthetic fibres

The **SETAVIN PE** levelling and dispersing agent is used for the dyeing of polyester under HT conditions. It is based on renewable raw materials and conserves resources thanks to its concentrated form.

**SETAVIN SU-E** is a concentrated levelling agent for the dyeing of polyester, polyester micro-fibres and polyester-elastane blends. The capability to dye at low temperatures (120 °C) enables energy savings and shorter production times. The low-foaming properties of **SETAVIN SU-E** save the use of additional defoamers.

**ZETESAN DHT**, based on renewable raw materials, is a special dispersing agent for the dyeing and after-cleaning of polyester materials. Its exceptional stability under HT conditions enhances operational reliability and reduces costs.

**ZETESAL NWM** is a sulphur-free and waste-water-saving after-cleaning agent for polyester and polyester-wool blends.

**ZETESAL NWM** helps achieve significantly shorter process times and reduced water and energy requirements.

product group	product	ZDHC MRSL requirements	Oeko-Tex® Standard 100	bluesign®	
auxiliaries for polyester dyeing	<b>SETACID AB conc</b>	compliant	conforms to classes I - IV	✓	
	<b>LUBATEX LV conc</b>	compliant	conforms to classes I - IV	✓	
	<b>ZETESAN DHT</b>	compliant	conforms to classes I - IV	✓	
	<b>SETAVIN PE</b>	compliant	conforms to classes I - IV	✓	
	<b>SETAVIN SU-E</b>	compliant	conforms to classes I - IV	✓	
	<b>ZETESAL NWM</b>	compliant	conforms to classes I - IV	✓	
	<b>ZS-CLEANREDOX FOS</b>	compliant	conforms to classes I - IV	✓	
auxiliaries for dyeing of polyamide	<b>SETACID AB conc</b>	compliant	conforms to classes I - IV	✓	
	<b>LUBATEX LV conc</b>	compliant	conforms to classes I - IV	✓	
	<b>ZETESAL FAP</b>	compliant	conforms to classes I - IV	✓	
auxiliaries for dyeing of polyacrylonitrile	<b>ZETESAN KA</b>	compliant	conforms to classes I - IV	✓	

**ZS-CLEANREDOX FOS** is an ecological reducing agent based on renewable raw materials. This reducing agent is sulphur-free and reduces the waste water load considerably.

**ZETESAL FAP** is used as an after-treatment and reserving agent for polyamide dyeings and printings, and is characterised by its low phenol content. **ZETESAL FAP** is GOTS 4.0 and bluesign®-approved.

**ZETESAN KA** is an ecological dispersing agent for the dyeing of acrylic materials and their blends with wool, polyamide and cellulose. **ZETESAN KA** is based on renewable raw materials, making it readily biodegradable.

	GOTS 4.0	SVHC	natural resources	readily biodegradable
	✓	free	✓	✓
	✓	free	✓	✓
		free	✓	✓
	✓	free	✓	✓
		free	✓	readily eliminable
	✓	free		readily eliminable
	✓	free	✓	✓
	✓	free	✓	✓
	✓	free	✓	✓
	✓	free		eliminable
	✓	free	✓	✓





# LT Dyeing



# ZS Clearing System

- ▶ provides savings in water, waste water and energy
- ▶ significant reduction of COD in the waste water load
- ▶ less energy consumption
- ▶ shorter process time



The eco-friendly systems for polyester articles and blends with elastane, which facilitate the dyeing and after-treatment process in both ecological and economic aspects

Standard process vs. eco-friendly LT Dyeing/ZS Clearing

■ Standard process ■ LT Dyeing/ZS Clearing







# Finishing

**FLAMMEX LCP** is an AOX free flame retardant for the permanent flame-resistant finishing of polyester. No fixing temperatures are required to achieve a permanent finish. This prevents the deterioration of the colour-fastness through thermo-migration and thus the need for an additional rinsing process. It also saves energy, thanks to lower process temperatures.

