

**Distinguished
washing and scouring power
by using of**

SINCAL ECO

01/2010

ZSCHIMMER & SCHWARZ

... THE SOLUTIONS PROVIDER



Textile auxiliaries

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What is SINCAL ECO?

SINCAL ECO is a highly alkali-resistant anionic wetting agent for continuous and discontinuous pre-treatment of cellulosic fabrics.

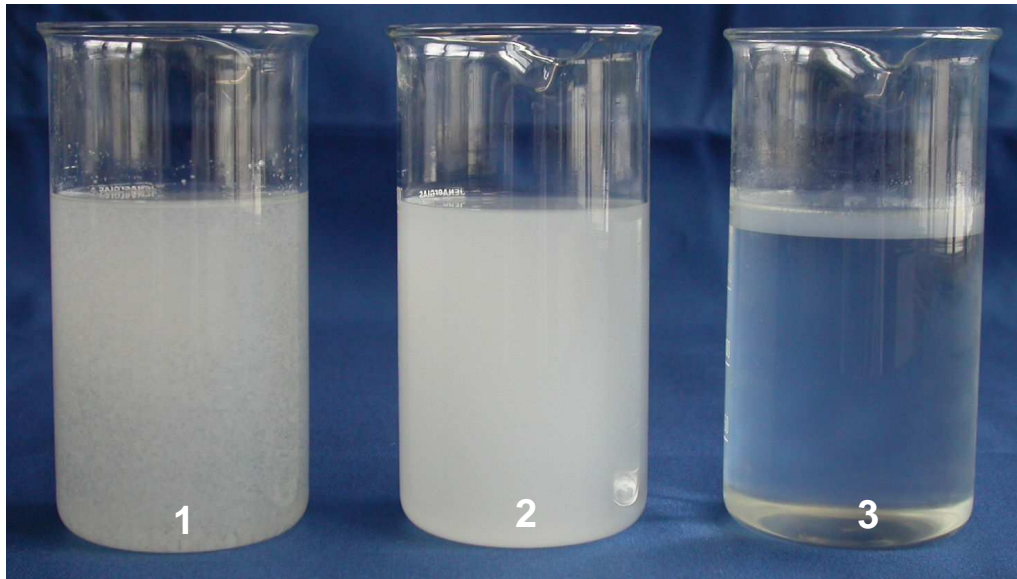
- suitable for all continuous bleaching & scouring processes of cotton, especially for wet-in-wet application when reinforced bleaching liquors are required
- suitable for discontinuous bleaching of cotton knitwear and woven fabrics
- suitable for discontinuous kier-boiling or bleaching of medical cotton
- excellent penetration of goods and emulsifying properties
- high absorbency and best degree of whiteness of treated cotton fabrics
- optimized scouring and pre-treatment results
- increases safeness of production process
- effective resource to save your money



Benefits of SINCAL ECO:

1. Stability in strong alkaline liquors:

Test: 100 g/l NaOH (100%)
10 g/l product
after 2 hours storage at room temperature without stirring



1 anionic
detergent

2 SINCAL ECO

3 non-ionic
detergent

The test shows:

- Most of **anionic detergents** are good soluble in strong alkaline liquors. But after a very short time, this liquors flocculate. An uneven pick-up results. (test 1)
- **SINCAL ECO** is very stable under strong alkaline conditions. The liquor can be stored over 1 day. A even pick-up and reproducible results are guaranteed. (test 2)
- **Non-ionic detergents** separate under strong alkaline liquor immediately. (test 3)

Benefits of SINCAL ECO:

2. Foaming behaviour:

Test: stamping method (ZSM method no. 3052,
according to DIN 53902 / 12728)
3 g/l product
1 g/l caustic soda
foam volume after 30 sec at 25°C



1 anionic detergent **2** SINCAL ECO **3** low foaming non-ionic detergent

The test shows:

- **Conventional anionic detergents** show a very high foaming behaviour. Therefore they are not recommended since they can cause foam build-up during application, steaming or on guiding devices. (test 1)
- **SINCAL ECO** is low foaming under the same conditions. The product is suitable for Impacta and padder application from a stock tank and also for saturator applications. Furthermore SINCAL ECO works on most of discontinuous dyeing machines. (test 2)
- **Low foaming non-ionic detergents** do not cause foaming problems during application (test 3), but they separate under strong alkaline conditions (see previous picture).

