



1. Acatel Presentation

- 2. Eco-Design
 - 2.1. Raw Materials
 - 2.2. Processes
 - 2.3. Finishings
- 3. Functional Finishings





1. Acatel Presentation





https://www.youtube.com/watch?v=U9Wl8ou3WMc

- www.acatel.pt
- * linktr.ee/acatel
- facebook.com/acatel1985
- o instagram.com/acatel1985
- in linkedin.com/company/acatel1985



























ACATEL

2. Eco-Design 2.1. Raw Materials 2.1.1 NaiaTM

With an extremely low water footprint, Naia™ is created using sustainably sourced wood and safe solvents, which are recycled and reused.

Naia™ filament yarn transforms fabrics into luxurious, comfortable, and easy-to-care-for fabrics, while Naia™ staple fiber blends perfectly with other eco-conscious fibers to create supremely soft, quick-drying fabrics that consistently reduce pilling.





COMFORT







SILKY SMOOTH

BRIGHT LUSTER OR

QUICK DRYING

RICH AND DEEP COLORS

SOFTNESS



ENDURING SOFTNESS



IMPROVED DRY RATE



GREAT FOR BLENDS

REDUCED PILLING



REDUCED PILLING



AGAINST FUZZ



The textile of tomorrow



2.1. Raw Materials 2.1.2 Tencel™ Lyocell



Pioneered using renewable wood sources and upcycled cotton scrapes in a closed loop process, TENCEL™ active cellulosic fibers help your body feel pleasently cool and dry, with its natural comfort and versatility.



Recyclable Strength



Gentle on Skin



Softness

Sheen









Botanic Origin



Drape



Sustainable Production



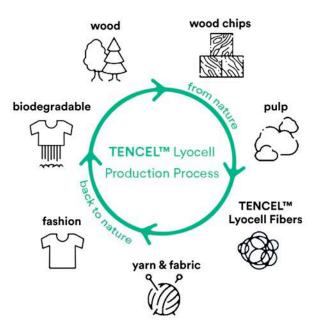
Enhanced Breathability



Unfavorable **Bacteria Growth**



Color Retention



>99% recovery of solvent less energy and less water



2.1. Raw Materials 2.1.3 Tencel™ Refibra™

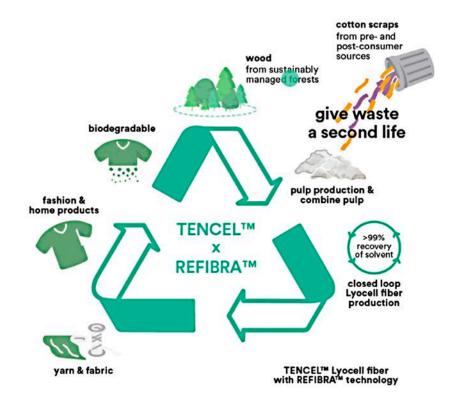




THE PIONEERING REFIBRATM
TECHNOLOGY INVOLVES UPCYCLING
COTTON SCRAPS FROM GARMENT
PRODUCTION.

These cotton scraps are transformed into cotton pulp. A substantial proportion – up to one third – of this is added to wood pulp, and the combined raw material is transformed to produce new virgin TENCEL™ Lyocell fibers to make fabrics and garments.

TENCEL™ fibers with REFIBRA™ technology are identifiable in yarns, fabrics and final garments owing to the innovative special identification technology designed to confirm fiber origin. In turn, this improves supply chain transparency.





2.1. Raw Materials 2.1.4 EcoVero™



derived from sustainable wood



viscose fibers



produced with up to 50% lower CO2 emissions & water impact



uses

more

up to 50% lower CO₂ emissions

LENZINGTM ECOVEROTM viscose fibers decompose quickly

certified with

EU Ecolabel#









conventional cotton uses more

EcoVero



2.1. Raw Materials 2.1.5 Good Earth Cotton®

GOOD EARTH COTTON'

TURN NEGATIVES INTO POSITIVES

Good Earth Cotton® is the world's first carbon-positive cotton.

carbon positive

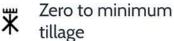
low impact

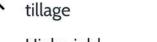
traceable

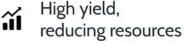


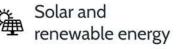




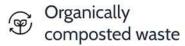




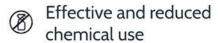




Biodiversity







Low water use

FibreTrace**

Every fibre tells a story®



1. Cotton gin

FibreTrace® is incorporated into the raw cotton fibre at the cotton gin via a luminescent fibre.



