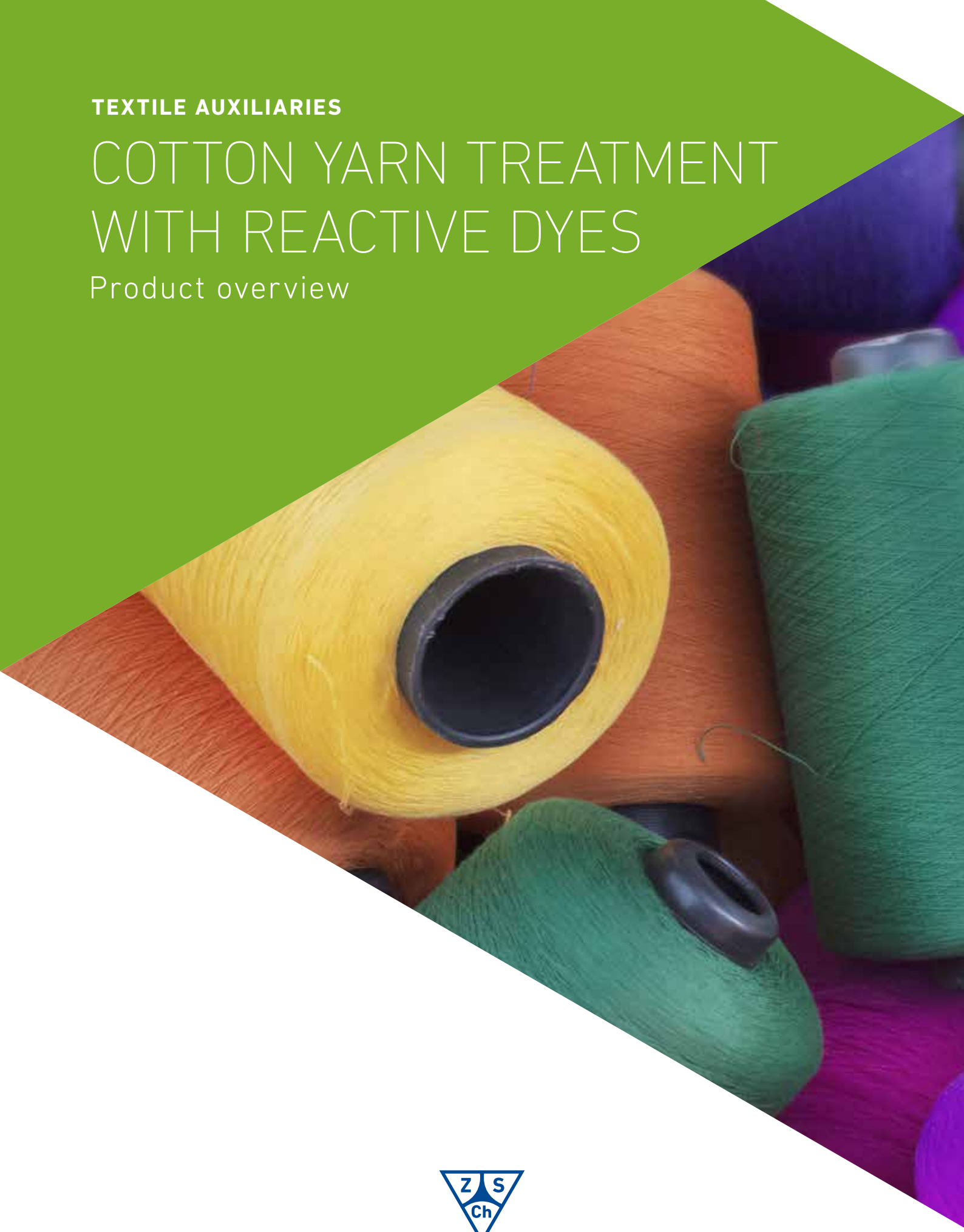
TEXTILE AUXILIARIES

COTTON YARN TREATMENT WITH REACTIVE DYES

Product overview



ZSCHIMMER & SCHWARZ

CHEMISTRY TAILOR-MADE

Zschimmer & Schwarz is an internationally active company with 28 affiliates worldwide and shareholdings in 14 countries. Our core business is the development, manufacture and delivery of tailor-made chemical auxiliaries for the leather, fur, ceramic, textile and fiber industries. Moreover, we are one of the leading manufacturers of high performance chemical specialities and auxiliaries for cosmetics and cleaning applications as well as phosphonates and polymer-based solutions. We guarantee our customers a globally consistent quality standard.

