E1.2. PRODUCTOS QUÍMICOS Y TEXTILES SOSTENIBLES

I+D DE NUEVOS ACABADOS FUNCIONALES SOBRE TEJIDOS TÉCNICOS Y PRENDAS, DE ALTO COMPONENTE SOSTENIBLE (año 2)

FUN2GARMENT II

FECHA 29 /06/ 2018

CONTENIDO

Este informe recoge ejemplos e innovaciones de productos químicos y productos textiles/de industrias afines, que han sido desarrollados desde un punto de vista sostenible

Nivel de difusión: PÚBLICO (PU)

Documento preparado por

G.I. Acabados técnicos, salud, confort, deporte y medio ambiente – AITEX

GENERALITAT VALENCIANA

iVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL

UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

TABLA DE CONTENIDOS

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

1. DESCRIPCIÓN DEL CONTENIDO DEL ENTREGABLE

En este documento se recogen diversos ejemplos de productos químicos de acabado textil, así como productos textiles (o que incorporan materiales textiles o de industrias afines, como la de la piel, el cuero o el plástico, por ejemplo), que han sido diseñados y fabricados bajo un punto de vista sostenible, bien por las tecnologías empleadas para ello, bien por los materiales/polímeros que entran a formar parte en su composición.

En cuanto a productos de acabado, tanto en la anualidad 2017 como en los 6 primeros meses de 2018 se realizó un trabajo con el que se ha identificado y analizado información técnica (proveniente de fuentes diversas) referente a químicos destinados a procesos de tintura, estampación y acabado que aporten ventajas medioambientales y de proceso frente a las opciones masivamente/tradicionalmente utilizadas.

Entre las familias de productos químicos investigados e identificados destacan:

- Repelentes a líquidos. C6 y compuestos fluorine-free.
- Resinas y productos de baja inercia química con la piel.
- Productos para tintura.
- Retardantes de llama. Las alternativas sostenibles en acabados retardantes de llama son compuestos basados principalmente en sales de nitrógeno/fósforo.

Por otra parte, también en el mismo periodo de tiempo indicado anteriormente, AITEX ha identificado diferentes productos textiles (no solo de sectores masivos de consumo como el textil-hogar o el ocio/deporte, por ejemplo) fabricados bajo un concepto de sostenibilidad y respeto medioambiental, uso de materias primas/químicos naturales, un concepto ‘km 0’ respecto de los proveedores de materias primas, etc.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

2. PRODUCTOS QUÍMICOS Y MATERIAS SOSTENIBLES

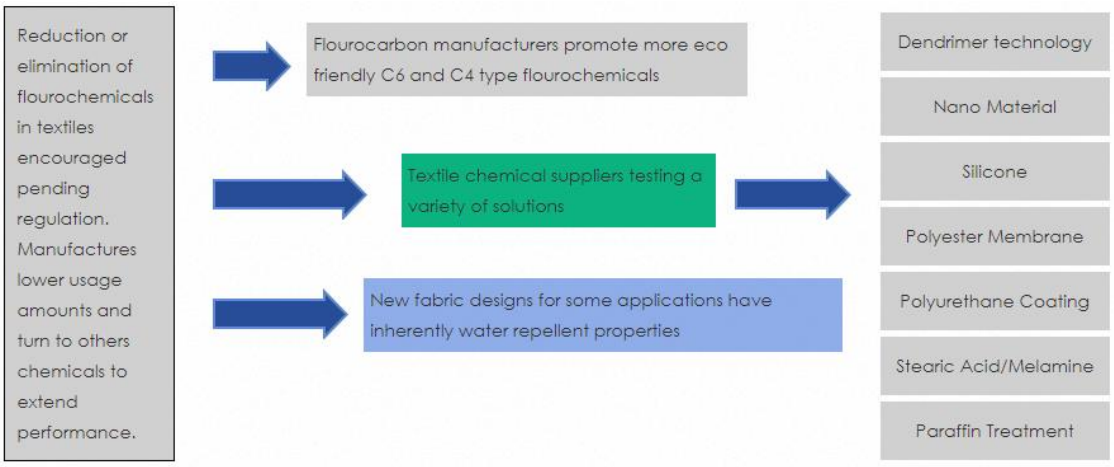
Dentro de la tarea T1.2 del proyecto FUN2GARMENT (tanto en su anualidad de 2017, como en los 6 primeros meses de su segunda anualidad, FUN2GARMENT II) los investigadores de AITEX han identificado y analizado información técnica (proveniente de fuentes diversas) referente a químicos destinados a procesos de tintura, estampación y acabado que aporten ventajas medioambientales y de proceso frente a las opciones masivamente/tradicionalmente utilizadas.

Con ello, se ha pretendido generar información valiosa y nuevo conocimiento sobre productos de acabado/tintura sostenibles, que incrementen todavía más el valor añadido que las tecnologías objeto de FUN2GARMENT I-II aporten a los textiles involucrados en el proyecto.

Este capítulo, por tanto, refleja información investigada y recopilada tanto en 2017 como en el periodo Ene – Jun de 2018, que es el periodo de ejecución de la tarea T1.2 “Productos químicos y materias primas que favorecen la sostenibilidad”.

2.1. Repelentes a líquidos. C6 y compuestos fluorine-free

Cada vez más, las opciones de repelencia a líquidos buscan también el componente medioambiental, conseguido a través de compuestos libres de flúor, para obtener efecto DWR (Durable Water Repellent). Por otra parte, los compuestos fluorocarbonados C6 deben tenerse en cuenta respecto el uso de monómeros fluorados que aseguren la no presencia de PFOAs de ningún tipo. Los C6, pese que a medio/plazo está prevista su desaparición en la fabricación y uso, son todavía la única alternativa si se desea obtener textiles con repelencia al agua y al aceite: los fluorine-free, de momento, solamente son capaces de aportar repelencia al agua.



GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

NEOSEED Water Repellent Solution

Made from botanical origins – completely free of fluorine resin. **NEOSEED** provides excellent Durable Water Repellency on all types of fabric. Made with an environmentally friendly hydrophobic polymer that offers durable performance comparable to fluorine-based products to meet increasing demands from consumers, industry and government regulation. Make the **NEOSEED** transition to Green!

- Excellent water repellency with outstanding wash durability
- Fluorine-free formulation uses botanical extract that is gentle on the environment
- Outstanding shear stability
- Meets consumer and government demands for Green water repellency
- Replaces traditional C8 and C6 solutions

NEOSEED NR-158
NEOSEED NR-159

NICCA's Success with Fluorine-free Water Repellents

NICCA USA has a long history as a high performance, specialty textile solution provider and is no stranger to tough challenges. One of the keys to NICCA's success is understanding that, when it comes to tricky problems, there is rarely a one-size-fits-all solution. The fluorine-free water repellent challenge is no exception. NICCA, a bluesign® partner, offers a variety of environmentally friendly NEOSEED water repellent solutions, along with our well-known technical support, to find the best fit for each application.

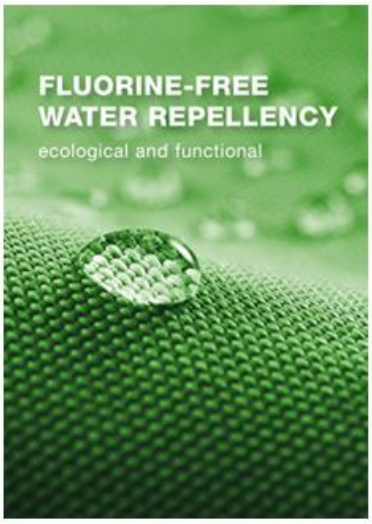
Contact us today for help in meeting your fluorine-free water repellent challenge.

Related Links

Sustainable carpet

Home furnishings durable Water Repellency

Textile Water Repellents – ECO-Friendly



This is how the fluorine-free alternative works

Unlike finishes containing fluorine zeroF is based on raw materials which neither during production nor during the application contain or release any environmentally critical substances such as PFOA (perfluorooctanoic acid). The impregnation is produced on a fluorine-free polymer base.

zeroF – one brand, many advantages

Textiles with the zeroF label...

- are free from fluorine and APEO
- are highly water-repellent
- are breathable and washfast
- are excellently suited for sportswear textiles, outdoor articles and protective rain wear
- support the sustainabilty and are environmentally friendly

We offer zeroF products in below application fields:

- Finishing of outdoor and sportswear textiles, athleisure, casual and business wear (ECOPERL ACTIVE, ECOPERL 4 and ECOPERL HC)

We also offer products for the fluorine-free water-repellent treatment in the fields of **Jeans and Garment** as well as of **Textile Care.**

You need further information?
We are glad to assist you.

Tal y como se constató ya el año pasado, y siendo una tendencia cada vez más creciente, las opciones de repelencia a líquidos en textiles buscan también el componente medioambiental, conseguido a través de compuestos libres de flúor, para obtener efecto DWR (Durable Water Repellent).

De esta manera, la mayoría de productores -nacionales, europeos y multinacionales- de químicos para el acabado textil ya disponen en sus catálogos de algún tipo de producto (o gama de ellos) que ofrezca buenos niveles de repelencia al agua y además durabilidad a lavados.

Por otra parte, los compuestos fluorocarbonados C6 deben tenerse en cuenta respecto el uso de monómeros fluorados que aseguren la no presencia de PFOAs de ningún tipo. Los C6, pese que a medio/plazo está prevista su desaparición en la fabricación y uso, son todavía la única alternativa si se desea obtener textiles con repelencia al

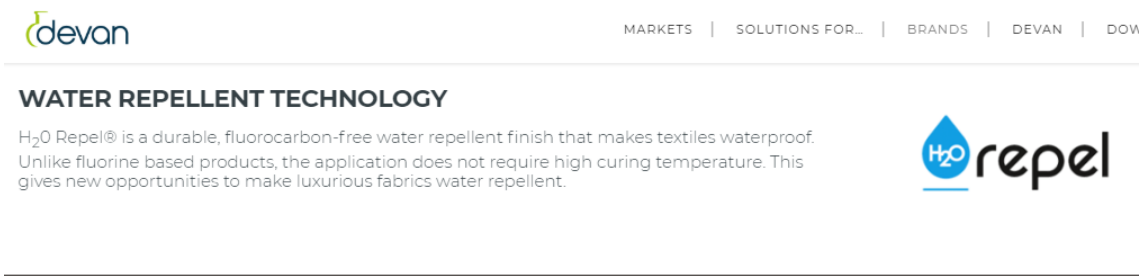
GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

agua y al aceite: los fluorine-free, de momento, solamente son capaces de aportar repelencia al agua.

Seleccionar productos fluorados de alta concentración (un contenido en % de sólidos lo más elevado posible) incrementará el rendimiento de la operación de acabado textil, minimizando el uso del producto fluorado C6.

La búsqueda y análisis de información técnica realizada ha permitido identificar opciones libres de fluor ya en prácticamente todos los fabricantes de productos de acabado y especialidades para el ennoblecimiento textil, aspecto que hace apenas 3 – 4 no ocurría. Igualmente, ya no se identifican productos fluorados C8 siendo los mayoritariamente disponibles los C6. Ejemplos de fabricantes y proveedores que tienen en el mercado estos productos son Colorcenter, Polysistec, Tanatex, Archroma, Devan, Daikin, Huntsman, Maflon, Nanocare, Rudolf Chemie, etc.

Algunos ejemplos:



GENERALITAT VALENCIANA
iVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

Unidyne product grades

Water and oil repellents

TG-5546
TG-5546: Universal product. Excellent water repellency, oil repellency and IPA repellency, especially on synthetics. Diesel repellency.

TG-5673
TG-5673: Excellent water repellency (cold and hot), excellent **Bundesmann** and low curing properties on all types of fabrics.

TG-5674
TG-5674: Excellent water repellency and good oil repellency on all types of fabrics.

Special water and oil repellents

TG-5502
TG-5502: Excellent water column and alcohol repellency. **Excellent resistance to liquid chemicals**.

TG-5545
TG-5545: Excellent water repellency, oil repellency and IPA repellency on aramid fibers. Solvent repellency, high temperature stability and **outstanding Diesel repellency**.

TG-5601
TG-5601: **Outstanding oil repellency**, excellent IPA repellency and good water repellency, especially on cotton and cotton blends.

Non-fluorinated, PFC-free water repellent for all types of fabrics

XF series
XF series: **PFC-free** water repellent for all types of fabric.

Property	Rating (0 to 5, higher is better)
Water repellency	5
Low temperature curing	3
Soft hand	3
Charge	weakly cationic

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

21st November 2017, Singapore

Huntsman introduces new non-fluorinated DWR

0 comment

Huntsman Textile Effects has introduced the new *Phobotex* RSY non-fluorinated durable water repellent (DWR). According to the manufacturer, this new product will allow brands and retailers to meet global demand for eco-friendly clothing that require extreme rain- and stain- protection.

The market for outdoor apparel is growing worldwide, and customers expect comfort and high-performance protection. Rain-, stain- and soil-resistant effects are therefore critical. At the same time, the industry is shifting away from traditional formulations based on per-fluorinated chemicals (PFCs) due to environmental health and safety concerns.

"Phobotex RSY durable water repellent raises the bar for performance on synthetics, allowing brands to offer high-performance weather protection to outdoor enthusiasts with an assurance of eco-friendly sustainability. As a trusted partner to the industry, Huntsman Textile Effects continues to lead the transition to non-fluorinated DWR alternatives that meet stringent environment, health and safety standards," said Lee Howarth, Global Marketing Manager for Finishing at Huntsman Textile Effects.

Phobotex RSY

According to the company, the Phobotex RSY durable water repellent is an environmentally friendly, non-fluorinated formulation that brands can rely on to produce sustainable textile products without compromising performance. This new addition complements Huntsman Textile Effects' existing range of durable water repellents.

Providing effective protection in extreme environments, Phobotex RSY durable water repellent repulses rain, sleet and snow and performs well on synthetics and blends. It is said to be ideal for high-performance outerwear fabrics, offering breathable comfort and durable water repellence. Fabrics treated with Phobotex RSY durable water repellent also repel stains, so they stay looking new for longer and can be easily spot cleaned.

Certification

Phobotex RSY durable water repellent is based on non-fluorinated technologies and complies with the latest requirements of bluesign, the Zero Discharge of Hazardous Chemicals MRSL (Manufacturing Restricted Substances List) and the Restricted Substances Lists of the world's global brands. Fabrics treated with Phobotex RSY durable water repellents are suitable for Oeko-Tex Standard 100 when applied as recommended.

Furthermore, Phobotex RSY durable water repellent meets the criteria for Textile Effects' High IQ Repel performance assurance scheme that ensures fabrics conform to stringent performance requirements.

MAFLON®

HOME COMPANY **PRODUCTS** NEWS PRODUCT SAMPLE REQUEST CONTACT

Group Website | Privacy

MAZZA HOLDING
www.mazzaholding.com

Textile fluorine-free water repellence

Product overview:

Hydrosin fluorine-free polymers specifically designed for textiles applications. They provide durable water repellency (DWR) and stain release properties to the treated materials. Not contain PFC, PFOA, PFOS, APEO or organotin.

Properties:

- Excellent water repellency
- Compatible with many other bath auxiliaries
- Easy to clean properties
- Resistant to dry cleaning
- Resistant to abrasion
- The original appearance of the finishes does not change
- Durable water repellency (DWR)
- Low temperature curing grades available
- OEKO-TEX® Standard 100 compliant when used according to technical data sheet

PRODUCTS	IONOGENITY	ACTIVE SUBSTANCE	CHEMICAL DESCRIPTION	FEATURES & BENEFITS
HYDROSIN NF-01 tds it - tds en	Weakly cationic	25%	fat modified compounds and paraffin. PFC-free	NF-01 is a fluorine-free hydrophobic agent which imparts water repellency and rainproof finishing on various cellulosic fibers and their blends with synthetic based fibers. Biodegradable > 90% (28 d, DOC decrease); Method OECD Test Guideline 302B.
HYDROSIN NF-02 tds it - tds en	Weakly cationic	21%	fat modified compounds and paraffin. PFC-free	NF-02 is a fluorine-free hydrophobic agent which imparts water repellency and rainproof finishing on various cellulosic fibers and their blends with synthetic based fibers. It does not contain PFC, PFOA, PFOS, APEO or organotin. Biodegradable 98% (28d, DOC decrease); Method: OECD Test Guideline 302B.
HYDROSIN NF-16 tds it - tds en	Weakly cationic	34%	Polymer compaund. PFC-free	NF-16 is a fluorine-free, water-based polymer emulsion. It imparts water repellency to textiles and nonwovens. It resists to wash and to dry cleaning. It does not contain PFC, PFOA, PFOS, APEO or organotin.
HYDROSIN NF-18 tds it - tds en	Weakly cationic	>30%	Polymer emusion PFC-free	NF-18 is a fluorine-free, water-based polymer emulsion. It imparts water repellency to textiles and nonwovens. It resist to wash and to dry cleaning in combination with booster crosslinker as our NF-08. It does not contain PFC, PFOA, PFOS, APEO or organotin.

nano Care
textile effects

- replace outdated C8 fluorocarbon technologies with no loss of performance: Nanoflex® F-Bond
- discover fluorine-free alternatives for the outdoor sector: Nanoflex® repel ECO/Plus
- protect leather from moisture and keep it supple at the same time: Nanoflex® L-Care
- use washing machines for do-it-yourself application : Nanoflex® Wash-on
- spray invisible protection on your upholstery: Nanoflex® Tex2
- tents and awnings can be completely waterproofed: Nanoflex® Tex-barrier

contact us at tex@nano-care.de

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

Nanoflex® repel Eco and/or the Eco Plus System deliver ultra-repellent performance against water and water-based contaminants on all fibres. Both systems are fluorine-free and correspond to the ZDHC joint roadmap.

Through the intelligent arrangement of hybrid structures, they constitute part of the Nano-Care Deutschland AG INTELLIGENT HYBRIDS® concept.

Both alternatives comprise several concentrates that are diluted and applied in the foulard / padding process:

- Nanoflex® repel Eco
- Nanoflex® repel Eco - nano-modified resin (cationic)
- Nanoflex® WAN - crosslinker for adhesion
- Nanoflex® WPB - wetting agent (for wetting issues)

Specification	
Chemical basis:	Nano-modified resin
Layer thickness:	> 1000 nm
Water resistance:	AATCC 22 / 100, ISO 4920 / 5
Oil resistance:	no, can be combined with Nanoflex F-Bond for oil resistance
Slip angle:	not specified
Temperature stability:	220°C
Chemical stability:	good LTD effects after chemical cleaning
Weather resistance:	up to > 500h pursuant to ISO 11507 A
Wash resistance:	30 - 40 washes LTD pursuant to (AATCC) Test Method 135, ECE formulation washing powder, non-phosphate reference
Transparency:	100%
Storage stability:	1 year
Temperature sensitivity:	1°C to 40°C
Consumption:	60 - 80% pick-up (ready mix)
Formula:	To achieve an outstanding, permanent stain guard against water-based contaminants e.g. on CO and synthetic blends, the following are recommended: • 50 - 80 gr/L Nanoflex® repel Eco • 10 gr/L Nanoflex® WAN • 10 gr/L Nanoflex® WPB • 0,5 gr/L acetic acid (60%)

Water absorption 60 - 80%
Drying under standard operating conditions, recommended: 100°C for 2 min
Subsequent curing : 150°C for 5 min.

Materials must be free of anionic, surfactant residues. Silicones or surfactants impair effect and adhesion. We would be happy to offer technical support for pre-cleaning.

Exceptional wash resistance can be achieved, even without the use of WAN. Therefore, it is only required for optimum results. Replacing Nanoflex® repel Eco with Nanoflex® repel Eco H (high-performance) offers even greater durability against hydrostatic pressure.

Follow-up analysis is needed for Ökotex Class I textiles. The product contains low quantities of formaldehyde.

The product is based on non-flammable chemicals. They are non-hazardous according to ADR and IATA. Please observe the respective safety data sheet when using the individual components.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

ARCHROMA
LIFE ENHANCED

Smartrepel® Hydro AM liq

Nature-friendlier protection that keeps polyester dry

Products / Recipes		0	1	2
Smartrepel Hydro AM liq	g/l	-	60	80
Arkophob DAN New liq	g/l	-	5	10
Fluowet UD liq	g/l	-	2	2
pH of the bath		6.5	6.8	6.7
SPRAYTEST (acc. to AATCC 22) on 100% PES knit, grey color				
Initial	Rate	0	100	100
After 3x40°C washes	Rate	0	100	100
After 10x40°C washes	Rate	0	90	100

Pad application

Polyester knit (grey):
Pad,
Pickup 85%
dry & cure 170°C 30s

Washes acc.
ISO6330-5A at 40°C,
tumble dry

Products / Recipes		0	1	2
Smartrepel Hydro AM liq	g/l	-	60	80
Arkophob DAN New liq	g/l	-	5	10
Fluowet UD liq	g/l	-	2	2
pH of the bath		6.5	6.8	6.7
SPRAYTEST (acc. to AATCC 22) on 100% PES, white color				
Initial	Rate	0	100	100
After 3x40°C washes	Rate	0	90	90-100
After 10x40°C washes	Rate	0	80-90	90

Polyester Tafetta (white):
Pad,
Pickup 50%
dry & cure 170°C 30s

Washes acc.
ISO6330-5A at 40°C,
tumble dry

7 /

2.2. Resinas y productos que deban tener baja inercia química con la piel

Existen diferentes productos, resinas y químicos auxiliares que se emplean en el acabado textil, los cuales pueden causar problemas leves/moderados en pieles sanas, e incluso graves en pieles muy sensibles como las de los bebés y neonatos.

Los materiales textiles, tanto en su formato tejido como no tejido, pueden funcionalizarse mediante la aplicación de productos de acabado -generalmente dispersiones acuosas- aplicados por técnicas convencionales tales como impregnación (fulardado), rasqueta, inducción, cilindro de contacto o incluso por agotamiento.

Particularmente para aquellos textiles fabricados con fibras naturales, destinados para indumentaria y que estén en contacto directo con la piel, los procesos y productos de acabado deben modificar el tacto aportado por el tejido lo menos posible -si es posible incluso mejorarlo, como en el caso de las siliconas- teniendo en cuenta además que los químicos empleados (OEKOTEX. Métodos de ensayo, 2013) no deben interaccionar negativamente con la piel del usuario, a fin de evitar problemas dérmicos -generalmente leves- tales como picores, irritaciones, alergias, erupciones, eczemas,

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

etc. Especialmente importante es este concepto en ropa destinada a bebés y niños de corta edad, con una piel más sensible que la de los adultos.

Resinas glioxálicas con contenido en formaldehído pueden generar estos problemas, así como reticulantes basados en formol/melamina, glioxal, isocianatos, etc.

Por ejemplo, el proyecto ECOFORMALTEX00 de ADRASA se ocupaba de la problemática generada por acabados antiarrugas que generar formaldehído. El producto que se ha investigado y desarrollado en este proyecto CDTI EEA-Grants permite la eliminación total del formaldehido de la composición del acabado antiarrugas y que al mismo tiempo se convierte en una alternativa viable como sustitutivo de los productos existentes. Las ventajas o mejoras que aporta este producto es la eliminación del formaldehido y todos los perjuicios que éste conlleva, pero la mejora más notoria se ve en el proceso productivo o lugares de trabajo, donde los trabajadores ya no tienen que estar en contacto con esta sustancia, y también en el medio ambiente, pues se elimina un residuo nocivo.

Además, otra ventaja que comporta el nuevo compuesto exento de formaldehido es la de un coste de producto menor, ya que los compuestos bajos en formaldehido (DMDHEU) resultan caros al final del proceso ante la necesidad de aplicar una mayor cantidad de producto y en ocasiones la adición de glioxina para obtener los compuestos superreducidos en formaldehido. Otro problema que presentaba es la acidez residual, la cual deterioraba el tejido en el tratamiento industrial e incluso después de los lavados posteriores y además de que la resistencia al arrugado se perdía con los mismos. El nuevo producto libre de formaldehido es por tanto, una solución beneficiosa para la salud, para el medio ambiente, y además puede ser competitivo a nivel de costes de producción, pues como se ha comentado, los procesos bajos en formaldehido tienen un coste elevado.

La novedad del proyecto se presenta en forma de un cambio en la formulación en el proceso de acabado, sustituyendo un compuesto formado por formaldehido por otro que es respetuoso con el medio ambiente y con la salud, y que además cumple las condiciones de eficacia dentro de su función. El nuevo compuesto desarrollado ha requerido de leves modificaciones en el proceso de aplicación, consiguiéndose una gran compatibilidad con los procesos actuales que se usan para este tipo de acabados en la industria. Finalmente está el valor añadido que tienen un tejido libre de formaldehido, ya que gracias al etiquetado el consumidor puede apreciar que está libre de este tipo de sustancias nocivas.

En resinas debe tenerse en cuenta aquellas que incorporan formol a la formulación, especialmente en las resinas wash-wear e inencogibles/antiarrugas.

También sería recomendable emplear aquellas con carácter auto-reactivo, para evitar la adición de crosslinkers o fijadores y reducir así el consumo de productos químicos.

Igualmente, innovaciones de carácter sostenible en cuanto a síntesis de resinas acrílicas y sobre todo de PU con monómeros de carácter ‘bio’ son también reseñables en los últimos tiempos.

Además, el estudio de información técnica realizado ha permitido identificar nuevos polímeros para coating y recubrimiento textil, como las dispersiones acuosas de PVB (polivinil butiral) reciclado.

El PVB es un polímero que se encuentra formando parte de aplicaciones estructurales en ventanas (vidrio laminado, por ejemplo). La empresa danesa Shark Solutions (https://www.shark-solutions.com/) ha desarrollado un proceso en el que, a partir de residuos de film de PVB proveniente de ventanales, vidrio laminado, vidrio de seguridad, etc. al final de su vida útil, ha podido revalorizar dicho film de PVB y transformarlo para uso textil, concretamente dispersiones acuosas para el acabado y recubrimiento de tejidos.

> Shark offers a range of dispersions and Pellets optimised for textile and nonwoven applications sold under SharkDispersionTC100™ , SharkDispersionTC200™ ,SharkDispersionTC300™ and SharkPelletC2c™, SharkPelletC4c™, SharkPelletC5c™ trademarks which can be selected according to the processes and applications of our customers need.
>
> SharkDispersions™ and SharkPellets™ offers multiple functionalities for the finishing of textile, nonwovens, artificial leather and is used for the durability and abrasion resistance, strengthen and retaining colours, elasticity, flexibillity, sound damping, anti-slip effect, UV resistance for both in and outdoor.
>
> SharkDispersions™ and SharkPellets™ can be applied to vary types of processing – by lick-roller, by foam-table, by air over knife and air over roll, by spray, by foulard and transfer coating, by extrusion or disolving, our experience to adapt our grades to the settings of machinery and applications requirements are well recognized by the markets.
>
> SharkDispersions™ as binder for further processes and are compatible with various type of fillers, flame retardants, surfactants, thickeners, anti-static agents, etc…or as a co-binder to enhance other polymers.
>
> SharkDispersions™ and SharkPellets™ fulfil the GUT criteria for environmentally friendly polymer dispersion and by using SharkDispersions™ we support our customers to produce their finished products in a sustainable way.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

SharkDispersions™

Are the trade names for Shark Solutions water based dispersions made of 100 % post-consumer or post-industrial recycled Polyvinyl Butyral in various grades.

SharkDispersions™ are homogeneous water based dispersions, meaning that the dispersing water based phase and the disperse PVB-based phase form extended uniform blended structures with a "particle size" in the colloidal range (<50 µm). This means that the dispersions show the Tyndall-effect (fogging effect if light passes through the media).

SharkDispersions™ are stable aqueous dispersions of (plasticized) PVB. (Only slight precipitation occurs when stored under normal conditions (+1 to 28 ^{0}C, which is the optimal temperature storage range)). However damages may occur if exposed to temperatures below 0 ^{0}C, and the product should be inspected before use. The product must be protected from frost to avoid damages.

Our dispersions can be used as a main component / binder or as a performance enhancing additive in water-borne coatings applications.

The products are easily applied by brush, dip, roller, spray, spreader, foam or as an aerosol.

PVB in a water-based dispersion has adhesive properties if the materials to be glued are porous or diffusion open.

The dispersions are drying and forming a homogeneous film at normal room temperature without addition of extra film forming additives. They are cross-linkable, and they can be mixed with a variety of emulsions and water dispersible resins due to excellent compatibility.

Delivery form:

- Aqueous dispersions of plasticized Polyvinyl Butyral (PVB) with milky white to greyish appearance
- Total Solids content: 45-48 % (w/w)
- pH value: 9-10
- Density: 1,03 kg/ltr.
- Brookfield viscosity < 600 cPs (=mPas), RVT No. 2 spindle, 50 rpm @ 20 ^{0}C
- Free of Phthalate based plasticizers

Protective biocide (0,1 % Acticide MBS) is added to our dispersions.

Applications
SharkDispersions™ are recommended for a wide variety of applications as outlined below.

Water borne paints, coatings and Inks
SharkDispersions™ are very suitable for applications as a binder in various types of paints and inks.