2. Spinner

The spinner receives the FibreTrace®-integrated cotton and scans in-bound bales into facility (or adds FibreTrace® sliver during spinning process).



3. Fabric Mill

The FibreTrace® cotton yarn is scanned in at the fabric mill to be converted into a textile.



4. Finished Goods

Fabric rolls are received and scanned into their next destination, where fabric is converted into finished goods.



5. Retail

Brand receives finished goods and scans in-bound to warehouse facility/site. This concludes the primary FibreTrace® production cycle.



6. Consumer

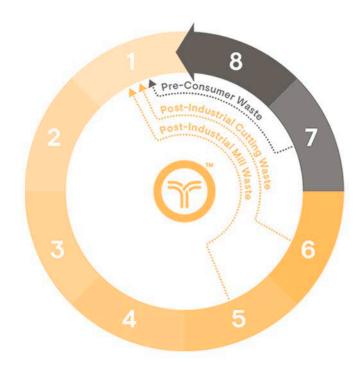
Consumers can shop with confidence, through secure, authenticated FibreTrace® technology..







2. Eco-Design 2.1. Raw Materials 2.1.6 Texloop™



RCOT™ Primo Recycled Cotton

vs 100% Conventional Cotton

Life Cycle Impacts Assessment Per kg of Material	Conventional GMO Cotton	RCOT™ Primo Recycled Cotton	% Savings vs Cotton
Water Scarcity (m3)	117.7	2.2	98% Less
Water Consumption (Liters)	2,678	48.9	98% Less
Global Warming (kg CO2 eq)	6.2	4.2	33% Less
Resource Depletion Fossil Fuels (MJ)	54.0	43.0	20% Less

^{*} Data based on raw white greige fabric LCIA Midpoints from HIGG. NOT DYED.

Texloop RCOT Primo™ & Classic

Post-Industial Recycling Process (1-6)





















Pre-Processing & Sorting





Garment Manufacturing

















Mechanical Recycling



Consumer







2. Eco-Design 2.1. Raw Materials

2.1.7 Agroloop™ Biofibre™

A NEW NATURAL FIBER MINDFULLY SOURCED FOR CIRCULARITY.

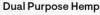
The Agraloop™ refines natural fibers derived from agricultural crops into textile-grade fiber called Agraloop™ BioFibre™.

With our specialized processing technique, cellulose from stems and leaves are purified into soft fiber bundles ready to spin into yarns. The Agraloop processes residues from various agricultural crops including, hemp, flax, banana, and pineapple.



European Hemp BioFibre™ Refined+

Crop





Output

Hemp BioFibre™ Refined+

Agraloop™ Refined+ BioFibre is refined with our proprietary wet plus dry processing technique.

Agraloop™ BioFibre™ vs Conventional Hemp	Conventional Hemp	Agraloop™ Hemp BioFibre™*	Additional Info.
Grown & Processed in Europe	?	✓	70% of global hemp comes from China
Farming Practices Support Soil Health & BioDiversity	?	✓	Agraloop crops are rainfed, do low to zero tilling, and use zero pesticides and herbicides
Oeko-Tex Certified	?	✓*	*In-Process
CRS Certified (Crop Residue Standard)	?	✓*	*In-Process
Traceable with Fiber Tracer & Blockchain Technology	?	✓	FibreTrace [»]
Authentic Trusted Brand	?	✓	

^{*}European Agraloop™ Hemp BioFibre™ using Refined+ processing technology.