Benefits of SINCAL ECO:

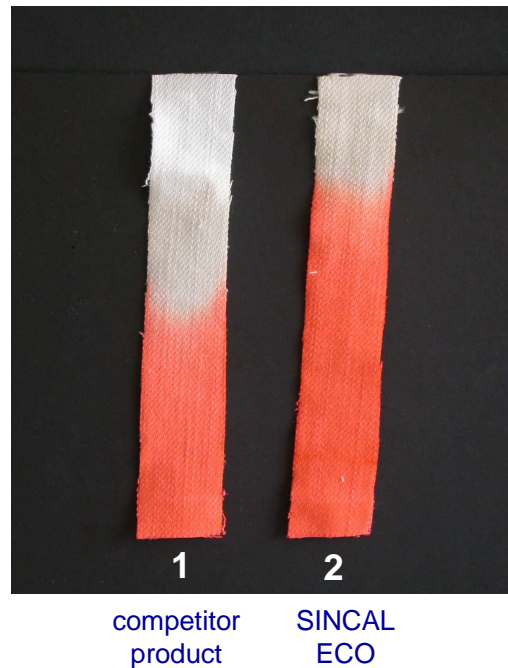
3. Absorbency:

Test:
enzymatic desizing,
PAD-Steam bleaching process

evaluation: capillary rise after bleaching

recipes on page 8

- 1 gabardine, competitor product
- 2 gabardine, SINCAL ECO



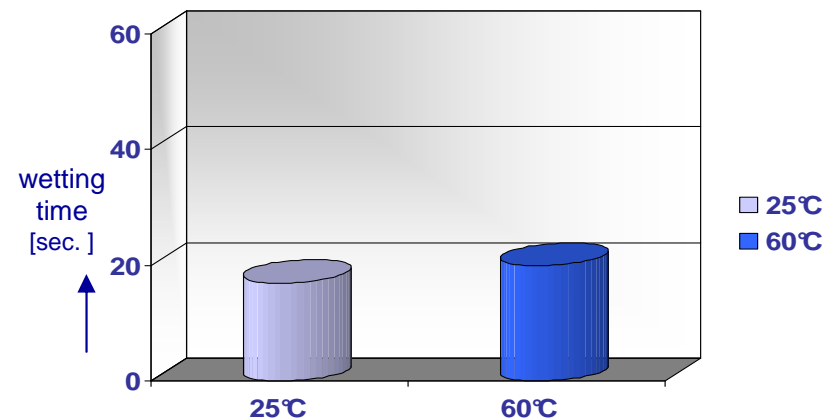
With **SINCAL ECO**

you can improve the
absorbency on a higher level.

4. Wetting behaviour:

method: acc. to our
testing method No. 3051/e
3.0 g/l scouring agent
30 g/l NaOH 100%
demineralized water

evaluation:
determination of the wetting time of
a raw cotton cloth disc immersed in
a solution of surface active agent



SINCAL ECO

is able to penetrate cotton fabrics
very quickly.

Benefits of SINCAL ECO:

5. Oil emulsifying power:

method: ZSM internal
5 g/l coloured mineral oil
3 g/l detergent
stirring 1 min at 8000 rpm (Turrax)

evaluation: distribution of coloured oil after 1 hour



without detergent



SINCAL ECO

SINCAL ECO

is able to emulsify mineral oils.