The Textile Auxiliaries Division: Whether natural or chemical fibers – you can expect a vast range of specialty products. Depending on the finishing effect (pretreatment, dyeing, lubricating etc.) we offer tailor-made solutions for fibers, yarns, woven and knitted fabrics.

Our application technologists and sales service will be happy to advise you.
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bluesign® SYSTEM PARTNER

Our System partner – support the textile industry to increase their efforts in sustainable processes.

PRODUCT OVERVIEW FOR TREATMENT OF COTTON YARN DYED WITH REACTIVE DYESTUFFS

PRETREATMENT

4	▶	OPTAVON 4UD	special complexing agent for acid demineralizing
5	▶	OPTAVON MEX	high performance complexing agent
5	▶	OPTAVON MEL	complexing agent
6	▶	OPTAVON 4UD MEX, MEL	comparison of the different complexing agents
7	▶	TISSOCYL RLB	concentrated detergent

DYEING

8	▶	SETAVIN RCO	levelling and dispersing agent
9	▶	ALKASET AOB	alkali supplier

AFTER-TREATMENT

11	▶	ZETESAL NS	excellent soaping agent
12	▶	ZETESAL FIX	high performance after-treatment agent
13	▶	ZETESAL TCS	special fixener for turquoise and blue dyeings

WET PARAFFINATING

15	▶	KATAMIN BW 3.0	wet paraffinating agent

OPTAVON 4UD

Special complexing and stabilizing agent for the OPTABLEACH process

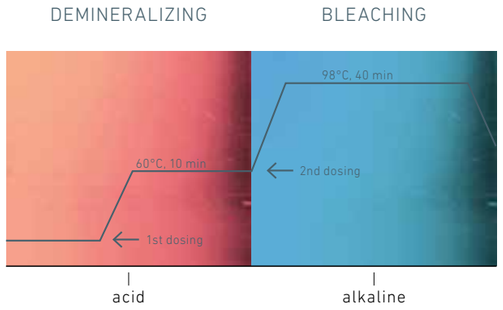
The outstanding properties of OPTAVON 4UD allow a versatile use during all pretreatment processes, for example as a sequestering agent, for demineralizing and as an acid donor.

BENEFITS

- Lower yarn break ratio due to powerful demineralizing
- Higher degree of whiteness
- Less differences of whiteness for a better reproducibility
- GOTS and bluesign® approved

OPTABLEACH

The OPTABLEACH process is a single-bath-process with two steps. The first step is the acid demineralizing, during the second dosing the alkaline is added to the bleaching process.

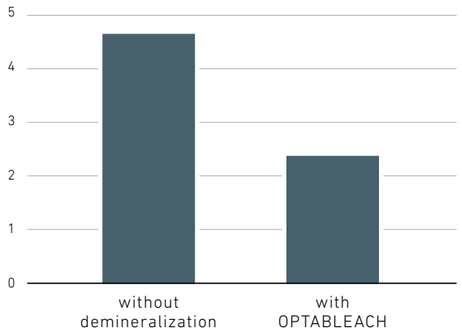


INFLUENCE OF DEMINERALIZATION

Yarns bleached with the OPTABLEACH process show significantly improved running properties in the weaving process (lower yarn break ratio) as well as a higher degree of whiteness.