Agraloop™ + FibreTrace»

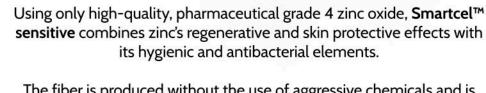
FibreTrace® connects digital traceability with physical technology to provide integrity and authentication - our patented luminescent pigment is applied to fibre or yarn and audited at every stage of the supply chain to ensure the fibre you are promoting is in fact what you are selling.



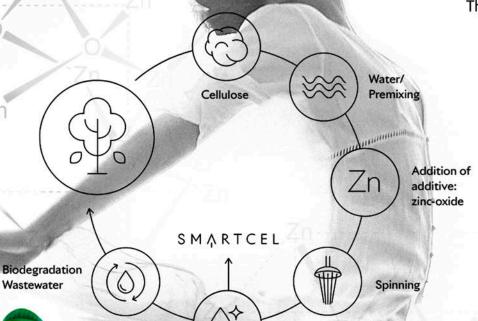
SMARTCEL

2. Eco-Design

2.1. Raw Materials 2.1.8 Smartcel™ Smartcel™ sensitive is the natural fiber with the essential trace element zinc. It is modern, patented, awarded with a prize for innovation, and developed in Germany.



The fiber is produced without the use of aggressive chemicals and is made solely from renewable raw materials, making it both eco-friendly and fully biodegradable.



After-treatment



Resistant to UV light



Soft on the skin



Soothing properties



Antiinflammatory



Antibacterial & Antifungal



Naturally moisture & odour resistant



Recyclable





2.1. Raw Materials 2.1.9 European Flax® Linen

Cultivated at close-proximity, flax is grown in a wide coastal band of Western Europe. The only plant textile fiber originating on the continent, European linen cultivation cannot be relocated, its excellence is thanks to a unique combination: a natural, damp ocean climate, flax's low thermal density, a rich soil and the experience of flax growers.









absorbent

hand washable



resistant



dirt /stains resistant



342.000 tons

of CO₂ greenhouse gas emissions avoided

650.000 millions cubic meters of water

would be consumed if flax cultivation was replaced by cotton cultivation

> it needs O irrigation (rain water is enough to grow it) and very little input (fertilizer and phytosanitary)

333.000 tons of stocked CO, , or 3,7 T/HA



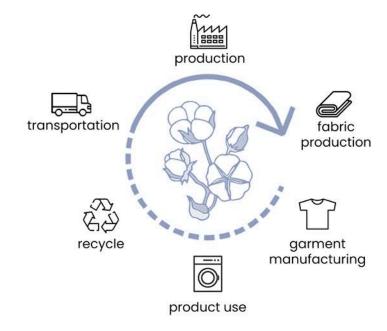
38.000 tons of petrol equivalents economized



2. Eco-Design 2.1. Raw Materials 2.1.10 Upcycled Cotton



Upcycled Cotton is produced from textile waste, which is frayed and reduced again to fiber and then spun again.





need



Made of

need

WASTES



resource





control

No GMO







Biodegradable erosion



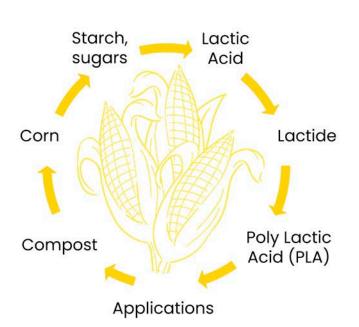


2.1. Raw Materials 2.1.11 PLA

Polylactic acid (PLA) is an eco-friendly, plant-derived thermoplastic.

The fiber forming substance is a polymer in which at least 85% by weight are lactic acid ester units derived from naturally occuring sugars

THE MANUFACTURING OF CORN FIBRE SAVES MORE THAN ONE TONNE OF CO² EMISSIONS PER TONNE OF FIBRE.





Breathable & insulating



Naturally moisture & odour resistant



Highly durable



Soft on the skin



Antibacterial & Antifungal



Soil release properties



Resistant to UV light



Recyclable



Easy wash & care



Hypoallergenic/ Skin friendly



Supreme softness



Bright luster





2.1. Raw Materials 2.1.12 Hemp

HEMP is one of the most environmentally friendly fabrics. It is a natural, highly renewable and regenerative crop that repairs the environment throughout its growth cycle.





