

August 2018



FASHION FOR GOOD

C2C Certified™ Assessed Materials Almanac

Overview of materials and processes assessed for Cradle to Cradle™ Material
Health relevant to the apparel industry

PREFACE

Prepared by Fashion for Good, C&A, McDonough Innovation, Eco Intelligent Growth (EIG), EPEA Switzerland (EPEA CH) and McDonough Braungart Design Chemistry (MBDC) based on the Cradle to Cradle Certified™ Product Standard version 3.1.

For the most recent information on the Product Standard, please visit www.c2ccertified.org.
For feedback, questions and suggestions, please contact press@fashionforgood.com.

THE STORY OF THE C2C CERTIFIED ASSESSED MATERIALS ALMANAC

With this Assessed Materials Almanac, Fashion for Good and its partners have built the toolkit for anyone to develop complex Cradle to Cradle Certified™ collections. This Almanac provides an overview of all materials and ingredients that have been assessed using the Material Health Methodology and are eligible for certified products at Silver, Gold or Platinum level. This provides the most comprehensive summary of what is currently available for use in C2C Certified™ garments, including materials and processes for denim, lingerie, elasticated fabrics, garment embellishments, and printed garments.

For this Almanac, Fashion for Good engaged McDonough Innovation and a team of three Cradle to Cradle Certified™ Accredited Assessors: Eco Intelligent Growth (EIG), EPEA Switzerland (EPEA CH) and McDonough Braungart Design Chemistry (MBDC). Under McDonough Innovation's leadership, these three assessors have come together as an expert consortium to identify products already available in the global market, whose chemistry makes them potentially good for people and the environment.

Fashion for Good's C2C Toolkit was kick-started in 2017. C&A, a leading fashion retailer, and Fashion for Good jointly helped two India-based garment manufacturers – Cotton Blossom and Pratibha Syntex – to develop and produce two Cradle to Cradle (C2C) Certified™ T-shirts¹. Launching in August 2018, C&A and Fashion for Good took the next step in the implementation of C2C Certified™ products with a complex product: denim jeans. Our success in gaining certification shows that C2C Certified™ serves as a standard to qualify products for a circular fashion industry more broadly. The context and value of the C2C Certified™ Product Standard, as well as all details on this process, are available publicly in the C2C Certified™ How-To-Guide, which can be accessed [online](#).

Of course, the next step is to go beyond assessment and attain Certification for new products and materials. Please reach out to McDonough Innovation, our partner Cradle to Cradle Certified™ Accredited Assessors (Eco Intelligent Growth (EIG), EPEA Switzerland (EPEA CH) and McDonough Braungart Design Chemistry (MBDC)), or any of the Accredited Assessors listed [here](#) to get help in this process.

Attaining circularity in fashion can seem daunting. Yet, as this Almanac demonstrates, assessed materials exist. Working together with committed suppliers, success is within reach. and as demands grows, the list will also grow, making it easier for all to succeed. We hope this will be a valuable resource for brands and garment manufacturers aspiring to produce C2C Certified™ collections.

Thoughts on this guide are encouraged and welcomed, so please reach out at press@fashionforgood.com

The Fashion for Good team, August 2018

¹ Cradle to Cradle Certified™ is a certification mark licensed by the Cradle to Cradle Products Innovation Institute



Katrin Ley, Managing Director, Fashion for Good

It is our great pleasure to offer this groundbreaking open-source toolkit to the industry! At Fashion for Good, our ambition is to reimagine the way fashion is designed, made, worn and reused. A culture of sharing information is crucial and this suite of C2C guides now available provides any industry player with the information that supports them in the transition to a circular textile system.



Bill McDonough, Chief Executive, McDonough Innovation

Fashion is a living thing and Fashion for Good is encouraging the production of Cradle to Cradle Certified™ products helping fashion to grow in a positive way. By sharing inspiring new product development toolkits and guides, Fashion for Good is inviting everyone from designers and material suppliers to manufacturers and customers – all the members of the apparel and fashion value chains – to come together now in collaborative advantage to co-create products that benefit people and the Earth.



Jeff Hogue, Chief Sustainability Officer, C&A

After a remarkable year of collaboration and innovation, C&A created the most truly sustainable jeans in the world. Our jeans prove we have cracked the complexity of circular jeans production, demonstrating what is possible today. We want to encourage all garments to be made this way. We hope this Almanac, will serve as a growing resource for the entire industry to develop circular fashion for all.

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INTRODUCTION

1. INTRODUCTION TO THE ASSESSED MATERIALS ALMANAC

The negative impact of the fashion industry on our planet and its people ranges from the production of raw materials to the disposal of a garment after its first use. Rather than trying to reduce these impacts, Cradle to Cradle principles advocate for having big impacts, but good impacts: during use phase and end of use, and also during the manufacturing process. The Cradle to Cradle (C2C) Certified™ Products Program² is a multi-attribute product certification that assesses products and materials for safety to human and ecological health, design for future (re-)use, and sustainable manufacturing.

ASPIRATION OF CRADLE TO CRADLE

The end goal is to create products that support a delightfully diverse, safe, healthy and just world, with clean energy, soil, water and air – equitably, economically, ecologically, and elegantly enjoyed.

WHAT THIS ALMANAC OFFERS

This Almanac presents the result of extensive work with suppliers and manufacturers of raw materials and chemicals to identify products already available in the global market, whose chemistry makes them potentially good for people and the environment. After a long list of products that has been assessed based on the Cradle to Cradle Certified™ Material Health Methodology, this study presents a selection of materials and chemicals for finished products, and their processes, eligible for certified products at Silver, Gold and/or Platinum level.

Each of the five key garment types (denim, lingerie, elasticated fabrics, garment embellishments, and printed garments) has an independent and self-contained list, for an easier use of this document as a guidance when putting into practice the design of a product, and its process. Hence, certain materials and chemicals that are applicable to more than one garment type (i.e. organic cotton can be used for all categories) will be found in more lists. Therefore the interest lies in identifying key materials and suppliers that can serve multiple purposes, enabling a brand to have flexibility in uses while more easily understanding its suppliers/partners.

Within each key type the same structure has been maintained (fibers and yarns, and garmenting), to facilitate identification of all materials and chemicals available at each relevant process step for the manufacturing of a specific garment type, from the fabric to the finished product (i.e. indigo dyes for denim), ready for commercialization. This Almanac presents 242 ingredients, of which 181 (75%) are fully disclosed with name and supplier. There are 28 publicly disclosed suppliers listed. We also list ingredients which are still under non-disclosure agreements, in the hope that these will be made public in the future.

The Almanac furthermore provides insight into the potential for Material Reutilisation of each of the types of fabrics and garments listed in the product tables. It also presents an overview of the suppliers mentioned in the tables.

A useful additional source of ingredient information that can be used for C2C Certified™ collections is the C2C Certified database, which is continually updated and publicly available [here](#).

2. HOW TO READ THE ALMANAC TABLES

The following information can be found in the tables:

TYPE OF MATERIAL OR CHEMICAL

One of the principles of Cradle to Cradle is that waste should be thought of as food. Garments are likely to end up dispersed in the environment (gradually with washing and use, and at the end of use), therefore biological nutrients have been prioritized in this study, through materials and chemicals that will enable a safe composting when necessary.

