Let's protect our planet with

SUSTINERI Coloring

An ongoing collaboration between Inditex and Pulcra Chemicals

Pulcra Chemicals

The solution specialist

SUSTINERI COLORING
AN INNOVATIVE DYEING TECHNOLOGY

The fashion industry has a huge impact on the global environment. In the textile production chain, the dyeing process is considered to have one of the largest impacts due to its intensive use of water and energy. There is an urgent need to find ways to save resources and reduce CO_2 footprint.

Sustineri Coloring is focused on shorter processing time and less use of water and energy. It is based on **newly engineered process chemicals**, with multi-functional wetting, emulsifying and dispersing capacities, which allow a **one bath pretreatment and dyeing** process for dark, medium and light shades of cotton and polyester/cotton fabrics by exhaust method.

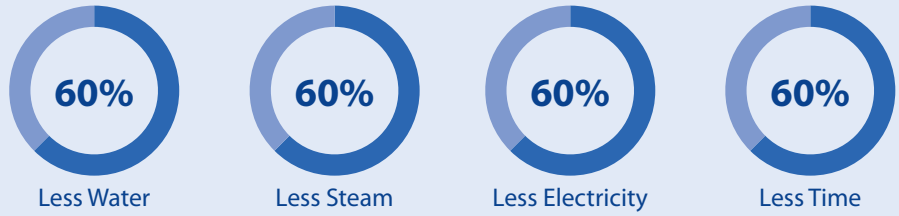
Sustineri Coloring is the outcome of an ongoing collaboration between Inditex and Pulcra Chemicals to develop new products and processes to address the textile industry challenges.

KEY **BENEFITS**

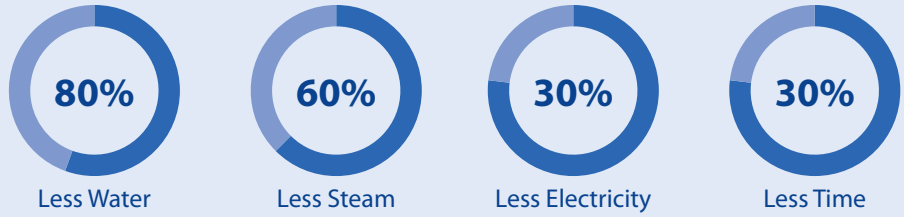
- Pretreatment and dyeing in one bath
- No machinery investment required
- Water, time and energy reduction
- Lower CO_2 footprint due to less energy consumption
- Gentler process conditions
- Shorter manufacturing process time
- Effluent reduction

SAVINGS GENERALLY UP TO:

COTTON



POLYESTER/COTTON



*Savings limited to pretreatment and dyeing step on dark and medium shades. The washing off is not included.

REACTIVE DYEING OF
100% COTTON KNIT FABRICS

PROPOSED PROCESS AND GUIDE RECIPE:
MEDIUM AND DARK SHADES

a) Adding 0.5 – 2.0% **FORYL® SCD** and 1.0 -3.0 % **OSIMOL® SCC**. Scouring at 80° C
b) Cooling to 60° C and addition of dyestuffs, salt and alkali
c) Rinsing at 60° C and aftersoaping at 80° C with 0.5 – 2.0% **LOCANIT® S**
d) Finishing and softening

PRODUCTS:

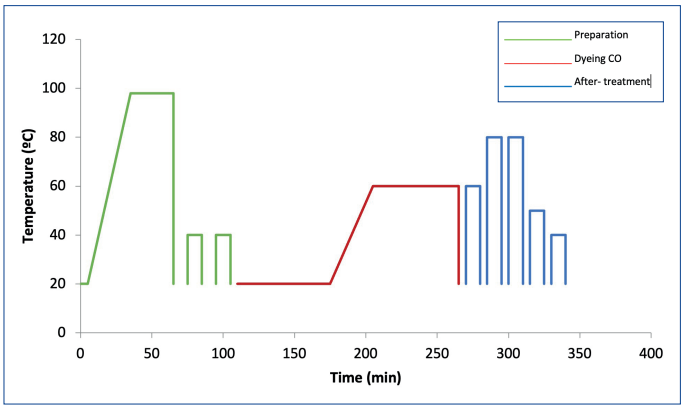
FORYL® SCD – Anionic deaerating agent. It provides excellent wetting and defoaming properties and has no negative impact on shades.

OSIMOL® SCC – Multifunctional product showing wetting, emulsifying, sequestering and crease preventing properties. OSIMOL® SCC is formulated by a mixture of selected anionic components.