Our dispersions are primarily recommended as a product enhancing additive for coatings,

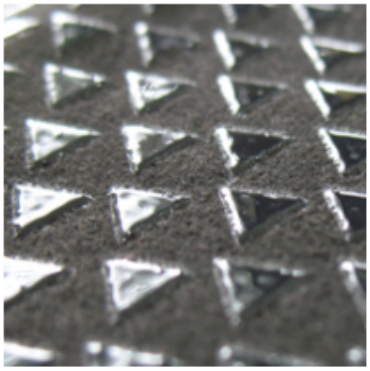
Otra innovación que no está todavía excesivamente presente en la industria textil son las resinas de silicona para estampación textil, las cuales por su composición están libres de PVC y por tanto de plastificantes tipo ftalato así como también libres de formaldehído.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

Silicone print pastes - Innovation in textile screen printing

Print pastes based on silicone elastomers are still an innovation in the field of textile screen printing. Aside from water-based print pastes the state-of-the-art products embody another ecologically harmless alternative to plastisols.The **ALPAPRINT and ALPATEC** pastes by CHT contain neither PVC nor phthalates nor formaldehyde and do not separate these either.

At the beginning, silicone elastomers were mostly used for the production of "anti-slip prints" because of their anti-slip properties. Further development of this new generation continued and convinced by its outstanding print properties.



Versatile and functional

ALPAPRINT and ALPATEC silicone print pastes stand out for their combination of positive as well as individual features. They have a long open time in the screen and can still be quickly dried intermediately. Silicone elastomers have also a high elasticity, a characteristic, soft handle and high wash stabilities. Hot fixation is not absolutely necessary.

Depending on the requirements, either shiny or mat surfaces can be printed.

A special feature of silicone elastomers is mainly, however, that nothing sticks to them. For example, a metal foil can be applied next to a silicone print without leaving any residues.

The right mix is what counts

Different kinds of silicone elastomers are processed depending on the application field.
ALPATEC 30143 A/B is mostly applied on baby socks because of its properties, whereas ALPAPRINT CLEAR and WHITE are mainly processed on sports and athletic wear thanks to their mat surface and stability.

ALPATEC 3060 LSR is used for very glossy gel effects in overprinting or direct printing resp. for metal or glitter effects.

The perfect supplement

CHT offers an application package for screen printing with silicone elastomers which contains various process auxiliaries.
These include COLORMATCH SI colour pigments, KÖRAFORM TM as thixotropic agent and ALPA OIL 50 as diluting agent.

We can also offer comprehensive solutions for extremely highly elastic substrates. The already high elasticity of the prints can be increased even more by adding ALPAPRINT ELASTIC ADD.

Sublimation occurring on synthetic materials can be counteracted by adding ALPATEC AM ADDITIVE.

En resinas y binders para estampación, la principal preocupación y el carácter sostenible viene por el contenido en formaldehido de dichos binders, el cual debe ser el mínimo posible siendo el caso ideal aquellos productos formaldehyde-free. Este mismo problema es muy tenido en cuenta en resinas tipo easy-care para el algodón, que favorecen el planchado minimizando la formación de arrugas en productos textiles celulósicos como camisas, sábanas, etc. El producto REAKNITT ZF de CHT es un ejemplo de acabado easy care desarrollado con una vertiente sostenible al ser formaldehyde-free.

Como en otras especialidades químicas, aquí las listas positivas tanto de entidades públicas como privadas (principalmente empresas fabricantes de productos químicos,

así como gigantes de la moda como Inditex o HM, por ejemplo) tienen mucho que decir, ya que permiten al consumidor final tener seguridad respecto de los químicos que son empleados, los cuales están autorizados en su uso tanto por el fabricante, el cliente final y la entidad legisladora correspondiente.

Properly crosslinked - formaldehyde-free binder for sustainable textile printing

Textiles which are worn with pleasure, frequently and over a longer period are sustainable.
Pre-requisites for an ecologically reasonable and permanent use are the fashion appeal and a quality which raises the desire to wear the piece of clothing very often.

Pigment printing is an excellent process for a sustainable manufacturing of printed textiles, whereas reactive printing requires a higher consumption of resources due to the wash off and drying processes.

Colours are of crucial importance for fashionable styling. Their stability is among others a criterion for quality. If a high quality pigment printing binder is used, fashionable, brilliant colours with a high fastness can be produced for intense wearing.

Free from toxic substances

The binder becomes part of the printed piece of clothing, so that it must comply with the fabric quality respectively handle.
The binder film on the fabric must be free from toxicological substances such as organotin compounds, APEO or formaldehyde.

High active content

Sustainable products have a high active content, so that the water quantity during transport is low. Saving weight during transport contributes to reduced fuel consumption; the lower storage capacity saves costs.

Reduced application amount

Besides the usual concentrations of 38 % our formaldehyde-free binders are also available in higher concentrations. TUBIFAST AS 5087 FF e.g. is available with a dry substance content of 50 %.
The application amount of the binder in the printing paste is proportional to the pigment concentration. With a high binder concentration a correspondingly lower pigment application amount can be used.

Fastnesses of deep colours

Fashion prints are often brilliant. With pigments the demanded high fastnesses can only be achieved with high binder quantities. Limit values (e.g. for small children) may be exceeded if common formaldehyde-releasing binders are used in high quantities.

With the new generation of "Zero Formaldehyde Binders" these fashionable articles need no longer be printed with reactive dyestuffs but can still meet highest ecological demands. The time-consuming wash off process can be omitted, too.

The printing recipe

A pigment printing recipe is a compatible system adjusted to the pigment concentration. The recipe must be proportionally adjusted to the material to be printed as well as to the individual demands.

If need be, a silicone defoamer, e.g. CHT-ENTSCHÄUMER BSN, may be added to the printing paste. Other additives such as urea or higher alcohols ought to be avoided if optimum fastnesses are to be obtained.

The binders are adjusted for perfect running properties.

Use the download for calculating your own recipe.

10 g/kg	TUBIGAT AR / R 130 NEU	Rheological additive for optimum colour depth
5 - 15 g/kg	TUBISOFT PS / SEM	Silicone for optimum dry abrasion fastness
10 - 30 g/kg	TUBIFIX P 70 / FIX 120 W	Formaldehyde-free blocked isocyanate fixing agent for good wet fastnesses
80 - 280 g/kg	TUBIFAST AS 4087 FF / AS 5087 FF	Formaldehyde-free 38 % or 50 % binder Tg minus 14 °C
12 - 48 g/kg	TUBIVIS DL 600 / STAR	Synthetic thickener

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

Easy care finishing with REAKNITT ZF – ecological and versatile

REAKNITT ZF is a modern crosslinking agent for the easy care finishing of cellulosic fibres. Textiles will become easier to iron and form less creases during wearing.

Unlike many other crosslinking agents on the market, REAKNITT ZF is formaldehyde-free. Thus, a great variety of requirements on an ecological easy care finishing can be easily implemented.

Without formaldehyde - with added value

Besides the excellent easy care effects, textiles treated with REAKNITT ZF offer many other advantages compared with products containing formaldehyde:

- completely free from formaldehyde
- various standards can be easily met
- improved stabilities
- more agreeable handle

Applicable in many fields

REAKNITT ZF has versatile application fields. The best effects can be achieved for outerwear as well as for home textiles.
Moreover, REAKNITT ZF is excellently suited for the anti-pilling treatment of knitwear made of viscose.

Strong combination

Easy care effects with maximum functionality are efficiently implemented with REAKNITT ZF and the perfectly adjusted catalyst CHT-KATALYSATOR ABT.

In combination with specifically selected softeners and handle additives totally different requirements can be individually adjusted. The most important softeners are ARRISTAN 71 or TUBINGAL FMH, the most important additives are POLYAVIN PEN or ARRISTAN EPD.

TANATEX CHEMICALS

MARKETS CONCEPTS PRODUCTS MEGATRENDS ABOUT US CONTACT

THE SEARCH FOR A FORMALDEHYDEFREE BINDER STOPS HERE

Roller blinds, plisse window shades and book covers are famous examples of products that need to withstand tearing, breaking and friction without losing their elasticity. To add these qualities to the fabric, textile manufacturers often work with polyurethane binders in their production process. Sadly, these binders come with three important obstacles, as they contain formaldehyde and solvents, and do not qualify for padding applications. The consequences of these problems are serious enough to speed up the development of a binder that solves them all. So that is what we did. In this article, we introduce you to the end-result: EDOLAN MR 01.

The issues with binders as we know them

In most binders, formaldehyde is used as a crosslinker to apply that hard and resistant coating that is needed for many textile applications. Unfortunately, formaldehyde is toxic and carcinogenic, two features that do not contribute to a green and safe production process or end-product. Second, binders contain solvents (around 5%), that are used as a carrier during the manufacturing process but end up in the environment through the air or through waste water. Third, the polyurethane dispersions that form the basis of binders do not do well in padding applications, as they cause the coating to dry out on the rollers. This third problem forces textile manufacturers to look for products to mitigate this drying effect, or to even switch application methods. Both fixes are time and energy consuming, meaning they only displace the problem.

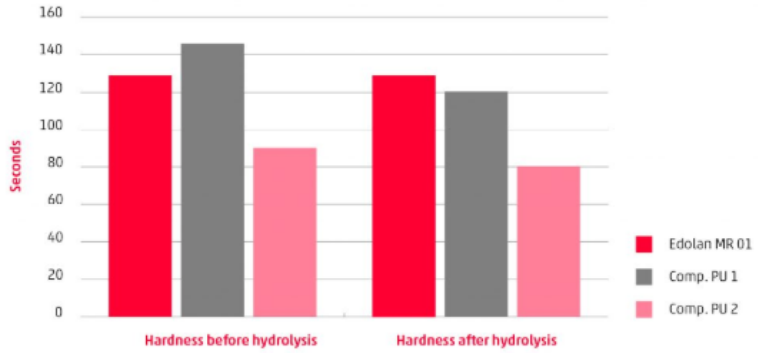
Solving the problems

The issues discussed above have far-reaching consequences for textile plants, as brands, retailers and end-users demand effective, low-cost and eco-friendly products that are produced in an equally eco-friendly production process. Apart from that, manufacturers no longer want to use products that contain formaldehyde and solvents, because of their increasing environmental awareness and focus on safety. This is why they search for more eco-friendly alternatives that are effective, easy in use and safe.

With these requirements in mind, we started the development of a new binder. We took our previous binder EDOLAN MR as a starting point and studied the behaviour of the substances after taking out the formaldehyde and the solvents. Based on this information, we managed to replace both elements with eco-friendly alternatives.

What can you expect from EDOLAN MR 01?

Our new binder is formaldehyde and solvent free, but also deals with the application issue we mentioned earlier. This makes EDOLAN MR 01 suitable for padding application, solving the third and last big issue of binders as we know them. A good start, but what about performance? EDOLAN MR 01 shows a decrease in hardness of only one percent after hydrolysis, meaning it helps producing hard and durable coatings that withstand high temperatures and humidity. Thanks to the hydrolysis resistance, textiles treated with EDOLAN MR 01 can be used for technical applications and outdoor products like tents, but also for products used in moist places, like bathrooms. Apart from the hardness test, we tested the EDOLAN MR 01 for wet and dry rub fastness, tensile and tear strength, and block resistance (at 70 degrees and for 3 and 24 hours). As it turns out, it either matched or exceeded the qualities of its predecessor EDOLAN MR and competitive products.



Compatibility of EDOLAN MR 01

We are chemists, so we are always curious about the way chemicals behave and interact in formulations. Apart from its eco-friendliness and performance, EDOLAN MR 01 is highly compatible with a range of thickeners and other binders. Thanks to this compatibility, textile manufacturers can use a combination of products that strengthen the qualities of EDOLAN MR 01 or add new features, such as gloss. This makes EDOLAN MR 01 the perfect alternative to binders that contain formaldehyde

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

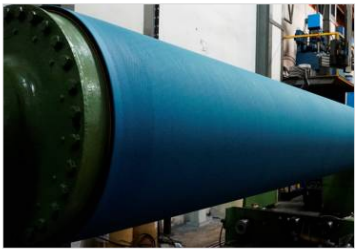
NUEVAS DISPERSIONES DE POLIURETANO ECO-DISEÑADAS PARA EL SECTOR TEXTIL (ECO-PUD)

03/1/18

Noticias » NUEVAS DISPERSIONES DE POLIURETANO ECO-DISEÑADAS PARA EL SECTOR TEXTIL (ECO-PUD)

02/2017, El Centro para el Desarrollo Tecnológico Industrial (CDTI) ha aprobado el proyecto **"NUEVAS DISPERSIONES DE POLIURETANO ECO-DISEÑADAS PARA EL SECTOR TEXTIL (ECO-PUD)".** Este proyecto está liderado por Color Center, S.A. en colaboración con Leitat Technological Center y en él se desarrollará una nueva gama de dispersiones poliméricas base agua de aplicación en el sector de recubrimientos textiles avanzados. Este trabajo de investigación tiene como eje central el ECO-Diseño de polímeros de altas prestaciones basados en Bio-Building-Blocks, libres de metales pesados y cosolventes nocivos para la salud y el medio ambiente.

Nuevos rodillos de poliuretano Eternathane® basados en Policarbonatodiol Eternacol®



22-01-2018

UBE Corporation Europe ha llevado a cabo un proyecto, en cooperación con Tecnocaucho, para el desarrollo e investigación de poliuretanos en base a derivados de Policarbonatodiol Eternacol®, material fabricado por UBE, con el objetivo de producir rodillos con elevadas prestaciones, que mejoren sensiblemente a los productos actuales disponibles en el mercado.

A partir de la mejora de las propiedades de los poliuretanos tradicionales, como la resistencia mecánica, química y térmica, el proyecto ha permitido desarrollar nuevos rodillos para su uso en aplicaciones no cubiertas anteriormente por los desarrollos existentes, posibilitando la ampliación de usos y aplicaciones, así como el acceso a nuevos mercados y clientes.

Este proyecto conjunto de UBE y Tecnocaucho ha sido subvencionado por IVACE con fondos FEDER, en la convocatoria IMIDCA EMP16 I+D.

2.3. Productos para tintura

Durante el último ITMA EUROPA algunas soluciones innovadoras y sostenibles para la industria textil fueron introducidas, algunas de ellas referentes a procesos y productos para tintura.

Durante la feria, muchos fabricantes y proveedores de sustancias químicas fueron capaces de mostrar sus innovaciones, incluyendo especialidades para conseguir no solo nuevos efectos o alta coloración si no también ahorros (en términos de agua, energía, agentes químicos…) y menos carga contaminante en residuos/descargas. Algunos ejemplos son listados a continuación:

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

ERCA. Presentaron ReactEVO, un simple y eficiente proceso basado en un concepto de post-tratamiento en tintura con colorantes reactivos. Permite una reducción drástica en consumo de energía y volumen de agua, acortando significantemente el tiempo total de tratamiento. Los resultados comparativos y las métricas de color superan los procesos estándar actuales. También este sistema integral de tintura/post-tratamiento produce beneficios significantes de sostenibilidad ya que permite ahorros de energía de hasta el 70%, ahorros de agua del 50% y un menor tiempo de procesamiento (de hasta el 20%). Todos los auxiliares del sistema ReactEVO (DYE, WBS, PHR y TWE) cumplen 100 requisitos con Oeko-Tex Standard y están aprobados por Bluesign y GOTS.

ADRASA. Tinturas y preparados con pigmentos para hilos y el FSC SYSTEM para tintura de PA a baja temperatura son algunas de las innovaciones introducidas por la compañía española.

Tintura de PA clásica I

- La tintura clásica se viene realizando a pH ácido con la adición de colorante a los 30 °C y subida hasta los 100 °C, y mantener esta temperatura durante 60 minutos.
- Precisa de una larga etapa de igualación a 100 °C con el uso de migrantes, que permiten la entrada y salida del color.
- La subida del colorante aniónico sobre fibra, se produce ya desde su introducción en el baño, provocando desigualdades muy marcadas según selección de colorantes.
- Alto grado de desigualación al inicio y una larga etapa de migración.

Tintura de PA clásica II

Sus principales características son:

- Necesidad de auxiliares (igualadores) con elevada capacidad de migración.
- Selección de colorantes con elevada capacidad de migración.
- Alto consumo de tiempo y energía.
- No apto para relaciones de baño cortas.
- Fuerte presencia de colorante en los baños residuales.

Alternativa ~ Sistema FSC

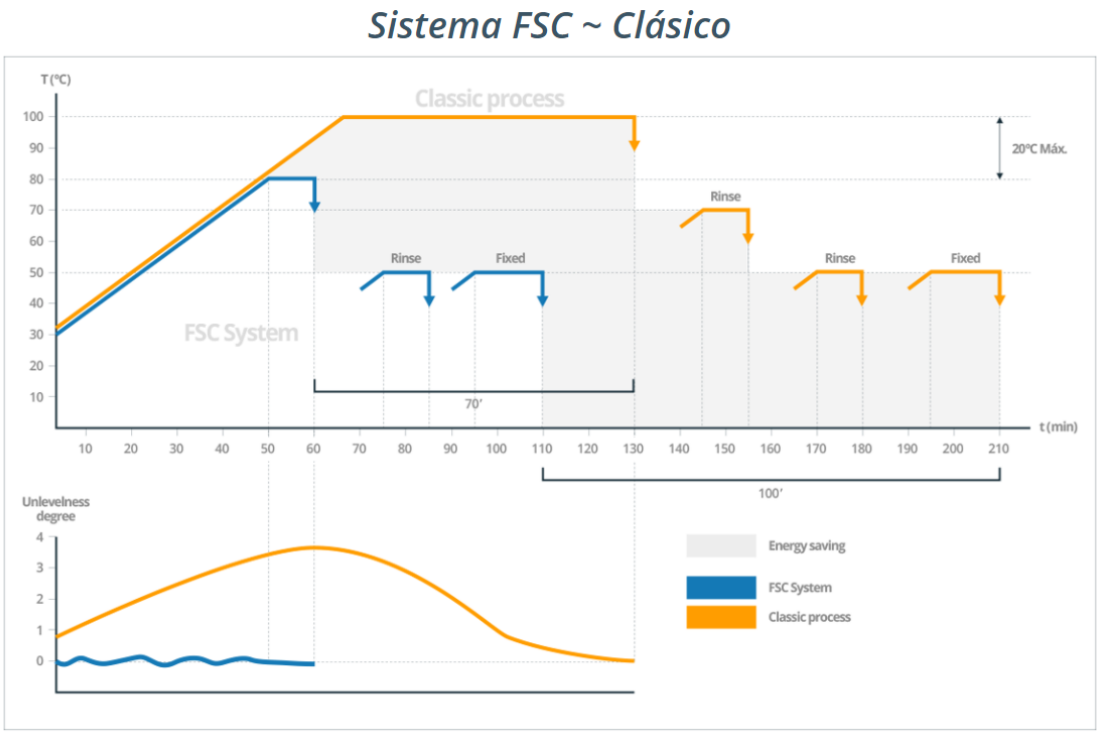
El nuevo sistema se basa en envitar la desigualdad de tintura que se provoca desde la adición del colorante en el baño.

A los 80 °C, la tintura esta agotada e igualada.

La subida de color en la fibra es dominada por el sistema y en ningún momento se permite la irregularidad.

No precisa la etapa a ebullición imprescindible en el sistema clásico para igualar.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa



Además, esta empresa es activa en mejoras de sus líneas de productos, ya que puso en marcha el proyecto E!9885 – INVESTIGACIÓN Y DESARROLLO DE UN NUEVO PROCESO DE TINTURA A LA CONTINUA UTILIZANDO DOS SISTEMAS EN UN SOLO BAÑO DE TINTURA. La investigación y desarrollo de un nuevo proceso de tintura a la continua utilizando dos sistemas en un solo baño de tintura (DYE-1-IN-2) ha sido un proyecto CDTI Eureka que recientemente ha concluido. Ha estado cofinanciado por el Fondo Europeo de Desarrollo Regional (FEDER) a través del programa operativo pluriregional de crecimiento inteligente. El objetivo del proyecto ha sido el desarrollo de una composición del baño de tintura que permite combinar colorantes reactivos y pigmentos conjuntamente, con la finalidad de completar una doble tintura, o tintura bicolor, de tejidos Denim en un único baño. Este desarrollo ha conllevado un estudio en profundidad de la formulación del baño para tratar de conseguir una estabilidad adecuada, así como el ajuste de todas las variables que influyen en el proceso a fin de lograr unos resultados que permitan obtener el tejido propuesto. Tras la finalización de este proyecto de un único hito, se ha conseguido obtener un nuevo proceso de doble tintura a la continua, que imprime una coloración base tejido a través del colorante reactivo, y un color exterior basado en pigmentos, habiendo desarrollado todo el proceso en un único baño de tintura. De este modo, la correcta formulación de los baños de tintura y la adaptación de todo el proceso industrial han sido los retos técnicos que se han trabajado durante este proyecto. Destacar el beneficio medioambiental del proyecto, ya que aprovechando la reducción del número de baños de dos a uno, se ha reducido en un 50% el uso de agua en el proceso de tintura, y consecuentemente reducir significativamente la energía necesaria para secar los tejidos, así como en el proceso total.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

CHT BEZEMA. Nuevo proceso de blanqueamiento para dénim (organIQ BLEACH). Agente orgánico blanqueante, sin metales, cloruros o AOX. Biodegradable. Por ahora solamente adecuado para denim no stretchable.

BOZZETTO GROUP. Posibilidades de implementación de proceso de tintura de aramida mejorado en términos de sostenibilidad y eficiencia del color a través del sistema Cindye DNK; alto rendimiento, biodegradabilidad y menos impacto medioambiental que las soluciones comunes.

Por otra parte, **COLORCENTER** también ha desarrollado en los últimos tiempos auxiliares para tintura de carácter sostenible:

COMPLEX BTB
Producto especial para el blanqueo de algodón a pH neutro y baja temperatura.

COTEMOLL CW-100
Detergente especialmente indicado para el lavado de prenda. Antibackstaining para Denim. Exento de nonilfenol.

ESTEROL ECO
Carrier para tintura de poliéster. Mínimo impacto ecológico.

ESTERFIX SEC
Fijador de máximas prestaciones, exento de formol.

AMPLEX 1001
Biodegradable sulfur-free reductive agent.

Y también, por ejemplo **PULCRA CHEMICALS** ofrece un sistema de tintura en índigo el cual aporta ventajas medioambientales y de menor emisión de carga contaminante de efluentes.

BREVIOL® DENIM TECHNOLOGY

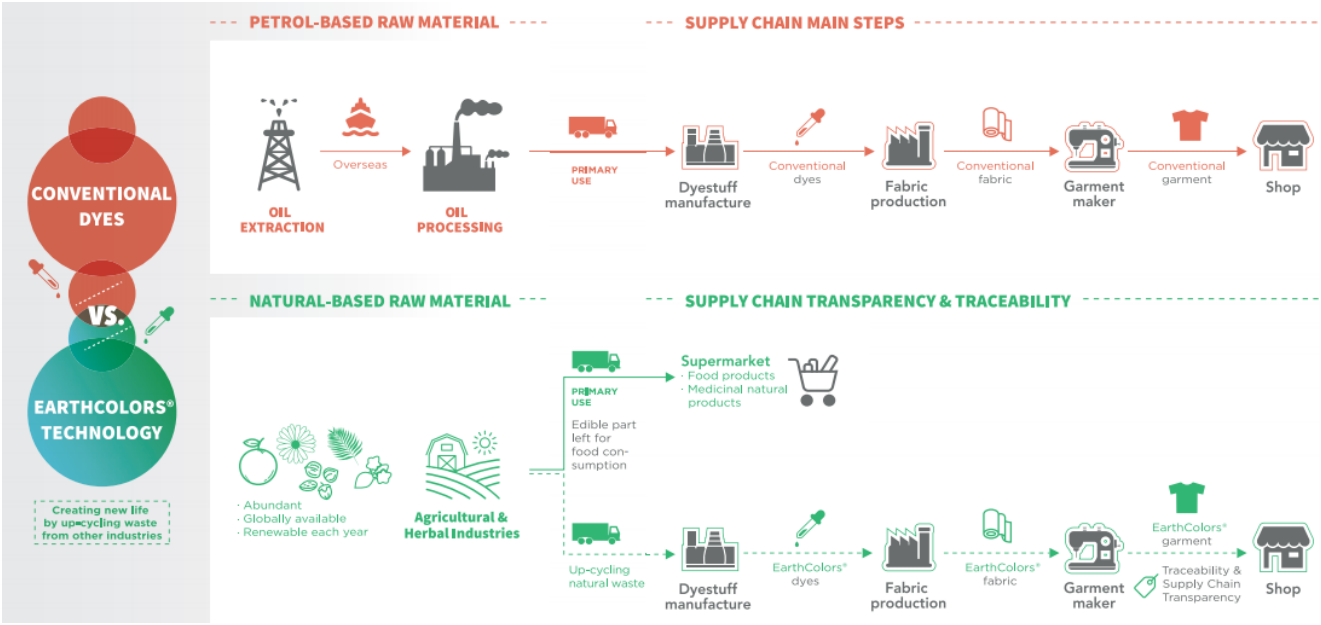
All mentioned charactristicics make Breviol Denim Technology in pure indigo, topping, bottoming, black-denim and color-denim a more sustainable process with good fastness, concluding that Breviol Denim Technology is more ecological, sustainable and exclusive for all denim process

GENERALITAT VALENCIANA
iVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

En colorantes biosintéticos, la gama EARTHCOLOURS de ARCHROMA identificada un tiempo atrás sigue marcando tendencia, habiendo desarrollado nuevas gamas de color, que complementan las que habían de inicio en tonos tierra y ocres.

Estas nuevas gamas de colores van de tonos rojizos a tonos azules y pese a ser sintéticos, ya que pasan por procesos industriales que transforman los residuos vegetales y las moléculas de colorante natural en colorante 'bio'sintético, solventando de esta manera las carencias intrínsecas de los colorantes naturales, como son la baja solidez a lavados y también a la luz.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa



Se está implantando no solamente esta gama de productos concretos del productor indicado, sino otras opciones de colorear textiles de una manera más natural. Aún así, la creciente preocupación de consumidores finales por adquirir prendas 'sostenibles' o 'responsables', junto con los requerimientos en el mismo sentido de fabricantes y confeccionadores finales, está haciendo que en el último año diversas firmas de moda y fabricación de indumentaria diversa estén optando específicamente por esta gama de nuevos colorantes biosintéticos. Por ejemplo, G-Star (denim), Ternua (ropa casual, de ocio/deporte, montaña a través de su proyecto Nutcycle https://www.ternua.com/com/sustainability-nutcycle/), Patagonia, Kathmandú, etc.

G-STAR RAW SELECTS ARCHROMA'S EARTHCOLORS FOR CAPSULE COLLECTION OF DENIM JEANS

Reinach, Switzerland, 29 November 2017 – Archroma, a global leader in color and specialty chemicals, today announced its first-ever collaboration with G-Star RAW.

G-Star RAW recently introduced a new capsule collection of denim colored using Archroma's EarthColors, a range of dyes made from recycled plant waste.

Archroma's EarthColors range recently came to public attention for being the Gold Winner of the OutDoor Industry Award 2017, Sustainable Innovations category.

Archroma's EarthColors is a line of patented plant-based dyes, sourced from up to 100 percent renewable resources. Archroma developed EarthColors using non-edible waste products, from agriculture and herbal industries, to replace petroleum derived raw materials; which are the conventional raw materials used to synthesize dyes currently. This gives brands an alternative when looking for more natural ways of dyeing garments.

The three gorgeous colors available in the capsule collection: 'Dark Plum', 'Asfalt' and 'Mazarine Blue', are made from the non-edible parts of beetroot and saw palmetto, left over from agriculture industry or herbal extraction.

The collection hit stores November 1, 2017, and is available online.

"As denim innovators we're always striving to challenge conventions – both in terms of style and future-proof processes. The introduction of EarthColors into G-Star's jeans' collection represents a successful collaboration with Archroma and the embodiment of our sustainable mindset which guides our product design from start to finish." – Frouke Bruinsma, Corporate Responsibility Director, G-Star RAW.

"G-Star is the very first denim brand to collaborate with Archroma to create a collection of colored jeans," comments Paul Cowell, Global Head of Brand Marketing, Brand & Performance Textile Specialties, Archroma. "By doing so, we hope they will inspire more denim brands and retailers to switch to sustainable dyeing ingredients that, like EarthColors, allow creating gorgeous colors – and at the same time are so much gentler on our planet. Because it's our nature!"