COMMERCIAL NAME OF THE PRODUCT AND SUPPLIER

This information has been shared prior consent of the manufacturer, reason for which in some instances “NDA” is specified, meaning that the assessor is bound by a Non Disclosure Agreement with a manufacturer, who has not yet approved disclosure of this information at the time of publication of this study. Note that information currently rated “NDA” is expected to be disclosed in the near future.

FUNCTION

When looking for suitable alternatives to an existing process, understanding the specific function provided by a material or chemical is crucial. Some functions do not have a prominent place in this study, due to current standard practice using toxic substances (i.e. chlorine based bleaching agents). This study can be a starting point to work with key suppliers who invest in innovation in line with Cradle to Cradle criteria to find suitable alternatives for these processes.

ASSESSMENT LEVEL

The Cradle to Cradle Certified™ Products Standard currently offers the possibility to achieve full certification (multi-attribute, considering the impacts in (1) the product design; (2) material health and reuse; (3) in its process; (4) energy and water stewardship; and (5) at a company level on social fairness (C2CC)). Another possibility is to start by identifying the materials' potential with a Material Health Certificate (MHC). These options are represented in the tables by C2CC and MHC, respectively.

When no C2C certification process has been carried out but other certifications are present, which are recognized by the certification protocol (i.e. GOTS), these are also displayed.

C2C LEVEL

Cradle to Cradle Certified™ Products Standard defines five levels (Basic to Platinum) to identify where a product stands, in the path to a good impact. Products with net good impact in Material Health (defined as optimized products) are found at Gold and Platinum levels.



INTRODUCTION

Denim is the first of the five key garment types/finishes due to its prominence in the fashion textile sector.

C&A launched its groundbreaking Gold Certified Denim Jeans in August 2018, the lessons and full Bill of Materials of which are shared in a guide which can be accessed [online](#).

Denim is a complex mainstream product, with production in several countries worldwide. There is an important potential for optimization, which will have an enormous impact at economic, environmental and social levels in all stages of its production. During the manufacturing of finished denim garments one of the critical steps is giving the fabric its worn look. This process has traditionally entailed aggressive processes for the product with hazards to its workers, due to flying dust or toxic substances released during the process. Examples are sandblasting or PP spray.

The denim list proposes 91 materials and chemicals, currently available in the market, which can be used in different steps of a denim garment manufacturing in a way that will not be hazardous to workers, users or the environment: 15 fibers and yarns (cellulosic and elastomeric), 10 dyes (indigo and other colors), and 54 auxiliaries (for spinning, sizing, dyeing, washing, etc.). Manufacturers of these materials and chemicals have worked together with Cradle to Cradle Certified™ accredited assessors to verify their good impact on health and the environment. Also, 12 materials to transform a denim fabric into a finished garment are proposed.

1. DENIM WEAVING

FIBERS AND YARNS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Organic Cotton	Organic Cotton	Cellulose	Multiple Options	GOTS others	GOLD	YES
	Organic Cotton	Cellulose BN	NDA	GOTS	GOLD	YES
	Organic Cotton	Natural (raw) color cotton (different brown hues)	Organic Cotton Colours	GOTS	GOLD	YES
Biodegradable Elastomer	Roica V550	Biodegradable Polymer	Asahi Kasei Spandex Europe GmbH	MHC 3214	GOLD	YES
Cellulose Fibers	Birla Spunshades	Viscose Staple Fibre	Grasim Industries Ltd	MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	SILVER/GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
Synthetic Fibers	NDA	PES TN	NDA	NDA	NDA	YES

LUBRICANTS FOR YARNS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Spinning lubricants	NDA	Lubricants	NDA	NDA	GOLD	YES
	NDA	Lubricants	NDA	NDA	GOLD	YES
	NDA	Lubricants	NDA	NDA Goal MHC	NDA	YES

SIZING PROCESS CHEMICALS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Sizing Process Chemicals	NDA	Sizing Process Chemicals	NDA	NDA	GOLD	YES
Sizing Agent	NDA	Warp strength enhancers	NDA	NDA	NDA	YES
	NDA	Softner	NDA	NDA	NDA	YES
	NDA	Softner	NDA	NDA	NDA	YES

WEAVING SELVAGE YARNS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Selvage Yarns	Organic Cotton	Cellulose	Multiple Options	GOTS others	GOLD	YES
	NDA	Cellulose	NDA	NDA Goal MHC	GOLD	YES
Catch Selvage Yarns	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	YES

VAT, INDIGO AND SULPHUR DYES

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Indigo Dyes	DyStar Indigo VAT 40% Sol	Indigo Dyes	DyStar	MHC 2659	GOLD	YES
VAT Dyes	Indanthren Brilliant Orange GR Coll	VAT Dyes	DyStar	MHC 2659	GOLD	YES
	Indanthren Red FBB Coll	VAT Dyes	DyStar	MHC 2659	GOLD	YES
	Indanthren Brown BR Col	VAT Dyes	DyStar	MHC 2659	GOLD	YES
	Indanthren Brilliant Green FFB Coll	VAT Dyes	DyStar	MHC 2659	GOLD	YES
	Indanthren Brown RN Coll	VAT Dyes	DyStar	MHC 2659	GOLD	YES
	Indanthren Blue RS Coll	VAT Dyes	DyStar	MHC 2659	GOLD	YES
	Indanthren Olive T Coll	VAT Dyes	DyStar	MHC 2659	GOLD	YES
	Indanthren Direct Black 5589 Coll	VAT Dyes	DyStar	MHC 2659	GOLD	YES
Sulphur Dyes	NDA	Sulphur Dyes for Denim and cellulosic fibers	NDA	MHC in process	NDA	YES

1. DENIM WEAVING

TEXTILE AUXILIARIES AND FINISHING CHEMICALS (1/2)