**POLAPPRET HNH** is used as a stiffening agent for all types of textiles. Finished textiles are given a very hard, semi-permanent hold. The product is also recommended for use as an edge-jointing adhesive. Thanks to its environmentally friendly ingredients, **POLAPPRET HNH** is suitable for the finishing of textiles that come into contact with food, such as filters and packaging, and is FDA-approved (§ 176.170, 176.180) for direct contact with food.

**FLEROGUM B4** is a universal foaming agent based on the natural raw material of coconut fatty acid.

Only small quantities are required to form an exceptionally fine-pored and stable foam. The product has a wide variety of applications in carpet back coating and in the coating of technical textiles.

The defoamer **CONTRIPON BD** based on renewable raw materials is highly effective and readily degradable in waste water systems. It is free of silicones and mineral oil. The vegetable oil used in the product is also used in the food industry.

**CEFATEX PE** gives polyester textiles a natural character without electrostatic charge and with excellent moisture transport. It is also used as a hydrophilic finishing agent, anti-static agent and soil-release product, and ensures improved resistance to soiling and easier removal of stains from the finished textiles.

product group	product	ZDHC MRSL requirements	Oeko-Tex® Standard 100	bluesign®	
flame retardant	FLAMMEX LCP	compliant	conforms to class IV		
stiff finish	POLAPPRET HNH	compliant	conforms to classes I - IV	✓	
softener	ADULCINOL T7531	compliant	conforms to classes I - IV	✓	
	ADULCINOL EB20	compliant	conforms to classes I - IV	✓	
foaming agent	FLEROGUM B4	compliant	conforms to classes I - IV	✓	
defoaming agent	CONTRIPON BD	compliant	conforms to classes I - IV	✓	
hydrophilic agent for PES	CEFATEX PE	compliant	conforms to classes I - IV	✓	



The cationic softener **ADULCINOL T7531** is primarily used for cellulose textiles. In addition to the ecological benefits – the product is readily biodegradable and GOTS 4.0 and bluesign®-approved – **ADULCINOL T7531** ensures an exceptionally smooth handle and is highly resistant to yellowing.

**ADULCINOL EB20** is a mildly cationic softener suitable for all textiles and is used predominantly in the padding process. The environmentally friendly, GOTS 4.0 and bluesign®-approved softener demonstrates exceptional handle, especially for qualities of cotton and polyamide, and is highly resistant to yellowing.

	GOTS 4.0	SVHC	formaldehyde free	AOX free	natural resources	readily biodegradable
		free		✓		
		free	✓			readily eliminable
	✓	free	✓			✓
	✓	free	✓			✓
		free	✓		✓	✓
	✓	free	✓		✓	✓
		free	✓			✓





# ECOPROOF

- ▶ free of perfluorinated chemicals (PFCs) and APEOs
- ▶ based on environmentally friendlier chemistry
- ▶ ZDHC (Zero Discharge of Hazardous Chemicals) MRSL (Manufactured Restricted Substance List) compliant
- ▶ Oeko-Tex® Standard 100 compliant
- ▶ bluesign® approved
- ▶ sustainable





## ECOPROOF

Choosing the right product for your specific needs

	ANTHYDRIN FF one	ANTHYDRIN FF base/soft/cat	ANTHYDRIN FF wax
<b>Chemistry</b>	silicone emulsion	silicone emulsion	paraffin emulsion
<b>Water repellency</b>	✓	✓ ✓	✓ ✓
<b>Durability (10 wash cycles at 40 °C )</b>	✓	✓ ✓	✗
<b>Breathability</b>	high	high	medium
<b>Hand feel</b>	soft	soft and bulky	greasy
<b>Benefits</b>	single product for easy handling and storage, no curing necessary	modular system for more flexibility and recipe custo- misation, no additional softener required	all advantages of a single product, good price-/ performance ratio



The newly developed **ECOPROOF** concept contains various types of water repellents (individual application or in a modular compound), which form an ideal basis for the creation of tailor-made finishing formulations and can be flexibly adapted to the respective customer/product requirements. At the same time, all **ECOPROOF** water repellents are fluorine-free, promoting the responsible stewardship of our environment.