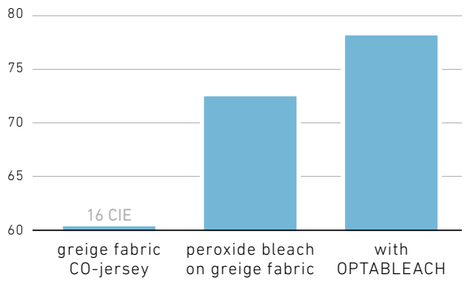
▶ YARN BREAK RATIO

yarn break ratio [stops/100 TS]



▶ DEGREE OF WHITENESS

influence of the demineralization on the degree of whiteness (CIE)

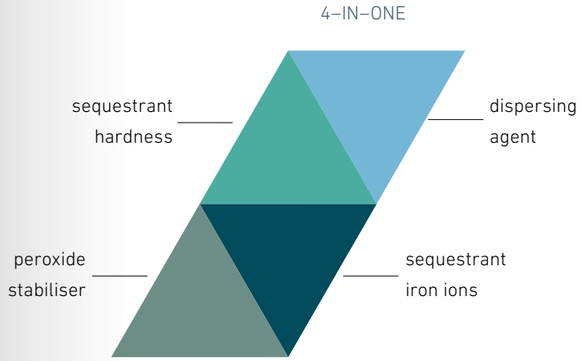


OPTAVON MEX and OPTAVON MEL

Complexing agents for all pretreatment processes

OPTAVON MEX and OPTAVON MEL offer excellent sequestering power regarding iron ions and hardness elements. They reduce catalytic damages on the textile goods during hydrogen peroxide bleaching. Moreover, they achieve very good stabilizing effects in peroxide bleaching.

OPTAVON MEX and OPTAVON MEL combine the advantages of a dispersing agent, a sequestering agent for iron ions and water hardness and a peroxide stabilizer in only one product.



BENEFITS

- Very good dispersing properties
- Prevents silicate deposits on machine parts
- Excellent binding power regarding calcium ions
- Compatible with enzymes
- Outstanding binding capacity regarding iron ions up to pH 13
- Very good peroxide stabilising
- GOTS and bluesign® approved

IRON COMPLEXING EFFECT OF OPTAVON MEX AND MEL

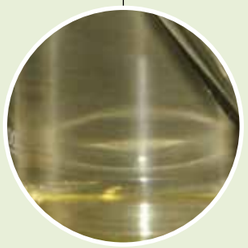
Iron ions often cause problems in alkaline bleaching baths. They can destabilize bleaching liquors and trigger the formation of pinholes after bleaching. This can be prevented by using OPTAVON MEX or OPTAVON MEL.

Liquor formulated with water with NaOH (pH 13) + 10 mg/l Fe^{3+} as catalyst

without sequestering agent

iron ions form insoluble precipitations in the alkaline liquor

with OPTAVON MEX or OPTAVON MEL



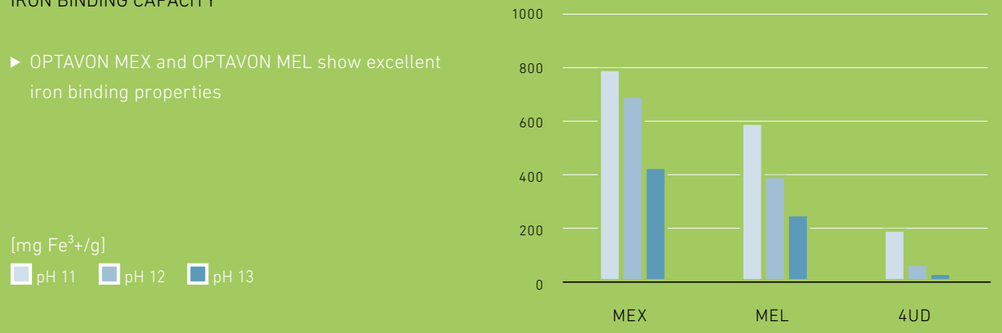
excellent iron binding ability, no precipitations caused by iron ions visible