Pineapple

2. Eco-Design

2.1. Raw Materials 2.1.13 Pineapple leaf **Pineapple leaf fibre (PALF)** is an agro residue, extracted by scratching of pineapple leaves followed by retting.

PALF has desirable properties of a textile fibre like high cellulose content, good tensile strength and fibre length.





2.1. Raw Materials 2.1.14 Banana

Just like hemp, which produces a flowering and a stem section, Banana stems and peels yield fibers that can be made into textile products. This practice has actually been done for many centuries, but it's only recently that the world of Western fashion has caught on to the textile potential of the common banana.

It can be blended easily with cotton fiber or other synthetic fibers to produce blended fabric & textiles.



durable



Antibacterial & Antifungal



Recyclable & biodegradable



Naturally moisture & odour resistant





Supreme softness



Low water



Bright luster



Highly



No pesticides, herbicides or fertilisers



petrochemicals



Hypoallergenic/ Skin friendly

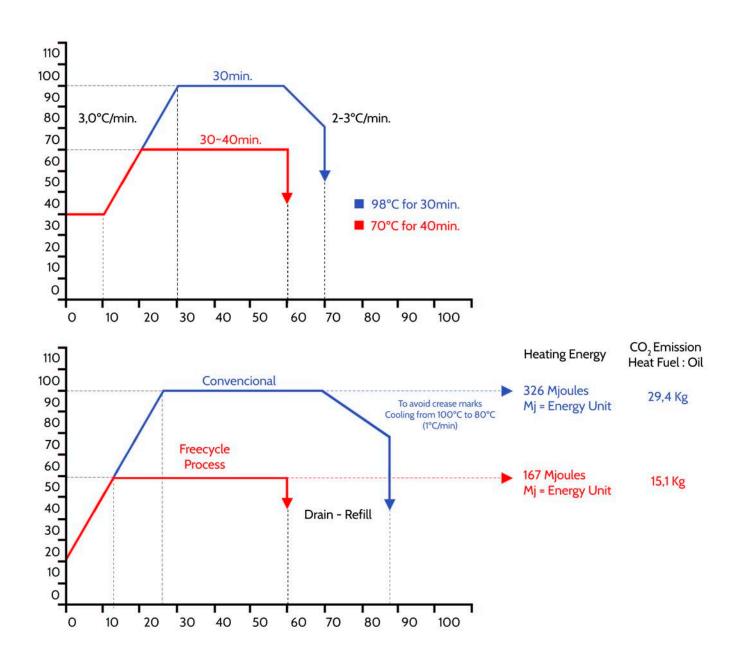








2.2. Processes
2.2.1 Freecycle





2.2. Processes

2.2.2 Freecycle - Low temperature bleaching

Inspired by nature, ACATEL developed a new concept in cotton bleaching. By using a brand new accelerator and achieving its potencial at **low treatment temperatures**, this meets the goal for invironmentally friendly processes. The new system is able to process textiles in a more sustainable way than conventional bleaching systems and delivers textile fabrics with enhanced quality.

KEY BENEFITS



Environmentally friendly



Energy saving up to 50%



CO2 emission 40 to 60% less



Lower COD in the wastewater



Time saving 30%



Strength retention

- . Better DP
- . Better tear strength
- . Less weight loss: gain 1,5 to 2.5%
- . Tenacity & elongation improves: by 10 to 15%



Remaining "cotton wax"

- . Natural softness: reduction by 50% of the amount of softening agent to be used
- . Excellent sewability (knitted fabric)
- . Better winding and weaving (less waxing needed): reduction by at least 50% of the amount of waxing or wet parafinating agent to be used

LOW TEMPERATURE BLEACHING



2.2. Processes 2.2.3 Freecycle - Neutrox

The mitigation of climate change through more sustainable practices are imperative actions for a healthier planet. **NEUTROX** is a process for neutralising alkaline buffers with high performance at low temperature (70-80%) reducing water and energy consumption.