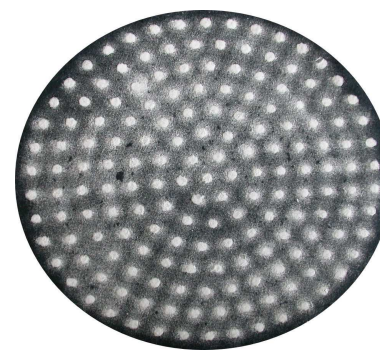
6. Wax emulsifying power:

method: ZSM internal
5 g/l wax
5 g/l detergent
3 min at 95°C stirring
shock cooling at 25°C, vacuum

evaluation: distribution of wax



without detergent



SINCAL ECO

SINCAL ECO

is able to emulsify waxes.

SINCAL ECO removes sizing agents and native waxes from the cotton textiles during desizing, scouring and bleaching process.

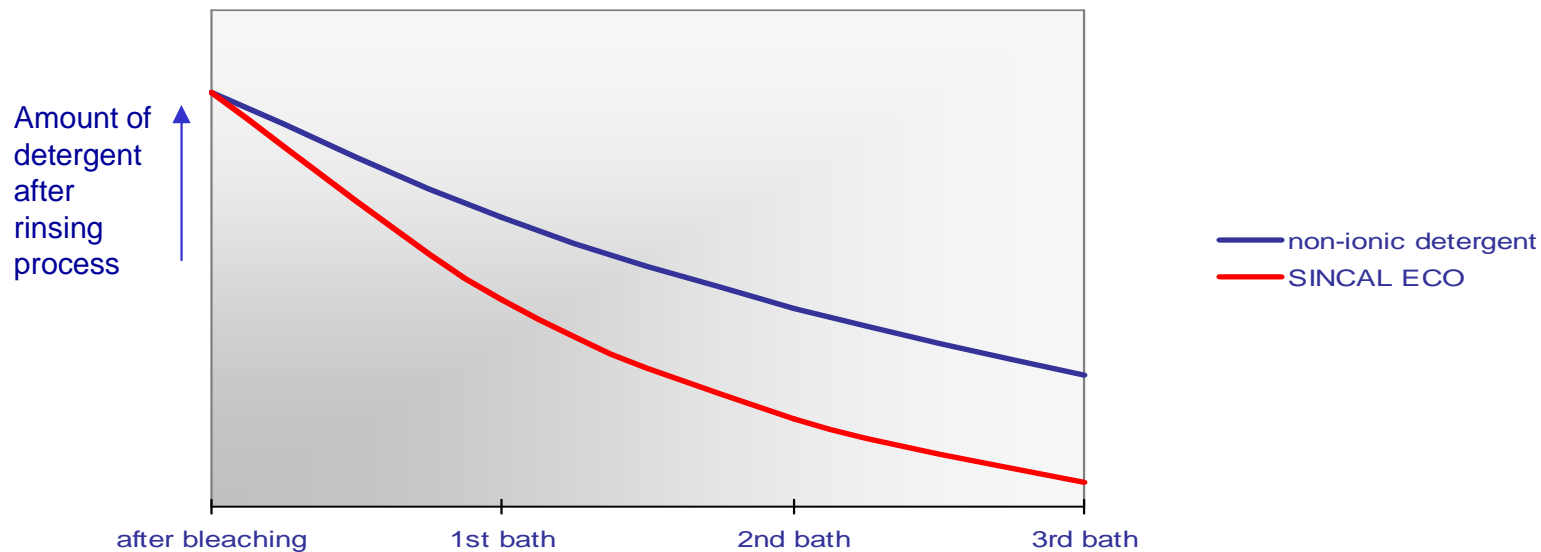
Good hydrophilic properties can be achieved after pre-treatment by SINCAL ECO.