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Textile Auxiliaries and Finishing Chemicals	Tannex Noveco	Multi-purpose, clay based product, bleach stabilizer	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Persohtal L	Dyebath lubricant, fatty based	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Levegal 221	Levelling agent for VAT dyeing	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Plexene QXL	Biodegradable sequestrant for bleaching and dyeing	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Respumit BA 2000	Biodradable, natural oil based defoamer	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Tanawet Q	Wetting and deaerating agent	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Tanazym CS	Non-GMO biopolishing enzyme	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Persohtal HNS	Hydrophilic softener, fatty based	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Persohtal Nano-S2G	Hydrophilic softener, based on unique silicone	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Protorez FFO 01	Crosslinker for easy care finishing of textiles composed of cellulosic fibers and ist blends with synthetic fibers	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Alviron GPL	Dyeing auxiliary, levelling agents	Texticolor	MHC	GOLD	YES
	Alviron W	Versatile applicable dyeing auxiliary; levelling dispersing and aftersoaping	Texticolor	MHC	GOLD	YES
	Lavan NH	Washing agents	Texticolor	MHC	GOLD	YES
	Seventin PEF flüssig	Fibre protecting agents	Texticolor	MHC	GOLD	YES
	Sevofix NHP	Aftertreating agents	Texticolor	MHC	GOLD	YES
	Softycon HGS	Softening agents	Texticolor	MHC	GOLD	YES
	TC-Dispergator BL	Dispersing agent	Texticolor	MHC	GOLD	YES
	TC-Dispergator BL 200%	Dispersing agent, concentrates	Texticolor	MHC	GOLD	YES
	TC-Kantenseife BS	Selvedge stiffing agents	Texticolor	MHC	GOLD	YES
	Tecovin FGA	Yarn finishing	Texticolor	MHC	GOLD	YES
	Lavan CBW	Washing agents, stain remover	Texticolor	MHC	GOLD	YES
	Alvirol AGK	Sequestering agents	Texticolor	MHC	GOLD	YES
	TC-Säurespender SWP 200%	Dyeing auxiliary, acid donor	Texticolor	MHC	GOLD	YES
	Albafix ECO	Dye Fixation	Huntsman	Goal MHC	GOLD	YES
	Albaflow FFC	Pretreatment	Huntsman	Goal MHC	GOLD	YES
	Albafluid EL3DM	Anti-Creasing Agent	Huntsman	Goal MHC	GOLD	YES
	Albatex AB 55	Dyebath chemical	Huntsman	Goal MHC	GOLD	YES
	Albatex CO	Dyebath chemical	Huntsman	Goal MHC	GOLD	YES
	BioBright O2	Detergent	Atlantic Care	Goal MHC	GOLD	YES
	Ecofix FF Ultra	Textile Auxiliaries + Finishing Chemicals	Zebec	Goal MHC	GOLD	YES
	Eripon R	Textile Auxiliaries + Finishing Chemicals	Huntsman	Goal MHC	GOLD	YES
	NDA	Bleaching Agent for Cellulosic	NDA	Goal MHC	GOLD	YES
	NDA	Low foaming stabiliser for bleaching regenerated cellulose fibres	NDA	Goal MHC	NDA	YES
	Felosan RGN	Wetting agents	CHT Bezema	Goal MHC	GOLD	YES

TEXTILE AUXILIARIES AND FINISHING CHEMICALS (2/2)

Sub-Category	Material-/ Chemical Name	Material- / Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Textile Auxiliaries and Finishing Chemicals	Hostapal MRZ	Wetting agents	Archroma	Goal MHC	GOLD	YES
	Imacol CN	Pretreatment	Archroma	NDA	GOLD	YES
	Invatex SA	Pretreatment	Huntsman	NDA	GOLD	YES
	NDA	Rope openers, softeners	NDA	NDA	NDA	YES
	NDA	Concentrated detergent and wetting agent. Fat and oil proprieties for all fibre types	NDA	NDA	NDA	YES
	Invatex AC	pH neutralizer	Huntsman	Goal MHC	GOLD	YES
	NDA	Reducing agent for sulphur dyes	NDA	NDA	GOLD	YES
	NDA	Dispersing agent	NDA	NDA	NDA	YES
	NDA	Wax based lubricant	NDA	NDA	GOLD	YES
	Kleerix PER	Demineralizing Chemical	Rossari Biotech	Goal MHC	GOLD	YES
	Ladiquest 1097	Soaping Agent	Archroma	Goal MHC	GOLD	YES
	Lanapex Sequest	Pretreatment	Croda	Goal MHC	GOLD	YES
	Matexil NZPN	Pretreatment	Croda	Goal MHC	GOLD	YES
	Levelgal RL	Levelling agent	Tanatex Chemicals	Goal MHC	GOLD	YES
	Leucophor BF2C	Optical Brightener	Archroma	Goal MHC	GOLD	YES
	Denimcol Soft PEN	Softening agents	CHT	Goal MHC	GOLD	YES
	Ablusoft ACSK	Softening agents	Taiwan	Goal MHC	GOLD	YES
	Elam EQB Base	Softening agents	Garmon	Goal MHC	GOLD	YES
	miDori bioSoft CA1	Softening agents	BST	Goal MHC	GOLD	YES
Printing Ink	Bezaprint Yellow RR	Printing Ink	CHT	Goal MHC	SILVER	YES
	Bezaprint Yellow 3GT	Printing Ink	CHT	Goal MHC	SILVER	YES
	Bezaprint Blue RR	Printing Ink	CHT	Goal MHC	SILVER	YES
	Bezaprint Red KCG	Printing Ink	CHT	Goal MHC	GOLD	YES
	Bezaprint Scarlet RR	Printing Ink	CHT	Goal MHC	GOLD	YES
	Bezaprint Violet FB	Printing Ink	CHT	Goal MHC	GOLD	YES
	Bezaprint Black DW	Printing Ink	CHT	Goal MHC	GOLD	YES
	Bezaprint Blue TB	Printing Ink	CHT	Goal MHC	GOLD	YES
	Tubiscreen GD-G	Printing Auxiliary	CHT	Goal MHC	GOLD	YES
	Tubisoft PSI	Printing Auxiliary	CHT	Goal MHC	GOLD	YES
	Luprintol Fixing Agent SE liq	Printing Auxiliary	Archroma	Goal MHC	GOLD	YES
	Luxetal HIT Plus	Printing Auxiliary	Archroma	Goal MHC	GOLD	YES
	Helizarin CS liq	Printing Auxiliary	Archroma	Goal MHC	GOLD	YES
	Helizarin G. Yellow FB- RM	Printing Auxiliary	Archroma	Goal MHC	GOLD	YES
	FT-0003	Screen Printing Ink	Spinks World	Goal MHC	GOLD	YES
	Diluant M-02	Screen Printing Thinner	Spinks World	Goal MHC	GOLD	YES
	Eco Discharge Binder- 301	Printing Auxiliary	Matsui Shikiso	Goal MHC	GOLD	YES

2. GARMENTING AND LAUNDRY

SEWING THREAD

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Sewing Thread	Sewing Yarn Natura	organic cotton	Mueller	C2CC 3006	GOLD	YES
	Sewing Yarn Natura	Tencel	Mueller	C2CC 3006	GOLD	YES
	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	YES

PATCH

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Denim Patch	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	YES

INTERLINING

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Interlining	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	Prototypes

METALLIC TRIMS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Metallic trims	NDA	NDA	NDA	NDA	NDA	R&D Project

DENIM WASHING CHEMICALS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Textile Auxiliaries and Finishing Chemicals	Alvion W	Versatile applicable dyeing auxiliary; levelling dispersing and aftersoaping	Texticolor	MHC	GOLD	YES
	Lavan NH	Washing agents	Texticolor	MHC	GOLD	YES
	TC-Dispergator BL	Dispersing agent	Texticolor	MHC	GOLD	YES
	TC Dispergator BL 200%	Dispersing agent, concentrate	Texticolor	MHC	GOLD	YES
	Lavan CBW	Washing agents, stain remover	Texticolor	MHC	GOLD	YES
	Alvirol AGK	Sequestering agents	Texticolor	MHC	GOLD	YES
	Lava Zyme AHG Conc	Washing agents	Dystar	MHC	GOLD	YES
	Lava Cell NBG	Washing agents	Dystar	MHC	GOLD	YES
	Lava Sperse KTZ New	Washing agents	Dystar	MHC	GOLD	YES
	Lava Jeans PRO 50	Washing agents	Dystar	MHC	GOLD	YES
	Lava Cell NHC Cold	Washing agents	Dystar	MHC	GOLD	YES
	Lava Soft HSB	Washing agents	Dystar	MHC	GOLD	YES
	Lava Soft EPS01	Washing agents	Dystar	MHC	GOLD	YES
	Lava Soft ME	Washing agents	Dystar	MHC	GOLD	YES
	Bactosol HPA liq	Washing agents	Archroma	MHC	GOLD	YES
	Direfix SD liq	Washing agents	Archroma	MHC	GOLD	YES
	Optifix RSL liq	Washing agents	Archroma	MHC	GOLD	YES
	Kieralon CDP liq c	Washing agents	Archroma	MHC	GOLD	YES
	Sirrix NE liq	Washing agents	Archroma	MHC	GOLD	YES
	BioBright O2	Washing agents	Atlantic Care	Goal MHC	GOLD	YES
	Ecofix FF Ultra	Washing agents	Zebec	Goal MHC	GOLD	YES
	Iglazyme Ultralite	Washing agents	Zebec	Goal MHC	GOLD	YES
	Soko Stone NLC	Washing agents	Soko Chemical	Goal MHC	GOLD	YES
	Solophenyl Black FR	Washing agents, overdye	Soko Chemical	Goal MHC	GOLD	YES
	Solophenyl Blue FGLE 220%	Washing agents, overdye	Soko Chemical	Goal MHC	GOLD	YES