OPTAVON 4UD, MEX, MEL

Comparison of the different complexing agents

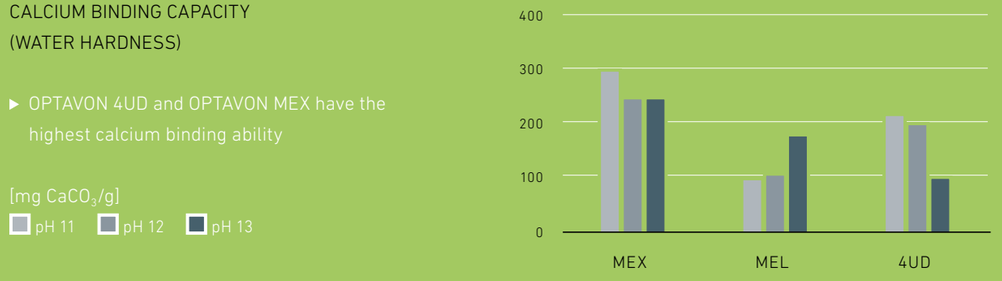
IRON BINDING CAPACITY

- OPTAVON MEX and OPTAVON MEL show excellent iron binding properties



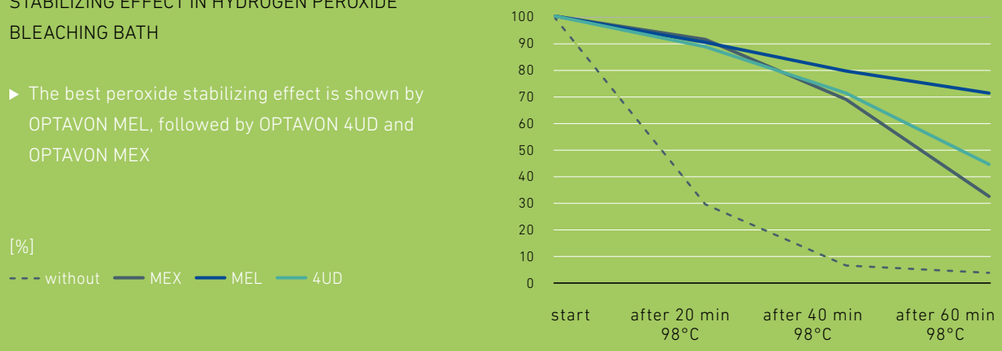
CALCIUM BINDING CAPACITY (WATER HARDNESS)

- OPTAVON 4UD and OPTAVON MEX have the highest calcium binding ability



STABILIZING EFFECT IN HYDROGEN PEROXIDE BLEACHING BATH

- The best peroxide stabilizing effect is shown by OPTAVON MEL, followed by OPTAVON 4UD and OPTAVON MEX



TISSOCYL RLB

Highly concentrated washing and wetting agent

TISSOCYL RLB is a highly efficient, multi-purpose detergent with very good fat and oil dissolving properties. It is applicable for all fibre types. Moreover, it displays a distinctive fat dissolving power during scouring of synthetic fibres and wool in order to remove lubricants.

BENEFITS

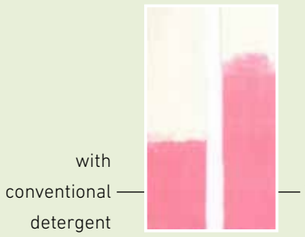
- Excellent wetting and deterging power
- Very high degreasing effect
- Outstanding emulsifying behaviour
- High soil suspending power
- Free of formaldehyde, biodegradable conform to Oeko-Tex® Standard 100
- bluesign® approved

DETERGING POWER

TISSOCYL RLB has excellent scouring and rewetting properties. Fabrics bleached with TISSOCYL RLB as detergent show a better absorbency after bleaching than by using conventional detergents.

Absorbency of 100% cotton terry fabric after bleaching

Absorbency of 100% cotton knitwear after bleaching



DROP TEST WITH RED DYED MINERAL OIL

TISSOCYL RLB emulsifies mineral oils very effectively so that oily residues from knitting or weaving are removed by scouring nearly completely.

SETAVIN RCO

Excellent levelling and dispersing agent

SETAVIN RCO is designed as a levelling agent for reactive dyeing on cellulose fibres and silk. It controls the liquor exhaustion rate and lowers rate of fixation during reactive dyeing. The levelness of reactive dyeing of materials with a high dyestuff affinity such as viscose, modal, lyocell, soja seacell and bamboo is essentially improved.