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa


(Photo: G-Star RAW)


(Photo: G-Star RAW)


(Photo: G-Star RAW)


(Photo: G-Star RAW)


(Photo: G-Star RAW)

Kathmandu selects Archroma's Earth Colors for capsule collection of its signature hoodies

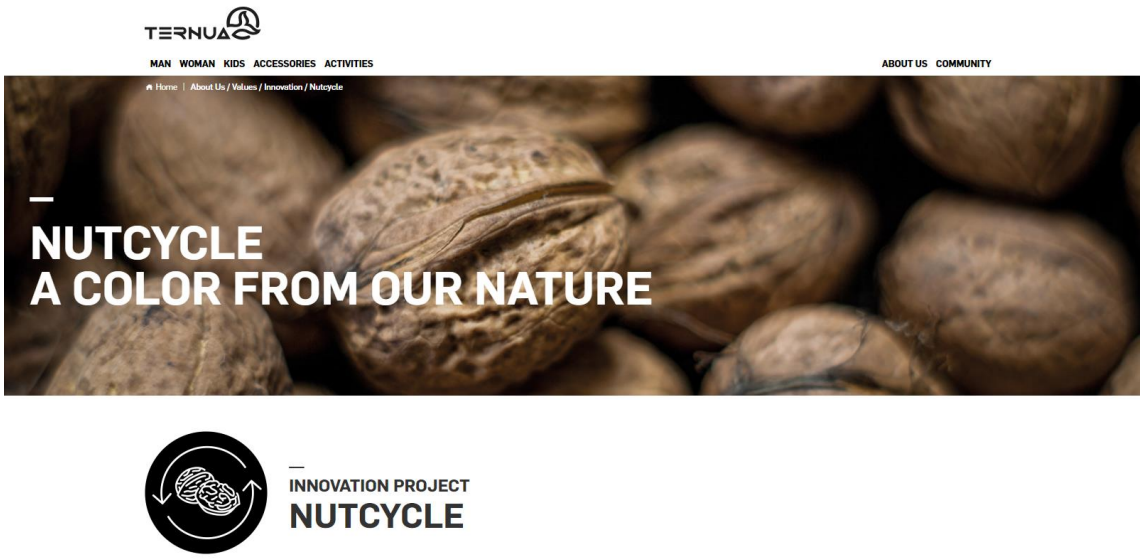
November 8, 2017

"We have been using recycled materials for over 20 years and we are constantly looking for new technologies to develop more sustainable outdoor gear, adds Manu Rastogi, Textile R&D and Responsible Materials Manager for Kathmandu. "Dyeing techniques using plants have been around for centuries, but they require adding huge amounts of mordants and fixatives, which could lead to water pollution.

They also tend to have poor light and wash fastness which is undesirable for the consumer and does not promote article longevity. So when we heard about Archroma'sEarthColors, we were immediately excited by what is probably the first technology allowing colors to be synthesized from plants rather than petroleum while keeping similar performance."

(Photographs: Kathmandu)

Kathmandu selected Archroma and its EarthColors range of plant-based dyes to create a new capsule collection of the brand's signature hoodie. (Photographs: Kathmandu)



INNOVATION PROJECT
NUTCYCLE

GENERALITAT VALENCIANA
iVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

De hecho, estas gamas de colores tierra para el próximo 2019 resultarán tendencia en cuanto al desarrollo de prendas de indumentaria, de manera que optar por una opción más sostenible para la fabricación de tejidos tintados, frente a los sistemas tintóreos habituales, puede ser una buena idea de diferenciación e innovación tecnológica, según indica WWD (https://wwd.com/business-news/business-features/archroma-and-fashion-snoops-release-color-atlas-1202636497/).

BUSINESS / BUSINESS FEATURES

Fall 2019 Color Atlas Identifies Desert and Earthy Tones as Key Trends

Archroma and Fashion Snoops released its collaborative fall 2019 Color Atlas, outlining color trends for the upcoming season.

By Tracey Greenstein on March 22, 2018

En este sentido, además de la propia innovación tecnológica, una adecuada y llamativa campaña de comunicación y márquetin de los nuevos productos y procesos, también contribuirá a dar a conocer el carácter sostenible de los nuevos desarrollos (por ejemplo, la comunicación de Cotton Inc. de noviembre 2017).

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

Los colores ya disponibles en el mercado, diseñados para tintar fibras celulósicas en principio cubrirían parte de la demanda que habría para dar alternativas a colorantes reactivos/directos, mientras que opciones de colorantes biosintéticos como alternativa al índigo no parecen estar ahora mismo (Jun 2018) disponibles en el mercado, sin bien se está empezando a investigar sobre ellos y sus métodos de síntesis o producción, tal y como informa Ecotextile (https://www.ecotextile.com/2018010923185/dyes-chemicals-news/modified-bacteria-used-to-make-indigo-dyes.html), la síntesis a nivel laboratorio de antocianinas biosintéticas (Sato et al. https://doi.org/10.1371/journal.pone.0198944, Jun 2018) o el uso de extractos de algas para obtener colorantes de recursos renovables y naturales no comunes (proyecto Greencolor de AITEX).

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

ECOTEXTILE NEWS
The environmental magazine for the global textile supply chain

Modified bacteria used to make indigo dyes

Published: 09 January 2018 Written by John Mowbray Print

CALIFORNIA – Researchers from the University of California say they've developed a biosynthetic indigo dye derived from enzymes produced by bacteria, which also avoids the need to use potentially hazardous substances used in indigo dye synthesis. Crucially, unlike other proposed microbial routes to indigo textile dyeing, the new process also removes the need for harsh chemical reducing agents for dye solubilisation.

The new microbial way to make denim dyes uses an enzyme combined with genetically modified *E. coli* bacteria to help stabilise an indigo precursor molecule called indoxyl by linking it to a sugar molecule. When added to bacteria, this enzyme then produces indican, which can then be easily isolated and kept for long-term storage. Later, at the time of dyeing, a different enzyme then turns indican into the familiar crystalline indigo directly on cotton textiles.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

OPEN ACCESS PEER-REVIEWED

RESEARCH ARTICLE

Computational study on a puzzle in the biosynthetic pathway of anthocyanin: Why is an enzymatic oxidation/ reduction process required for a simple tautomerization?

Hajime Sato, Chao Wang, Mami Yamazaki, Kazuki Saito, Masanobu Uchiyama

Published: June 13, 2018 • https://doi.org/10.1371/journal.pone.0198944

Abstract

In the late stage of anthocyanin biosynthesis, dihydroflavonol reductase (DFR) and anthocyanidin synthase (ANS) mediate a formal tautomerization. However, such oxidation/reduction process requires high energy and appears to be unnecessary, as the oxidation state does not change during the transformation. Thus, a non-enzymatic pathway of tautomerization has also been proposed. To resolve the long-standing issue of whether this non-enzymatic pathway is the main contributor for the biosynthesis, we carried out density functional theory (DFT) calculations to examine this non-enzymatic pathway from dihydroflavonol to anthocyanidin. We show here that the activation barriers for the proposed non-enzymatic tautomerization are too high to enable the reaction to proceed under normal aqueous conditions in plants. The calculations also explain the experimentally observed requirement for acidic conditions during the final step of conversion of 2-flaven-3,4-diol to anthocyanidin; a thermodynamically and kinetically favorable concerted pathway can operate under these conditions.

FICOERITRINA: COLORANTE ROJO DE MACROALGA *GRACILARIA SP.* APLICADO EN PROCESO DE TINTURA DE LANA

S. Moldovan [1], M. Ferrandiz [1], M. Bonet-Aracil [2]

[1] *Instituto tecnológico textil (AITEX), Plaza Emilio Sala, nº 1, 03801, Alcoy (Alicante)*
e-mail: smoldovan@aitex.es
[2] *Universitat Politécnica de València, Escuela Politécnica Superior de Alcoy Departamento de Ingeniería Textil y Papelera, Plaza Ferrándiz y Carbonell, s/n 03801 Alcoy*

Resumen

El proceso de industrialización a nivel global implica una extrema utilización de recursos naturales y genera, al mismo tiempo, procesos muy contaminantes para el medioambiente. Este comportamiento propaga la aplicación de los conceptos de sostenibilidad y durabilidad en todas las industrias, entre las cuales se incluye también la industria textil. De esta manera se genera la necesitad de investigar acerca de colorantes naturales que se someten a los conceptos mencionados. Las algas representan una fuente muy importante de compuestos activos aplicables en varias industrias, y también colorantes naturales para la industria textil. La ficoeritrina es un pigmento encontrado en las algas rojas, el grupo más numeroso de todas las algas. Por este motivo, en la presente investigación se estudia la extracción y aplicabilidad de ficoeritrina procedente de macroalga ***Gracilaria sp.*** en el proceso de tintura textil sobre sustratos de lana. Los tejidos tintados presentan un color rojo claro, con buenas solideces de tintura al frote y lavado.

Abstract:

The global industrialization process implies an accelerated natural resource utilization and generates in the same time extremely environmentally contaminant processes. These activities proliferate the necessity of the application of the sustainability and durability concepts to all the industries, including the textile industry. Therefore, it is generated the need of investigation of natural colorants which are subjected to the previously mentioned concepts. Algae represent an important source of active compounds with applicability in several industries, including natural colorants for the textile industry. Phycoerythrin is a pigment produced by red algae, the largest from all algae groups. For this reason, this study investigates the extraction process and applicability of the phycoerythrin obtained from ***Gracilaria sp.*** in the wool dyeing process. The obtained dyed wool substrates were colored successfully with a light red, and showed good laundering and rubbing fastness.

GENERALITAT VALENCIANA
iVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

2.4. Auxiliares para tintura, estampación/acabado

Al igual que con los productos funcionales para tintura, estampación o acabado, los auxiliares que se emplean para desarrollar las formulaciones de estos procesos de ennoblecimiento textil también son susceptibles de aportar beneficios medioambientales, de manera que se genere una carga contaminante lo más baja posible, favorezcan la reducción del consumo de agua, la generación de efluentes, unas temperaturas de proceso más bajas para consumir menos energía, etc. Por ejemplo:

- En cuanto a detergentes la no presencia de nonilfenol debe ser considerada, también el que tengan una biodegradabilidad lo más alta posible y que formen la menor cantidad de espuma posible, a fin de optimizar su ratio de uso. Por supuesto deben evitar el proceso de 'backstaining' (o re-deposición de colorante) en la medida de lo posible para así minimizar operaciones extra de lavado del tejido.

- Los humectantes también deben ser fácilmente biodegradables, los dispersantes deben generan cuanta menos espuma mejor y los antiespumantes de uso lo más versátil posible (para cualquier proceso) y si es posible que estén fabricado a partir de derivados vegetales (como ésteres o aceite vegetal. Fuente: catálogo Polysistec).

- Los carriers para tintura deben estar exentos de AOX y generar el mínimo impacto ecológico posible, teniendo un carácter biodegradable en la medida de lo posible. E igualmente, los secuestrantes estar libres de nitrógeno y fósforo para reducir la carga contaminante de los efluentes generados.

- Los fijadores en tintura y estampación; debe considerare que estén exentos de formol o con un contenido en este compuesto lo más bajo posible, ya que puede desencadenar reacciones alérgicas en la piel de usuarios especialmente sensibles. Reticulantes en estampación interesa que trabajen y se desbloqueen a temperaturas de curado cuanto más bajas mejor (cercanas a las de secado 100 – 110ºC).

- En cuanto a los agentes reductores interesa que tengan un carácter biodegradable lo más alto posible. Y en cuanto a los antirreductores, el seleccionar productos que trabajen tanto a pH ácido como pH básico.

- Los activadores de blanqueo deben optimizar este proceso al máximo, para evitar el consumo excesivo de peróxido de hidrógeno o de hipoclorito (especialmente en este último caso); también para procesos de blanqueo de algodón interesan auxiliares y estabilizadores que trabajen a pH neutro (para evitar adición de ácidos/bases que ajusten el pH) así como que trabajen a una temperatura lo más baja posible (para evitar consumir excesiva energía).

- Respecto de la tecnología enzimática y el uso de estos productos en diferentes operaciones y procesos textiles -como ya se sabe- en sí mismas representan

una opción interesante y alternativa frente al uso de productos químicos de alta carga contaminante (por ejemplo, para realizar operaciones de descrudado/desencolado o blanqueo) u operaciones mecánicas (por ejemplo, en lugar de un lavado a la piedra). En el caso de enzimas, interesan productos concentrados, que trabajen a temperaturas lo más bajas posible, que trabajen en rangos de pH lo más amplios posible, o que puedan trabajar a pH neutro y en diferentes fases de trabajo (p.ej. en desencolado y biopulido). Especialmente para las catalasas, sería ideal que puedan eliminar totalmente el agua oxigenada residual en poco tiempo, de forma limpia y compatible con el medio ambiente.

BEIZYM SPELL - Glossy biofinish for viscose, cotton and blends

Great performance of BEIZYM SPELL: This cellulase blend provides a perfect biofinish of viscose, cotton and blends.

Particularly on dyed goods – and above all on intense colours such as turquoise, navy and black - the enzyme shows its high efficiency.

BEIZYM SPELL for a biofinish of CO and CV at 40 °C - 60 °C offers a sustainable solution and an even effect, in particular on striped textiles. Instead of pilling the enzyme produces an extremely smooth surface.

The surface look of repaired parts with grinding and chafe marks can often be improved to a great extent by a treatment with BEIZYM SPELL.

Glossy benefits

Compared with a surface treatment with common cellulases the following main benefits result with BEIZYM SPELL:

- efficient on CV and highly twisted CO qualities and their blends
- efficient on turquoise, black and critical shades, even on striped goods with various colours
- broad application range from pH 5.0 to 7.0, therefore higher process safety and reproducibility
- treatment temperature of 40 - 60 °C with a short running time of 20 min possible – time savings!
- far less bleeding when treating dyed articles in the neutral pH range at 40 °C
- nor or clearly less change in shade when working in the neutral pH range
- reduced losses in weight and strength
- contains lint dispersants

Saturated dyeing results

With BEIZYM SPELL these effects can be achieved:

- reduced pilling tendency
- clear surface structures
- less lint on the surface
- higher surface slip and silky gloss
- improved hydrophilicity

PRODUCT INFORMATION:

- BEIZYM SPELL

- Los <u>espesantes</u> en procesos de estampación interesan que incrementen el rendimiento de color lo máximo posible. También están las opciones de utilizar derivados naturales de base alginato, goma guar e incluso de almidón/tamarindo (fuente: catálogo Colorcenter), en vez de los sintéticos acrílicos, o derivados de la celulosa modificados químicamente como los de hidroxietilcelulosa.

- En <u>emulsiones de estampación ya preparadas</u>, para su uso en prenda la presencia/ausencia de formol también es importante, al llevar ya incorporado el

fijador correspondiente. Deben por tanto estar exentas de disolventes y tener un nivel de formaldehído lo más bajo posible.

- En plastisoles, la presencia de plastificante debe ajustarse a la legislación vigente y no contar con ftalatos no recogidos en la legislación y estándares de calidad vigentes.

- Respecto de las siliconas, es recomendable el uso de aquellas lo más concentradas posible (un % de contenido en sólido lo más elevado).

2.5. Retardantes de llama

Las alternativas sostenibles en acabados retardantes de llama son compuestos basados principalmente en sales de nitrógeno/fósforo, frente compuestos bromados, clorados y cualquier tipo de derivado halogenado.

En España, dos de los más importantes productores de químicos para la industria textil, COLORCENTER y ADRASA han lanzado en los últimos años proyectos de I+D destinados al desarrollo y mejora de las características sostenibles de los retardantes de llama, a través de los proyectos ECO-FR y ANCLATEX respectivamente.

A nivel europeo/multinacional, CHT es uno de los mayores productores de estas especialidades químicas; se muestra a continuación un listado con sus productos retardantes de llama más significativos.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

Product name	Product type	Preview of properties	
APYROL BASE2 E	Flame retardants	▪ Liquid ▪ Soft handle	▪ For BS 5852/ 1+2 ▪ Suited for paste coating
APYROL BKW	Flame retardants	▪ Liquid ▪ Free from antimony	▪ B1 certified ▪ For DIN 4102/ B1
APYROL CEP-ECO	Flame retardants	▪ Liquid ▪ Free from antimony	▪ Suited for cellulosic fibres ▪ Suited for the padding finish
APYROL F 2	Flame retardants	▪ Suited for polyamide ▪ Liquid	▪ Suited for wool ▪ Suited for polyester
APYROL FFD E	Flame retardants	▪ Suited for polyamide ▪ Liquid	▪ Suited for polyester ▪ Flame inhibiting filler
APYROL FR CONC E	Flame retardants, Functional coatings	▪ Suited for polyamide ▪ Liquid	▪ Suited for polyester ▪ Flame inhibiting filler
APYROL GBO-E	Flame retardants, Functional coatings	▪ Suited for polyester ▪ Black-out coating	▪ For DIN 4102/ B1 ▪ Containing halogen
APYROL LV 21	Flame retardants, Functional coatings	▪ For DIN 4102/ B1 ▪ Suited for paste coating	▪ Suited for backcoating of black-out vertical blinds and roller blinds ▪ Containing halogen
APYROL NCE NEU	Flame retardants	▪ Suited for polyamide ▪ Liquid	▪ Suited for polyester ▪ Free from antimony
APYROL PA 1	Flame retardants	▪ Suited for polyamide ▪ Powder	▪ Free from antimony ▪ Suited for the padding finish
APYROL PES 80	Flame retardants	▪ Liquid ▪ Suited for polyester	▪ Free from antimony ▪ For DIN 4102/ B1
APYROL PP 31	Flame retardants	▪ Powder ▪ Free from antimony	▪ Flame inhibiting filler ▪ For BS 5852/ 1+2
APYROL PP 41	Flame retardants	▪ Powder ▪ Free from antimony	▪ Flame inhibiting filler ▪ Suited for paste coating
APYROL PREM E	Flame retardants	▪ Soft handle ▪ For BS 5852/ 1+2	▪ Containing halogen ▪ Semi-permanent
APYROL PREM2 E	Flame retardants	▪ Soft handle ▪ For BS 5852/ 1+2	▪ Containing halogen ▪ Semi-permanent
APYROL VDK	Flame retardants	▪ Suited for polyamide ▪ Liquid	▪ Suited for polyester ▪ Free from antimony
APYROL ZAC	Flame retardants	▪ Liquid ▪ Suited for wool	▪ Suited for exhaust procedures ▪ Free from antimony
APYROL ZFK	Flame retardants	▪ Powder ▪ Suited for wool	▪ Suited for exhaust procedures ▪ Free from antimony

En retardantes de llama e ignifugantes, la búsqueda y análisis bibliográfico ha permitido constatar que -lógicamente- se sigue manteniendo la opción tecnológica de emplear productos basados en sales de nitrógeno, fósforo o aluminio, y mezclas sinérgicas de ellos, junto con el proceso Zirpro específico para lana, y no se consideran productos basados en halógenos (cloro, bromo…) ni que contengan derivados AOX (Compuestos Orgánicos Halogenados) así como compuestos de antimonio.

Aparte de los productos N-P y basados en aluminio, también se han detectado novedades en cargas retardantes de llama tales como el producto POLYFLAM – GRF (carga ignífuga para acabados intumescentes basada en grafito expandible. Fuente: Polysistec) u otros productos espumables -expandibles- como el ECOFLAM BUC 291 de Devan. Y como ocurre con los nuevos repelentes al agua libres de flúor, prácticamente todas las empresas fabricantes de especialidades químicas y productos de acabado cuentan con productos químicos libres de halógenos: Colorcenter, Polysistec, Clariant/Archroma, Thor, CTF2000, Devan, Lubrizol, Inotex, etc.

En retardantes de llama:

- Cada vez se detectan más alternativas sostenibles en productos químicos para el acabado FR, si bien las familias químicas que se emplean son limitadas (sales de fósforo, nitrógeno, carbono/grafito expandible o intumescente, ciertas sales e hidróxidos inorgánicos).
- No hay excesiva regulación y legislación a nivel EU, no estando armonizadas las normas y regulaciones locales, a efectos de fabricantes y de elección de las opciones más sostenibles para la fabricación de nuevos FRs.
- No parece haber tampoco una fuerza impulsora desde el mercado para dar a conocer estas alternativas cara a los consumidores finales (al contrario de lo que ocurre con los repelentes al agua y los fluorocarbonados).
- Igualmente, son crecientes las iniciativas enfocadas no solo al propio desarrollo de retardantes de llama sostenibles, sino también a la propia validación de los mismos, tanto en lo que se refiere a prestaciones técnicas que aportan como a su adecuación a legislación vigente o a listas de productos admitidos/prohibidos por entidades públicas y privadas.

Algunos ejemplos de productos y proyectos en esta línea se muestran a continuación:

TRANSPORT & MOBILITY

- Application methods: padding, back-coating
- Suitable for: wool and wool blends, synthetics
- Testing standards: UNECE R118 6 & 8 , EN 45545/2 , FAR 25853 , ABD 0031 , FMVSS 302 , ...

BUS	Eco-flam BUC 291	White (dark grey on request) back coating compound for pes and pes/wool pile velvet upholstery
	Eco-flam P207	Padding solution for Pes and Pes/pa plain fabrics highly wash-durable
TRAIN	Eco-flam RUF-287MI	Brown back coating compound for wool and wool/pa pile velvet upholstery
	Eco-flam BUC 291	White (dark grey on request) back coating compound for pa/wool pile velvet upholstery
AVIATION	Eco-flam CA-F-288	Back-coating for Pa and Pa blends aircraft carpets: innovative halogen-free intumescent & weight-reducing technology

HOME & BEDDING

- Application methods: padding, back-coating, additives
- Suitable for: natural fibres, synthetics, blends
- Testing standards: BS 5852 , DIN 4102 - B2 , BS 5867 part 2 , NFPA 701 , NFP 92 503 - M1

UPHOLSTERY	Eco-flam UF - 249S	collapsible foam back-coating for cellulosic fabrics: transparent, soft and cost effective
	Eco-flam P - 128	padding/spraying solution for cotton based fabrics (BS 5852)
WINDOW DECORATION	Eco-flam P - 189 NEW	padding product for PES curtains – no salt rings
	Eco-flam P - 207	padding product for PES curtains – wash durable
	Eco-flam SF-BO-295	compound for BO & DO curtains
	Eco-flam AD-261A	additive for BO & DO curtains and stable foam coating
	Eco-flam C-226	coating for pleated curtains
	Eco-flam C-150	transparent printing & paste coating for PES curtains and blends
BEDDING	Eco-flam P - 184 Mod 2	padding/spraying solution for cellulosic- and blends – cost effective
	Eco-flam SU	padding/spraying solution for cellulosic and blends – Oekotex registered

- Newsroom
- COST Stories
- Action dissemination guidelines and COST corporate identity
- Publications
- Multimedia

Toxic flame retardants are a burning issue

Flame retardants are an integral part of creating products from plastics to textiles that are fire friendly. However, many of the flame retardants in use are toxic and damaging for the environment. Dr Giulio Malucelli has built a group that is 'greening-up' flame retardant chemicals.

The use of flame retardants is growing by a rate of nearly 5% a year, and by 2018 the market is expected to be worth USD $7 billion. They are a vital part of modern life, but they pose problems around health, safety and the environment. So one researcher reached out to the COST Programme to help in his quest to address these issues by sharing knowledge and ideas with experts in this field.

There are dozens of materials that various industries have used as flame retardants historically. However, the ones receiving the most attention from Dr Giulio Malucelli, Associate Professor of Materials Science and Technology at Polytechnic University of Turin, are those used by the textile industry.

Dr Malucelli's interest in flame retardantts grew out of his activities in chemistry and chemical engineering. Drawn to the field through his investigations into polymers, Dr Malucelli noticed that while extremely useful to society from an industrial and construction perspective, using flame retardant chemicals presented concerns over meeting fire safety requirements. The use of biomacromolecules instead of chemicals in flame retardants could be a safer option.

Furthermore, he also discovered that many of the flame retardants used by the textile industry can cause grave damage to the environment. *"Some of the standard flame retardants can have a high environmental impact and usually require complex and expensive technologies for their application to textiles"* he notes.

In 2014, Dr Malucelli approached the COST Programme with the goal of building an international, multidisciplinary group dedicated to solving the issues currently plaguing industry's use of flame retardant chemicals. The result was the COST Action FLARETEX - Sustainable flame retardancy for textiles and related materials based on nanoparticles substituting conventional chemicals.

"The objective of FLARETEX was to create a network dedicated to fire retardant issues related to textiles – both natural and synthetic – and develop new innovative flame retardants with low fire toxicity and environmental impacts that were also halogen-free" shares Dr Malucelli.

His own activities within FLARETEX have zeroed in on designing and developing biomacromolecules (namely, proteins and nucleic acids) as flame retardant systems for textiles. *"We succeeded in proposing and publishing papers on biomacromolecules as low impact, sustainable and effective flame retardants for cotton fabrics, PET and their blends"* he states.

"The COST Action has also helped disseminate the research carried out by my group. Some of the results are being acted up in a H2020 project on the recovery and use of biomacromolecules from wastes for conferring flame retardant properties to bio-polymers."

Dr Malucelli and his team also worked with production finishing company INOTEX, successfully testing a new ecofriendly, water-based halogen and antimony-free flame retardant. It performed well when compared to conventional flame retardant coating systems, and the advantages of its more eco-friendly nature has led to a significant uptake within the industry.

According to Dr Malucelli, the COST FLARETEX Action was also created with the intention of encouraging researchers to propose and discuss new solutions to tackle the problems emerging from the use of standard flame retardants – a goal it has succeeded in achieving.

"The scientific and technological network that we created during the COST Action included several people with high competencies, straddling different 'areas' within the textile world" he shares. *"The obtained results clearly demonstrate the high level of competency within the network."*

clutex
cluster technical textiles

MITIGATION OF ENVIRONMENTAL IMPACT CAUSED BY FLAME RETARDANT TEXTILE FINISHING CHEMICALS

LIFE-FLAREX aims to carry out an analysis of the environmental impact of the best technologies currently available that are alternative to toxic Flame Retardants (FRs) used in textile finishing processes. The project will concentrate on those that are halogenated, contain antimony or are formaldehyde-releasing, and demonstrate which are the best alternatives: the less toxic and with lower environmental impact but at the same time those that will keep the required properties of the fabric.

Consortium members

Specifically, the objectives of the LIFE-FLAREX project are:

- To apply the substitution principle to FR chemicals listed on the REACH SVHC and Candidate lists on the basis of i) PBT character, ii) high production volumes, iii) widespread use and iv) potential exposure of general population
- To demonstrate and evaluate at industrial scale the feasibility of suitable chemicals for replacing FR, in the home textile sector, that can support the application of REACH legislative framework on the substitution principle environment
- To encourage the substitution of halogenated FR so that at the end of the project their use in the home textile sector has been reduced by 10% and by another 10% in the following 3 years.

UNIFI TRUE INNOVATION starts in the fiber

Benefit Solutions / Flame Retardant

Safety First

Flame-retardant compound that reduces propensity to burn. Offering you superior performance and durability compared to topical treatments. Safety is the most important factor when choosing fabric for camping supplies, car seats and upholstery. That's why we created flame-retardant technologies that masterfully inhibit the spread of flames.

Core Benefits

- Uses proven phosphorus FR chemistry
- Phosphorus-based, non-halogenated chemical
- Superior performance & durability compared to topical finishes
- Affordable solution compared to other FR polyester
- Combines with other Unifi performance technologies

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

THE BASICS PROCUREMENT BRANDS & VERIFIERS RESOURCES PRODUCT FINDER

The list of flame retardants accepted under TCO Certified is growing

Harmful halogenated flame retardants have been mostly phased out of products certified to TCO Certified. However, they have often been replaced with potentially harmful non-halogenated flame retardants where little information about their safety is available.

For the new generation TCO Certified, we only accept non-halogenated flame retardants that have been reviewed using GreenScreen® for Safer Chemicals.

One feature of the new generation TCO Certified, which was launched in November, is a new approach aimed at further reducing harmful chemicals in IT products. For many years, halogenated substances such as chlorinated and brominated flame retardants have been restricted in TCO Certified products. In the worst case, these could be replaced with non-halogenated substances whose impact on health and the environment may be entirely unknown.

The US CAS Registry has over 86 million chemicals registered. Ineffective legislation means that the majority of these chemicals are not assessed before they reach the market.

Only reviewed and accepted flame retardants may be used

To tackle this issue, we have chosen only to accept the non-halogenated flame retardants that have been verified as safer alternatives, following a review of their effects on health and the environment in line with GreenScreen for Safer Chemicals. These accepted substances are published on the TCO Certified Accepted Substance List.