INTRODUCTION

Lingerie as a fashion garment is increasingly complex and varied, using more and more colors, parts and embellishments. Still it needs to stay gentle on the wearer's skin. The goal of this chapter is to identify elements that can fill these fashion requirements without posing risks to its users, workers or the environment.

The present lingerie list proposes 120 materials and chemicals, currently available in the market, which can be used in different steps of lingerie garment manufacturing: 13 fibers (natural and synthetic), 40 dyes, and 56 other auxiliaries. Also, 11 elements to fully achieve a finished lingerie garment are proposed.

1. FABRICS AND FINISHES

FIBERS AND YARNS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Organic Cotton	Organic Cotton	Cellulose BN	Multiple Options	GOTS others	GOLD	YES
	Organic Cotton	Cellulose BN	NDA	GOTS	GOLD	YES
	Organic Cotton	Natural (raw) color cotton (different brown hues)	Organic Cotton Colours	GOTS	GOLD	YES
Biodegradable Elastomer	Rojca V550	Biodegradable Polymer BN/TN	Asahi Kasei Spandex Europe GmbH	MHC 3214	GOLD	YES
Cellulose Fibers	Birla Spunshades	Viscose Staple Fibre	Grasim Industries Ltd	MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	SILVER/GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
Synthetic Fibers	NDA	PA 6 TN	NDA	NDA	NDA	YES
	NDA	PES TN	NDA	NDA	NDA	YES

LUBRICANTS FOR YARNS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Spinning lubricants	NDA	Lubricants BN	NDA	NDA	GOLD	YES
	NDA	Lubricants BN	NDA	NDA	GOLD	YES
	NDA	Lubricants BN	NDA	NDA Goal MHC	NDA	YES
	NDA	Lubricants BN/TN	NDA	NDA	NDA	in development
Lubricants for Knitting	NDA	Lubricants BN/TN	NDA	NDA	GOLD	YES

REACTIVE DYES

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Reactive Dyes	Remazol Brilliant Yellow GL	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol Yellow GR 133%	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol Ultra Orange RGBN	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol Brilliant Red F3B	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol Ultra Carmine RGB	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol Brilliant Blue RN	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol luminous Yellow FL	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Levafix Eco Forest	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Levafix Eco Black	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Drimaren Yellow HF-3GL cdg	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Red CL-5B gr	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Red CL-5B p	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Red HF-3B gr	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Red HF-6BL cdg	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Red HF-CD cdg	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Scarlet HF-3G cdg	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Navy HF-GN gr	Reactive Dyes	Archroma	MHC	GOLD	YES
	Avitera Black SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Avitera Brilliant Yellow SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Avitera Deep Blue SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Avitera Deep Sea SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Avitera Gold SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Avitera Light Red SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Black NN	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novaron Brilliant blue W-BR	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Navy EC-BN	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Navy S-G	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Navy S-GI	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Orange EC-3R	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Red EC-2BL	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Red S-B	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Ruby S-3B	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Yellow EC-2R	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Yellow S-3R	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES

ACID DYES

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Acid Dyes	Nylosan Orange N-RL p 250	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Red E-BL sgr 180	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Violet E-2R sgr 300	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Brilliant blue N-FL sgr 180	Acid Dyes	Archroma	MHC	GOLD	YES
	Lanasyn Brilliant Green F-6GLN sgr	Acid Dyes	Archroma	MHC	GOLD	YES
	Lanasyn Flavine F-5G	Acid Dyes	Archroma	MHC	GOLD	YES
	Lanasyn Red F-6B 140	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Red S-3B sgr	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Orange S-3R sgr	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Navy S-3G sgr	Acid Dyes	Archroma	MHC	GOLD	YES

DISPERSE DYES

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Disperse Dyes	Foron Vermillion S-WF	Disperse Dyes	Archroma	MHC	GOLD	YES
	Foron Blue S-WF	Disperse Dyes	Archroma	MHC	GOLD	YES
	Foron Red S-WF	Disperse Dyes	Archroma	MHC	GOLD	YES
	Foron Brilliant Yellow S-WF	Disperse Dyes	Archroma	MHC	GOLD	YES
	Dianix Yellow AM-SLR 200%	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Yellow S-3G	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Orange AM-SLR	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Turquoise S-BG	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Brilliant Violet R	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Red AM-SLR	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Rubin XF2	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix ECO Black HF	Disperse Dyes	DyStar	MHC 2659	GOLD	YES

SULPHUR DYES

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Sulphur Dyes	NDA	Sulphur Dyes for Denim and cellulosic fibers	NDA	MHC in process	NDA	YES