KEY BENEFITS Energy saving up to 50% Reduce Chemicals 50% . Alternative to Acetic and Formic acid . Easy to use and handle CO2 emission 40 to 60% less . Improved whiteness . Ability to remove earth metal ions found inside the fibre that can affect Water saving 40% the colour tone . Buffer for caustic soda neutralisation . Strong sequestering properties Time saving 30% . Helps to obtain uniform dyes . Improved light fastness and wash-down properties when applied when dyeing





2.2. Processes

2.2.4 Freecycle - BIOWASH 1.0

BIOWASH 1.0 technology is a new generation of a soaping off agent for washing cellulosic fibres after reactive dyeing. This operation uses 80% less water and energy in the textile process innovation, reducing temperature, water, treatment time and auxiliaries cost.

KEY BENEFITS Energy saving up to 50% **Reduce Chemicals 50%** Excellent soaping-off with suspending properties: increases the water wasing CO2 emission 40 to 60% less fastness and minimizes re-deposition risks Economical: allows 10 to 40% in the Water saving 40% number of rins compared to a normal soaping-off with a Polyacrylate Low foaming nature makes it suitable Time saving 30% for all types of machines including jet and package dyeing machinery Emulsify anti-dusting oils & give oil spot free fabric Low energy wah-off without modifying the shades, specially recommended for Viscose considering its behaviour in wet process





2.2. Processes
2.2.2 Colorifix



The f

The first step is to find a colour created by an organism in nature.

Via online DNA sequencing we translate that DNA code into our microorganism. The resulting engineered microorganism can then produce the pigment just as it is produced in nature.



COLORIFIX MINIMISES THE ENVIRONMENTAL IMPACT OF INDUSTRIAL DYEING BY REPLACING CHEMISTRY WITH BIOLOGY AT EVERY STEP IN THE PROCESS, FROM THE CREATION OF THE DYES TO THEIR FIXATION INTO FABRICS.



Our dyes are grown on-site with renewable feedstocks.

We ship a tiny quantity of engineered microorganism to our clients who with our support grow the colour via fermentation, in the same way beer is brewed



Compared to the conventional dyeing step for cotton, the Colorifix technology reduces water consumption by at least 49%, electricity by 35%, and CO₂ emissions by 31%.



The microorganisms are fuelled by simple sugars, yeast, and plant-byproducts. What normally takes many petrochemicals, our dyes are produced using these clean, renewable feedstocks.



Ve leverage a naturally

We leverage a naturally-occurring biological process to deposit and fix the colour.

Our engineered microorganisms, however, are able to concentrate the nutrient salts and metals that are already present in water to levels that facilitate this dye-fabric interaction with zero added substances.



Our dyes are produced, deposited and fixed onto fabrics without the need for heavy metals or organic solvents



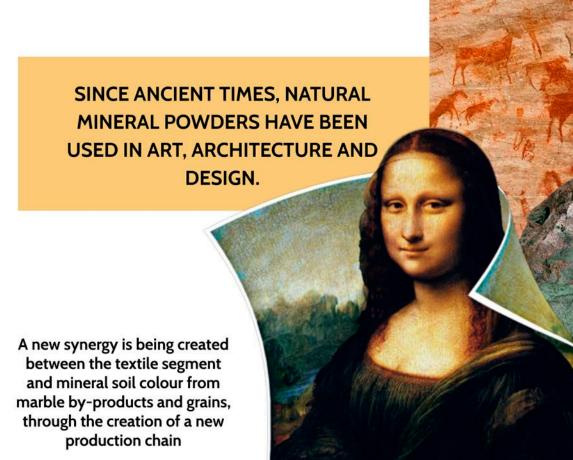




2.2. Processes
2.2.3 Art of Colours - mineral printing

	CONCENTRATION	LIGHT FASTNESS UNI EN ISO BO2	WASHING AT 40°C UNI EN ISO 105 C06	WATER UNI EN ISO 105 E01	ALKALINE PERSPIRATION UNI EN 1SO 105 E04	ACIDIC PERSPIRATION UNI EN ISO 105 E04	WET CROCKING	DRY CROCKING
Yellow	5%	6/7	5	5	5	5	4	4/5
Ochre	5%	6/7	5	5	5	5	4	4/5
Red	5%	6/7	5	5	5	5	3	4/5
Violet	5%	6/7	5	5	5	5	3	3/4
Green	5%	6/7	5	5	5	5	4/5	4/5
Olive	5%	6/7	5	5	5	5	4/5	4/5
Blue	5%	6/7	5	5	5	5	3/4	4/5
Grey	5%	6	5	5	5	5	3/4	4/5