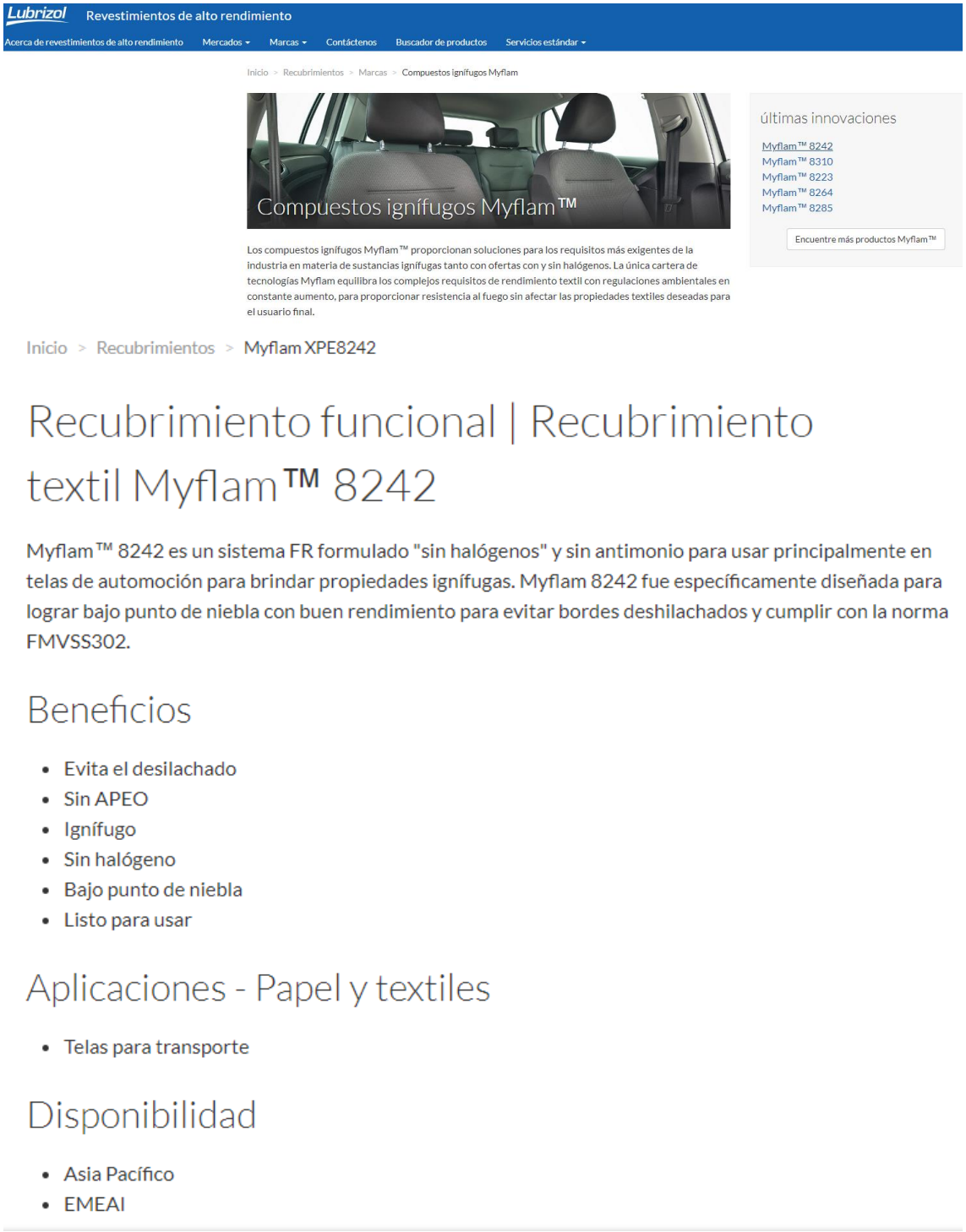
"We are currently phasing out the most harmful substances of IT products," explains Stephen Fuller, who is responsible for developing criteria at TCO Development. "The goal is to expand the list on an ongoing basis. Two new substances have already been added, which now brings the list to a total of 13 entries. By asking for products with the latest version of TCO Certified, you are helping to ensure that more substances are assessed and the most harmful ones phased out."

About halogenated and non-halogenated substances

For many years, harmful halogenated substances have been used as plasticisers and flame retardants in electronics, textiles and other everyday products. They are not readily degradable and they accumulate in people, animals and plants – with carcinogenic risks and disruption of hormone function. Brominated and chlorinated flame retardants are restricted in products that are certified to TCO Certified.

However, the substitute non-halogenated flame retardants can be just as harmful and carry the same inherent risks. The substances that may be used according to TCO Certified are often based on phosphorus and silicon and are included on our TCO Certified Accepted Substance List.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa



Lubrizol Revestimientos de alto rendimiento

Acerca de revestimientos de alto rendimiento | Mercados | Marcas | Contáctenos | Buscador de productos | Servicios estándar

Inicio > Recubrimientos > Marcas > Compuestos ignífugos Myflam

Compuestos ignífugos Myflam™

Los compuestos ignífugos Myflam™ proporcionan soluciones para los requisitos más exigentes de la industria en materia de sustancias ignífugas tanto con ofertas con y sin halógenos. La única cartera de tecnologías Myflam equilibra los complejos requisitos de rendimiento textil con regulaciones ambientales en constante aumento, para proporcionar resistencia al fuego sin afectar las propiedades textiles deseadas para el usuario final.

últimas innovaciones

Myflam™ 8242
Myflam™ 8310
Myflam™ 8223
Myflam™ 8264
Myflam™ 8285

Encuentre más productos Myflam™

Inicio > Recubrimientos > Myflam XPE8242

Recubrimiento funcional | Recubrimiento textil Myflam™ 8242

Myflam™ 8242 es un sistema FR formulado "sin halógenos" y sin antimonio para usar principalmente en telas de automoción para brindar propiedades ignífugas. Myflam 8242 fue específicamente diseñada para lograr bajo punto de niebla con buen rendimiento para evitar bordes deshilachados y cumplir con la norma FMVSS302.

Beneficios

- Evita el desilachado
- Sin APEO
- Ignífugo
- Sin halógeno
- Bajo punto de niebla
- Listo para usar

Aplicaciones - Papel y textiles

- Telas para transporte

Disponibilidad

- Asia Pacífico
- EMEAI

2.6. Protectores UV

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

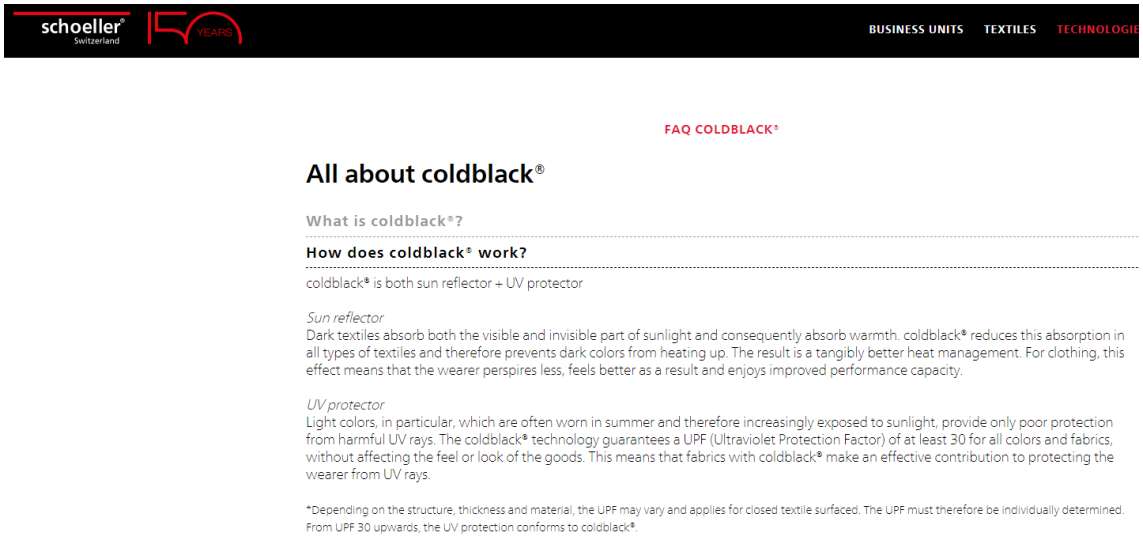
Respecto de innovaciones en la protección UV de tejidos, para aumentar el efecto barrera a este tipo de radiación y mejorar el UPF de los textiles, las opciones mayoritarias suelen pasar tanto por productos inorgánicos (como el TiO2) como orgánicos, que suelen ser los mayoritarios.

La búsqueda y análisis bibliográfico ha permitido identificar acciones de investigación que consideran compuestos innovadores como naftoquinona (Lithospermum), nanoarcillas diversas (como la montnorblonita), así como el formato nano de compuestos inorgánicos como el ZnO o el TiO2.

Además, otras opciones técnicas avanzadas ya presentes desde hace unos años en la industria, como el COLDBLACK de Schoeller, siguen dando buenos resultados y siendo empleados de forma habitual. Este tipo de producto puede ser empleado por los acabadores y fabricantes de productos textiles que necesiten un acabado anti UV y para reflexión de radiación mediante un acuerdo de licencia con Schoeller y Archroma (socio que distribuye dicho producto). Huntsman también tiene desarrollados productos de alto componente técnico como HIGH IQ SUN PROTECT, así como Rudolf Chemie con su RUCO-SHIELD RAY.

Fabricantes de productos químicos para el acabado textil como Colorcenter o Polysistec también cuentan con algún grado de protector UV en su catálogo.

A continuación se indican algunas referencias de documentos técnicos y de algunos productos e iniciativas de I+D centradas en los protectores UV para textil:


schoeller® Switzerland 150 YEARS

BUSINESS UNITS TEXTILES TECHNOLOGIE

FAQ COLDBLACK®

All about coldblack®

What is coldblack®?

How does coldblack® work?

coldblack® is both sun reflector + UV protector

Sun reflector
Dark textiles absorb both the visible and invisible part of sunlight and consequently absorb warmth. coldblack® reduces this absorption in all types of textiles and therefore prevents dark colors from heating up. The result is a tangibly better heat management. For clothing, this effect means that the wearer perspires less, feels better as a result and enjoys improved performance capacity.

UV protector
Light colors, in particular, which are often worn in summer and therefore increasingly exposed to sunlight, provide only poor protection from harmful UV rays. The coldblack® technology guarantees a UPF (Ultraviolet Protection Factor) of at least 30 for all colors and fabrics, without affecting the feel or look of the goods. This means that fabrics with coldblack® make an effective contribution to protecting the wearer from UV rays.

*Depending on the structure, thickness and material, the UPF may vary and applies for closed textile surfaced. The UPF must therefore be individually determined. From UPF 30 upwards, the UV protection conforms to coldblack®.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

Huntsman Textile Effects introduces High IQ® SUN PROTECT

Singapore, 25 July 2018 -- Huntsman Textile Effects has extended the HIGH IQ® performance assurance scheme to help mills, brands and retailers meet consumer demand for garments and accessories with built-in sun protection. HIGH IQ® SUN PROTECT provides an Ultraviolet Protection Factor (UPF) of up to 50 and above, providing the wearer with the highest level of protection for the lifetime of the garment.

Consumers around the world are increasingly aware of the harmful effects of sun exposure. Children are known to be particularly vulnerable, but all those who work outdoors or who enjoy outdoor activities are at risk.

Tested against the highest industry standards, HIGH IQ® Sun Protect guards against damaging UV-A and UV-B rays to ensure maximum protection. It does not impair the natural aesthetics of the fabric, and prolonged exposure to sunlight and multiple laundering will not degrade the protection or fade the colors.

"Consumers today want maximum protection from the sun's harmful rays, especially when it comes to protecting children. With Huntsman's HIGH IQ® Sun Protect assurance program, we offer peace of mind when outdoors and exposed to the sun. Our innovative technology ensures protection at the highest levels in textiles that carry the HIGH IQ® Sun Protect label, while remaining durable over the lifetime of the garment," said Lee Howarth, Global Marketing Manager, Huntsman Textile Effects.

Only mills that meet Huntsman's stringent requirements earn the right to use the HIGH IQ® performance assurance hang tags as point-of-sale product branding.

HIGH IQ® Sun Protect is ideal for a broad range of fabrics and garments, including clothing for children and babies, swimwear, sportswear, workwear and school uniforms, as well as hats, pram covers, umbrellas and other accessories.

The technology used to produce the HIGH IQ® Sun Protect effect comply with the requirements of bluesign® for safe and sustainable textile production. Furthermore, fabrics produced with HIGH IQ® Sun Protect effect are suitable for Standard 100 by OEKO-TEX®.

The global leader in intelligent effects, Huntsman Textile Effects developed the HIGH IQ® global performance assurance program to help mills, brands and retailers produce high-performance textiles with built-in sun protection, freshness, friction protection and water repellence, in bright whites and color that lasts. The program is based on innovative dyes and effects and unparalleled technical support and application know-how from Huntsman Textile Effects to help mills improve their productivity and competitiveness.

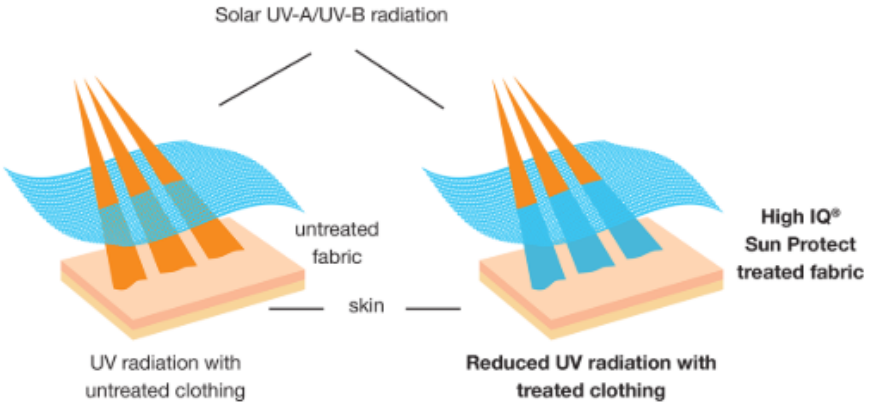
For more information, visit www.high-iq.com.

High IQ®

HOME EFFECTS PERFORMANCE ASSURANCE NEWS RESPONSIBILITY CONTACT

High IQ® sunprotect

A performance assurance program that ensures garments will protect the skin from the sun's harmful rays. Tested against the highest industry standards, **High IQ® Sun Protect** provides much needed peace of mind when outdoors and exposed to the sun



- Improves the sun screening properties of items from children's and babywear to sportswear, accessories and workwear
- High efficiency in both the UV-A and the UV-B range, ensuring maximum protection against harmful radiation from the sun
- A powerful protection (UPF) of 50+ ensured on textile fabrics of appropriate construction
- Very high stability to washing and daylight, lasting the lifetime of the garment
- No impairment of the natural aesthetics of the fabric

Powered by innovative UV-absorbing technologies and backed by decades of application know-how and superior technical support.

Durable performance | UPF 50+ | Soft handle | Colors won't wash out or fade

Ø ZDHC Zero Discharge of Hazardous Chemicals | bluesign APPROVED | OEKO-TEX® CONFIDENCE IN TEXTILES

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

10th April 2018, Bönnigheim

Understanding UV protective clothing

0 comment

With the summer approaching, Hohenstein Institute has issued tips and advice regarding clothing made with UV-protective textiles that could provide the necessary protection against the sun, where sunshade and sun cream are not always the option.

Too much sun and ultraviolet (UV) rays, in particular, can cause lasting damage to eyes and skin. On the other hand, we need exposure to the sun to produce vitamin D, which is, for example, important for bone development. However, babies and children only have little or no protection until about the age of 15, when the human body develops full protection against harmful UV rays. But even then, this protection is only effective for a limited period of time when exposed to direct sunlight.

Sunscreen with UV protection, like sunblock, can offer a solution, but can only provide a sun protection factor (SPF) of 50. This can get washed off or rubbed off and must be re-applied several times to ensure long-term protection. Sunshades or awnings also only provide limited protection from indirect or reflected sunlight.

That is why dermatologists recommend that you also wear clothes covering your body as sun protection. Long trousers, a long-sleeved shirt and headgear with as wide a brim as possible are all useful, while children should wear neck protection as well. The colour and design of clothing is important too. Dark colours provide a higher level of protection than light colours. In general, denser material provides better protection against UV rays. Synthetic fibres therefore have a higher UV protection factor than products made from natural fibres.

7th September 2018

Expert Opinion

Uncertainty is biggest challenge facing US textiles industry

The United States Fashion Industry Association (USFIA) is dedicated to fashion made possible by global trade.

Sustainable innovations on show

"The best way is to choose textiles that guarantee a high level of UV protection. Check whether a textile has been awarded a UPF (Ultra Violet Protection Factor), and which level was awarded. This helps you to see to what extent a textile offers protection from sunlight," the Hohenstein Institute explains.

UV-protective textiles can provide extremely effective protection from UV rays. Depending on the basis, they can provide a protection factor (UPF) of up to 80, which would allow you to spend the whole day outside.

"When determining a reliable UPF for the consumer, the special challenges facing sunscreen textiles during use must be taken into account," emphasised Silke Heidt, head of UV protection testing at Hohenstein. "That is why we recommend that you wear modern UV textiles, tested to the UV Standard 801, to ensure your safety when out in the sun."

"Textiles have been tested using the UV Standard 801 for 20 years. This provides effective prevention, as the textiles are also tested when wet, stretched and used – under realistic conditions – as part of the UV Standard 801 test procedure. This helps us to guarantee that you can enjoy the sun to the fullest, without having to worry."

Natural Flavonoid-Functionalized Silk Fiber Presenting Antibacterial, Antioxidant, and UV Protection Performance

Yuyang Zhou and Ren-Cheng Tang*
National Engineering Laboratory for Modern Silk, College of Textile and Clothing Engineering, Soochow University, 199 Renai Road, Suzhou 215123, China

ACS Sustainable Chem. Eng., **2017**, 5 (11), pp 10518–10526
DOI: 10.1021/acssuschemeng.7b02513
Publication Date (Web): October 12, 2017

*E-mail: tangrencheng@suda.edu.cn. Fax: +86 512 6724 6786. Tel.: +86 512 6716 4993.

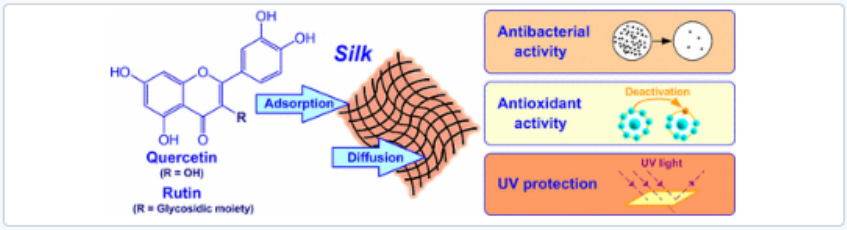
Cite this: *ACS Sustainable Chem. Eng.* 5, 11, 10518-10526
RIS Citation GO

Synopsis

Quercetin and rutin are employed to impart antibacterial, antioxidant, and UV protection properties to silk fiber by an adsorption technique.

Your current credentials do not allow retrieval of the full text.

Abstract



Natural bioactive compounds as promising alternatives to synthetic finishing agents have recently gained increasing attention in the textile industry due to their eco-friendliness, low irritation, and biocompatibility. The present study reports a sustainable approach for preparing antibacterial, antioxidant, and UV-protective silk fiber using two natural flavonoids (quercetin and rutin) by an adsorption technique. The adsorption kinetics and isotherms of the two flavonoids were investigated, and their functionalities and the washing durability of their functionalities were discussed. The equilibrium adsorption isotherms fitted well to the Langmuir and Freundlich adsorption models, demonstrating that ion–ion interactions, hydrogen bonding, and van der Waals forces play major roles in the adsorption of quercetin and rutin on silk. The adsorption isotherm parameters of quercetin and rutin had a decisive effect on their adsorption kinetics, which fit well to the pseudo-second-order kinetic equation. Quercetin exhibited higher initial adsorption rate, shorter half adsorption time, and higher adsorption capability than those of rutin due to its higher affinity constant. Quercetin also imparted better antioxidant, antibacterial, and UV protection performance to silk than rutin at the same initial application concentration and provided better washing durability of functionalities. This study demonstrates that quercetin and rutin can be employed as promising multifunctional agents for the chemical processing of silk materials.

®RUCO-SHIELD RAY

Durable UV-protective finish of textiles for protecting the skin from harmful UV rays especially suitable for cellulosic fibres & polyamide

- optimises the UPF due to reduced UV-rays transmitted
- resistent to washing
- does not impare the handle
- preliminary trials on dyed or optically brightened fabric recommended

Field of application: Pad or exhaust processes

Chemical Basis: Titanium dioxide

Ionic Character: Cationic

Form: Liquid

2.7. Antimicrobianos y productos skin/care - microencapsulados

En antimicrobianos, las alternativas inorgánicas o de carácter orgánico a la plata siguen en aumento. Así, cada vez más se detectan en el mercado compuestos base cobre o de zinc, así como compuestos orgánicos tales como las n-halaminas, fenoles halogenados, polibiguanidas, y otros de carácter natural como fenoles, polifenoles, quinonas, flavonoides, taninos, coumarin, terpenoides, polímeros naturales como la quitina, quitosano, alginato, gelatina o el ácido hialurónico.

Estos compuestos encuentran también aplicaciones de interés en otros sectores, y para otras funcionalidades como la insecticida, efectos revitalizantes/energizantes, mejora del comfort y el bienestar personal, protección UV y eliminación de malos olores, por ejemplo.

En productos de acabado textil microencapsulado y para el cuidado de la piel, las opciones innovadoras o con carácter sostenible se centran tanto en las funcionalidades como en los ingredientes microencapsulados, así como en el uso de ligantes y reticulantes/fijadores que presenten unos niveles de formol lo más bajo posible, como ha sido indicado anteriormente.

Se siguen detectando productos microencapsulados con propiedades especiales y de interés que están centradas en el cuidado de la piel, por ejemplo, CENTERFINISH SKA o POLYPROTEC AMC (Anti-celulítico), CENTERFINISH DCI o POLYPROTEC MR (Acabado anti-estrés), POLYPROTEC REPEL (antimosquitos) o CENTERFINISH ALV (Acabado hidratante, aloe-vera). Fuente: catálogo de productos de Colorcenter y Polysistec. Otros también especiales son el rango R-VITAL de Devan que incluye diferentes principios activos y compuestos hidratantes y para el cuidado de la piel

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

como la coenzima Q10/ubiquinol, te verde, rooibos, extractos de algas, etc, o los microencapsulados de Tanatex como el TANA CARE Q10, por ejemplo.

Algunos de estos productos antimicrobianos/skin care, iniciativas de I+D para investigar sobre ellos y ejemplos de encapsulados para el acabado textil, de productos destinados al cuidado de la piel, se muestran a continuación:

Carbohydr Polym. 2018 Feb 15;182:29-41. doi: 10.1016/j.carbpol.2017.11.007. Epub 2017 Nov 6.

Nanocomposites based on chitosan/silver/clay for durable multi-functional properties of cotton fabrics.

Rehan M[1], El-Naggar ME[2], Mashaly HM[3], Wilken R[4].

⊕ **Author information**

Abstract

The present work addresses an innovative approach for benign development of environmentally synthesis of chitosan-based nanocomposite. The synthesis involves the inclusion via interaction of AgNPs and clay with chitosan (Cs) giving rise to Cs/AgNPs and Cs/AgNPs/clay nanocomposites which when applied independently induce super functionalities. Comparison is made among the two nanocomposites with respect to their intimate association with the in depth cotton fibre-fabric surfaces and the onset of this on the multi-functionalization of cotton fabrics. It is as well to emphasize that Cs/AgNPs/clay nanocomposites prove unequivocally that its use in one-step treatment process for cotton fabrics results in imparting very appreciable good technical properties which, in turn, are reflected on all the gained functionalities of cotton fabrics. Of these functional performance properties, mention is made of cotton fabrics which exhibit high strength, uniform morphology, increased thermal stability, successful deposition of the composite on the surface of cotton fabrics, high water absorption, antimicrobial activity, flame retardant, controlled release of fragrance and UV protection. The obtained data indicate that the treatment for cotton fabrics with these nanocomposite is stable against washing even after 20 washing cycles. Based on encourage data, the environmental benign synthesis of Cs/AgNPs/clay nanocomposites is considered as a promising nanocomposite for the multifunctional finishing textiles.

KEYWORDS: Antimicrobial; Chitosan; Clay; Flame retardant; Silver nanoparticles; UV protection

PMID: 29279123 DOI: 10.1016/j.carbpol.2017.11.007

9th January 2017, United Kingdom

Anti-odour clothing

0 comment

€570 Buy Now $750 Buy Now

Consumers are increasingly seeking active, healthy and hygienic lifestyles, and are willing to pay a premium for products which help them to participate in active pursuits. However, such pursuits tend to be characterised by the generation of sweat and this can lead to the formation of unpleasant odours as a result of the build-up of bacteria.

Consequently, demand for anti-odour clothing has increased and this has presented huge opportunities for providers of anti-odour technologies. In response, developers of odour management technologies have made major advances in recent years, and apparel brands and manufacturers are now able to choose from a variety of anti-odour fibres, yarns and fabric finishes which best meet their needs and add value to their products.

Furthermore, several major providers of odour management technologies are keen to work closely with apparel brands in the development of anti-odour products. For the apparel brands, such development provides opportunities for marketing and branding, and for the formation of strategic partnerships with odour management technology suppliers.

This report provides a wealth of information on the agents, materials and techniques used in the elimination of bacteria and odour from fabrics, as well as key providers of anti-odour technologies and their products. Also, the report provides insight into the markets for anti-odour fabrics, discusses opportunities for branding and collaboration, and provides an outlook for the future.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

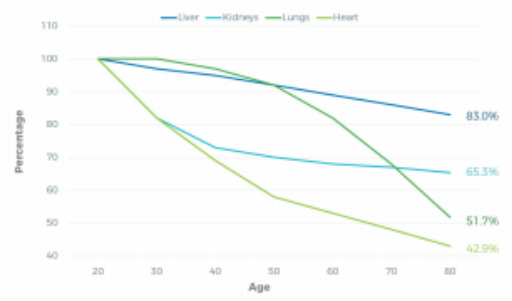
MIGHTY UBIQUINOL

Ubiquinol is the body-ready, reduced form of Q10 and is found everywhere in our body. The co-enzyme has two main benefits:

1. It donates an electron to free radicals to make them harmless and it regenerates weakend anti-oxidants.
2. It improves the energy production/ transportation in the mitochondria.

Unfortunately, as we age, the amount of ubiquinol naturally produced within the body drastically decreases.

Ubiquinol production in the body vs age



Source: Amendment from A. Kalen et. al. (1989) Lipids, 24 579

APPLICATION METHODS

- Padding
- Spraying
- Exhaustion
- Printing
- Foaming

Possible applications: Bedding, Bed accessories, Sleepwear, Shapewear, Sportswear, Comfortwear, Socks, Underwear, etc.

ADVANTAGES

- Gradual release, long lasting & wash-durable
- Environmentally & skin friendly
- Patented technology
- Create your own blend

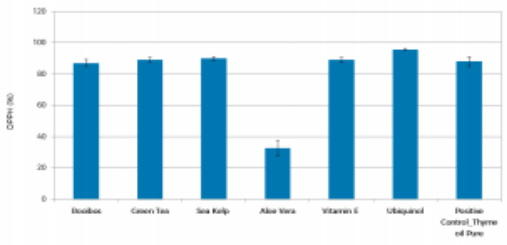
CREATE YOUR OWN BLEND

Choose multiple active ingredients and create your own blend for a truly unique product.

Example of a combination:

- skin improvement blend: aloe vera (smoothens skin) + Sea kelp (cellulitis) + thym oil (blood circulation).

Also possible to combine with a fragrance of choice.



Antioxidant activity: total potential if 1 g/m² applied

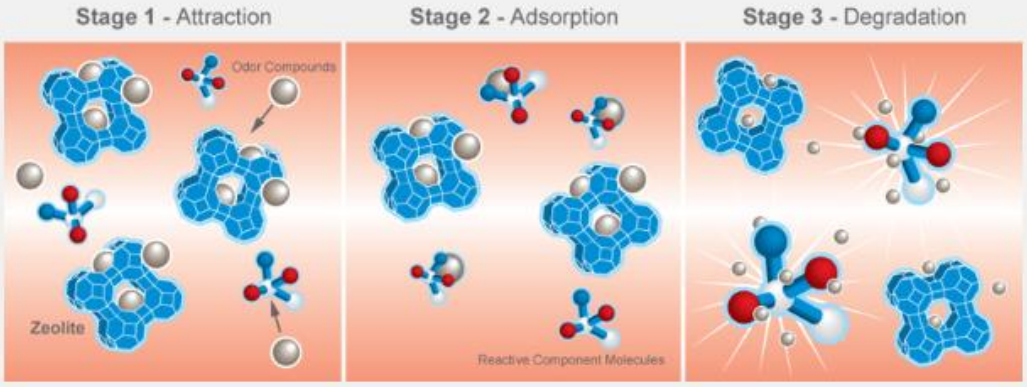
GENERALITAT VALENCIANA
iVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

Overview

Anti-odor technology harnesses the power of zeolites – mineral-based substances originating from volcanic ash – to capture odor molecules and keep products smelling fresh.

How it Works

The high surface area of zeolite carriers attract and adsorb odor molecules on products. These odor molecules are then released during laundering, after which the technology regenerates. Next-generation technology not only attracts and adsorbs odor molecules, but also degrades them. This enables self-regeneration of the technology without laundering.



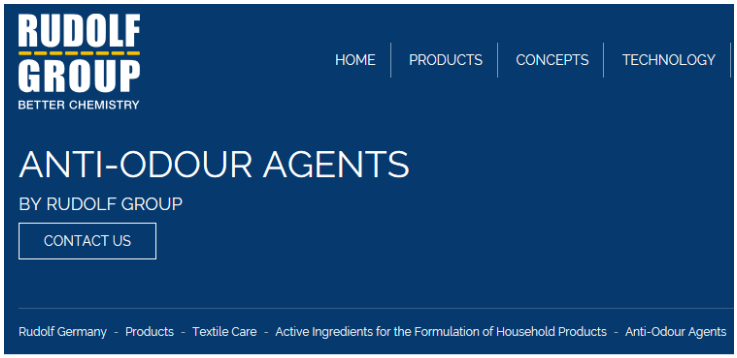
What This Means
When your body begins to produce odor vapors, the anti-odor technology in your garment captures the odor molecules as they are detected. This means unpleasant body odors are kept under control and you stay smelling fresh throughout daily activities.