BENEFITS

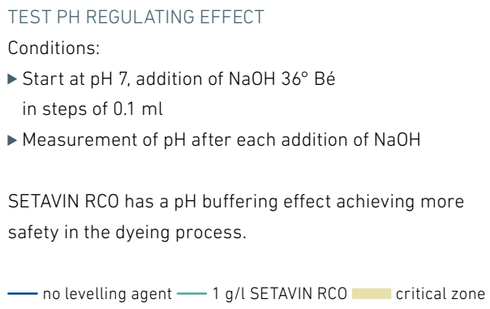
- pH regulating effect
- Even build-up of shade over the whole temperature range
- Good dispersing agent
- Sequestering effect
- GOTS and bluesign® approved

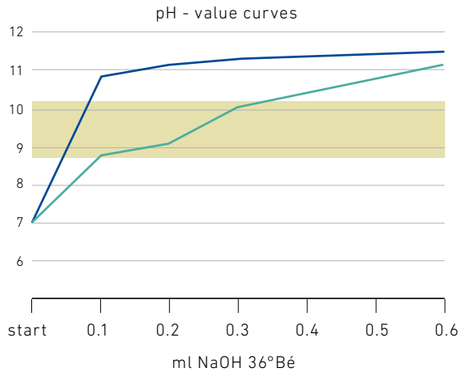
TEST PH REGULATING EFFECT

Conditions:

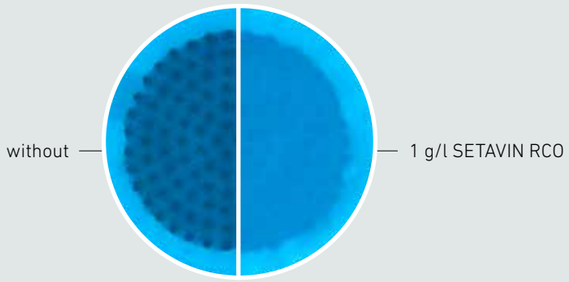
- Start at pH 7, addition of NaOH 36° Bé in steps of 0.1 ml
- Measurement of pH after each addition of NaOH

SETAVIN RCO has a pH buffering effect achieving more safety in the dyeing process.





TEST DISPERSING PROPERTIES IN REACTIVE DYEING WITH C.I. REACTIVE BLUE 21



The picture shows the excellent dispersing effects on reactive dyes, especially the critical disperse dyestuff, by using SETAVIN RCO.

ALKASET AOB

Alkali supplier for reactive dyeings

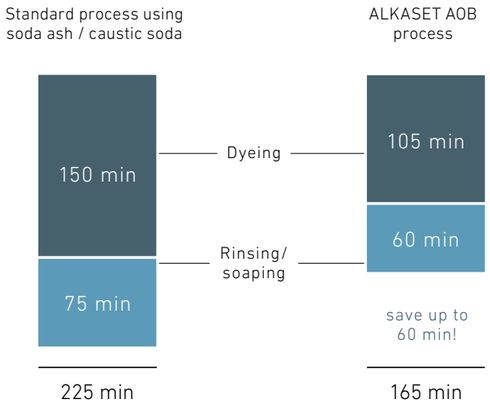
ALKASET AOB is designed as an alkali supplier for high and medium reactive dyestuffs on cellulosics. It offers easy shading, reduces the dyeing time, enables higher dyestuff yield, and guarantees an even and controlled liberating of alkali.

BENEFITS

- Reduction of dyeing time (up to 1 hour)
- „All in" method possible
- Deeper colour yield
- Reduced formation of hydrolysate
- Better reproducibility of the dyeings by improved pH control
- Homogeneous build-up of shade

REACTIVE DYEING PROCESS (VS TYPE) 60°C

With the usage of ALKASET AOB it is possible to save up to 60 min in the dyeing process.



BUILD-UP OF SHADE BY USING ALKASET AOB IN CRITICAL COLOR

There is an even build-up of shade by using ALKASET AOB.

ZETESAL NS

High effective aftersoaping agent

ZETESAL NS is used for aftersoaping of reactive dyeings of cotton and printings. It is also possible to add ZETESAL NS to the dyebath. It can be added to the soaping bath either diluted or undiluted.
ZETESAL NS can be applied in dyeing processes without any restrictions since it has no demetallising effect of dyestuffs, has no influence on the light fastness of a dyeing and has no retarding effect.