Art of Colours





Art of Colours

2. Eco-Design

2.2. Processes
2.2.3 Art of Colours - mineral printing



OCHRE

SOILS mix 100% NATURAL



RED

EMATIITE soil
100% NATURAL







2.2. Processes
2.2.3 Art of Colours - mineral printing





GREEN

CELADONITE SOIL based 100% NATURAL





2.2. Processes 2.2.3 Art of Colours - mineral printing



VOLCAN SOIL 100% NATURAL



2. Eco-Design2.3. Finishings

BIO-BASED Softners





2. Eco-Design

2.3. Finishings
2.3.1. Bio-Based Softners

We offer a range of bio-based products that offer comparable performance against the synthetic products applied in textile industries. The new range of bio-based products have been designed to:



Eliminates/lowers carbon emissions from the textile industry



Eliminates toxic hazards of the chemical industry



No dangerous levels of harmful substances are released into the air and water



Reduces enerfy use due to the elimination of fossil fuels





2.3. Finishings
2.3.1. Bio-Based Softners

Bio-based Products

Bio-based Products are whooly or partly derived from **biological resources**, such as plants or algae, excluding geological and/or fossil materials.

They must include biological ingredients, including renewable domestic agricultural materials, renewable chemicals and forestry materials, or an intermediate ingredient or feedstock.

Biobased products generally provide an alternative to conventional petrochemicals offering a green alternative.



Carbon-14

Carbon-14 analysis allows the quantification of **biobased content**. This refers to the percentage of a material that is made from renewable sources like plants

BIO-BASED softners



The textile of tomorrow



2. Eco-Design

2.3. Finishings
2.3.1. Bio-Based Softners



BIOSOFTENER 1

The first microalagae-based wicking finish for synthetic textiles

BENEFITS

- . A revolutionary wicking finish for high performance textiles.
- . Innovative formula provides excellent durability and fast-drying properties, achieving state-of-the-art performance.
- . Performace comparison with BIOSOFTENER 2.
 - . 6-10% faster wicking based on product testing of 25 different PES fabrics.
 - . O-5% faster wicking based on product testing of 15 different PA fabrics

SUITABLE FOR

Excellent for synthetic fabrics



2. Eco-Design

2.3. Finishings
2.3.1. Bio-Based Softners



BIOSOFTENER 1

The first microalagae-based wicking finish for synthetic textiles

MADE FROM

. 100% microalgae oil, the first-ever in the industry. Microalgae oil is GMO free. Extracted from dried microalgae biomass which has been grown in controlled, sealed environments.

SUSTAINABILITY

- . Up to 80% CO, reductions vs. similar performing synthetic standard products
- . GreenScreen Certified, Bronze
- . Biocarbon content of 94%
- . LCA on CO, footprint



2.3. Finishings 2.3.1. Bio-Based Softners



BIOSOFTENER 2

Wicking and drying finish for synthetic textiles made from plant seed oil

BENEFITS

- . A finishing technology for synthetic textiles that has high wicking power and is fast-drying.
- . Innovative formula that elevates textile performance and provides excellent durability.