TEXTILE AUXILIARIES AND FINISHING CHEMICALS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Textile Auxiliaries and Finishing Chemicals	Tannex Noveco	Multi-purpose, clay based product, bleach stabilizer	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Persoftal L	Dyebath lubricant, fatty based	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Levelgal RL	Levelling agent for reactive dyes	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Plexene QXL	Biodegradable sequestrant for bleaching and dyeing	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Respumit BA 2000	Biodradable, natural oil based defoamer	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Tanapal M-RE	Postscouring agent for reactive dyeings based on minerals	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Tanwet Q	Wetting and deaerating agent	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Tanazym CS	Non-GMO biopolishing enzyme	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Persoftal HNS	Hydrophilic softener, fatty based	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Persoftal NANO-S2G	Hydrophilic softener, based on unique silicone	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Protorex FFO 01	Crosslinker for easy care finishing of textiles composed of cellulosic fibers and ist blends with synthetic fibers	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Curite 5184N	Catalyst for resin finishing	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Alviron GPL	Dyeing auxiliary, levelling agents	Texticolor	MHC	GOLD	YES
	Alviron W	Versatile applicable dyeing auxiliary; levelling dispersing and aftersoaping	Texticolor	MHC	GOLD	YES
	Lavan NH	Washing agents	Texticolor	MHC	GOLD	YES
	Seventin PEF flüssig	Fibre protecting agents	Texticolor	MHC	GOLD	YES
	Sevofix NHP	Aftertreating agents	Texticolor	MHC	GOLD	YES
	Softycon HGS	Softening agents	Texticolor	MHC	GOLD	YES
	TC-Dispergator BL	Dispersing agent	Texticolor	MHC	GOLD	YES
	TC-Dispergator BL 200%	Dispersing agent, concentrates	Texticolor	MHC	GOLD	YES
	TC-Kantenseife BS	Selvedge stiffing agents	Texticolor	MHC	GOLD	YES
	Tecovin FGA	Yarn finishing	Texticolor	MHC	GOLD	YES
	Lavan CBW	Washing agents, stain remover	Texticolor	MHC	GOLD	YES
	Alvirol AGK	Sequestering agents	Texticolor	MHC	GOLD	YES
	TC-Säurespender SWP 200%	Dyeing auxiliary, acid donor	Texticolor	MHC	GOLD	YES
	NDA	Bleaching Agent for Cellulosic	NDA	MHC in process	GOLD	YES
	NDA	Alkali for pretreatment	NDA	NDA Goal MHC	GOLD	YES
	NDA	Bleaching Chemical	NDA	NDA Goal MHC	GOLD	YES
	NDA	Neutralizing Acid	NDA	NDA Goal MHC	GOLD	YES
	NDA	Peroxide Stablizer	NDA	NDA Goal MHC	GOLD	YES
	NDA	Wetting Agent	NDA	NDA Goal MHC	GOLD	YES
	NDA	Demineralizing chemical	NDA	NDA Goal MHC	GOLD	YES
	NDA	Core pH neutralizer	NDA	NDA Goal MHC	GOLD	YES
	NDA	Dye exhaustion	NDA	NDA Goal MHC	GOLD	YES
	NDA	Dye Fixation	NDA	NDA Goal MHC	GOLD	YES
	NDA	Soaping Agent	NDA	NDA Goal MHC	GOLD	YES
	NDA	Dye Fixation	NDA	NDA Goal MHC	GOLD	YES
	NDA	Anti-creasing agent/Lubricant	NDA	NDA Goal MHC	GOLD	YES
	NDA	Optical Brightener	NDA	NDA Goal MHC	GOLD	YES
	NDA	Wetting Agent	NDA	NDA Goal MHC	GOLD	YES
	NDA	Sequestering Agent	NDA	NDA Goal MHC	GOLD	YES
	NDA	Pretreatment	NDA	NDA Goal MHC	GOLD	YES

PRINTING INK

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Printing Ink	Bezaprint Yellow RR	Printing Ink	CHT	Goal MHC	SILVER	YES
	Bezaprint Yellow 3GT	Printing Ink	CHT	Goal MHC	SILVER	YES
	Bezaprint Blue RR	Printing Ink	CHT	Goal MHC	SILVER	YES
	Bezaprint Red KCG	Printing Ink	CHT	Goal MHC	PLATINUM	YES
	Bezaprint Scarlet RR	Printing Ink	CHT	Goal MHC	PLATINUM	YES
	Bezaprint Violet FB	Printing Ink	CHT	Goal MHC	PLATINUM	YES
	Bezaprint Black DW	Printing Ink	CHT	Goal MHC	PLATINUM	YES
	Bezaprint Blue TB	Printing Ink	CHT	Goal MHC	PLATINUM	YES

2. GARMENTING

SEWING THREAD

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Sewing Thread	Sewing Yarn Natura	organic cotton	Mueller	C2CC 3006	GOLD	YES
	Sewing Yarn Natura	Tencel	Mueller	C2CC 3006	GOLD	YES
	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	YES

LABEL

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Label	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	YES
Neck Label Ink	Sapphire SB White	Neck Ink	Inkcups	Goal MHC	PLATINUM	YES
	Sapphire SB Black	Neck Ink	Inkcups	Goal MHC	PLATINUM	YES
	Sapphire SB Gray	Neck Ink	Inkcups	Goal MHC	PLATINUM	YES

INTERLINING

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Interlining	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	Prototype

ELASTIC BANDS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Elastic Bands	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	YES
	NDA	NDA TN	NDA	NDA	NDA	Prototype
	NDA	NDA BN	NDA	NDA	NDA	YES



INTRODUCTION

Elasticated fabrics bring enormous performance and comfort opportunities for a range of uses. To achieve these functions, a combination of multiple materials is needed, which in some cases complicates their active cycling (recyclability or healthy compostability).

The Elasticated Fabrics list proposes 126 materials and chemicals, currently available in the market, which can be used in different steps of an elasticated garment manufacturing in a healthy manner and enabling its active cyclability: 16 fibers and yarns (natural and synthetic), 23 dyes, and 74 other auxiliaries. Also, 13 elements to transform the fabric into a finished elasticated garment are proposed.

1. KNITS AND WOVENS

FIBERS AND YARNS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Organic Cotton	Organic Cotton	Cellulose BN	Multiple Options	GOTS others	GOLD	YES
	Organic Cotton	Cellulose BN	NDA	GOTS	GOLD	YES
	Organic Cotton	Natural (raw) color cotton (different brown hues)	Organic Cotton Colours	GOTS	GOLD	YES
Biodegradable Elastomer	Rojca V550	Biodegradable Polymer BN/TN	Asahi Kasei Spandex Europe GmbH	MHC 3214	GOLD	YES
Cellulose Fibers	Birla Spunshades	Viscose Staple Fibre	Grasim Industries Ltd	MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	SILVER/GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
Synthetic Fibers	NDA	PA 6 TN	NDA	NDA	NDA	YES
	NDA	PES TN	NDA	NDA	NDA	YES

LUBRICANTS FOR YARNS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Spinning lubricants	NDA	Lubricants BN	NDA	NDA	GOLD	YES
	NDA	Lubricants BN	NDA	NDA	GOLD	YES
	NDA	Lubricants BN	NDA	NDA Goal MHC	NDA	YES
	NDA	Lubricants BN/TN	NDA	NDA	NDA	in development
Spinning lubricants	NDA	Spin finish oil TN	NDA	NDA	NDA	YES
	NDA	Hydrophilic Finish for PA	NDA	NDA	NDA	YES

SIZING PROCESS CHEMICALS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Sizing Process Chemicals	NDA	Sizing Process Chemicals	NDA	NDA	GOLD	YES
Sizing Agent	NDA	Warp strength enhancers	Multiple (NDA)	NDA	NDA	YES
	NDA	Softner	NDA	NDA	NDA	YES
	NDA	Softner	NDA	NDA	NDA	YES

WEAVING SELVAGE YARNS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Selvage Yarns	Organic Cotton	Cellulose	Multiple Options	GOTS others	GOLD	YES
	NDA	Cellulose	NDA	NDA Goal MHC	GOLD	YES
Catch Selvage Yarns	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	YES