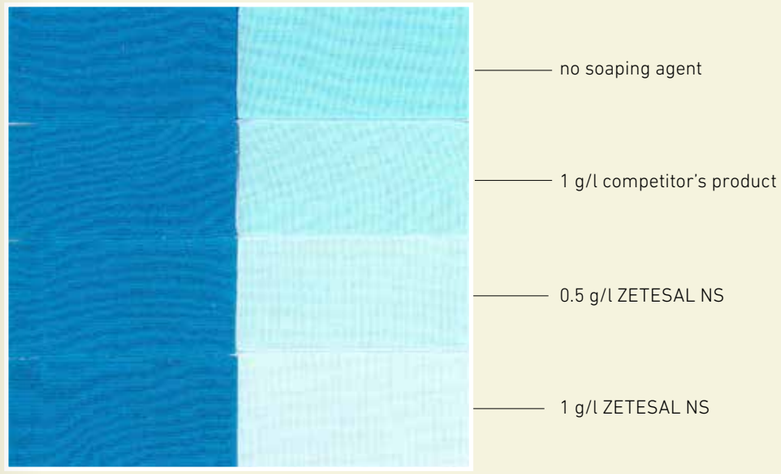
BENEFITS

- Outstanding improvement of fastness properties
- Suitable for turquoise and green shades
- Excellent dispersing power
- No foaming
- GOTS and bluesign® approved

TEST SOAPING EFFECT

ZETESAL NS is an outstanding soaping agent that achieves an excellent wash fastness.
Normally 0.5 g/l ZETESAL NS is sufficient for getting comparable good results like competitive products.
An increase of the amount up to 1g/l leads to a significantly improved result.

Shade Turquoise (6 % Remazol Turquoise Blue G 133%)
Soaping without / with soaping agent wash fastness 60°C ISO 105-C03



Staining of CO test fabric

ZETESAL FIX

High performance after-treatment agent

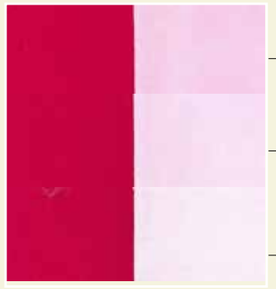
ZETESAL FIX is applied in order to improve the wet fastness of reactive dyeings and printings of cellulose fibres. It can be applied with softeners in a single-bath two step process. ZETESAL FIX is compatible with high-grade finishing liquors. Moreover, it is applicable to Indosol dyeing and selected sulphur dyeing (hydron blue).

BENEFITS

- Excellent improvement of the wash fastness
- Fast effects during boiled wash
- Negligible influence in light fastness, touch and shifting in shade
- Impedes rehydrolysis of the fixed reactive dyestuffs
- Free of formaldehyde
- Conform to Oeko-Tex® Standard 100
- GOTS and bluesign® approved

TEST PERFORMANCE OF AFTER-TREATMENT AGENTS

wash fastness 60°C ISO 105-C03

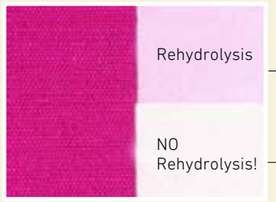


The figure shows the improvement of the wash fastness of reactive dyeing, using ZETESAL FIX in the dyeing process.

ZETESAL FIX PREVENTS HYDROLYSIS OF REACTIVE DYES

Wash test 60°C immediately after finishing

Repeat test after 3 months storage time



ZETESAL FIX avoids the re-hydrolysis of reactive dyes after a longer storage time.

ZETESAL TCS

Special after-treatment agent

ZETESAL TCS is designed as a special after-treatment agent for direct dyeing and reactive dyeing turquoise. It is applied in order to improve the wet fastness properties of direct and reactive dyeings and printings of cellulose fibres. It can also be applied as a cationic fixing agent for double fixation of polyamide or polyamide/elastane dyeings. ZETESAL TCS improves the contact fastness of wool or wool/viscose felt and silk dyeing.