**ANTHYDRIN FF one** is used as a “ready-to-use”, fluorine-free, water-repellent treatment for all types of textiles.

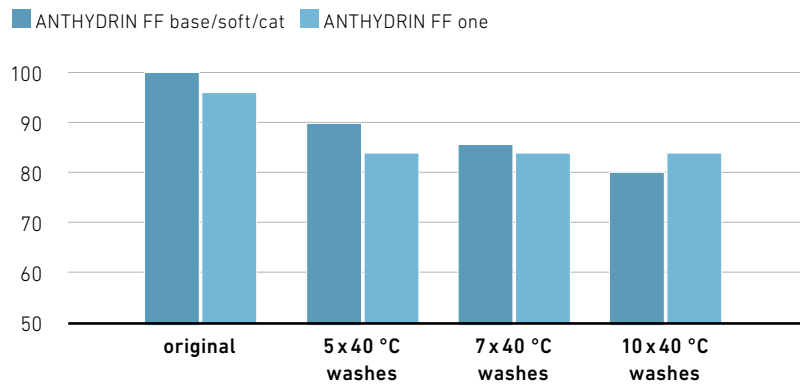
**ANTHYDRIN FF base**, **ANTHYDRIN FF soft** and **ANTHYDRIN FF cat** form a flexible, modular system to meet specific requirements for water-repellency, permanence and soft handle.

**ANTHYDRIN FF wax** is a paraffin-based water repellent that enables water-repellency in all types of textiles, while giving the product a soft handle.

All water-repellents are free of PFOS and PFOA and related substances. They achieve excellent water-repellent effects and high wash permanence.

product	ZDHC MRSL requirements	Oeko-Tex® Standard 100	bluesign®	SVHC	formal-dehyde free	APEO free	fluorine free	readily biodegradable
<b>ANTHYDRIN FF one</b>	compliant	conforms to classes I - IV	✓	free	✓	✓	✓	✓
<b>ANTHYDRIN FF base</b>	compliant	conforms to classes I - IV	✓	free	< 50 ppm	✓	✓	✓
<b>ANTHYDRIN FF soft</b>	compliant	conforms to classes I - IV		free	✓	✓	✓	✓
<b>ANTHYDRIN FF cat</b>	compliant	conforms to classes I - IV		free	✓	✓	✓	
<b>ANTHYDRIN FF wax</b>	compliant	conforms to classes I - IV	✓	free		✓	✓	✓

## ECOPROOF - Performance on synthetics (Spray test rating according to AATCC 22)





# FLAMMEX LCP

- ▶ sustainable flame retardant for the finishing of polyester
- ▶ durable flame retardancy immediately after dyeing process
- ▶ no thermofixation and reductive cleaning is necessary
- ▶ provides savings in energy and time
- ▶ AOX free







## FLAMMEX LCP is a durable flame retardant for sustainable finishing of polyester

Comparison of flame retardant finishing

	flame retardant state of the art	FLAMMEX LCP
Burning behavior (B2, M1, FMVSS 302)	✓	✓
Durability to washing	✓	✓
Reduction of energy and water consumption / waste water quantity	x	✓ ✓
Reduction of COD load and CO <sub>2</sub> -emission	x	✓ ✓
Process time/production capacity	x	✓ ✓
Fastness level	✓	✓ ✓
Process costs	x	✓ ✓





# Coatings

**Lefasol VK 204/4** is a water-reactivable adhesive for "pre-pasted wall paper". This product achieves high adhesive strength, initial adhesion and excellent repositioning, even with sparing application.