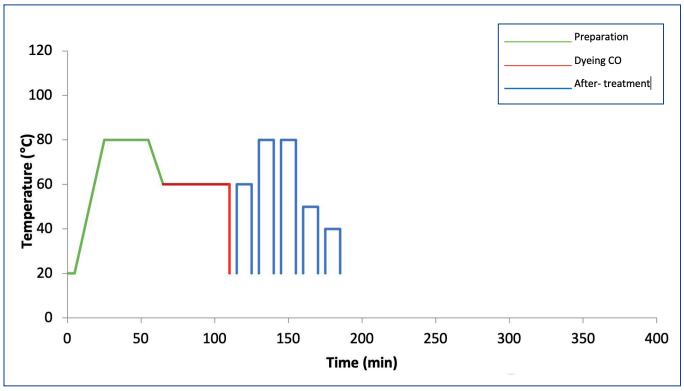
LOCANIT® S – Performing aftersoaping agent for reactive dyeings. Allows a reduction of the aftersoaping temperatures to 70 – 80°C.

JET DYEING OF
100% COTTON KNIT FABRIC IN A NAVY SHADE

STANDARD PROCESS



PULCRA SUSTINERI COLORING PROCESS



	STD process	SC Process	% Reduction
Electricity (kWh/kg)	0,12	0,05	-58%
Steam (Nm3/kg)	0,08	0,03	-62%
Water (L/kg)	22	7	-57%
Time (min/process)	265	110	-58%

REACTIVE DYEING OF
100% COTTON KNIT FABRICS

Special process for light shades – The process combines the pretreatment and dyeing in one bath and mild enzymatic bleaching after dyeing.

PROPOSED PROCESS AND GUIDE RECIPE:
LIGHT SHADES

a) Adding 0.5 – 2.0% **FORYL® SCD** and 1.0 -3.0 % **OSIMOL® SCC**. Scouring at 80° C
b) Cooling to 60° C and addition of dyestuffs, salt and alkali
c) Rinsing at 60° C
d) Special enzymatic bleaching with 1-1,5 % **FORYLASE® AS** and 3– 4,5 % **SECURON® AE**, 3% H202 (50%), 0,5-1% **FORYL® SCD**
e) Finishing and softening

LIMITATIONS:

In light shades selected reactive dyestuffs must be used. Please ask our specialist to help you.

PRODUCTS:

Bleaching catalyzed by enzymes:

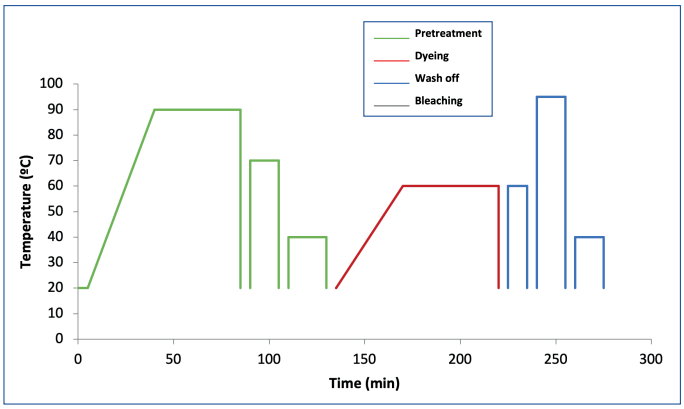
FORYLASE® AS – Arylesterase enzyme that catalyzes the reaction of peroxide with SECURON® AE.

SECURON® AE – Enzyme booster.

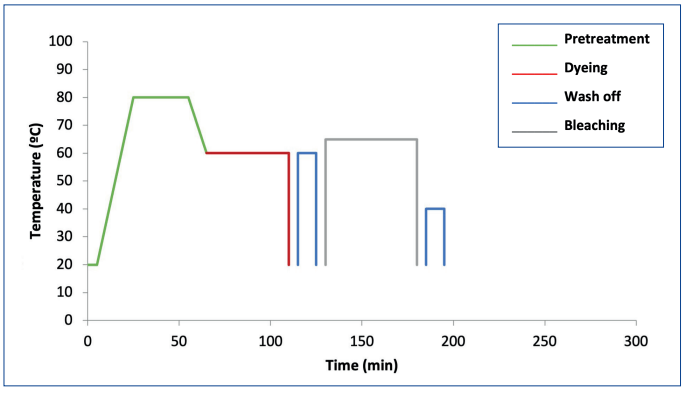
In light shades savings make reference to the full process including washing.