Benefits of SINCAL ECO:

7. SINCAL ECO can be removed easier from cotton fabric than non-ionic detergents.

Comparison:

Washing-off behaviour of non-ionic detergent and SINCAL ECO during rinsing after bleaching



Advantages of the excellent washing-off behaviour of SINCAL ECO:

- very important for critical blue / turquoise shades
- saving of water
- saving of process time
- optimum for “ready to dye” processes

Need-to-know of SINCAL ECO:

Basics:

- ionicity: anionic / non-ionic
- pH value: about 7
- stability to alkali: 100 g/l NaOH (100%)
(in budged liquors up to 150 g/l)
- enzyme compatibility: no influence

Appearance:

- gel-like product
- viscosity: about 7000 mPas (20°C)
- not suitable for directly dosing by pump
- handling: before adding to the liquor preparation, SINCAL ECO should be dissolved in warm water and stirred well
- stock preparations of SINCAL ECO are only recommended under highly alkaline conditions, but not longer than one day



Basic recipes for continuous processes:

SINCAL ECO has to be solved in the ratio 1:2 up to 1:4 with warm water.
The boiling up with spear and straight steam should be avoided.

Enzymatic desizing:

2 - 6 g/l	SINCAL ECO
1 - 2 g/l	OPTAVON MEX
x g/l	amylase

impregnation: roller compartment, 60 - 80°C, pick-up p 80 - 100%
dwel: 6 h
wash off: 60 - 70°C

Alkali scouring:

2 - 4 g/l	SINCAL ECO
1 - 2 g/l	OPTAVON MEX
30 - 40 g/l	NaOH (100%)

impregnation: pick-up ca. 80 %, combined steamer, 8-25 min saturated steam
wash off: 90 - 95°C

Hydrogen peroxide bleaching:

	silicate containing:	silicate-free:
0.1 - 0.2 g/l	magnesium sulphate (<i>if soft water is used</i>)	
8 - 15 ml/l	sodium silicate 38°Bé	
3 - 6 g/l	NaOH (100%)	6 - 12 g/l NaOH (100%)
2 - 4 g/l	SINCAL ECO	2 - 4 g/l SINCAL ECO
1 - 2 g/l	OPTAVON MEX	2 - 4 g/l OPTAVON MEX
15 - 40 ml/l	hydrogen peroxide (35%)	15 - 40 ml/l hydrogen peroxide (35%)
<i>impregnation:</i>	<i>pick-up ca. 80 %, combined steamer, 8-25 min saturated steam</i>	
<i>wash off:</i>	<i>90 - 95°C</i>	

Basic recipes for discontinuous processes:

SINCAL ECO has to be solved in the ratio 1:2 up to 1:4 with warm water.
The boiling up with spear and straight steam should be avoided.

One-step hydrogen peroxide bleaching:

0.7 - 2.0 g/l	SINCAL ECO
0.5 - 1.5 g/l	REDUSTAB OS
0.5 - 1.0 g/l	OPTAVON NW
2.5 - 4.0 ml/l	NaOH 50%
4.0 - 8.0 ml/l	H ₂ O ₂ 35%

*LR 1:10, start at 30 to 40°C having added all chemicals,
heat up with 2 to 2.5°C per min to 98°C,
bleach at 98°C for 40 to 60 min*

Acid demineralizing / Hydrogen peroxide bleaching in one bath:

0.7 - 2.0 g/l	SINCAL ECO
0.5 - 1.0 g/l	OPTAVON TW 6007 or OPTAVON MEX
4.0 - 8.0 ml/l	H ₂ O ₂ 35%
2.5 - 4.0 ml/l	NaOH 50%

*LR 1:10, start at 30 to 40°C **without adding the lye**,
demineralize at 60 to 70°C for 10 min, add the lye i nto the same bath
and heat up to 98°C,
bleach at 98°C for 30 to 60 min*

Bleaching of surgical cotton:

0.5 - 2.0 %	SINCAL ECO
0.5 - 1.0 %	OPTAVON MEX
3.0 - 5.0 %	NaOH (100%)
6.0 - 12.0 %	hydrogen peroxide (35%)
<i>bleaching:</i>	<i>30 - 45 min at 98°C or 20 - 30 min 110°C</i>
<i>rinsing:</i>	<i>80 - 90°C</i>