Anti-Odor Products

Sciessent Lava

When incorporated into a product that is frequently exposed to or may harbor odors, Sciessent Lava performs an essential function. Harnessing the power of zeolites (based on naturally occurring minerals found in volcanic rock), Sciessent Lava can capture odor on everything from sweat soaked apparel and pet products to home textiles - and beyond.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa



®RUCO 3811

Odour absorber and air refresher for confined spaces and textiles

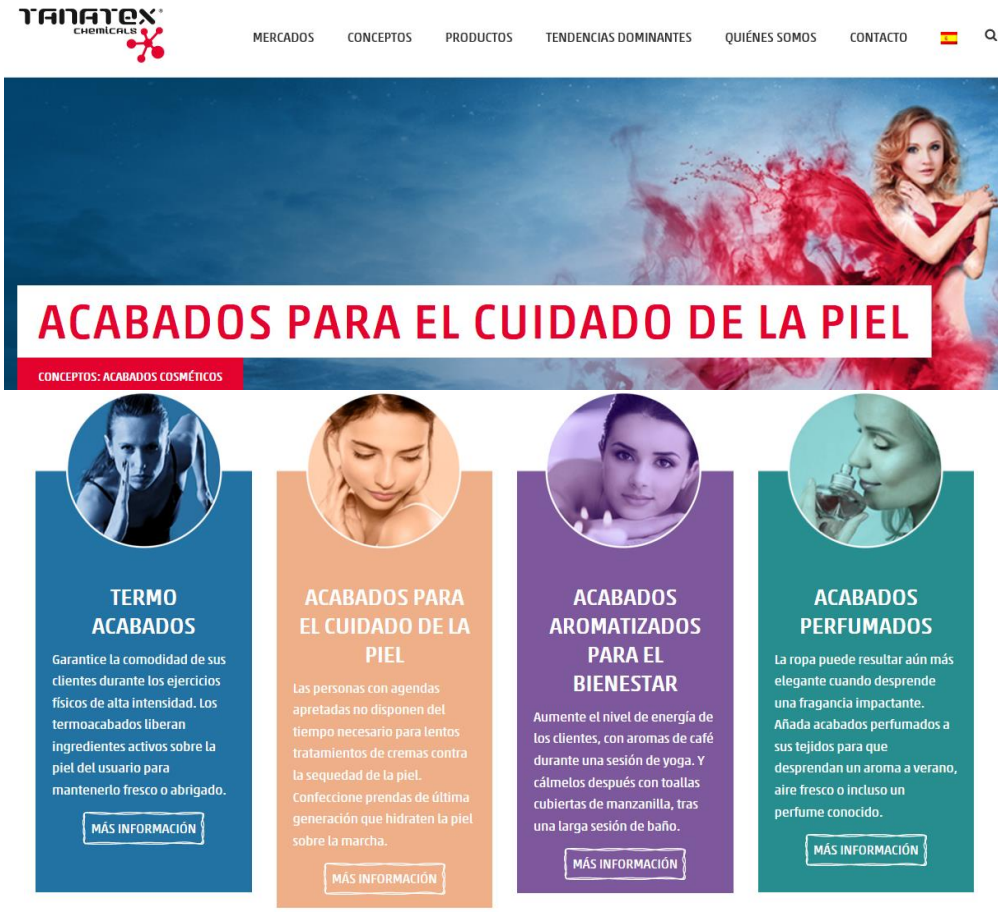
- Ready-to-use formulation
- Compatible with hard water
- Can be combined with anionic and non-ionic products

Field of application: Exhaust process

Chemical Basis: Preparation of organozinc derivatives

Ionic Character: Anionic

Form: Liquid



GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

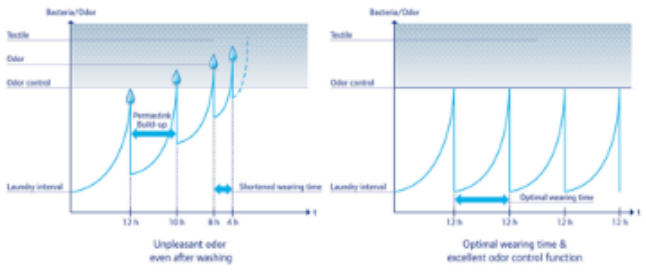
16.1.2018

Innovative Odor Control Function for polyester textiles: Sanitized® Odoractiv 10 with patented, dual-action technology.

Burgdorf, Switzerland, January 16, 2018: SANITIZED AG presents a new unique dimension to odor-management for functional polyester textiles. The newly developed wash-resistant Sanitized® Odoractiv 10 has a dual-action effect: on the one hand it prevents the bacteria from docking on the textile, and on the other, it adsorbs odors whilst the garment is being worn. The underlying technology that has been further developed was awarded the Swiss Technology Award. Goodbye permastink!

Manufacturers of functional polyester textiles from all over the world face the same challenge: freshly washed garments develop an unpleasant odor even after a short wearing period. The cause of this undesirable effect is not the human perspiration itself, but the bacteria that break down the perspiration. This process of decomposition generates the characteristic sweet, pungent smell. Once the bacteria, or the odor molecules, have penetrated into the surface of the polyester textile, they remain there permanently. Machine wash cycles and special detergents will never completely eliminate them. The bacterial colonization produces a biofilm on the polyester, which not only causes unpleasant odors, but also has a negative impact on the properties of the material.

Sanitized® Odor Control Function
Stop Permastink Build-Up Naturally



© SANITIZED AG

Surface modulation with anti-adhesive properties

This is exactly where the new, dual-action technology from SANITZED AG comes into play: the surface of the textile is "coated" with Sanitized® Odoractiv 10 in the padding process. This creates a protective film on the surface of the textile. The bacteria use this anti-adhesive protective film as the basis for latching onto the garment. The bacteria can therefore be completely washed out in a normal wash cycle, consequently preventing any biofilm from forming. An anti-adhesion test method was developed in cooperation with EMPA to prove this Wash Effect.

2.8. Conclusiones parciales

Las conclusiones parciales de este punto, relacionado directamente con la tarea T1.2 de FUN2GARMENT son las siguientes:

- En productos repelentes a líquidos puede afirmarse ya con rotundidad que se ha consolidado la tendencia de uso y desarrollo de repelentes al agua libres de flúor. Tal y como se constató ya el año pasado, y siendo una tendencia cada vez más creciente, las opciones de repelencia a líquidos en textiles buscan también el componente medioambiental, conseguido a través de compuestos libres de flúor, para obtener efecto DWR (Durable Water Repellent). Los C6, pese que a medio/plazo está prevista su desaparición en la fabricación y uso, son todavía la única alternativa si se desea obtener textiles con repelencia al agua y al aceite: los fluorine-free, de momento, solamente son capaces de aportar repelencia al agua. La búsqueda y análisis de información técnica realizada ha permitido identificar opciones libres de fluor ya en prácticamente todos los fabricantes de productos de acabado y especialidades para el ennoblecimiento textil, aspecto que hace apenas 3 – 4 no ocurría. Igualmente, ya no se identifican productos fluorados C8 siendo los mayoritariamente disponibles en base flúor los C6.

- En lo referente a retardantes de llama, se sigue manteniendo la opción tecnológica de emplear productos basados en sales de nitrógeno, fósforo o aluminio, y mezclas sinérgicas de ellos, junto con el proceso Zirpro específico para lana, y no se consideran productos basados en halógenos (cloro, bromo…) ni que contengan derivados AOX (Compuestos Orgánicos Halogenados) así como compuestos de antimonio. También se han detectado novedades en cargas retardantes de llama (carga ignífuga para acabados intumescentes basada en grafito expandible. Fuente: Polysistec) u otros productos espumables -expandibles-. En cambio, no hay excesiva regulación y legislación a nivel EU, no estando armonizadas las normas y regulaciones locales, a efectos de fabricantes y de elección de las opciones más sostenibles para la fabricación de nuevos FRs. Ni tampoco parece haber tampoco una fuerza impulsora desde el mercado para dar a conocer estas alternativas cara a los consumidores finales (al contrario de lo que ocurre con los repelentes al agua y los fluorocarbonados).

- En la temática de nuevos protectores UV, las opciones mayoritarias suelen pasar tanto por productos inorgánicos (como el TiO2) como orgánicos, que suelen ser los mayoritarios. La búsqueda y análisis bibliográfico ha permitido identificar acciones de investigación que consideran compuestos innovadores como naftoquinona (Lithospermum), nanoarcillas diversas (como la montnorblonita), así como el formato nano de compuestos inorgánicos como el ZnO o el TiO2. Por supuesto, compuestos orgánicos basados en benzofenonas, benzotriazoles etc. siguen siendo líderes en este sentido.

- En cuanto a productos tipo resina, sería recomendable emplear aquellas con carácter auto-reactivo, para evitar la adición de crosslinkers o fijadores y reducir así el consumo de productos químicos. Igualmente, innovaciones de carácter sostenible en cuanto a síntesis de resinas acrílicas y sobre todo de PU con monómeros de carácter 'bio' son también reseñables en los últimos tiempos. Además, el estudio de información técnica realizado ha permitido identificar nuevos polímeros para coating y recubrimiento textil, como las dispersiones acuosas de PVB (polivinil butiral) reciclado.

- En colorantes naturales y biosintéticos, el desarrollo de gamas de diferentes tonos de colorantes biosintéticos por parte de Earthcolours de Archroma ha impactado tanto en la industria textil y grandes firmas, que muchas de ellas ya los incorporan y publicitan en sus productos. Estas nuevas moléculas de colorante natural transformado industrialmente en colorante 'bio'sintético, salvan las carencias intrínsecas de los colorantes naturales, como son la baja solidez a lavados y también a la luz. De hecho, estas gamas de colores tierra para el próximo 2019 resultarán tendencia en cuanto al desarrollo de prendas de indumentaria casual y de moda. Ya se está trabajando en otras alternativas biosintéticas y otros colorantes para otras fibras que no sean celulósicas.

- En auxiliares químicos, se está prestando atención a la sostenibilidad desde el punto de vista que diferentes auxiliares no contribuyan a elevar la carga contaminante de los efluentes generados, por una parte, evitar re-operaciones, mejorar la eficiencia de los procesos en que se emplean, estén sintetizados con materia prima renovable, que posean un contenido en sólidos (%) lo más elevado posible, y no sean susceptibles de desencadenar reacciones alérgicas en la piel del usuario, por otra.

- En productos antimicrobianos y skin-care para el acabado textil, las alternativas inorgánicas o de carácter orgánico a la plata siguen en aumento (compuestos base cobre o de zinc, compuestos orgánicos tales como las n-halaminas, polibiguanidas, y otros de carácter natural como fenoles, polifenoles, quinonas, flavonoides, taninos, coumarin, terpenoides, polímeros naturales como la quitina, quitosano, alginato, gelatina o el ácido hialurónico). Los skin-care principalmente microencapsulados.

3. TEXTILES SOSTENIBLES

Complementando los trabajos realizados en T1.1 y T1.2 también se identificaron diferentes productos textiles (no solo de textil-hogar y ocio/deporte que contempla FUN2GARMENT) fabricados bajo un concepto de sostenibilidad y respeto medioambiental, uso de materias primas/químicos naturales, un concepto 'km 0' respecto de los proveedores de materias primas, etc.

3.1. Ejemplos de tejidos de uso general y prendas deportivas funcionales, incluyendo las que favorecen la salud del usuario

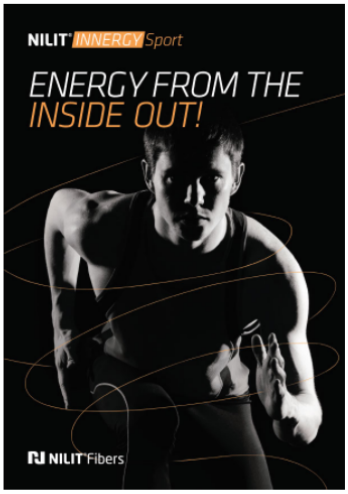
Las prendas deportivas son un importante nicho de mercado para los fabricantes textiles que utilizan hilados técnicos y acabados especiales para dotar de prestaciones de interés a tejidos y prendas. Varias de estas prestaciones están relacionadas con la salud del usuario, la mejora del bienestar, la protección frente agentes externos, etc.

La revisión y búsqueda de información técnica en este sentido arrojó los siguientes resultados principales de ejemplos de tejidos y prendas funcionales.

NILIT® INNERGY SPORT HEADLINES AT SPORTSGEAR SOURCING DAYS

Annecy-le-Vieux France, December 6-7, Booth B1

Migdal Haemek, Israel, November 22, 2016 — Revitalizing NILIT® Innergy Sport and the new NILIT® ATS nylon 6.6 yarns will be the main attractions at the NILIT® Fibers booth B1 at the upcoming SportsGear Sourcing Days. The show runs from December 6-7 at the Espace Rencontre in Annecy-le-Vieux, France.



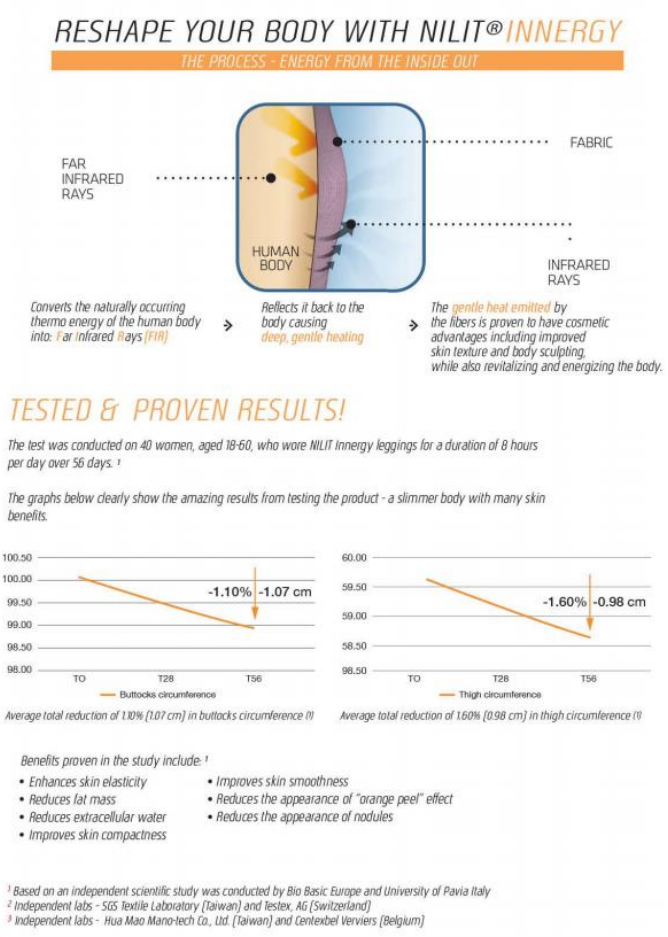
NILIT® Innergy Sport nylon 6.6 yarn captures body heat and reflects it back to the body as FIR (Far Infrared Rays) to gently and deeply warm and invigorate muscles. A naturally occurring mineral incorporated into the fibers converts the thermal energy and generates the FIR emissions. Independent laboratory testing confirms that NILIT® Innergy Sport increases oxygen levels in the blood, reduces lactic acid build up in muscles, and relieves muscle fatigue, discomfort, and tension. All these actions lead to greater user comfort and better athletic performance, not to mention reduction in the appearance of cellulite. In addition, NILIT® Innergy Sport nylon yarn is durable, stays fresh, and protects from UV radiation making it the perfect choice for both outdoor and indoor athleticwear.

"NILIT® Innergy Sport is a very special performance yarn that has been proven to help active people feel better and look better," says Pierluigi Berardi, NILIT's Global Marketing Director. "Designers can use this exciting yarn to create activewear that provides unique benefits for athletes at all levels."

Another innovation from NILIT® is the new ATS (which stands for Air Textured Soft) special air jet texturing technology. NILIT's ATS technology makes NILIT® performance nylon yarns light, airy, and soft. In fact, NILIT® ATS yarns are softer than cotton. They also dry faster and are more durable with longer-lasting suppleness.

NILIT's ATS technology has instilled extra softness and strength into many of NILIT's well-known performance yarns. NILIT® Heat with natural thermal insulation, NILIT® Breeze with cooling plus UV protection, NILIT® Aquarius with moisture management, and NILIT® Bodyfresh with antimicrobial protection are all softer and stronger than ever before.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa



NILIT® Heat // Performance Fibers

Thermo insulating yarn that captures and conserves natural body heat, to warm wearers from the inside out

NILIT Heat is a unique yarn, created with coffee charcoal, for natural insulation, to keep wearers warmer in cold temperatures.

This exceptional fiber, made with coffee charcoal, offers superior thermo insulation anti-bacterial properties, a powerful deodorizing effect, and a sweat-free sensation, for maximum comfort and performance all day long.

An environmentally friendly yarn, NILIT Heat makes smart use of a natural surplus by integrating coffee charcoal (from coffee bean shells) into the nylon fiber.

NILIT Heat-based fabrics are comfortable and versatile. For best warming results, NILIT Heat should be knitted as the inner layer of a garment, closest to the body, to provide effective insulation from the inside out. Ideal uses included hosiery, tights and leggings, sportswear, underwear, socks, base layers and warming clothes.

Available in Dtex count: 44/34/1-2, 78/68/1-2

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

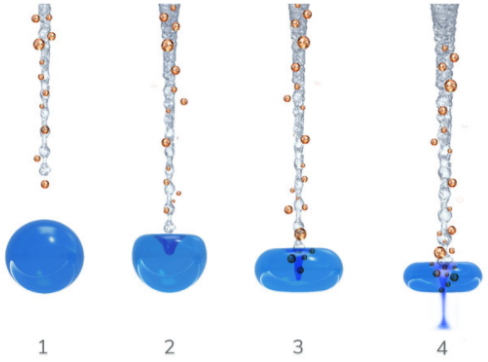
CottonX™

SMART FIBER. IN COTTON

CottonX™ is Argaman's flagship technology. It is a one-of-a-kind platform that allows us to infuse cotton fibers with various compounds, turning them into active smart fibers without losing the natural attributes of cotton.

CottonX™ CUSTOMIZED

Argaman supports its customers in developing customized compounds to be used in the CottonX™ platform technology enabling endless possibilities for new attributes to be infused in cotton.



HOW IT'S DONE

Cotton spinning is an intricate traditional process. CottonX™ patented technology was designed as an innovative form of cotton fiber treatment that seamlessly integrates with the standard process of cotton spinning. It's a novel and unique industrial method for the impregnation of cotton fibers with different particles. We blast particles into fibers using the energy of sound waves. Cavitated bubbles collapse,creating powerful shockwaves and waterjets of 400 m/s. These shockwaves accelerate the particles to high speeds, causing them to embed in the fiber like an arrow shot into a tree. Thanks to this energy transfer, the particles are embedded in the fiber for life, with no bindings or coatings needed. This single-step innovative process results in 100% durable CottonX™ fiber which can be easily integrated in standard textile manufacturing. We are a closed-loop manufacturing facility, recycling all of our water and our chemistry.

CottonX™ SKINCARE

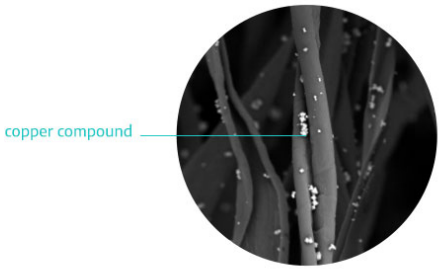
A dual action smart fiber, fusing 100% natural cotton with a copper compound to provide the ultimate in skin care and protection:

WHY COTTON?

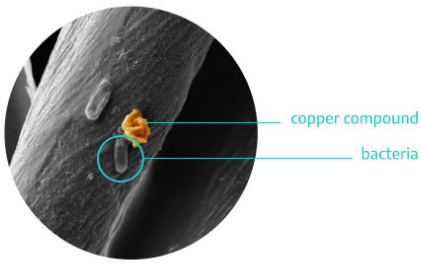
Cotton is one of the most popular natural fibers used in the world today. Cotton is the most popular natural fiber used worldwide. Historically it's always been the fiber of choice. It is environmentally-friendly, biodegradable and most important, it is good for your skin. In addition, cotton has always been known as a skin-friendly fiber due to its comfort, breathability and softness. Cotton's hypoallergenic qualities make it the ideal fiber for consumers with sensitive skin and perfect for use in hygiene products. The unique structure of cotton allows for superior absorption and release capabilities, making it the optimal fiber for the application of a multitude of skin-enhancing technologies.

WHY COPPER?

Copper is an essential element of life. It is not only a well-known and powerful anti-bacterial, sanitizing and anti-odor material, but is equally important in nurturing and protecting skin appearance. Research has shown that copper plays a key role in several processes of skin formation and regeneration. When using copper-infused textiles, positive cosmetic effects are noted such as significant reduction in the appearance of wrinkles and improvement of general appearance within several weeks of use. When in contact with skin, the copper helps promote skin regeneration and collagen synthesis, resulting in smoother, firmer and healthier- looking skin.
Our technology is EPA approved.



Microscopic view of CottonX™ SKINCARE fibers



Microscopic view of copper compound attacking bacteria on cotton fiber

GENERALITAT VALENCIANA
iVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

COSMETIC TEXTILES

Boosting textiles with CottonX™ turns passive fabrics into active fabrics, working to enhance the appearance of your skin while providing therapeutic and deodorizing capabilities. CottonX™ fibers may be blended with regular cotton or synthetics and may be dyed and treated using standard procedures without compromising on its performance. CottonX™ provides competitive cosmetic performance and withstands repeated washings, promising true value for the life of the product.

APPLICATIONS

ACTIVEWEAR

DENIM

MEDICAL TEXTILES & WORKWEAR

UNDERGARMENTS & SHAPEWEAR

BEDDING

TOWELS

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

20th November 2017, Munich

Thermal performance for functional sportswear

2 comments

This season's focus at functional fabric fair Performance Days in Munich was on thermal technologies and covered a diverse range of fabrics and materials, which can increase warmth or store and release body heat, as well as fabrics and systems, which can generate additional heat.

Exhibitors showcased natural, renewable and synthetic fabrics and insulation materials suitable for a broad range of products including baselayers, midlayers, outerwear such as insulated and shell jackets, and accessories.

Natural & renewable fabrics

Although performance sportswear is generally associated with synthetic fabrics, there was a strong trend towards natural and renewable alternatives with thermal properties. Due to Merino Wool's inherent technical benefits, such as moisture management, temperature regulation, odour control and comfort and shape-retention, the popularity of Merino wool-based products has recently surged in the sports and outdoor sector. Taking natural performance to the next level, many fabric suppliers are now combining the inherent qualities of Merino wool with the additional benefits of *Tencel ®*.

As described by Andreas Gürtler of Lenzing AG during the interactive workshop 'Botanic performance and thermoregulation', Merino and Tencel ® make a perfect natural combination; while Merino brings its properties of moisture management, odour control and comfort, Tencel ® wicks moisture, transmits heat effectively to keep temperature down and is comfortable against the skin. In addition, this blend is stronger, cooler and dries faster than 100% Merino, while Lenzing's Tencel ® adds a silky handle and luxurious drape to the product.

Another example of the successful marriage of the two fibres was presented at Tintex Textiles, where Catarina Rodrigues described Merino wool as possessing an inherent thermoregulation 'super power', which can be combined with Tencel® for effective moisture management and the elimination of bacteria formation. Tintex also utilise silk to provide natural temperature regulation, as silk acts as a permeable barrier between the skin and the surrounding air, in order to help the body cool down or warm up as required. Blends combining Tencel®, silk and cashmere are also offered with HeiQ's *ADAPTIVE* finish, which provides additional thermal regulation properties, such as keeping the body cool and dry for 10-15 washes.

Natural and renewable fibres were also popular for insulation materials and Baur Vliesstoffe showcased their range of wool-based waddings, which include *lavalan*® sport, made from virgin wool and PLA (*IngeoTM*) and lavalan® exquisite, made from merino, cashmere, yak or camel wool and PLA (IngeoTM). Both qualities are aimed at the sports and outdoor sector and are manufactured to be highly breathable, light and machine washable.

El ejemplo de utilización de microcápsulas funcionales o aceites esenciales para generar olores, aprovechar los beneficios de la aromaterapia, etc. también está siendo investigado sobre todo en tejidos para el hogar de media/alta gama.

By Profesional Horeca | 23 marzo, 2017 0 Comments

Sábanas con aromas o que cuidan la piel: la apuesta por la innovación de Vayoil Textil

¿Se imagina que su hotel le ofrezca sábanas con aroma a rosas o con colágeno y vitaminas que cuiden su piel? No es ciencia ficción: la firma **Vayoil** ya está trabajando en **cosmotextiles**: productos con propiedades especiales gracias a la **microencapsulación.**

Vayoil está trabajando para incorporar propiedades especiales a sus productos textiles

El departamento de I+D+i de esta empresa de **lencería para hostelería y colectividades** se dedica a investigar y desarrollar nuevos productos textiles con propiedades añadidas.

Si en los últimos meses ha presentado su línea de **productos anti ácaros y antialérgicos** en las ferias Hostelco, EquipHotel y HIP, actualmente se encuentra probando **cosmotextiles**, es decir: incorporar propiedades especiales a sus productos textiles, ya sean aromáticas (fragancia a rosa, jazmín, lavanda); del cuidado de la piel (vitaminas A, C, B, E), colágeno, aceite de argán, neutralizadores de olor…) o termorreguladores (que aportan sensación de calor o frío) a través de la **microencapsulación.**

La **microencapsulación** es la técnica que mejores resultados está dando en los desarrollos textiles. Supone la incorporación de aceites esenciales (moléculas con principios activos) que permiten una liberación controlada y gradual de los mismos con el roce de la piel, incorporar propiedades especiales a sus productos textiles, contribuyendo a la armonía y el bienestar del cuerpo y la mente.

Los **aceites esenciales** están "encerrados" en microcápsulas, realizadas en una resina especial de poliuretano impermeable a la dispersión. Este modo de encapsulación permite una gran capacidad de amarre a la fibra del tejido.

> La microencapsulación supone la incorporación de aceites esenciales (moléculas con principios activos) que permiten una liberación controlada y gradual de los mismos con el roce de la piel

Vayoil Textil trabaja en el campo de la **biotecnología** para el desarrollo de técnicas que, aplicada a los procesos textiles, den un valor añadido a las prendas. La compañía valenciana es consciente de la importancia de unas prendas que están en contacto directo con la piel de los huéspedes que se alojan en los hoteles.

La compañía se encuentra trabajando en estos productos para aumentar su **resistencia a los lavados industriales.** Las prendas de hostelería están sometidas a condiciones de lavados extremas que suponen un obstáculo para la durabilidad de estas propiedades en los textiles, pero **Vayoil** espera que, en poco tiempo, estos **cosmotextiles** sea una realidad y den un valor añadido a las habitaciones y spas de los hoteles.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

3.2. Ejemplos de tejidos y prendas deportivas desarrolladas con procesos sostenibles

Muchas de las consideraciones principales que tiene en cuenta FUN2GARMENT están en línea con las tendencias actuales del sector textil, al respecto de uso e implementación de tecnologías de fabricación maduras con carácter sostenible.

12th December 2017, Cincinnati, OH

DownTek water repellent down is now PFC-free

0 comment

Sustainable Down Source, a division of Down Décor, has announced an initiative that entails replacing its entire durable water-repellent (DWR) down line with a PFC-free water repellent down that uses *bluesign* approved chemistry that out-performs the company's original *ZeroPFC* treatment as tested by the IDFL shake test.

"We have worked tirelessly to source our down responsibly and develop a more evolved technology that ensures our down is not only the highest performing product on the market, but is also the benchmark for environmental sustainability," said Andrew Payne, Principal at Sustainable Down Source.

"Without hesitation I can say that brands who want the best performance from their DWR treated down and are committed to making our planet a healthier place to live and play are making the change to our new DownTek formula."

The DownTek initiative aims to reflect the company's commitment to create and lead a greener industry standard for DWR treated down insulation. DownTek's quest began with its recent launch of *DownTek Zero PFC*, a perfluorocarbon-free water repellent down that uses a nature-inspired approach to achieving water repellency. But because ZeroPFC was unable to reach the same level of performance as the original DownTek, SDS continued R&D until it was able to achieve the benefits of both their formulas in one new product: *DownTek PFC-Free Water Repellent Down*.

Sustainable Down Source is RDS-certified and a bluesign System Partner. Its new PFC-Free formula complies with the ecological and toxicological requirements as put forth by the bluesign criteria.

DownTek will showcase the new technology at Outdoor Retailer next month. The new technology will replace the whole SDS DWR product line and will be available to all new and existing brand partners.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

7th February 2017, Zurich/Ventura, CA

HeiQ and Patagonia to explore new ways for sustainable water repellence

0 comment

The Swiss textile technology innovator HeiQ and sustainable outdoor clothing brand Patagonia have teamed up for an exclusive strategic research partnership to explore novel ways for a sustainable textile finishing technology to achieve breathable and durable water repellence (DWR) with best-in-class performances.

Recently there have been numerous human health and environmental studies quantifying the hazardous impacts of perfluorinated chemistries (PFCs) and some brands in the outdoor industry have begun to switch to currently available first-generation non-fluorinated DWRs. Among HeiQ's product portfolio, there are already several industry-leading fluorine-free DWR technologies, including HeiQ's successful *HeiQ Eco Dry* product.

To date, there remains a lot to be explored in DWR effects in the areas of non-fluorinated water, stain and oil repellency performance, the company reports. According to a survey conducted by HeiQ Textile Market Knowledge Centre with 40 outdoor, apparel and fashion brands in August 2016, 56% of the respondents expressed a need to learn more regarding the DWR performance function.