REACTIVE DYES

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Reactive Dyes	Remazol Brilliant Yellow GL	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol Yellow GR 133%	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol Ultra Orange RGBN	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol Brilliant Red F3B	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol Ultra Carmine RGB	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol Brilliant Blue RN	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol luminous Yellow FL	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Levafix Eco Forest	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Levafix Eco Black	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Drimaren Yellow HF-3GL cdg	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Red CL-5B gr	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Red CL-5B p	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Red HF-3B gr	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Red HF-6BL cdg	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Red HF-CD cdg	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Scarlet HF-3G cdg	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Navy HF-GN gr	Reactive Dyes	Archroma	MHC	GOLD	YES
	Avitera Black SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Avitera Brilliant Yellow SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Avitera Deep Blue SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Avitera Deep Sea SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Avitera Gold SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Avitera Light Red SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Black NN	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novaron Brilliant blue W-BR	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Navy EC-BN	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Navy S-G	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Navy S-GI	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Orange EC-3R	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Red EC-2BL	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Red S-B	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Ruby S-3B	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Yellow EC-2R	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Yellow S-3R	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES

ACID DYES

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Acid Dyes	Nylosan Orange N-RL p 250	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Red E-BL sgr 180	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Violet E-2R sgr 300	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Brilliant blue N-FL sgr 180	Acid Dyes	Archroma	MHC	GOLD	YES
	Lanasyn Brilliant Green F-6GLN sgr	Acid Dyes	Archroma	MHC	GOLD	YES
	Lanasyn Flavine F-5G	Acid Dyes	Archroma	MHC	GOLD	YES
	Lanasyn Red F-6B 140	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Red S-3B sgr	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Orange S-3R sgr	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Navy S-3G sgr	Acid Dyes	Archroma	MHC	GOLD	YES

DISPERSE DYES

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Disperse Dyes	Foron Vermillion S-WF	Disperse Dyes	Archroma	MHC	GOLD	YES
	Foron Blue S-WF	Disperse Dyes	Archroma	MHC	GOLD	YES
	Foron Red S-WF	Disperse Dyes	Archroma	MHC	GOLD	YES
	Foron Brilliant Yellow S-WF	Disperse Dyes	Archroma	MHC	GOLD	YES
	Dianix Yellow AM-SLR 200%	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Yellow S-3G	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Orange AM-SLR	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Turquoise S-BG	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Brilliant Violet R	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Red AM-SLR	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Rubin XF2	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix ECO Black HF	Disperse Dyes	DyStar	MHC 2659	GOLD	YES

SULPHUR DYES

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Sulphur Dyes	NDA	Sulphur Dyes for Denim and cellulosic fibers	NDA	MHC in process	NDA	YES

TEXTILE AUXILIARIES AND FINISHING CHEMICALS (1/2)

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Textile Auxiliaries and Finishing Chemicals	Tannex Noveco	Multi-purpose, clay based product, bleach stabilizer	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Persoftal L	Dyebath lubricant, fatty based	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Levelgal RL	Levelling agent for reactive dyes	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Plexene QXL	Biodegradable sequestrant for bleaching and dyeing	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Respumit BA 2000	Biodegradable, natural oil based defoamer	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Tanapal M-RE	Postscouring agent for reactive dyeings based on minerals	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Tanwet Q	Wetting and deaerating agent	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Tanazym CS	Non-GMO biopolishing enzyme	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Persoftal HNS	Hydrophilic softener, fatty based	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Persoftal NANO-S2G	Hydrophilic softener, based on unique silicone	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Protorex FFO 01	Crosslinker for easy care finishing of textiles composed of cellulosic fibers and ist blends with synthetic fibers	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Curite 5184N	Catalyst for resin finishing	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Alvicon GPL	Dyeing auxiliary, levelling agents	Texticolor	MHC	GOLD	YES
	Alvicon W	Versatile applicable dyeing auxiliary; levelling dispersing and aftersoaping	Texticolor	MHC	GOLD	YES
	Lavan NH	Washing agents	Texticolor	MHC	GOLD	YES
	Seventin PEF flüssig	Fibre protecting agents	Texticolor	MHC	GOLD	YES
	Sevofix NHP	Aftertreating agents	Texticolor	MHC	GOLD	YES
	Softycon HGS	Softening agents	Texticolor	MHC	GOLD	YES
	TC-Dispergator BL	Dispersing agent	Texticolor	MHC	GOLD	YES
	TC-Dispergator BL 200%	Dispersing agent, concentrates	Texticolor	MHC	GOLD	YES
	TC-Kantenseife BS	Selvedge stiffing agents	Texticolor	MHC	GOLD	YES
	Tecovin FGA	Yarn finishing	Texticolor	MHC	GOLD	YES
	Lavan CBW	Washing agents, stain remover	Texticolor	MHC	GOLD	YES
	Alvirol AGK	Sequestering agents	Texticolor	MHC	GOLD	YES
	TC-Säurespender SWP 200%	Dyeing auxiliary, acid donor	Texticolor	MHC	GOLD	YES
	NDA	Bleaching Agent for Cellulosic	NDA	MHC in process	GOLD	YES
	NDA	Alkali for pretreatment	NDA	NDA Goal MHC	GOLD	YES
	NDA	Bleaching Chemical	NDA	NDA Goal MHC	GOLD	YES
	NDA	Neutralizing Acid	NDA	NDA Goal MHC	GOLD	YES
	NDA	Peroxide Stablizer	NDA	NDA Goal MHC	GOLD	YES
	NDA	Wetting Agent	NDA	NDA Goal MHC	GOLD	YES
	NDA	Demineralizing chemical	NDA	NDA Goal MHC	GOLD	YES

TEXTILE AUXILIARIES AND FINISHING CHEMICALS (2/2)

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
T+A161:A180extile Auxiliaries and Finishing Chemicals	NDA	Core pH neutralizer	NDA	NDA Goal MHC	GOLD	YES
	NDA	Dye exhaustion	NDA	NDA Goal MHC	GOLD	YES
	NDA	Dye Fixation	NDA	NDA Goal MHC	GOLD	YES
	NDA	Soaping Agent	NDA	NDA Goal MHC	GOLD	YES
	NDA	Dye Fixation	NDA	NDA Goal MHC	GOLD	YES
	NDA	Anti-creasing agent/Lubricant	NDA	NDA Goal MHC	GOLD	YES
	NDA	Optical Brightener	NDA	NDA Goal MHC	GOLD	YES
	NDA	Wetting Agent	NDA	NDA Goal MHC	GOLD	YES
	NDA	Sequestering Agent	NDA	NDA Goal MHC	GOLD	YES
	NDA	Pretreatment	NDA	NDA Goal MHC	GOLD	YES
	NDA	Low foaming stabiliser for bleaching regenerated cellulose fibres	NDA	NDA	NDA	YES
	NDA	Wetting agent	NDA	NDA	GOLD	YES
	NDA	Wetting agents	NDA	NDA	NDA	YES
	NDA	Wax like softener	NDA	NDA	GOLD	YES
	NDA	Rope openers, softeners	NDA	NDA	NDA	YES
	NDA	Concentrated detergent and wetting agent. Fat and oil proprieties for all fibre types	NDA	NDA	NDA	YES
	NDA	pH neutralizer	NDA	NDA	GOLD	YES
	NDA	Reducing agent for sulphur dyes	NDA	NDA	GOLD	YES
	NDA	Dispersing agent	NDA	NDA	NDA	YES
	NDA	Wax based lubricant	NDA	NDA	GOLD	YES
	NDA	Silicon-free detergent, low foaming, easily biodegradable	NDA	NDA	GOLD	YES
	NDA	Levelling agent for polyester dyeing	NDA	NDA	GOLD	YES
	NDA	Dispersing agent for dyeing and aftertreatment of polyester	NDA	NDA	NDA	YES