**Lefasol VK 204/4** is made from renewable raw materials and is readily biodegradable.

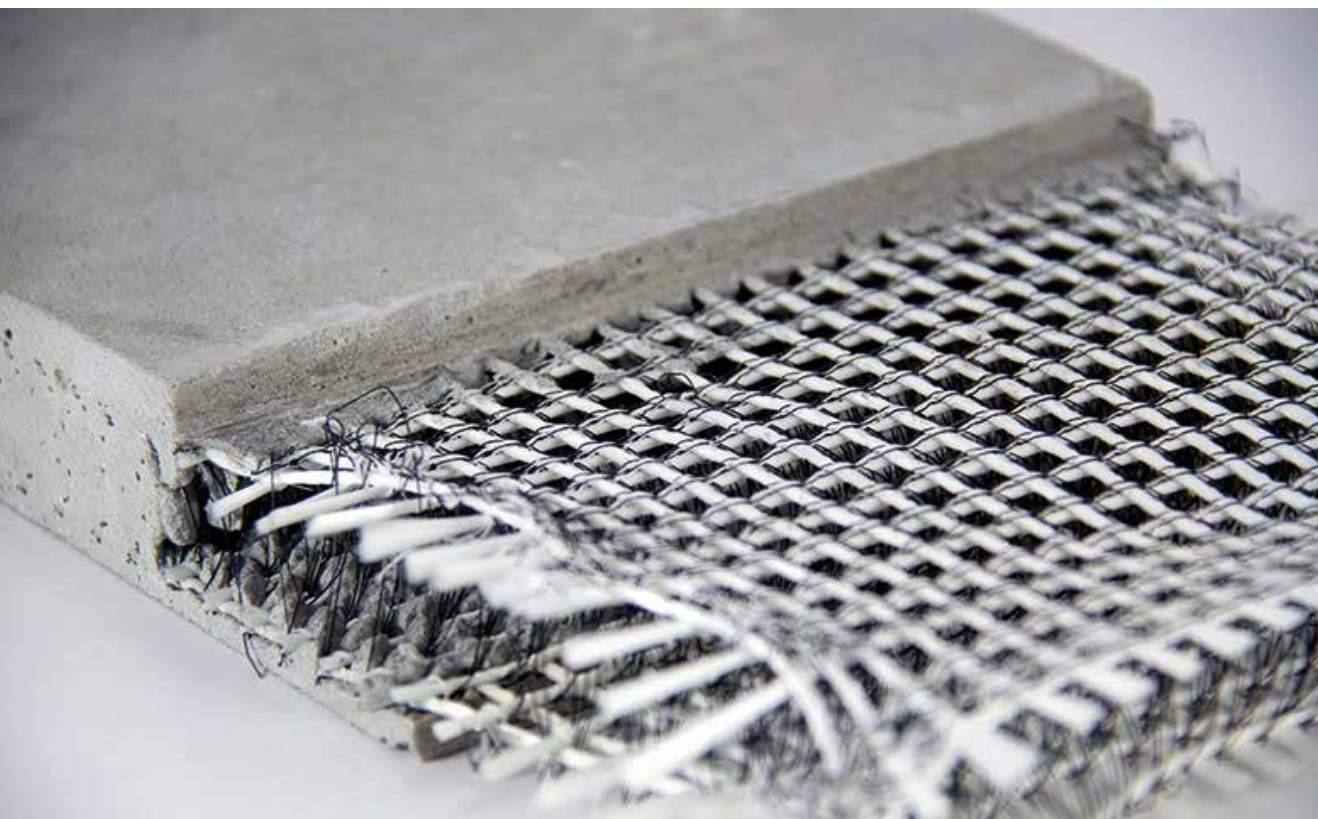
**Lefasol VH 157/1** and **Lefasol VH 122/1** are filling agents for compounds and binders, and are based on natural raw materials.

The readily biodegradable **Lefasol VH 71/1** is a highly effective thickener based on renewable raw materials.

The **Lefasol VB 146/13** compound is used as an anti-slip coating on various textiles to achieve a wash permanence of up to 60°C.

**Lefasol VB 452/1** is used as a foam coating, for instance for carpets or acoustic materials, to achieve an anti-slip effect. The product is free of formaldehyde and can be used for class II to IV Oeko-Tex® Standard 100 applications.