JET DYEING OF
100% COTTON KNIT FABRIC IN A LIGHT SHADE

STANDARD PROCESS



PULCRA SUSTINERI COLORING PROCESS



	STD process	SC Process	% Reduction
Electricity (kWh/kg)	0,54	0,36	-32%
Steam (Nm3/kg)	0,17	0,07	-56%
Water (L/kg)	52	22	-58%
Time (min/process)	275	195	-30%

DISPERSE/REACTIVE DYEING OF **POLY COTTON KNIT FABRICS**

PROPOSED PROCESS AND GUIDE RECIPE: **MEDIUM AND DARK SHADES**

a) Adding 0.5 – 1.5% **BREVIOL® SC MULTI** and 1.0 -3.0 % OSIMOL® SCC

b) Addition of the disperse dyes, **BREVIOL® SCP** and acid for pH adjustment

c) Heating up to 130° C and dyeing the PES portion

d) Cooling to 60° C and addition of dyestuffs, salt and alkali and dyeing the CO portion

e) Rinsing at 60° C and aftersoaping at 80° C with 0.5 – 2.0% **LOCANIT® S**

f) Finishing and softening

LIMITATIONS:

This process only applies to disperse dyestuffs that can be solubilized with alkali (no reduction clearing is needed)

PRODUCTS:

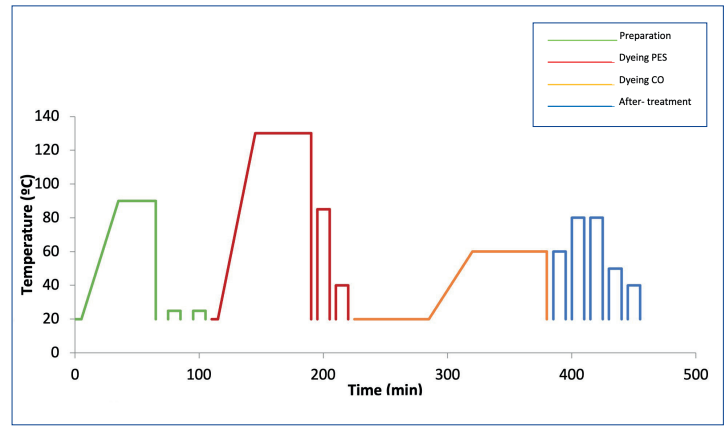
BREVIOL® SC Multi – Multifuctional product enabling a single step pretreatment and dyeing of PES knit fabrics. It provides hydrophilizing, emulsifying and crease preventing properties.

BREVIOL® SCP – Non-ionic dispersing and levelling agent for disperse dyes introduced to PES knit fabrics. It can furthermore support the removal of oligomers.

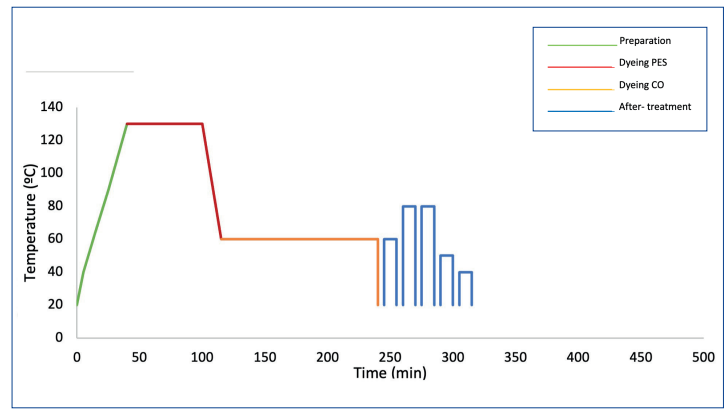
OSIMOL® SCC – Multifunctional product showing wetting, emulsifying, sequestering and crease preventing properties. OSIMOL® SCC is formulated by a mixture of selected anionic components

JET DYEING OF **35% PES / 65% CO KNIT FABRIC IN A BLACK SHADE**

STANDARD PROCESS



PULCRA SUSTINERI COLORING PROCESS



	STD process	SC Process	% Reduction
Electricity (kWh/kg)	0,21	0,14	-35%
Steam (Nm3/kg)	0,19	0,07	-62%
Water (L/kg)	77	7	-81%
Time (min/process)	370	240	-35%

Like to find out more?
info@pulcrachem.com
www.pulcra-chemicals.com

Pulcra Chemicals GmbH
Isardamm 79-83
82538 Geretsried
Germany
Phone: +49 8171 628 0

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Pulcra Chemicals
The solution specialist