PRINTING INK

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Printing Ink	Bezaprint Yellow RR	Printing Ink	CHT	Goal MHC	SILVER	YES
	Bezaprint Yellow 3GT	Printing Ink	CHT	Goal MHC	SILVER	YES
	Bezaprint Blue RR	Printing Ink	CHT	Goal MHC	SILVER	YES
	Bezaprint Red KCG	Printing Ink	CHT	Goal MHC	PLATINUM	YES
	Bezaprint Scarlet RR	Printing Ink	CHT	Goal MHC	PLATINUM	YES
	Bezaprint Violet FB	Printing Ink	CHT	Goal MHC	PLATINUM	YES
	Bezaprint Black DW	Printing Ink	CHT	Goal MHC	PLATINUM	YES
	Bezaprint Blue TB	Printing Ink	CHT	Goal MHC	PLATINUM	YES

2. GARMENTING

SEWING THREAD

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Sewing Thread	Sewing Yarn Natura	organic cotton	Mueller	C2CC 3006	GOLD	YES
	Sewing Yarn Natura	Tencel	Mueller	C2CC 3006	GOLD	YES
	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	YES

LABEL

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Label	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	YES
Neck Label Ink	Sapphire SB White	Neck Ink	Inkcups	Goal MHC	PLATINUM	YES
	Sapphire SB Black	Neck Ink	Inkcups	Goal MHC	PLATINUM	YES
	Sapphire SB Gray	Neck Ink	Inkcups	Goal MHC	PLATINUM	YES

INTERLINING

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Interlining	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	Prototype

ELASTIC BANDS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Elastic Bands	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	YES
	NDA	NDA TN	NDA	NDA	NDA	Prototype
	NDA	NDA BN	NDA	NDA	NDA	YES

METALLIC TRIMS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Metallic trims	NDA	NDA	NDA	NDA	NDA	R&D Project

TRIMS FOR BIOLOGICAL NUTIENTS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Trims for BN	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	YES



INTRODUCTION

Embellishments contribute strongly to creating unique items and to build a fashion identity with which customers can express themselves.

Given the complexity of these elements, which can easily be dispersed in the environment, the Garments & Embellishments list proposes materials that combine fashion with a positive impact for all. 151 materials and chemicals are presented: 19 fibers and yarns (natural and synthetic), 25 dyes, 95 other auxiliaries, and 13 elements to transform a fabric into a finished garment are proposed.

1. KNITS AND WOVENS

FIBERS AND YARNS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Organic Cotton	Organic Cotton	Cellulose BN	Multiple Options	GOTS others	GOLD	YES
	Organic Cotton	Cellulose BN	NDA	GOTS	GOLD	YES
	Organic Cotton	Natural (raw) color cotton (different brown hues)	Organic Cotton Colours	GOTS	GOLD	YES
Biodegradable Elastomer	Rojca V550	Biodegradable Polymer BN/TN	Asahi Kasei Spandex Europe GmbH	MHC 3214	GOLD	YES
Cellulose Fibers	Birla Spunshades	Viscose Staple Fibre	Grasim Industries Ltd	MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	SILVER/GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
Synthetic Fibers	NDA	PA 6 TN	NDA	NDA	NDA	YES
	NDA	PES TN	NDA	NDA	NDA	YES
Protein fibers	NZ Merino Kōura wool fiber	Wool BN	NZ Merino Company	C2CC 3165 MHC 3165	SILVER PLATINUM	YES
	Slowool & Slowool Light wool yarns	Wool BN	Botto Giuseppe e Figli	C2CC 3027 MHC 3027	SILVER PLATINUM	YES
	Millennium Yarn	Wool BN	Zegna Baruffa Lane Borgosesia	C2CC 3040 MHC 3040	GOLD PLATINUM	YES
	Slowsilk Yarn	Silk BN	Botto Giuseppe e Figli	C2CC 3048 MHC 3048	GOLD PLATINUM	YES
	Birla Spunshades	Viscose	GRASIM INDUSTRIES LTD.	MHC 3522	GOLD	YES

LUBRICANTS FOR YARNS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Spinning lubricants	NDA	Lubricants BN	NDA	NDA	GOLD	YES
	NDA	Lubricants BN	NDA	NDA	GOLD	YES
	NDA	Lubricants BN	NDA	NDA Goal MHC	NDA	YES
	NDA	Lubricants BN/TN	NDA	NDA	NDA	In development
Spinning lubricants	DEFILAN UN	Lubricants for protein fibers	Achitex Minerva	NDA	SILVER/GOLD	YES
Spinning process chemicals	MISTOX MP	Mothproof for protein fibers	Achitex Minerva	NDA	SILVER/GOLD	YES
	Achistat AL30	Antistatic for protein fibers	Achitex Minerva	NDA	SILVER/GOLD	YES
	ACHIGEL 12	Micronized colloidal silica. Cohesione agent for protein fibers	Achitex Minerva	NDA	GOLD	YES
	NDA	Antistatic special for non-shrink wool, very good antistatic and cohesion properties	NDA	NDA	SILVER/GOLD	YES

SIZING PROCESS CHEMICALS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Sizing Process Chemicals	NDA	Sizing Process Chemicals	NDA	NDA	GOLD	YES
Sizing Agent	NDA	Warp strength enhancers	NDA	NDA	NDA	YES
	NDA	Softner	NDA	NDA	NDA	YES
	NDA	Softner	NDA	NDA	NDA	YES

WEAVING SELVAGE YARNS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Selvage Yarns	Organic Cotton	Cellulose	Multiple Options	GOTS others	GOLD	YES
	NDA	Cellulose	NDA	NDA Goal MHC	GOLD	YES
Catch Selvage Yarns	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	YES

REACTIVE DYES

Sub-Category	Material- / Chemical Name	Material- / Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Reactive Dyes	Remazol Brilliant Yellow GL	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol Yellow GR 133%	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol Ultra Orange RGBN	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol Brilliant Red F3B	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol Ultra Carmine RGB	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol Brilliant Blue RN	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol luminous Yellow FL	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Levafix Eco Forest	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Levafix Eco Black	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Drimaren Yellow HF-3GL cdg	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Red CL-5B gr	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Red CL-5B p	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Red HF-3B gr	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Red HF-6BL cdg	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Red HF-CD cdg	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Scarlet HF-3G cdg	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Navy HF-GN gr	Reactive Dyes	Archroma	MHC	GOLD	YES
	Avitera Black SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Avitera Brilliant Yellow SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Avitera Deep Blue SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Avitera Deep Sea SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Avitera Gold SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Avitera Light Red SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Black NN	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novaron Brilliant blue W-BR	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Navy EC-BN	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Navy S-G	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Navy S-GI	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Orange EC-3R	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Red EC-2BL	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Red S-B	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Ruby S-3B	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Yellow EC-2R	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Yellow S-3R	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES

ACID DYES

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Acid Dyes	Nylosan Orange N-RL p 250	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Red E-BL sgr 180	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Violet E-2R sgr 300	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Brilliant blue N-FL sgr 180	Acid Dyes	Archroma	MHC	GOLD	YES
	Lanasyn Brilliant Green F-6GLN sgr	Acid Dyes	Archroma	MHC	GOLD	YES
	Lanasyn Flavine F-5G	Acid Dyes	Archroma	MHC	GOLD	YES
	Lanasyn Red F-6B 140	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Red S-3B sgr	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Orange S-3R sgr	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Navy S-3G sgr	Acid Dyes	Archroma	MHC	GOLD	YES