**Lefasol 150** is a formaldehyde-free and softener-free dispersion for the stiff finishing of textiles and is characterised by excellent water-resistance.



product	ZDHC MRSL requirements	Oeko-Tex® Standard 100	SVHC	formaldehyde free	natural resources	readily biodegradable
<b>Lefasol VK 204/4</b>	compliant	conforms to class IV	free	✓	✓	✓
<b>Lefasol VH 157/1</b>	compliant	conforms to classes II - IV	free	✓	✓	
<b>Lefasol VH 122/1</b>	compliant	conforms to classes II - IV	free	✓	✓	
<b>Lefasol VH 71/1</b>	compliant	conforms to classes III - IV	free	✓	✓	✓
<b>Lefasol VB 146/13</b>	compliant	conforms to classes III - IV	free			
<b>Lefasol 150</b>	compliant	conforms to classes II - IV	free	✓		
<b>Lefasol VB 452/1</b>	compliant	conforms to classes II - IV	free	✓		

# Plant-for-the-Planet

Because Zschimmer & Schwarz wants to do more than contribute to environmental awareness by developing specially designed resource-saving and energy-efficient products and processes, we have decided to become a cooperation partner of the **Plant-for-the-Planet** initiative.

## Origin and background of the youth initiative Plant-for-the-Planet.

A single tree absorbs around three tonnes of CO<sub>2</sub> in its lifetime. While researching the topic of climate change for a school project, a 9-year-old German child, Felix Finkbeiner, had an idea to harness this ability even more: by planting one million trees in every country on earth. In almost no time, a student initiative became an international movement.

Since then, Plant-for-the-Planet has developed into an international network of global citizens who are working to achieve climate justice by means of reduced emissions of greenhouse gases and a uniform distribution of these emissions across all people. The children are especially motivated by the idea that poorer countries are disproportionately affected by the consequences of the climate crisis. They are convinced that only a binding worldwide contract based on climate justice can solve the climate crisis. The children have campaigned tirelessly to persuade government representatives and the public that they must finally take action. They themselves are taking action by planting trees – every tree removes CO<sub>2</sub> from the atmosphere and is a symbol for climate justice. Children from all over the world are now involved. UNEP also supports the youth initiative Plant-for-the-Planet, and in 2011 the organisation officially handed over the Billion Tree Campaign, and with it the United Nations tree counter, to the youth.



The planting area where the seedlings are grown and bedded out is located in Campeche, Mexico. Seven different tree species are being planted there on approximately 14,000 ha. of land.

## Diplomats in rubber boots – children train children as ambassadors for climate justice in Plant-for-the-Planet academies.

Since October 2008, Plant-for-the-Planet academies have been organised in Germany and eventually worldwide – by children, for children. In the academies, children who are already engaged as volunteers for climate justice pass on their knowledge and experiences. They take action in their own countries to demonstrate that they will not passively accept the climate crisis, but rather will take responsibility on a global level and actively shape their future. Together the children can achieve a lot – in a global network of world citizens who are fighting for climate justice. In 51 countries, including China, Germany, India, France, Italy, Mexico, Austria, Poland and Switzerland, there are now more than 46,000 qualified ambassadors for climate justice. By 2020, the children want to train one million more children in approximately 20,000 academies to get involved in the global network and spread the vision of Plant-for-the-Planet in their respective countries.

The children's worldwide slogan is "Stop talking. Start planting." We were so impressed by this bold, worldwide campaign, and the ideas and zest of the children, that we decided to actively support **Plant-for-the-Planet**. An annual academy will now take place at Zschimmer & Schwarz. It will be open to the children of our employees and customers so that they can learn more about the importance of the overall issue of climate protection. Zschimmer & Schwarz will also plant at least 2,000 trees per year on behalf of its customers.

Because Eco is more than just a word for us.



# List of abbreviations

AOX	Adsorbable organohalogenes
APEO	Alkyl phenol ethoxylates
BOD	Biochemical oxygen demand
COD	Chemical oxygen demand
FC	Fluorocarbons
FDA	Food and Drug Administration
GOTS 4.0	Global Organic Textile Standard Version 4.0
HT	High Temperature
LT	Low Temperature
PFC	Perfluorocarbons
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctanesulfonic acid
UNEP	United Nations Environment Programme
ZDHC MRSL	Zero Discharge of Hazardous Chemicals Manufacturing Restricted Substances List
SVHC	Substances of Very High Concern
WHC	Water hazard class (german regulation)





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