Fluorine-free DWR technologies

For decades, Patagonia has been leading the industry towards building high-performance products with the vision to a greener and more sustainable future for our environment. A central component to Patagonia's material innovation strategy is to minimise the proliferation of toxic chemistries.

"Shattering the status quo for DWR is of paramount importance to Patagonia. However, we will not be successful unless we also achieve the quality and performance that our customers demand, a calculated partnership is a key means of doing so," said Matt Dwyer, director of material innovation and development at Patagonia. "HeiQ is a natural partner in its ability to conduct world class research while commercialising high performing, sustainable textile finishes and we believe that together we can find a solution."

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

8th December 2017, Frankfurt

Functional clothing can also be sustainable

0 comment

From 16-18 January 2018 at the Kraftwerk Berlin, Greenshowroom and the Ethical Fashion Show Berlin, as well as the new Messe Frankfurt conference, FashionSustain, and its motto *Run for Circularity*, will show that clothing made of functional materials and accessories with outdoor appeal can be both fashionable and sustainable.

"Over the past 10 to 15 years, the outdoor and fashion sectors have grown much closer together, and have also inspired each other to a certain extent. This can be seen in the overlapping product ranges of both industries and, of course, in our everyday cityscape. In recent years, this has definitely been a segment exhibiting strong growth," said Antje von Dewitz, Managing Director of Vaude Sport. "People outside mountaineering have also realised that the functionality and comfort of outdoor clothing can also provide added value in everyday life. We're also seeing an increasing convergence of our professional and private lives."

In addition to the performance aspects of the clothing, environmentally friendly and fair production is playing an increasingly important role. Innovative materials that are consistently produced sustainably on the one hand but are also suitable for functional urban outdoor fashion on the other hand are currently attracting a great deal of attention.

Green pioneer

German labels such as Vaude, bleed, Langer Chen and Nat-2, which will be exhibiting at Greenshowroom and the Ethical Fashion Show Berlin, undertake constant research in this field. They produce PFC-free products and work with self-developed membrane alternatives that do not use PTFE. In some cases, they are pioneers in the realisation of future-oriented concepts for a circular economy and recycling. At the Ethical Fashion Show Berlin, for example, Vaude will be presenting a new collection for the first time that is around 90% bio based, recycled or made of purely natural materials.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

"For years, we have been developing sustainable and natural functional fabrics and improving them continuously," said Philipp Langer, Managing Director of Langer Chen." For our latest collection we have developed an all-natural jacket – an outdoor parka made entirely of natural fibres. It consists of our new high density organic cotton poplin and pure wool padding. Our goal is to reduce the use of synthetic fibres even more in the future and minimise the impact of microplastics on the oceans."

bleed has announced that it will present a collection consisting of new editions of their best-sellers and new styles for the 10th anniversary of the 2018/19 season. Further styles and accessories include climate-compensated, recycled, single-origin and environmentally friendly functional jackets for all kinds of winter weather, warm knitwear made of organic cotton and functional base layers made of Tencel.

Sustainable production

The rise of today's successful outdoor and sportswear brands in the late 1970s and early 1980s is primarily associated with the term "performance". For a long time, measurable product properties such as water column and breathability were the deciding factors for a purchase. In most cases, however, these properties have been achieved with the help of processes that are controversial from an environmental perspective.

Many outdoor products are made of petroleum-based synthetic fibres, such as polyester, polyamide or acrylic. In turn, the best results in terms of waterproofing and breathability could only be achieved with controversial membrane technologies and equipment, such as the use of PFCs.

Ever since Greenpeace entered the arena with its Detox campaign, microplastics in the oceans has been a topic that has been discussed in the media and given that bioaccumulative PFCs in polar bears – i.e. accumulating via the food chain – have now been proven, many outdoor brands have committed themselves to turning away from their performance dogma.

Sustainable urban outdoor labels

A selection of sustainable urban outdoor labels will be presented to trade visitors at the Kraftwerk Berlin from 16-18 January 2018 as part of the upcoming Berlin Fashion Week. The selection of materials, production methods and brand philosophies of the brands shown there are in line with the high environmental and social standards that Ethical Fashion Show Berlin and Greenshowroom deem obligatory for participation. The highlight of both fairs is

21st April 2017, UK

Isbjörn of Sweden strengthens its eco credentials

0 comment

Premium outdoor children's clothing and accessories manufacturer, Isbjörn of Sweden, has further strengthened its green-credentials by introducing the environmentally friendly *Husky* base layers, made with mulesing-free merino wool for Autumn/Winter 2017/18.

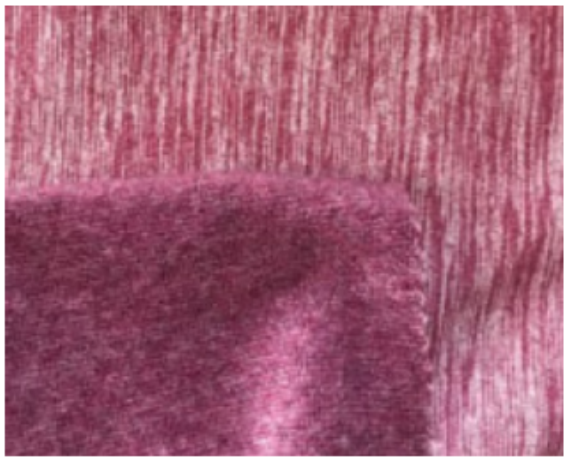
The Isbjörn of Sweden Husky base layer programme consists of a sweater and a pair of matching long johns, made from a blend of 50% wool and 50% polyester. "The blend of materials used within Husky offers the perfect balance of durability, function and softness. The wool material keeps the children warm in cold weather and the polyester blend effectively wicks moisture from the skin," the company explains.

27th November 2017, Ismaning

Vaude and Pontetorto receive Eco Performance Award

0 comment

The outdoor manufacturer Vaude and the Italian fabric producer Pontetorto were recognised with the Eco Performance Award at the recently concluded 19th edition of the Performance Days trade fair for functional fabrics and sport accessories, for their jointly developed sustainable fleece fabric *Biopile*.



Pontetorto is a pioneer when it comes to sustainable textile solutions and environmental protection. The Italian fleece specialist has a long history of recycled fabrics in its portfolio, under the name *Ecosystem*. Last season the company launched its 'biodegradable' materials. With its work, the company addresses one of the most topical environmental issues: dangerous micro plastics that contaminate waters worldwide.

Micro plasticity endangers the environment – it ends up in rivers, lakes and seas and accumulates in marine life, which is then consumed. This is one way, among others, how micro plastics enter the human body. In order to reduce its impact, plastic waste must be avoided. Not only bags and bottles are an issue, but also clothing made from synthetic fibres is a source of pollution. During the washing process, such garments (e.g. fleece pullovers) can release micro plastic particles from their brushed side.

Biopile

Article No. 8852 M, *Biopile*, is said to be the first fabric, whose pile fleece does not release any dangerous micro plastics, thus protecting rivers, lakes, seas and other creatures from such danger. What makes Biopile unique is its construction, the company explains.

The inner, brushed side of the fabric does not consist of polyester (as with conventional fleece), but is 100% of Lenzing's *Tencel*, whose fibres are biodegradable even in marine water, according to the manufacturer. "Should the fabric release even the smallest of Tencel particles from its brushed side during a washing process, these will decompose without residue in any environment in around 90 days, thus in no way endangering any living creatures," the company reports.

The material, which is currently available in three weight classes, is the latest highlight from Pontetorto's Ecosystem family. 100% (recycled) polyester is used on the smoother outer surface, with other qualities also possible. Biopile is said to combine all the benefits of higher functionality with an environmental consciousness, as Tencel is considered a natural functional fibre with excellent climate regulating and moisture transporting properties. Additionally, Tencel is the first fibre to be certified as biodegradable in marine water.

TextileMission

Initially, Biopile will be introduced exclusively for Vaude products. The outdoor enterprise from Tettnang was developing Biopile together with Pontetorto and is a founding member of the cooperative project, *TextileMission*, which was launched on the 1 September 2017.

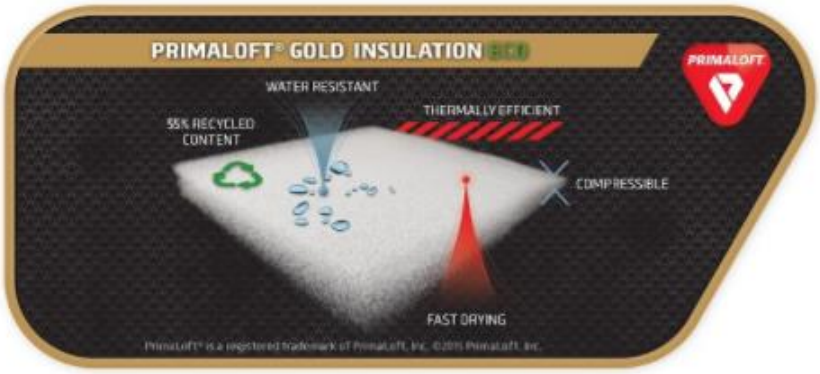
8th September 2017, Munich/Latham, NY

Primaloft Gold Insulation now has 55% recycled content

0 comment

PrimaLoft, a leader in providing comfort solutions with high-performance insulations, fabrics and yarns, has updated its *PrimaLoft Gold Insulation* to include 55% post-consumer recycled content.

The update is a continuation of the PrimaLoft brand's commitment to providing sustainable, high performance products. The company has a five-year sustainability goal to have at least 90% of its insulation products contain at least 50% post-consumer recycled materials, with absolutely no compromise on existing performance.



Sustainability

"Sustainability and social responsibility are deeply ingrained in the PrimaLoft corporate values and we strive to reconcile high performance with minimal environmental impact. Many of our brand partners are equally committed to helping the environment, so increasing the recycled content in our products will also be beneficial to their sustainability goals, without any impact on end user performance," said Jochen Lagemann, Managing Director Europe & Asia at PrimaLoft.

The new *PrimaLoft Gold Insulation Eco*, with 55% recycled content (plastic bottles), is said to have the same performance characteristics as the original PrimaLoft Gold Insulation, which offers superior warmth-to-weight ratios, both wet and dry performance ratings, softness, dry times, compressibility and durability, the company explains.

Updated version

The change originally happened after Patagonia worked closely with PrimaLoft to add a post-consumer recycled component to its existing PrimaLoft Gold Insulation, but with the guarantee of existing premium performance. PrimaLoft Gold Insulation Eco was used exclusively in the Nano Puff range for one year, beginning Autumn 2016.

8th September 2017, Sweden

Tierra introduces new 100% bio-based jacket

0 comment

Tierra, a Swedish outdoor apparel brand, committed to sustainability and lowering environmental impact, is introducing its new *Deterra Jacket*, a technical jacket that is fully free from fossil based material and uses exclusively bio-based elements.

The exterior fabric is made with *Evo* by Fulgar, a polyamide produced from castor oil, while the padding is in wool from German sheep and *Tencel* yarn derived from wood cellulose. Finally, the buttons are in corozo nut from the Tagua palm, and the hood fastens with a simple knot instead of the usual plastic stopper. The jacket is available in two versions, *Deterra Hood Jacket* and *Deterra Shirt Jacket*.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

26th May 2017, Manchester

Fibres key to environmental sustainability in the textile and apparel supply chain

0 comment

The environmental sustainability of the textile and clothing supply chain depends significantly on the way that fibres are grown or manufactured and the raw materials used, according to a new report from the business information company Textiles Intelligence -

Talking strategy: fashioning fibres for an environmentally sustainable future.

Report summary

Fibres represent only the starting point of the textile and apparel supply chain. But it is in these areas where much of the damage to the environment is caused, the report explains.

In the case of wool, the problems start with the rearing of sheep. Manure generated from livestock, for example, has contributed significantly to the increase in atmospheric greenhouse gases over the last 250 years, and faecal matter has been known to contaminate waterways in areas where sheep are farmed. Also, high stock numbers can be a cause of significant soil erosion which can trigger desertification.

In the case of cotton, there is a problem of water usage - it is said that around 8,500 litres of water are needed to grow the cotton used in the manufacture of a T-shirt and a pair of jeans. Also, extensive use is made of pesticides, synthetic fertilisers and other chemicals which can cause damage to the environment. Moreover, pesticides can cause considerable harm to human health.

If cotton is going to be produced in significant quantities for the foreseeable future, there will be rising pressure to find ways of improving the environmental sustainability of cotton growing.

A variety of initiatives have emerged with this objective in mind, including the Better Cotton Initiative (BCI), organic cotton, Cotton made in Africa (CmiA) and Fairtrade certified cotton.

Despite these initiatives, these so-called "identity cottons" account for only a small proportion of total cotton production. In 2015 organic cotton accounted for a mere 0.5%. And even when other types of sustainable cotton are added, the total is only 16%. Admittedly, this share is expected to reach 35% by 2020. But most identity cottons fall short of the standards of organic cotton in terms of environmental sustainability as they still involve the use of artificial pesticides and fertilisers.

Set against these issues, man-made fibres would appear to provide a more environmentally friendly alternative. In the manufacture of man-made cellulosic fibres - such as cuprammonium rayon (cupro), lyocell, modal and viscose - most of the raw material used is wood pulp, which can be obtained from a naturally occurring renewable resource

24th May 2017, Lenzing

New eco viscose fibre from Lenzing

0 comment

Fibre producer Lenzing is launching a new eco fibre called EcoVero which it says is helping it achieve the next milestone in its sustainability journey by offering eco-friendly viscose with the lowest environmental impact in the industry", setting a new industry wide benchmark.

"The environmental awareness of consumers has been growing steadily over the last decade, more recently in the fashion and textile industry. Textile consumption is expected to double by 2025, and the industry is anxiously looking for more sustainable solutions with minimal eco-footprint. Achieving low environmental impact requires developing eco-friendly raw materials and a sustainable manufacturing process," the Austrian company said in a press statement today.

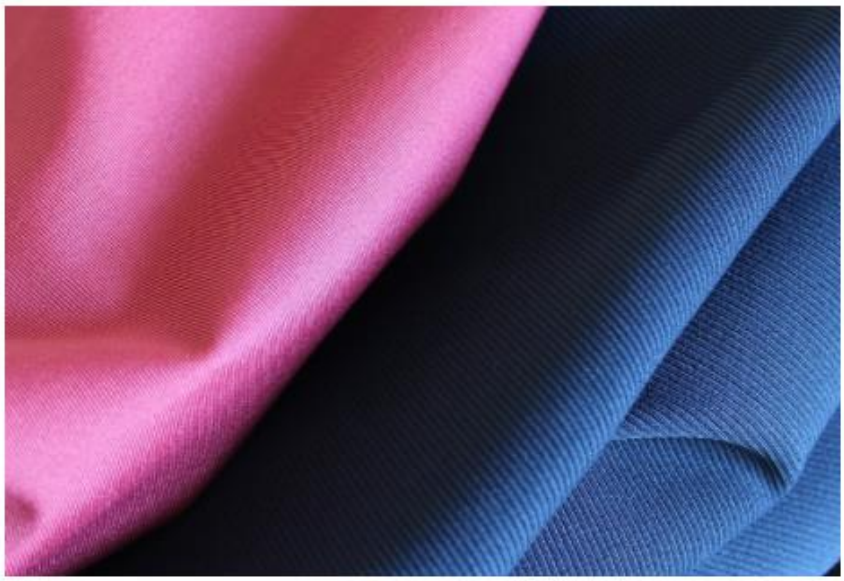
24th April 2017, Busto Arsizio

Brugnoli launches new zero-kilometre recycled fabric line

0 comment

Brugnoli, an established Italian company specialised in the creation of high-end fabrics, is widening its eco-sustainable range with the launch of *B.Recycled*, a new high-quality, zero-kilometre fabric line based on recycled yarn. The new product will be launched at Performance Days, which takes place in Munich, this week.

In order to guarantee fabrics with exceptional quality and undisputed performances, Brugnoli says it focuses on the excellence of its raw materials and once again relies on its well-established partner, the Italian company Fulgar.



Brugnoli chose *Q-Nova* by Fulgar, an eco-sustainable nylon 6.6 fibre obtained from pre-consumer recycling that retains its qualitative features without needing to undergo further regeneration processes that would impact on environment. This also leads to a reduction in CO_2 emissions and water consumption, the company reports.

Bio-based fabrics

This zero-kilometre Made in Italy product line means the supply chain is monitored and certified throughout, the manufacturer explains. The creation of B.Recycled by Brugnoli starts with a raw materials recycling process carried out entirely in the Fulgar laboratories and mills. Work then continues at the Brugnoli plant, where all the fabrics are created, produced and dyed in the same location.

Tom Cridland's denim response to fast-fashion

Kristopher Fraser | Wednesday, June 27 2018

Many in the industry are becoming aghast with fast-fashion. While there is plenty of talk regarding sustainability in the industry, only a few brands will actually put their money where their mouth is. Tom Cridland is one of those companies as they have launched Half Century Jeans under Deborah Marx, the managing director of Tom Cridland.

Tom Cridland is the company who originally became best known for their thirty year sweatshirt, as they expanded into other categories, denim was a logical step. Thus, Half Century Jean were born. The jeans are built from a special hybrid of materials including Japanese selvedge denim sourced from Okayama, along with ultra durable Spectra fibres which are 15 times stronger than cable steel.

Tom Cridland designs durable denim

The jeans, as their name denotes, have a lifespan of 50 years, and should anything happen to them, repairs and replacements are free of charge. For customers who tend to like to replace their clothes frequently, they are encouraged to donate to a charity shop or give them back to the company so they can be recycled and turned into new jeans.

"We're not claiming to reinvent the wheel," said Marx to FashionUnited. "People have kept clothing and valued it for a very long time throughout history. Now we have "micro seasons" where people are developing clothing every single week. It's all a bit ludicrous to keep up and not very sustainable, and a bad supply chain model."

Half Century Jeans subscribes to the philosophy that as consumers, we need to buy less and buy better, and to stop subscribing to the "fast-fashion" mentality that has become so prevalent, and has made fashion the world's second most polluting industry.

"There's two sides to it, the production and the mentality," Marx said to FashionUnited. "Half Century Jeans is a change in mentality because a lot of talk around fast-fashion can be quite grim like 'the planet can explode, we're all going to die.' We add a fun element to an idea. Obviously, with all this social media, people are posting new clothes the whole time and trends are constantly changing. We aren't saying you shouldn't go out and buy a nice floral print from time to time, but wardrobe staples should be valued and kept. You see people go out and buy the same white t-shirt every single year. With us, once you buy something you have something for decades."

While many might wonder how this company manages to stay in business with product lasting so long and people not needing to buy more, Marx says they actually have a lot of repeat business. Customers will shop yearly for a new color or cut they find on the brand's website.

Berlin eco fashion fairs are now "Neonyt"

FashionUnited | Tuesday, June 26 2018

In early July, two Berlin fairs for green fashion - Greenshowroom and the Ethical Fashion Show - will take place for the last time in their usual formats. Thereafter, the events will merge to a new format called "Neonyt". According to an announcement last Wednesday by Messe Frankfurt, which owns both platforms, Thimo Schwenzfeier will manage Neonyt in the future.

"Our future vision of the fashion industry is an age of sustainable growth. This requires innovations that provide dynamic solutions for social as well as ecological problems", explained Olaf Schmidt, vice president textiles and textile technologies at Messe Frankfurt, in a news release. "With Neonyt we are launching a global hub where visionary industry experts gather, that creates a broad stage for a sustainable lifestyle and where the fashion industry consistently thinks ahead for the future."

With the merger of their two events, Messe Frankfurt takes the next step in establishing Berlin as a center for sustainable fashion. In 2011, the company had taken over Greenshowroom, the capital's leading eco fashion fair founded two years earlier. In 2012, Messe Frankfurt brought the Ethical Fashion Show to Berlin, which was founded in 2004 in Paris and belonged to the trade fair corporation since 2010.

Thimo Schwenzfeier to manage the new fair

After both events took place in separate locations during Berlin Fashion Week for several seasons, they were held jointly in 2015. They found a new home at Berlin's Kraftwerk after locations like Postbahnhof and Funkhaus Berlin. In the upcoming summer season (3rd to 5th July), they will take place as separate events for the last time before Neonyt's premiere in January. The fair will be supported by tried and tested events like the fashion show and the Fashionsustain symposium as well as a framework programme with additional events. The cooperation with fair corporation Premium will continue, whose innovation platform Fashiontech continues to take place at the Kraftwerk location.

Thimo Schwenzfeier will be Neonyt's show director in addition to his function as director, marketing and communication of Messe Frankfurt's textile fairs. According to the organisers, Greenshowroom founder Magdalena Schaffrin will remain its creative director.
"Sustainability in fashion has changed from a nice-to-have to a synonym for innovation and progress. I was able to actively shape this development in the past years for our green trade fairs", said Schwenzfeier. "I'm looking forward now to elevating our events at Kraftwerk together with the experienced team around Bernd Müller to the next level."

12th January 2018, Amsterdam

Fashion for Good and adidas to scale sustainable innovation

0 comment

Fashion for Good, a global initiative to make all fashion good, and adidas, a leader in the sporting goods industry, have announced their partnership to accelerate and scale sustainable innovation in the apparel industry. This partnership aims to demonstrate a shared commitment to cross-industry collaboration and to integrating disruptive innovation in the fashion supply chain.

With the addition of adidas to its network, Fashion for Good gains a committed partner and industry leader with strong sustainability and innovation credentials. As a partner, adidas will play a significant role in setting Fashion for Good's innovation agenda, including by defining focus areas, participating in the selection of new innovators and providing expertise and mentorship to circular apparel start-ups.

In turn, adidas will gain specialised scouting and screening support, as well as preferential access to market-ready innovations through Fashion for Good's extensive network. adidas will also contribute to the development of the full Fashion for Good Experience, an experiential, consumer-facing concept space that will open to the public in Fall 2018.

Fashion for Good is a global platform for innovation, made possible through collaboration and community. This platform includes the Fashion for Good-Plug and Play Accelerator, a 12-week start-up programme run with Plug and Play, a leading Silicon Valley accelerator, to give promising start-up innovators the funding and expertise they need in order to grow. It also includes a robust Scaling Programme, which provides bespoke support to circular apparel and footwear innovations that have passed the proof-of-concept phase.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

26th January 2018, Weinheim

Freudenberg's comfortemp goes sustainable

0 comment

Freudenberg Performance Materials Apparel has succeeded in achieving the technical feasibility of using recycled fibres in padding. As a new partner of the sustainable *bluesign* system, Freudenberg will be presenting the thermo-insulation series *comfortemp down feel HO19xPS* and *comfortemp fiberball eco HO29xR* at ISPO Munich 2018 from January 28-31 in Hall C3, Stand 436.

For the first time ever, Freudenberg will be presenting the Eco version of the comfortemp fiberball padding, the world's first padding made from fibre balls. Made from 80% recycled fibres, comfortemp fiberball eco is a sustainable, high-performance padding and is ideal for sportswear, Freudenberg says.

The remaining 20% of the padding is made up of binder components that are essential for making a coherent structure such as padding. "As the first sustainable padding made from fiberballs, comfortemp fiberball eco combines the benefits of padding and down," explained Ulrich Scherbel, General Manager Freudenberg Performance Materials Apparel.

Freudenberg lists the benefits of comfortemp fiberball eco as:

- Consists of 80% recycled fibres and 20% binder components
- Manufactured without the use of chemicals
- Sustainable thermal insulation of the highest class
- Ideal for use in sports garments but also suitable for the fashion sector
- Optimal breathability
- Super soft and fluffy
- No fiber migration: the padding maintains its position in the garment and does not clump
- Very good elastic recovery: can be easily compressed and quickly returns to its normal volume

Freudenberg has re-engineered the padding of the comfortemp down feel HO19xPS series. It had already consisted of a high proportion of recycled fibres. Now, with this new product series, Freudenberg has achieved the technical feat of significantly increasing the proportion of recycled fibres.

comfortemp down feel

- Consists of 85% recycled fiber and 15% binder components
- Manufactured without the use of chemicals
- Sustainable padding with insulating properties: suitable for use in sports and fashion garments
- Light and voluminous
- Extremely soft feel
- Resistant to fiber migration due to the multi-layered structure
- Ideal for lightweight, smooth nylon outerwear

7th March 2018, Michigan

Dow launches ECOFAST Pure sustainable textile treatment

0 comment

The Dow Chemical Company has launched *ECOFAST Pure* sustainable textile treatment at the American Association of Textile Chemists and Colorists (AATCC) International Conference this week. This breakthrough technology enables unique, brighter colours on natural textiles and significantly improves resource efficiency during the dyeing process.

Dow's patented technology allows for the uptake of reactive, direct and acid dyes on natural fibers and fabrics, used in products from apparel to home goods. Most notably, acid dyes are used to achieve colours such as fluorescents, which, until now, were unavailable on cotton, the most preferred clothing material by consumers. ECOFAST Pure also improves colour fastness to provide brand owners peace of mind that the quality of a product will stand up against wear over time, says Dow.

"Dow has leveraged over a century of material science knowledge to help address the performance and sustainability gaps in the textile industry," said Esma Talu, market manager for Dow. "By pre-treating textiles with ECOFAST Pure, manufacturers can deliver longer lasting, new generation colours on natural textiles while simultaneously reducing water, dye and energy use."

At the core of ECOFAST Pure is Dow's commitment to deliver breakthrough sustainable chemistry innovations, a key pillar of the Company's 2025 Sustainability Goals. According to Dow, materials treated with ECOFAST Pure require less rinses and lower water temperatures during dyeing to ultimately decrease water use by more than 50% as well as overall energy use. Manufacturers can also decrease dye use by 75% through increased dye uptake and reduced cycle time, the company adds. The enhanced resource efficiency can even be achieved without the addition of salts to the dye bath, Dow notes.

"Better manufacturing processes are key to more responsible textile production," said Talu. "Through products like ECOFAST Pure, Dow is able to drive a more sustainable supply chain that requires less resources to create essential textiles for our society."

Natural textiles commonly treated with ECOFAST Pure include tubular knit fabric, yarn, denim, garments and towelling.

9th March 2018, Austria

Lenzing unveils sustainable complete shoe concept

0 comment

Regenerated cellulosic fibre producer Lenzing participated for the first time at Lineapelle in Milan, last month, where the Austrian company unveiled its *complete shoe concept* – shoes made almost entirely from its eco-friendly Tencel Lyocell fibres.

Focus on sustainable materials

According to Lenzing, in the search for sustainable and innovative materials, an increasing number of reputable brand and shoe manufacturers are becoming aware of its Tencel branded lyocell fibres.

"The demand for sustainable materials certainly did not stop at the shoe industry. With a global production of more than 23 billion pairs of shoes per annum*, shoes represent an enormous burden after their useful life since shoes are not recycled," the company explains.

With Lenzing's *complete shoe concept* the possibilities range from textile fibre in the upper material, as a filling material, or as a nonwoven fleece in the inner sole through to Lenzing Lyocell powder in the outer sole or in the padding. "Likewise, shoe laces and the supporting material for zippers are possible. The more shoe components are made of Tencel Lyocell fibres, the closer we are getting to the vision of a bio-degradable shoe," the company says.

Solution for the footwear industry

Due to their eco-friendly production and bio-degradability, two criteria which are increasingly significant in the shoe sector, Tencel Lyocell fibres are said to be an ideal alternative to conventional materials.

"Tencel Lyocell fibres are produced from wood pulp. This is made of sustainable wood farmed in accordance with the strictest guidelines for wood and pulp procurement applicable for the Lenzing group. The closed loop process for Lyocell fibres guarantees minimum environmental impact thanks to low water and energy consumption and the sparing use of raw materials. This production cycle was awarded the 'European Award for the Environment' by the European Union,: Lenzing continues.

"The eco awareness of consumers is rising in general," says Birgit Schnetzlinger, who is responsible for the footwear segment in Lenzing. "They are becoming increasingly critical and are better informed about sustainability and pay more attention to what they purchase and where the product is coming from. This situation is an opportunity for Tencel Lyocell fibres because we have the material solution for the footwear industry," Schnetzlinger enthuses.

Tencel Lyocell fibres naturally have good breathing properties and ensure optimum moisture management in footwear, according to Lenzing and they can be easily combined with all of the materials commonly used in shoe production.

* World Footwear Yearbook 2016

3.3. Ejemplos de indumentaria y materiales tipo piel procesados con láser y/u ozono

El marcado con láser se está mostrando como una de las técnicas más emergentes y de mayor crecimiento para el ennoblecimiento textil y la personalización de producto. Cada vez son más habituales prendas de origen diverso (tejidos de calada, de punto, fabricados con fibras naturales, con sintéticas…) decorados con marcados láser o microperforaciones.