BENEFITS

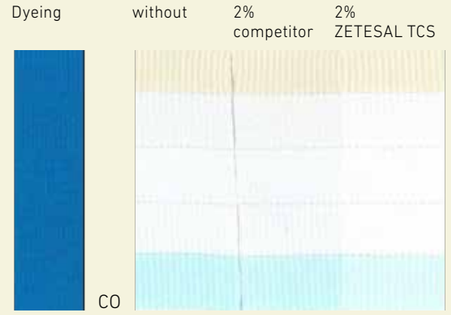
- Excellent improvement of the wash fastness on dyeings with reactive dyes (50°C and 60°C), especially blue and turquoise dyeings
- Good improvement of wash fastness on dyeings with direct dyes (40°C)
- Free of formaldehyde
- Conform to Oeko-Tex® Standard 100
- bluesign® approved

TEST PERFORMANCE OF AFTER-TREATMENT AGENTS

ZETESAL TCS improves the washing fastness of direct dyeings and reactive dyeings, especially in turquoise shades.

Shade Black – direct fastness to washing 40°C ISO 105-C01

Shade Turquoise – reactive fastness to washing 50°C ISO 105-C02



KATAMIN BW 3.0

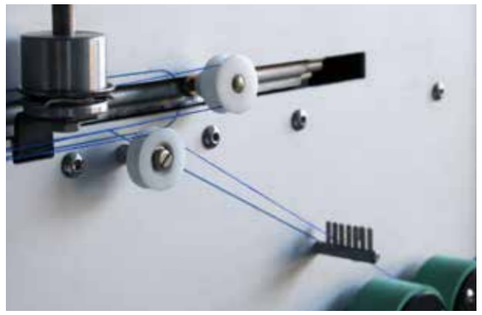
Wet paraffinating agent

KATAMIN BW 3.0 is a wet paraffinating agent for yarns from cotton, linen, acrylic and mixtures with other fibres. In most cases, the application of hard paraffin which requires extra rewinding is not necessary. KATAMIN BW 3.0 is also applied to cotton knitwear by exhaust process. It improves the stitchability properties and imparts a pleasant fabric touch. Stitch breaking during ready-to-wear manufacturing is prevented. KATAMIN BW 3.0 is successfully used for conditioning of linen tops in backwashing.

BENEFITS

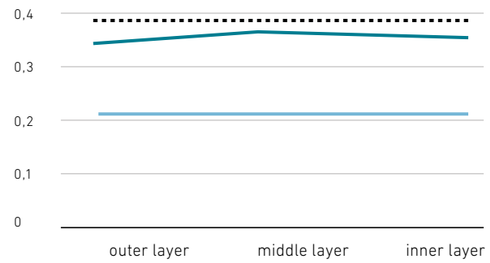
- High smoothness of yarn
- Easy to apply
- Suitable for cotton, viscose, linen and acrylic
- Even distribution over the entire bobbin
- High productivity in wet paraffinating
- Retains the hydrophilic nature of cotton
- GOTS and bluesign® approved

TESTING OF FRICTION VALUES



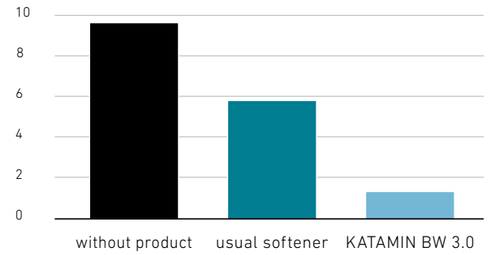
LOWER FRICTION VALUES BY KATAMIN BW 3.0
FRICTION VALUES μ-MEASURED BY ZWEIGLE-μ-METER

Yarns treated with KATAMIN BW 3.0 show a smooth surface and significantly lower friction values than yarns with conventional softeners.



KATAMIN BW 3.0 REDUCES THE YARN BREAK RATIO [STOPS/100TS] SIGNIFICANTLY

KATAMIN BW 3.0 imparts perfect gliding properties. Therefore the yarn break rate is reduced and the efficiency of weaving or knitting processes can be increased.



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