SUITABLE FOR

Excellent for synthetic fabrics



2. Eco-Design

2.3. Finishings
2.3.1. Bio-Based Softners



BIOSOFTENER 2

Wicking and drying finish for synthetic textiles made from plant seed oil

MADE FROM

. 100% plant seed oil

SUSTAINABILITY

- . Up to 70% CO₂ reductons vs. similar performing, synthetic standard products
- . 94% biocarbon content
- . LCA on CO_2 footprint



2. Eco-Design

2.3. Finishings
2.3.1. Bio-Based Softners



BIOSOFTENER 3

An eco-friendly wicking finish for cotton that is soft, cool and re-hydrating

BENEFITS

- . Combines two critical performance attributes for cellulosic fabrics and blends: wicking and softness
- . Enhanced comfort that mantains the softest quality and dry comfort of your cotton and blends
- . Multi-purpose fabric softener for denim, bottoms, knits, shirts, etc.

SUITABLE FOR

. Cotton, blends and regenerated cellulosics such as TENCEL™ and TENCEL™Lyocell



2. Eco-Design

2.3. Finishings
2.3.1. Bio-Based Softners



BIOSOFTENER 3

An eco-friendly wicking finish for cotton that is soft, cool and re-hydrating

MADE FROM

. Plant seed based oils and palm oil-free active ingredients

SUSTAINABILITY

- . Up to 60% CO₂ reductions vs. similar performing, synthetic standard products
- . GreenScreen Certified, Silver the first chemical to achieve silver status
- . 76% biocarbon content
- . LCA on CO₂ footprint



2.3. Finishings 2.3.1. Bio-Based Softners



BIOSOFTENER 4

A soft and smooth finish for all fibres

BENEFITS

- . Lightweight, multipurpose formula
- . Enhances comfort and wear
- . Soft and breathable with a smooth hand

SUITABLE FOR

. Any fibre type including blends



2.3. Finishings 2.3.1. Bio-Based Softners



BIOSOFTENER 4

A soft and smooth finish for all fibres

MADE FROM

. Plant-seed based active ingredients and components from bio-waste streams

SUSTAINABILITY

- . Up to 60% CO₂ reductions vs. similar performing, synthetic standard products.
- . C2C Platinum, the highest standard in Cradle to Cradle Certified™ product design
- . GreenScreen Certified, Silver
- . 72% biocarbon content



2.3. Finishings 2.3.1. Bio-Based Softners



BIOSOFTENER 5

A PFC-free, durable water-repellent for all fibres

BENEFITS

- . High performance and durability that protects fabrics from rain and water-based stains
- . Does not use PFCs (perfluorinated chemicals), which has toxic effects on the health of humans and animals if released into our waterways
- . Versatile and environmentally-friendly solution

SUITABLE FOR

. Any fibre type



2. Eco-Design

2.3. Finishings
2.3.1. Bio-Based Softners



BIOSOFTENER 5

A PFC-free, durable water-repellent for all fibres

MADE FROM

. Partially-based plant seed, renewable sources, and Bluesign® certified components

SUSTAINABILITY

- . 55% biocarbon content
- . Bluesign® listed



3. Functional Finishings

3.1. Moov&Cool

Moov&Cool

is a cool comfort technology achieved through a combination of heat absorption

capacity and moisture management.

- . helps evaporate sweat faster
- . fastening at lower temperatures
- . based on biosourced natural renewable resources
- . silicon-free
- . durability to washing (up to 20 washes)
- . bio-content 92%
- . recyclable





3. Functional Finishings 3.2. Tones of Cool



Tones of Cool

offers an instant cool sensation and reduces the skin temperature.

The high thermal efusivity quickly draws heat away from the skin: on initial contact an instant cooling sensation is perceived.

- . long-lasting thermoregulation
- . instant cool touch
- . lower flammability
- . 90% biobased
- . ZDHC
- . Oeko-tex Class 2-4 compliant







3. Functional Finishings

3.3. Moisture boost + Q₁₀

Moisture boost + Q₁₀

regaining natural skin hydration and anti-ageing effect

Moisture boost gives the skin extra hydration while wearing your active wear, during air travel, work in airconditioned environment or while sleeping.

As we age the amount of ubiquinol naturally decreases and so the microcapsules of Q10 in form of Ubiquinol are released helping the body's natural defences against the free-radicals.

- . revitalizes the body and skin with antioxidants
- . capsules gradual release, long lasting & wash-durable
- . natural ingredients
- . 84% biobased
- . ZDHC