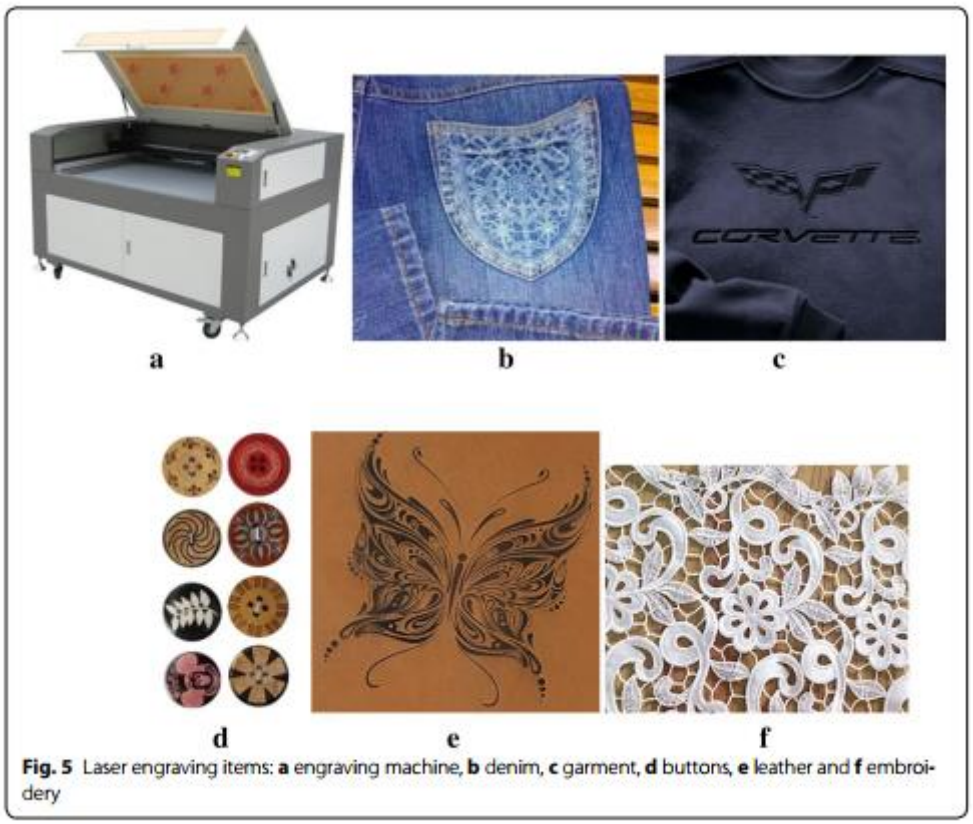


Fig. 5 Laser engraving items: **a** engraving machine, **b** denim, **c** garment, **d** buttons, **e** leather and **f** embroidery

Ejemplos de uso de tecnología láser para marcado de elementos de indumentaria (extraído de 'The use of laser in garment manufacturing: an overview'. Nayak and Padhye. Fash Text (2016) 3:5. DOI 10.1186/s40691-016-0057-x).

VANTAGE

Compare | Mini

PRODUCT DECORATE & CUSTOMIZE RESOURCES BLOG ABOUT US

Laser Etching: One of the Hottest Decoration Trends in Logo Apparel

Posted 18 January 2017 by Gina B

Looking for something new to try with your client's logo? Check out one of the hottest decoration trends in logo apparel – laser etching. This popular technique uses laser technology to burn a logo or design right into the fabric of a garment. The end result differs by fabric but is always a precise, clean mark. On polyester polos and woven shirts, the laser machine burns the top layer of fabric resulting in a darker, tonal mark on the garment, and on denim shirts, the process removes the pigment as it burns the fabric. Medium-colored, smooth fabrics achieve a more distinguishable design than light or dark fabrics.

Since laser etching produces an upscale, tonal mark it is appropriate for many audiences and brands. Unique decoration placements including oversize left or right chest, large vertical, full-front over zippers, or hip areas can be used to bring extra attention to the logo and satisfy high impact branding and advertising needs. Laser etching is an easy process to quote since set-ups and run charges are usually based on overall design size. Vantage Apparel includes up to 36 square inches in its standard design charge. For clients that want something extra, mixed media designs that combine laser etching with standard embroidery or laser appliqué can provide an extremely trendy look. Ask your sales rep for specialty samples and swatches to promote this trending decoration technique or check out this demonstration.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

thinklaser

INFO@THINKLASER.COM 01737 887583

LASER SYSTEMS LASER SERVICES MATERIALS GUIDE OUR WORK SPECIAL PROJECTS ABOUT US BLOG CONTACT US

Laser marking of Leather Shoe

Leather

Laser Source	CO2
Application	Leather Shoe
Material	Leather
Customer	Nike

A Thinklaser high powered CO2 laser marking system has been used to process the design onto the leather surface. Various power levels are used to create different depths to the surface almost creating a 2 dimensional shape. Using high levels of power also means the leather shapes can be cut.

Care must be used when laser marking leather materials due to the possible high levels of oil contained within the material. When processed this can cause flare off which in turn can cause staining to the surface if not controlled.

To search, type and hit enter. SEARCH

Recent Posts

Glowforge, A Job Well Done

Prolong the life of your Laser tube with these 8 simple tips

Industrial Laser – What to Measure?

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

Laser engraving of leather sports shoe

Leather

Machine type used	M Series laser marking system
Laser Source	CO_2
Application	Pattern generation and cutting on leather
Completion Year	2005
Customer	Nike
Material	Leather

In this application the customer wanted to combine two quite different applications within a single machine. From a single material panel they want to generate all the individual parts that make up the particular shoe design. Before being able to cut out each shape those that would have pattern design would need to be laser engraved first.

A vacuum table ensured that the materials were held while both processes were completed. When completed the parts would be removed and sent for final assembly. In order to combine these two applications the laser source selection was much higher than a source normally associated with laser marking and engraving applications.

With the material being natural and various oils being used during the tanning process, it can be difficult to achieve clean cutting and marking without burning or flair off. This flair off, if not controlled, causes staining of the leather which is difficult to remove.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

Leather marking by CO2 laser technology

Leather

Machine type used	M Series laser marking system
Laser Source	CO2 laser
Completion Year	2015
Material	Leather
Applicaation	Pattern engraving
Customer	Withheld University student

Leather forms part of a very large group of applications processed by Laser. From sports shoes to fashion, from belts to phone covers. The material processes very well as long as care is taken during process evaluation.

In this example the material is part of a garment that has a large process area tribal tattoo style pattern laser marked. CO2 is the most common laser used and creates a dark burn image on the surface. You can clearly see from the image the process lines used to fill the image, not so evident when viewed from a normal distance.

The quality of the leather plays a big part in the resulting laser marking quality. The lower the oil content the better the mark quality and the less chance of staining the surface from flare off during the process.

Most Galvo based marking systems (as used here) have a limited process area, normally around the 200 mm square region. Where the process image is bigger we have to find natural breaks in the artwork in order to divide the image up into tiles. The Lightblade flatbed machines provide larger process areas and can facilitate cutting as well as marking the materials.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

Cutting and engraving leather materials by laser

Leather

Machine type used	M Series laser marking system
Application	Mmarking and cutting patterns and shapes
Laser source	CO2 laser
Completition Year	2005
Customer	Nike
Material	Leather

Most of the sports – leisure shoe manufacturers are providing custom capability within their product range. While this effect is to show what can be done using laser engraving technology the more important element is for it to be used as a manufacturing tool. In the case of Nike the requirement to utilise the technology was to reduce the time and cost in the development stage of a new design. The laser engraving technology allowed designers to experiment without having to create new cutting forms to see design changes. In order to combine the laser engraving and cutting process in a single unit the systems were supplied with a much higher power source than would normally be associated with a straight marking or engraving application on such materials. Laser engraving of leather can produce the stunning results required.

The CO2 wavelength is the most suitable for natural organic materials such as this. The laser burns into the surface effectively tattooing the skin as a branding process. The darkness is achieved due to good contrast levels between the white skin and the burning of the leather. One major issue is the quality of the leather. I am informed that the quality of the leather is directly related to the amount of oils used in the tanning process. The poorer the quality the higher the level of oil content. This directly relates to the potential for flare up during the marking process. Flare up is when the oil catches fire. Normally this would only be for a very short time period but the flame will damage the mark edge and stain the materials. This staining is not very easy to remove. So great care has to be taken when setting up and running these materials. It is important that extraction is set high so that any flare off is pulled high and away from the materials to reduce or eliminate and staining of the material.

Limitations will be around spot size of CO2 source. These wavelength lasers with galvo based beam delivery modules tend to have larger spot sizes than other wavelength laser. This can restrict flexibility especially if very small character generation is required.

GENERALITAT VALENCIANA
iVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

GROWING APPLICATION OF LASER IN APPAREL INDUSTRY

Posted by Editorial Team | Feb 17, 2017 | Technology

Laser marked denim garment

Laser engraved and pierced denim skirt

Laser marked cloth

Laser engraved fur

Ejemplos de marcados láser sobre indumentaria diversa (de GD Han's Laser Group).

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

Ejemplos de marcado láser en diferentes elementos de indumentaria (de Two Fish Apparel).

Tencel garments finished with Jeanologia laser-finishing equipment.

Up for Some 'Light Laundry'?

By Alison A. Nieder | Tuesday, January 31, 2017

Jeanologia, the Spanish developer and distributor of laser-finishing equipment for jeans and other apparel, and Lenzing the maker of Tencel, have joined forces to showcase the benefits of "laser laundry technology" on Tencel fabrics and garments.

Jeanologia, the Spanish developer and distributor of laser-finishing equipment for jeans and other apparel, and Lenzing, the maker of Tencel, have joined forces to showcase the benefits of "laser laundry technology" on Tencel fabrics and garments.

The two companies recently conducted a study to demonstrate the benefits of finishing Tencel fabrics with laser technology. The companies have dubbed Tencel a "Light-Sensitive Fiber Powered by Jeanologia"

"Effective laser marking requires quick and effective dye removal, clear image definition, sharp image outline and smooth grey scale transition. Fabrics that contain Tencel have the above desired characteristics and are the perfect fabrics to work with laser" said Begoña Garcia, senior technologist at Jeanologia,

Based in Valencia, Spain, Jeanologia works with textile and apparel companies to find "industrial solutions in garment finishing, developing sound principles of ecology, efficiency and ethics."

"The relationship between Tencel and Jeanologia dates back to 1994 and between then and now we have participated in many different projects together," said Michael Kininmonth, Lenzing project manager. "The relationship is such that they now are highly familiar with each-others know-how, such that working together has become almost second nature."

Garcia and Kininmonth will lead a webinar—scheduled for 10 a.m. EST on Feb. 15—to discuss the advantages of laser finishing on Tencel fabrics.

Visitors can register for the webinar here.

Tencel garments finished with Jeanologia laser-finishing equipment.

3.4. Materias textiles innovadoras

Se muestra también la información más reseñable en materiales textiles sostenibles que se han investigado, por la vía de la bibliografía y la búsqueda, análisis y clasificación de información técnica relacionada, de interés para el ámbito del proyecto.

Las principales reseñas en materiales fibrosos y tejidos naturales que se consideraron de interés fueron:

- Algiknit.

Algiknit produces textile fibres extruded from kelp, a variety of seaweed.

AlgiKnit

transforming the fashion ecosystem
with rapidly renewable bio-based textiles

FASHION HAS A BIG PROBLEM

Fashion, the second most polluting industry on earth, is facing a choice: embrace sustainability, or stop growing.

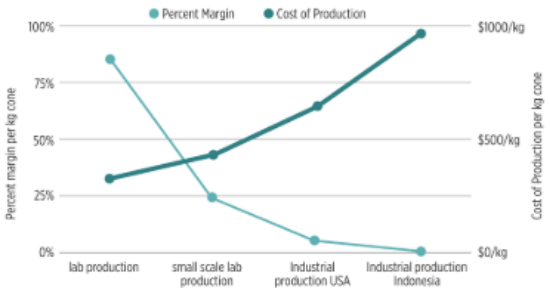
Industry leading brands have pledged to enact sustainable practices in the coming decades, but they don't know how they will meet these goals. More than any factor, fabric determines the environmental impact of a garment. Changing fabric will transform the industry.

THERE IS A BIG OPPORTUNITY

In response, the eco-textiles market is rapidly expanding. A 1.5% slice of this market, will generate over 1 billion USD in annual revenue.

WE HAVE A COST COMPETITIVE SOLUTION

Algiknit is solving the damage caused by fashion with durable and compostable yarn that can be manufactured into fabric. Our raw materials are readily available in industrial quantities and low cost, making AlgiKnit yarn cost competitive with cotton at industrial scale.

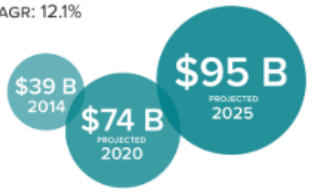


THAT WORKS WITH EXISTING INFRASTRUCTURE

Our yarn is made using biopolymers derived from seaweed and plants. It fits into the existing yarn and textile manufacturing ecosystem and can be readily dyed using sustainable and cutting-edge methods. Leading the fashion industry into the circular economy.

THE MASSIVE ECO-TEXTILES MARKET

CAGR: 12.1%



A TINY CARBON FOOTPRINT

THE TEAM TO MAKE IT HAPPEN

AlgiKnit is a team of award-winning designers and scientists from the fields of fashion, physics, and biology. We have years of experience working with textiles from the molecular level to the whole garment & supply chain.

To date, we're raised $136,000 through grants from National Geographic and the Clinton Foundation, as well as a pre-seed investment from RebelBio

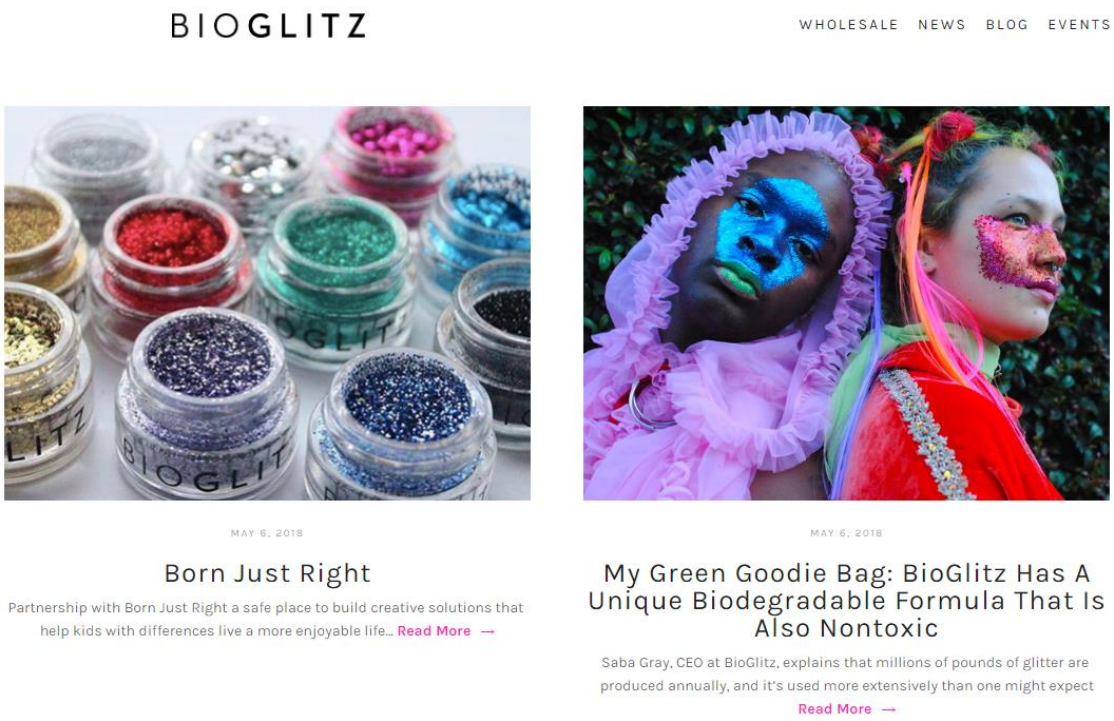
CONTACT

Aaron Nesser, CEO
aaron@algiknit.com

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

- BioGlitz

BioGlitz produces biodegradable glitter, which is fully biodegradable, compostable and allows for the sustainable consumption



- Flocus

Flocus produces natural yarns, fillings and fabrics made from kapok fibres.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

FLOCUS™ is a revolutionary textile brand producing yarn blends and filling made with Kapok. Kapok is the most sustainable fiber in the market leaving no human footprint behind. Nature has given Kapok numerous properties like its silky soft and dry touch of the fiber itself, antimoth and antimite properties as well as insulation properties comparable to down, and many others.

With the most advanced technology in the market, FLOCUS™ can spin the highest kapok %, offer yarns in the thinnest counts with the possibility of low minimum order quantity per blend. Utilizing Kapok, FLOCUS™ offers products which can reduce the presence of animal and synthetic products in the market, utilizing a completely natural alternative without abandoning functionality. FLOCUS™ is a 100% sustainable 'open' source textile concept in which buyers can tailor blend their needs for their sustainable collections.

- Frumat

Frumat uses apples to create a leather-like material. Apple pectin is an industrial waste product which can be used to create sustainable materials that are totally compostable.

RICICLAGGIO SCARTI INDUSTRIALI BIOLOGICI

L'azienda Frumat di Bolzano nasce con l'obiettivo di riutilizzare, in modo intelligente ed eco-sostenibile, gli scarti industriali biologici, come la buccia e il torsolo della mela. Lo scopo è quello di trasformare tali scarti in prodotti d'uso comune, attraverso speciali tecniche di riciclaggio e lavorazione delle materie prime. Dopo una lunga fase di ricerca scientifica, ancora oggi al centro dell'attività aziendale, Frumat è in grado di proporre un gran numero di prodotti eco-sostenibili per il mercato italiano e internazionale. Le principali creazioni dell'azienda sono: materiali cartacei per la cancelleria e il packaging e la cosiddetta Apple Skin, rivoluzionario prodotto dalle svariate applicazioni.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

The apple paste obtained during the studies on glue was then reworked. Alberto used a pasta machine to stretch and cut the material. He ended up developing the Pellemela, literally apple leather, a material that has nothing to envy to animal leather. It is ecological, it keeps the heat while remaining breathable, it is waterproof, resistant and of course 100% vegan.

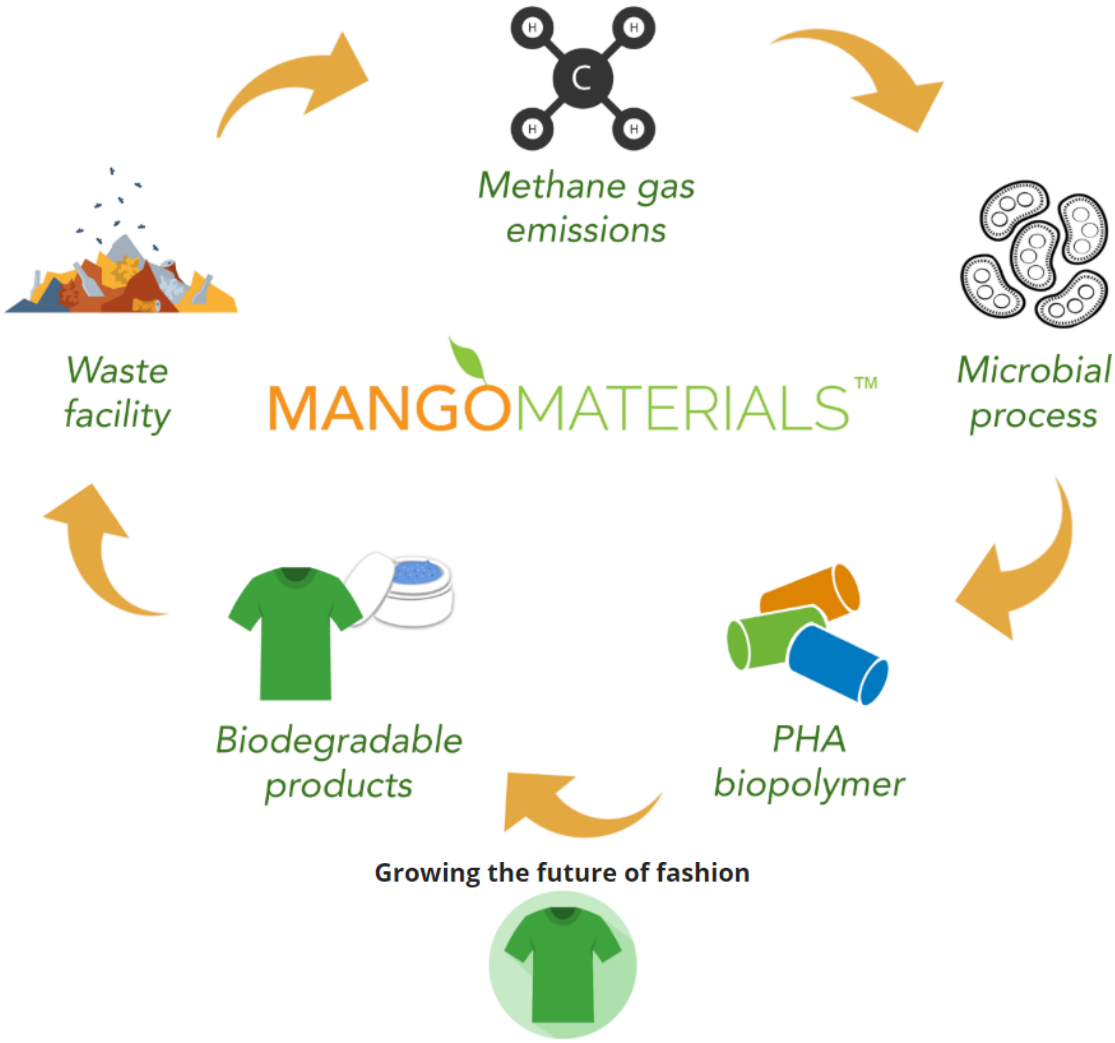
When I met Hannes in London in a cafe on the Leceister Square side, he was on a business tour. He had with him lots of samples and prototypes made from Cartamela and Pellemela. Incidentally, the first thing I saw was his business card printed on apple paper.

I also saw gorgeous notebooks and planners specially designed for the 2015 Milan Expo. The pages and the cover are made from paper and apple leather. Since, the Lediberg group, B-to-B distributor specializing in paper and leather goods, launched its Appeel collection, a beautiful range of notebooks and planners made from apple paper. For the record, the German edition of the vegan recipe book by Anna Jones "A modern way to eat" is printed on apple paper.

- Mango Materials.

Mango Materials produces biodegradable bio-polyester that can be used as a sustainable alternative to the present polyester utilized in the fashion industry.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa



Our fully biodegradable biopolyester fibers are a sustainable alternative to petroleum-based polyester used in the $2 trillion fashion industry. Did you know that 60% of our clothing now contains polyester?

Recycling clothing is difficult due to the large number of different natural and synthetic materials used in a single garment. Only 17% of clothing and other textile products is collected for recycling, while 30 billion pounds of textile waste is discarded in landfills. What a waste! Not to mention that washing clothing can release synthetic microfibers that impact wildlife and ecosystems.

We have a solution.

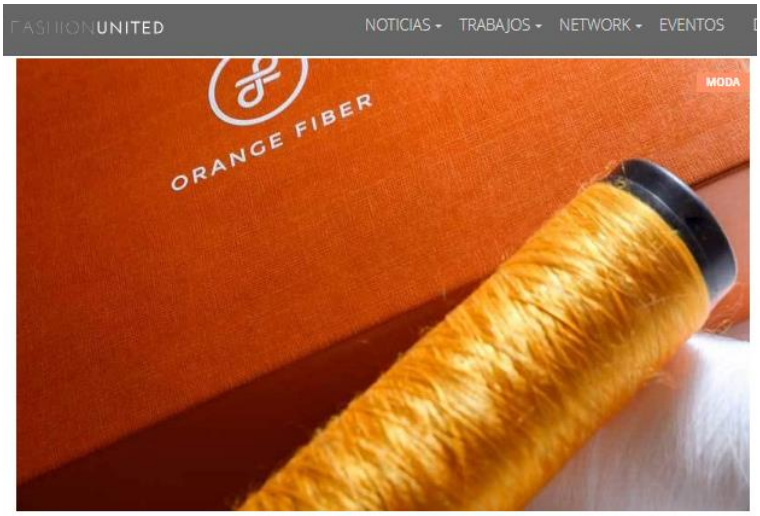
Our naturally occurring biopolyester can be used with other natural textile materials to produce a truly sustainable product. Our carbon recycling technology enables regeneration of new apparel from used apparel without reduction in quality.

Made by bacteria so it can be degraded by bacteria.

- Orange Fiber.

Orange Fiber manufactures natural fabrics from citrus by-products.

GENERALITAT VALENCIANA
iVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa



Tejidos Innovadores Sostenibles: Orange Fiber

Alicia Carrasco Rozas | Lunes, 30 Octubre 2017

En una era donde el slow fashion está tomando cada vez más protagonismo en las pasarelas del mundo, día tras día surgen nuevas alternativas de materiales y textiles sostenibles con el objetivo de minimizar el impacto medioambiental y social de la moda. Es así como fibras obtenidas del café, del cáñamo, de la piña e incluso de la ortiga, entre otros, se han ido convirtiendo poco a poco en ejemplos reales y palpables de que otra forma de producir moda es totalmente posible. En esta línea, hoy incluimos en nuestra serie de Tejidos Innovadores Sostenibles, a Orange Fiber, un nuevo textil obtenido a partir de fibra de naranja.

En este sentido, el proceso de creación de esta fibra es además totalmente ecológico, con un tratamiento especial que luego pasa por hilado en España y que al regresar a Italia de nuevo es transformado en tela para ser usado de forma pura o mezclada con otros hilos y materiales para crear un textil biodegradable y refinado. Además, un detalle muy interesante de esta fibra es que libera sobre la piel Vitamina C, un atributo que no se ha visto antes en otros textiles eco.

ORANGE FIBER

http://orangefiber.it/

3.5. Ejemplos de tejidos y prendas con repelentes al agua sostenibles

Uno de los bloques específicos en los que investigó el personal de AITEX, respecto de producto final, fue estudiar ejemplos de tejidos y prendas que presentan propiedades de repelencia al agua, conseguidas por repelentes sostenibles (libres de flúor).

Con ello, se dio continuidad y más peso y base técnica a la tendencia identificada en la parte de 'productos químicos' de T1.2, donde ya prácticamente todos los proveedores y fabricantes de químicos y especialidades para el acabado textil cuentan con algún repelente fluorine-free en su catálogo.

De toda la información estudiada y analizada por AITEX la más reseñable, en cuanto a producto textil final que incorpora estas soluciones sostenibles que aportan repelencia al agua, fue:

FASHIONUNITED NEWS JOBS NETWORK EVENTS

Felder Felder launching capsule line with Ecoalf

Danielle Wightman-Stone | Tuesday, April 24 2018

London-based designer label Felder Felder, founded by twins Daniela and Annette Felder, have unveiled a capsule collection for autumn/winter 2018 with sustainable Spanish label, Ecoalf to showcase sustainability and style.

The collection, inspired by the design duo's "eclectic time" in Berlin's club scene, combines shiny materials with urban style, with each piece made with recycled nylon to achieve a unique selection of shiny black, silver and matte black outerwear designs finished with a 100 percent synthetic filling.

Combining Felder Felder's design style with the innovative Ecoalf materials, the collection of jackets and coats with oversize-cuts, hoodies and belts are water repellent, downproof and ultralight, as well as being 100 percent vegan.

The Felder Felder x Ecoalf collection features two coats and 1 vest, all available in silver, shiny black and matte black.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

Denim board shorts: O'Neill & ISKO 'suffer from pioneer syndrome'

Caitlyn Terra | Thursday, April 19 2018

Amsterdam - Up until recently, the combination of denim and the ocean was impossible to imagine. No one in their right mind would go swimming in a pair of denim jeans (unless they are looking to break-in a pair of virgin jeans) as once they become wet, they become extremely heavy and stiff and take hours to dry. "Surfers love denim, but we could never wear it at the beach," said Jan Lindeboom, category manager surf & snow performance at O'Neill. But now all this has changed with the launch of the world's first denim board shorts, the fruition of a collaboration between O'Neill and denim producer ISKO.

O'Neill and ISKO capture the pioneering spirit in the world's first denim board shorts

O'Neill could not have found a better timing to launch its first pair of denim board shorts to the world. The two companies came together on the first summer day in Amsterdam, to present the denim board shorts to the world - the same week the denim industry flocked to the city to attend Kingpins. FashionUnited met with Jan Lindeboom from O'Neill and Fabio di Liberto, brand director of ISKO, to learn more about the denim board shorts, which have been two years in the making. "It feels like our child is being born now," jokes Lindeboom.

Ralph Lauren debuts 2018 Olympic Ceremony uniforms

Kristopher Fraser | Wednesday, November 01 2017

As of today, it's officially 100 days until the 2018 Winter Olympics. The upcoming ceremony will take place in Pyeongchang. As part of the lead up to the ceremony, Polo Ralph Lauren, the official outfitter of the U.S. Olympic and Paralympic Teams for the sixth Olympic Games, has unveiled their uniforms.

As an ode to patriotism, the uniforms are done in classic red, white and blue. The uniforms include a white water-repellent down jacket, navy double-fleece pants with red stripe detailing, and a vintage ski sweater in a red, white and blue color block. Winter isn't complete without accessories, though. To accessorize, Polo created wool-gloves with winter inspired Intarsia pattern and a matching ski hat, a bandana featuring the American flag, and brown suede mountain boots with red laces.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

Filippa K attracted by sustainable water-repellent

Published: 14 June 2018 Written by Chris Remington Print

STOCKHOLM – Swedish fashion brand Filippa K has partnered with cleantech company OrganoClick and will market the firm's water-repellent and biodegradable textile impregnation, OrganoTex, through its garment care product line.

OrganoClick, a spin-off company from Stockholm University, produces a range of functional materials enhanced with sustainable fibre chemistry treatments. OrganoTex technology, which Filippa K adopted in its February 2015 clothing collection, incorporates plant-based catalysts and organic polymers instead of fluorocarbons, a group of chemicals that are bio-accumulative and hormone disturbing.

Acrylate repellent coating 'outperforms' PFCs

Published: 10 November 2017 Written by David Styles Print

PORTLAND – A US company says it has developed a new fluorine-free process 'using heat and pressure' that can permanently bond chemical repellent finishes to textile fibres without using water or releasing any hazardous substances.

The new technology claims to outperform previous water repellent finishes based upon 'C6 and C8' fluorine chemistry in addition to providing a platform for additional anti-odour, anti-bug, anti-microbial and fire-resistant finishes.

The new dry finishing 'Aquavent' technology, which does not repel oil but does have stain release properties, is based on acrylates with hydrocarbon side chains and comes at a time of increased regulatory interest in fluoro-chemistry in both Europe and the USA.

The technology is currently in production for the Spring 2018 season in partnership with a leading US outdoor brand.

EU Eco-Label for textiles gets update

Published: 14 August 2017 Written by John Mowbray Print

BRUSSELS – The European Commission (EC) has fine-tuned its criteria the voluntary EU Ecolabel for textiles, including its definition of textiles to include accessories and intermediate products used in textiles and it has extended the validity of the assessed criteria for 78 months from the adoption of the amendment. The criteria were due to expire in June 2018.

The amendment also clarifies the exceptions applying when recycled fibres or organic cotton fibres are used and revises the calculation required with regards to the percentage of these fibres used in EU-Ecolabelled textiles. Other criteria for chemical management, such as water repellent finishes are mentioned alongside new rules for wool and pesticide residues on cotton are also clarified.

The Little "Made in Italy" Label That Could

Jackie Mallon | Monday, July 24 2017

"I am fighting every day," says Antonella Arpaia, co-founder of Manto, a luxury men's outerwear brand made in Italy, into its fourth season. She is in town taking sales appointments for her Spring collection. "I have to be competitive or I'm nobody. It is a very critical moment," she says, but her face brightens. "*The* major Manhattan luxury department store just almost tripled their last Fall order." The U.S. is Arpaia's biggest market followed by Russia, Germany, Switzerland, and the U.K. She sells both private label to select department stores and eponymously in specialized boutiques. I sit down with her at her midtown showroom to discuss the challenges and rewards of bringing a new Italian label to the accessible luxury market at a time when fashion's race to identify new far-off hubs able to manufacture at rocket bottom prices has been crushing even long-established Italian brands.

It's not the typical modern business model we are used to, but Arpaia's commitment is unshakeable. She enthusiastically draws my attention to the characteristics of a goatskin bomber, a cashmere reversible jacket with microfiber interior, a water repellent wool silk overcoat, the genius of a "storm system" bib-front blazer, which, chimes in Keith the showroom model, "does double duty. Like this if you are going to work and it's raining and you don't want to ruin your expensive tie, then you get to the office you zip the panel off, store it in your desk drawer, and it's a classic blazer." He proudly unzips and reattaches the bib. "Everything is super soft and lightweight and perfect for traveling," adds Arpaia.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

14th June 2018, Feldkirchen-Westerham

Gore achieves key milestone in achieving PFC goals

0 comment

The Fabrics Division of W. L. Gore & Associates will announce at this year´s OutDoor Show in Friedrichshafen, Germany, that it reached a key milestone on its journey towards the goal of eliminating PFCs of Environmental Concern (PFCEC) from the life cycle of the majority of its consumer fabrics portfolio by 2020. This ambitious goal was announced in February 2017.

At its booth, from 17-20 June, Gore will present a range of *Gore-Tex 2-Layer* jackets, manufactured by customers like Berghaus, Haglöfs and Marmot, amongst others, that utilise – for the first time – a DWR (Durable Water Repellent) treatment free of PFCEC.

In addition, the outdoor jackets shown at the booth reflect a second big step forward in Gore Fabrics´ efforts to reduce the environmental footprint of its products, the company reports. All the products are manufactured with Gore laminates utilising face-textiles made from recycled materials – another key initiative within Gore Fabrics´ strategy.

Using recycled materials helps reduce the amount of plastic waste that otherwise would end up in landfills or incineration, according to the manufacturer. Gore's recycled nylon is currently sourced from pre-consumer waste while its recycled polyester stems from used PET bottles.

"The Gore-Tex jackets shown at our booth have a PFCEC-free DWR treatment and face-textiles made from recycled materials. They represent the strong intent of both us and our customers to offer environmentally improved products," said Bernhard Kiehl, Gore Fabrics´ Sustainability Leader. "The positive feedback we have received on our innovations motivates us to work even harder on developing further advanced material solutions. We continue our efforts to deliver fit-for-use products that provide the ideal combination of high performance, durability and a low environmental footprint."

While Gore Fabrics´ current product collection for the Autumn/Winter 2018 season offers more than a dozen Gore-Tex laminates that are manufactured with face-textiles made from recycled materials, this number is expected to almost triple by A/W 2019. This will correspond to approximately 10% of Gore Fabrics´ total consumer laminate offering.

Also, ready to be rolled-out by customers for the A/W 2019 season is another innovation: solution-dyed face-textiles, which will add alternative consumer laminate options to the Gore-Tex collection for A/W 2019. Solution dyeing is a yarn-dyeing technology that – compared to conventional dyeing processes – saves up to 60% in water usage and significantly reduces CO2 emissions, according to the company. During the solution-dyeing process, dyestuffs are mixed with the nylon or polyester pellets prior to spinning into yarn. The resulting yarn is permanently, deeply coloured and ready to be woven into fabrics.

Gore Fabrics has also developed a new textile backer that combines the advantages of solution dyeing and recycled content, resulting in an attractive offering of an additional range of 18 laminates with solution dyed content to Gore -Tex brand partners from 2019 onwards.

"We seek to expand our share of solution-dyed textiles due to two compelling advantages: solution-dyeing helps reduce our environmental footprint, and it offers a performance benefit of superior colour-fastness, which will allow consumers to enjoy brilliantly bright colours for longer than usual. And, as we know from our Life Cycle Assessment studies, using durable outerwear for a long time is the best thing you can do reduce its impact on the environment," explained Thomas Kiebler, Gore Fabrics' Application Engineer Leader.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

3.6. Ejemplos de tejidos y prendas con colorantes y tinturas sostenibles

Las prendas de hoy en día cada vez cuentan más con un componente sostenible que viene de los procesos de tintura y acabado. Se ha visto en la investigación de T1.2 referente a colorantes naturales el auge que han tenido nuevas gamas de colorantes biosintéticos como los comercializados por Archroma.

La revisión y búsqueda de información técnica en este sentido arrojó los siguientes resultados principales de ejemplos de tejidos y prendas tintados con soluciones sostenibles.

29th May 2018, Reinach

Archroma introduces new aniline-free indigo for denim

0 comment

Archroma, a leader in colour and specialty chemicals, has presented an aniline-free denim indigo dye at the recent Planet Textiles 2018 Conference in Vancouver, Canada. According to the company, the brand-new dye provides a non-toxic way to produce the traditional, iconic indigo blue that consumers associate with denim and jeans.

Currently, aniline impurities are an unavoidable element of producing indigo-dyed denim. Unlike other chemical impurities, aniline is locked into the indigo pigment during the dyeing process and therefore cannot be washed off the fabric.

Scientific testing has shown that aniline impurities are toxic to humans, causing skin allergies, damage to major organs and genetic defects, as well as being linked to cancer. Aniline is also toxic to aquatic life, which is an issue as two thirds of the 400 metric tons of aniline waste on an annual basis ends up in the environment as wastewater discharge. The toxic chemical is therefore starting to feature on the restricted substance lists (RSL) of some major clothing brands and retailers.

"We have tested denim garments and found that aniline concentrations are frequently higher than expected," said Alexander Wessels, CEO, Archroma. "This could put some manufacturers over the limits agreed on their RSLs."

"At Archroma, we continuously challenge the status quo in the deep belief that we can make our industry sustainable. By removing a hazardous impurity from the denim supply chain, we aim to protect the workers who create denim, the consumers who wear denim, and the environment with cleaner waterways."

The *Denisol Pure Indigo 30* dye is the latest in a long line of sustainable innovations for denim started in 2009. That year, Archroma introduced its *Advanced Denim* technology, which uses up to 90% less water during the dyeing process. "Being not indigo but sulfur based, Advanced Denim itself was an aniline free solution too," added Alexander Wessels.

For designers and brand owners, who long for authentic indigo inspiration, the new Denisol Pure Indigo 30 now also makes it possible to produce indigo-dyed denim without high levels aniline impurities.

Archroma successfully tested Denisol Pure Indigo 30 at Absolute Denim mill in Thailand. "During the testing everything performed exactly the same as it would with conventional indigo," said Vichai Phromvanich, Board Member, Absolute Denim. "There was just one important difference: no aniline."

"We've had an overwhelming positive reaction from the industry in sneak previews and during the launch at Planet Textiles," continued Alexander Wessels. "As a responsible industry leader, we believe it's important to actively look for eco-advanced solutions that are attractive and at the same time cost-efficient for clothing brands, retailers and end-consumers."

The new dye will be produced in Archroma's facility in Pakistan, a plant that made the headlines in 2012 for being what Archroma believed to be the industry's first zero liquid discharge plant.

4th May 2018, Irvine, CA

Bed linen made with traditional Japanese dyeing techniques

0 comment

Inspired to bring the benefits of traditional Japanese indigo-dyed fabrics into the modern age, a start-up company Aizome Bedding is introducing organic bed linen to provide a unique and healthy sleep experience.

According to the company, the new products are environmentally friendly and produced without employing toxic chemical dyes that can irritate the skin and lead to potential health problems. Aizome Bedding uses the leaves of the Asian indigo naturalis plant that gives its bedding products a unique colour, as well as medicinal properties and low environmental impact.

Aizome updated a centuries-old Japanese dyeing technique through using a cutting-edge ultrasound technology in developing uniquely colourfast and chemical-free textiles. This allows the company to use 200 times less water than textiles producers using chemical dyes, the company explains.

Another key aspect of Aizome Bedding's products is their use of organically sourced GOTS certified cotton fabric that has not been grown with any toxic chemicals, pesticides or GMOs. The combination of the natural indigo dye and organic cotton is said to provide Aizome bedding with hypoallergenic qualities, eliminating dust, detritus, oil and dust mites from building up in a sleeping environment, and preventing anyone with sensitivity to dust materials from experiencing bad reactions.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

3rd April 2018, Reinach

Archroma presents sustainable solutions at China Interdye

0 comment

Archroma, a leader in colour and specialty chemicals, will present its latest technologies under the motto *Enhanced solutions for colour and performance, it's our nature* at China Interdye 2018, in Shanghai, next week.

Visitors at Archroma's booth will be able to 'experience' the company's innovative solutions, in particular, the *EarthColors* range of "biosynthetic" dyes for cotton and cellulose-based fabrics, which are made from waste left over by the agricultural and herbal industry after extraction, such as almond shells, saw palmetto, or rosemary leaves.

The latest NFC technology used on the end-product hangtags enables transparency and traceability through the supply chain to consumers. The EarthColors have been adopted by brands such as Patagonia, Kathmandu and G-Star, and won an OutDoor Industry Award 2017.

Color Atlas

The *Color Atlas by Archroma* is a new platform specially devised to address the needs of designers, brands, retailers, and manufacturers, enhancing creative possibilities for the industry, as well as manageability and time to market, through key complementary tools: The six-volume *Color Atlas Library* with 4,320 colour swatches and cotton poplin samples, the *Color Atlas Compact* in two volumes for increased portability, and the *Color Atlas Online* allowing to capture an inspiring image using a smartphone and immediately identify the closest Color Atlas shade palette, with the possibility to purchase a colour sample instantly.

GENERALITAT VALENCIANA
iVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

YKK trials CO2 dyeing

Published: 29 January 2015 Written by John Mowbray Print

Phote, tuja66, Deposit Photos

TOKYO - YKK, the world's largest zipper producer, is in the process of trialling Supercritical Fluid Dyeing (SFD) technology to zipper dyeing in a move which it claims could potentially allow it to reduce to almost zero the amount of water used in the zipper dyeing process. The Japanese company says it is currently testing and working on the further development of its 'Eco-Dye' technology for mass production, although a release date for zipper products dyed using this process has yet to be announced. YKK will at ISPO in Munich next week to discuss this and other developments at the business.

SFD is a dyeing technology that has been around for two decades but its implementation has so far proved to be commercially difficult on a mass scale. The technology uses super-critical carbon dioxide (CO_2) instead of water as a dyeing medium.

Eucalyptus waste used to dye cotton

Published: 17 September 2015 Written by John Mowbray Print

SAO PAULO – Waste from the eucalyptus wood steaming process could potentially provide a natural dye source for dyeing cotton according to new research from South America. Researchers claim to have successfully used the coloured liquid waste produced in the steam treatment of eucalyptus wood as a natural dyestuff to colour cotton in an exhaust dyeing process without the addition of traditional mordants. The findings represent an interesting breakthrough, not least because Tencel, made by Austrian company Lenzing, is also made from extracted eucalyptus wood pulp.

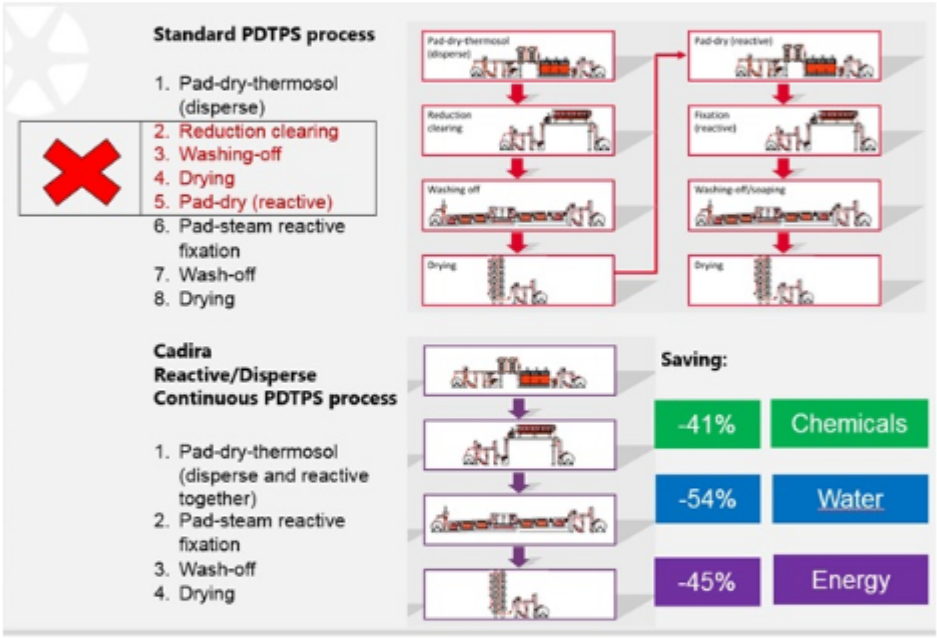
19th March 2018, Singapore

DyStar launches new concept for resource optimised dyeing

0 comment

DyStar Group, a leading solution provider of colourants, auxiliaries and services, has launched a new concept of its resource saving module – *Cadira Reactive/Disperse Continuous*. It is a modified pad-dry-thermosol-pad-steam dyeing process for open width PES/CO fabrics.

In contrast to the standard PDTPS process, Cadira Reactive/Disperse Continuous does not require a separate reduction clearing process and thus saves more than 40% chemicals, water and energy, according to the company. This effect is obtained by using a special dye choice of *Dianix* XF/XF2 and SF disperse dyes in combination with selected *Levafix* and *Remazol* reactive dyes and a modified steaming and wash-off process with Sera auxiliaries.



"The Cadira concepts considerably reduce process costs, water, waste and energy consumption and machine utilisation. Cadira supports brands and retailers and their production partners in their effort to save valuable resources and to reduce the carbon footprint of their textile goods," the company explains. "DyStar will continue their effort to support the textile industry to reduce the environmental footprint."

The first Cadira module was developed in 2016. Since then DyStar has launched Cadira concepts for various substrates and applications. So far, the following Cadira concepts are available: Cadira Polyester; Cadira Recycled Polyester; Cadira Vat; Cadira Reactive; Cadira Procion PX; Cadira Wool; and Cadira Denim.

ByStar Group is a solution provider, offering customers a complete range of colorants, auxiliaries and services. The DyStar Group has offices, competence centres, agencies and production plants in over 50 countries.

DyStar's service division assist brands and retailers and their industry partners from their first inspiration throughout the entire supply chain to ensure that they meet stringent quality and ecological specifications, reduce costs and shorten lead times. The service division offers state of the art colour communication through CSI, textile and ecology testing through Texanlab, ecology and environmental advice, supply chain auditing and consulting for RSL compliant sustainable processes through Sustainable Textile Solutions programmes.

www.dystar.com

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

27th February 2018, Obertshausen

Karl Mayer acquires continuous dyeing technology with indigo

0 comment

Master and a leading warp knitting machinery manufacturer Karl Mayer have signed the agreement for transferring the continuous dyeing technology with indigo and other dyestuffs of warp chains for denim fabrics. Karl Mayer takes over from Master patents, trademarks, projects and dyeing technology for machines models: *IndigoFlow*, *IndigoRope* and *IndigoGenius*.

Master is a pioneer and a leader in the continuous dyeing with indigo and other dyestuffs. After the delivery of currently ordered machines, the company will stop the manufacturing of these kind of machines and will focus its activity to develop and manufacture new machines for packages and hank dyeing.

IndigoFlow is said to offer maximum operative flexibility for the slasher continuous dyeing, with indigo and other dyestuffs, of denim fabric warps, according to the manufacturer. It is arranged for all the pre and post treatments and for dyeing of yarn's warps, both ring spun or open end, even very light, of cotton, new fibres, blends and elastic, in a wide range of blue, black and other colours.

IndigoRope is a machine for the continuous dyeing, in rope, with indigo and other dyestuffs of denim fabric warps. It is a technologically evolved machine, which is designed to make every possible intervention easy, simple and safe, therefore, making it practical, rational and ergonomic.

IndigoGenius is an advanced technology machine for dyeing in continuous, slasher and rope, in Nitrogen atmosphere, with indigo and sulphur dyestuffs, denim fabric warps, which makes use of the new ingenious ecological and economical technology with two or more *Genius* modules.

Genius is an integrated module to dye with indigo and sulphur dyes in a nitrogen atmosphere, made up of a dyeing vat and a special diffusion/fixation unit of the soluble-state (leuco) dye to the yarn, which can be differentiated according to heat activation and the duration of stay in an inert environment.

Karl Mayer Rotal, will further develop the *Nitrogen* technology, by integrating it into its current product range *Prodye-S* and *Prodye-R*.

GENERALITAT VALENCIANA
iVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

Textile dyes from cotton waste for dyeing cotton

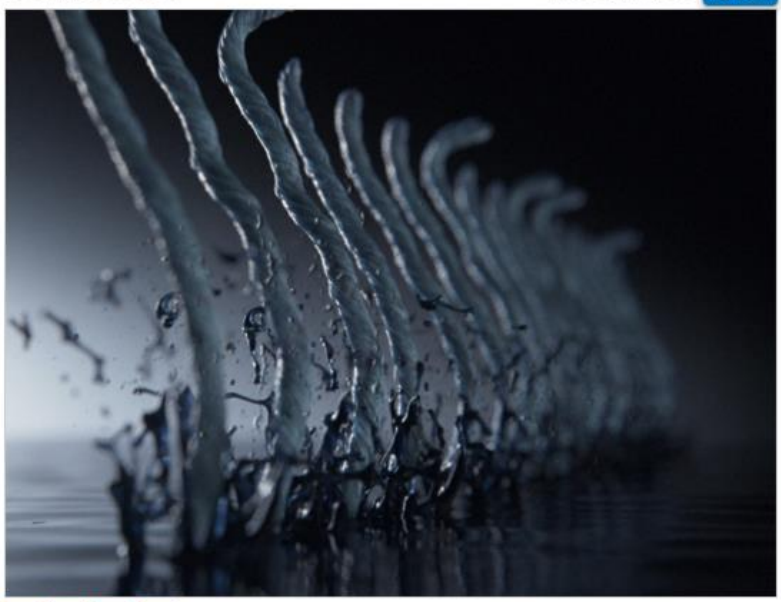
Published: 12 September 2016 Written by John Mowbray Print

CARY – Cotton Incorporated and Archroma have joined forces to develop what it believed to be the first ever cellulosic textile dyes derived from cotton biomass, which essentially means the technology to dye cotton – from cotton – is now commercially available to the global textile industry.

The new dyestuff for cellulosic fibres is the latest addition to Archroma's 'EarthColors' range of sulphur-based dyes that are derived from waste biomass, as opposed to being synthesized using oil-based derivatives. The new dye uses by-products of cotton harvesting as a base instead of oil to give knit and woven cotton fabrics dyed in a variety of warm, soft, natural brown shades that will be shown at this week's Premiere Vision trade show in Paris.

Crab shells help to fix denim dyes

Published: 08 April 2016 Written by Tommy Lee Print



MILAN – An Italian company has produced a new range of denim which uses chitosan to help fix natural pigment dyes on to cotton fibre which is claims can reduce its water consumption in the denim manufacturing process by 80 per cent over a year. Italdenim's 'Respect Nature' fabric uses recycled chitin derived from crustacean shells through a new process developed by fellow Italian textile manufacturer Canepa.

G-Star Raw launches EarthColors Jeans

Vivian Hendriksz | Friday, November 03 2017

London - Denim label G-Star has launched a new, innovative line of naturally dyed jeans. Named EarthColors Jeans, the range features sustainable dyes made from recycled plants and non-edible nutshells.

Created together with dye-experts Archroma, the initiative is part of G-Star's wider aim to set an example for the rest of the industry and take a leading role by promoting more sustainable solutions. Archroma, one of the leading dye firms within the textile industry, patent new method offers warm, ternary shades inspired by nature which have been applied to G-Star's denim.

"As denim innovators we always try to break the rules, in both the style and future-oriented processes. The introduction of EarthColors in the jeans collection of G-Star is the result of a successful collaboration with Archroma. It embodies our sustainable philosophy, featuring our product design from start to finish," commented Frouke Bruinsma, Corporate Responsibility Director, G-Star Raw.

EarthColors dye consists of 70 to 100 percent natural colors taken from different types of leaves from recycled plants, such as olive trees, rosemary as well as non-edible nutshells and almonds. The production of the dye does not require additional agricultural production, as it uses the leftover by-products from food consumption. In addition, EarthColors uses ozone and laser techniques to ensure the optimum performance of the dyes.

EarthColors Jeans is set to launch in G-Star's 5620 Staq mid skinny for women and 5620 G-Star Elwood 3D super slim for men this month in stores and online.

Photo: Courtesy of G-Star

3.7. Conclusiones parciales

Las conclusiones de esta tarea 1.3 de FUN2GARMENT II son:

- Los principales productores y fabricantes de indumentaria casual, técnica, deportiva, de montaña, etc. ya incorporan en sus catálogos tejidos y prendas con acabados DWR (Durable Water Repellent) que están basados en compuestos libres de flúor. La fuerza de concienciación que se ha dado a este

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

tema, en cuanto a saber comunicar los riesgos de los PFOAs, los fluorocarbonos C8, etc. parece que sí ha llegado al consumidor final. De esta manera, existen en el mercado múltiples opciones de prendas con repelentes al agua sostenibles. Ello está en línea con lo visto en la parte de 'productos químicos' de T1.2, donde ya prácticamente todos los proveedores y fabricantes de químicos y especialidades para el acabado textil cuentan con algún repelente fluorine-free en su catálogo.

- Respecto de tejidos y prendas desarrollados con procesos de tinturas sostenibles, está en línea con el desarrollo y penetración de nuevas gamas de colorantes provenientes de recursos renovables. Cada vez hay más opciones de colorantes de base natural con buen rendimiento de color y calidad final de la tintura, y con ello cada vez más empresas y fabricantes apuestan por desarrollar y lanzar líneas de producto y colecciones de textiles tintados (principalmente, se han identificado hasta ahora usos finales en indumentaria casual y de ocio/deporte).

- En línea con los dos ejemplos posteriores, también es posible desarrollar bienes de consumo y textiles/prendas con otras opciones que aportan carácter sostenible al proceso de fabricación. Biotecnología, bioplásticos, consolidación del uso de poliéster reciclado como materia prima ya totalmente aceptada por la industria textil en cuanto a la calidad que aporta (similar a la del PES virgen), diseño bajo conceptos como economía circular, capacidad de reciclado de materiales al final de su vida útil, etc. Además de tener en cuenta las tecnologías emergentes y maduras de la propia industria textil, muchas de las cuales ya se investigaron y se dejó constancia de ellas en la anualidad I de FUN2GARMENT (tintura con CO2, sistemas más eficientes de tintura, estampación digital, laminación hotmelt, etc.).

- También se ha constatado la cada vez más creciente penetración de la tecnología láser en diferentes sectores industriales, incluyendo el textil y el de materiales afines que investiga FUN2GARMENT II, como las pieles, el cuero o la madera. No solo para realizar marcados, sino también para perforaciones, corte, grabado tipo gofrados, etc.

- Y, por último, respecto de la tecnología de ozono cabe indicar que cuesta encontrar ejemplos de otros usos en textil que no sea el propio de decoloración y envejecimiento de prendas. Quizá su implantación en lavanderías industriales como sistema de desinfección y eliminación de malos olores de tejidos y prendas, así como ayudando a obtener grados de blanco más elevados o ayudando a la eliminación de manchas oxidables sea el ejemplo más significativo. Tampoco se han identificado ejemplos de maquinaria de ozono que sea capaz de trabajar a la continua de modo eficiente, salvo el caso de la tecnología y equipamiento G2 Dynamic (de Jeanologia, Valencia), ya reseñada durante la anterior anualidad del proyecto.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

4. CONCLUSIONES

Las conclusiones que establece el equipo investigador de AITEX, al respecto del trabajo efectuado en el PT1. INVESTIGACIÓN DE NUEVOS PROCESOS DE ACABADO FUNCIONAL Y SOSTENIBLE, dentro de la anualidad II (2018) de FUN2GARMENT y finalización de las tareas de este PT son:

- Consolidación de opciones sostenibles en química empleada en procesos de acabado textil, principalmente los DWR (Durable Water Repellent) libres de flúor. Para repelencia al agua. Los C6, pese que a medio/plazo está prevista su desaparición en la fabricación y uso, son todavía la única alternativa si se desea obtener textiles con repelencia al agua y al aceite: los fluorine-free, de momento, solamente son capaces de aportar repelencia al agua. Se tiene constancia que los principales fabricantes de productos químicos y especialidades para el acabado textil investigan en productos para dar alternativa total a los C6.

- Los principales productores y fabricantes de indumentaria casual, técnica, deportiva, de montaña, etc. ya incorporan en sus catálogos tejidos y prendas con acabados DWR (Durable Water Repellent) que están basados en compuestos libres de flúor.

- Van apareciendo nuevos sistemas de resinas PU, fabricados a partir de monómeros de carácter 'bio'. Además, el estudio de información técnica realizado ha permitido identificar nuevos polímeros para coating y recubrimiento textil, como las dispersiones acuosas de PVB (polivinil butiral) reciclado.

- En colorantes naturales y biosintéticos, el desarrollo de gamas de diferentes tonos de colorantes biosintéticos por parte de Earthcolours de Archroma ha impactado tanto en la industria textil y grandes firmas, que muchas de ellas ya los incorporan y publicitan en sus productos. Parte de sus gamas de colores tierra para el próximo 2019 resultarán tendencia en cuanto al desarrollo de prendas de indumentaria casual y de moda.

- Respecto de tejidos y prendas desarrollados con procesos de tinturas sostenibles, principalmente, se han identificado hasta ahora usos finales en indumentaria casual y de ocio/deporte.

- Sigue en tendencia creciente y penetración en nuevos mercados la estampación digital.

- Amplia oferta de hilos de origen natural / recursos renovables. Incremento de la oferta de materias. Amplia oferta de hilos (y productos) de materias recicladas. Crece la oferta de hilos a base de bio-polímeros, como el PLA y usos de viscosas como Tencel. Innovaciones en materiales no textiles como el corcho (JPSCork Group), incluso como hilados para tapicería por ejemplo.

GENERALITAT VALENCIANA
IVACE INSTITUTO VALENCIANO DE COMPETITIVIDAD EMPRESARIAL
UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

- Consolidación del PES reciclado hilado como materia prima de calidad comparable a la del PES virgen.

- Auxiliares de tintura y la propia maquinaria para reducir agua y tiempo de proceso. También es creciente la implementación de opciones como la tintura con CO2, laminación hotmelt, etc.

- También se ha constatado la cada vez más creciente penetración de la tecnología láser en diferentes sectores industriales, incluyendo el textil y el de materiales afines para realizar marcados, perforaciones, corte, grabado tipo gofrados, etc. En cuanto al ozono, cuesta encontrar ejemplos de otros usos en textil que no sea el propio de decoloración y envejecimiento de prendas. Como sistema de desinfección y eliminación de malos olores y ayudando a obtener grados de blanco más elevados sea el ejemplo más significativo. La tecnología de nanoburbujas sigue como opción sostenible para el acabado funcional de prendas ya confeccionadas frente procesos tradicionales como dip-coating, no habiendo identificado sistemas a la continua.