DISPERSE, REACTIVE AND SULPHUR DYES

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Disperse Dyes	Foron Vermillion S-WF	Disperse Dyes	Archroma	MHC	GOLD	YES
	Foron Blue S-WF	Disperse Dyes	Archroma	MHC	GOLD	YES
	Foron Red S-WF	Disperse Dyes	Archroma	MHC	GOLD	YES
	Foron Brilliant Yellow S-WF	Disperse Dyes	Archroma	MHC	GOLD	YES
	Dianix Yellow AM-SLR 200%	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Yellow S-3G	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Orange AM-SLR	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Turquoise S-BG	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Brilliant Violet R	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Red AM-SLR	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Rubin XF2	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix ECO Black HF	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
Reactive Dyes	NDA	Reactive Dyes	NDA	NDA	GOLD	YES
	NDA	Reactive Dyes	NDA	NDA	NDA	YES
Sulphur Dyes	NDA	Sulphur Dyes for Denim and cellulosic fibers	NDA	MHC in process	NDA	YES

TEXTILE AUXILIARIES AND FINISHING CHEMICALS (1/2)

Sub-Category	Material- / Chemical Name	Material- / Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Textile Auxiliaries and Finishing Chemicals	Tannex Noveco	Multi-purpose, clay based product, bleach stabilizer	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Persoftal L	Dyebath lubricant, fatty based	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Levelgal RL	Levelling agent for reactive dyes	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Plexene QXL	Biodegradable sequestrant for bleaching and dyeing	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Respumit BA 2000	Biodradable, natural oil based defoamer	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Tanapal M-RE	Postscouring agent for reactive dyeings based on minerals	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Tanwet Q	Wetting and deaerating agent	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Tanazym CS	Non-GMO biopolishing enzyme	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Persoftal HNS	Hydrophilic softener, fatty based	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Persoftal NANO-S2G	Hydrophilic softener, based on unique silicone	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Protorex FFO 01	Crosslinker for easy care finishing of textiles composed of cellulosic fibers and ist blends with synthetic fibers	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Curite 5184N	Catalyst for resin finishing	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Alviron GPL	Dyeing auxiliary, levelling agents	Texticolor	MHC	GOLD	YES
	Alviron W	Versatile applicable dyeing auxiliary; levelling dispersing and aftersoaping	Texticolor	MHC	GOLD	YES
	Lavan NH	Washing agents	Texticolor	MHC	GOLD	YES
	Seventin PEF flüssig	Fibre protecting agents	Texticolor	MHC	GOLD	YES
	Sevofix NHP	Aftertreating agents	Texticolor	MHC	GOLD	YES
	Softycon HGS	Softening agents	Texticolor	MHC	GOLD	YES
	TC-Dispergator BL	Dispersing agent	Texticolor	MHC	GOLD	YES
	TC-Dispergator BL 200%	Dispersing agent, concentrates	Texticolor	MHC	GOLD	YES
	TC-Kantenseife BS	Selvedge stiffing agents	Texticolor	MHC	GOLD	YES
	Tecovin FGA	Yarn finishing	Texticolor	MHC	GOLD	YES
	Lavan CBW	Washing agents, stain remover	Texticolor	MHC	GOLD	YES
	Alvirol AGK	Sequestering agents	Texticolor	MHC	GOLD	YES
	TC-Säurespender SWP 200%	Dyeing auxiliary, acid donor	Texticolor	MHC	GOLD	YES
	NDA	Bleaching Agent for Cellulosic	NDA	MHC in process	GOLD	YES
	NDA	Alkali for pretreatment	NDA	NDA Goal MHC	GOLD	YES
	NDA	Bleaching Chemical	NDA	NDA Goal MHC	GOLD	YES
	NDA	Neutralizing Acid	NDA	NDA Goal MHC	GOLD	YES
	NDA	Peroxide Stablizer	NDA	NDA Goal MHC	GOLD	YES
	NDA	Wetting Agent	NDA	NDA Goal MHC	GOLD	YES
	NDA	Demineralizing chemical	NDA	NDA Goal MHC	GOLD	YES
	NDA	Core pH neutralizer	NDA	NDA Goal MHC	GOLD	YES
	NDA	Dye exhaustion	NDA	NDA Goal MHC	GOLD	YES
	NDA	Dye Fixation	NDA	NDA Goal MHC	GOLD	YES
	NDA	Soaping Agent	NDA	NDA Goal MHC	GOLD	YES
	NDA	Dye Fixation	NDA	NDA Goal MHC	GOLD	YES
	NDA	Anti-creasing agent/Lubricant	NDA	NDA Goal MHC	GOLD	YES

TEXTILE AUXILIARIES AND FINISHING CHEMICALS (2/2)

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Textile Auxiliaries and Finishing Chemicals	NDA	Optical Brightener	NDA	NDA Goal MHC	GOLD	YES
	NDA	Wetting Agent	NDA	NDA Goal MHC	GOLD	YES
	NDA	Sequestering Agent	NDA	NDA Goal MHC	GOLD	YES
	NDA	Pretreatment	NDA	NDA Goal MHC	GOLD	YES
	NDA	Low foaming stabiliser for bleaching regenerated cellulose fibres	NDA	NDA	NDA	YES
	NDA	Wetting agent	NDA	NDA	GOLD	YES
	NDA	Wetting agents	NDA	NDA	NDA	YES
	NDA	Wax like softener	NDA	NDA	GOLD	YES
	NDA	Rope openers, softeners	NDA	NDA	NDA	YES
	NDA	Concentrated detergent and wetting agent. Fat and oil proprieties for all fibre types	NDA	NDA	NDA	YES
	NDA	pH neutralizer	NDA	NDA	GOLD	YES
	NDA	Reducing agent for sulphur dyes	NDA	NDA	GOLD	YES
	NDA	Dispersing agent	NDA	NDA	NDA	YES
	NDA	Wax based lubricant	NDA	NDA	GOLD	YES
	NDA	Silicon-free detergent, low foaming, easily biodegradable	NDA	NDA	SILVER	YES
	NDA	Levelling agent for polyester dyeing	NDA	NDA	GOLD	YES
	NDA	Dispersing agent for dyeing and aftertreatmentof polyester	NDA	NDA	NDA	YES
	NDA	Low foaming stabiliser for bleaching regenerated cellulose fibres	NDA	NDA	NDA	YES
	NDA	Wetting agent	NDA	NDA	GOLD	YES
	NDA	Wetting agents	NDA	NDA	NDA	YES
	NDA	Wax like softener	NDA	NDA	GOLD	YES
	NDA	Rope openers, softeners	NDA	NDA	NDA	YES
	NDA	Concentrated detergent and wetting agent. Fat and oil proprieties for all fibre types	NDA	NDA	NDA	YES
	NDA	pH neutralizer	NDA	NDA	GOLD	YES
	NDA	Reducing agent for sulphur dyes	NDA	NDA	GOLD	YES
	NDA	Dispersing agent	NDA	NDA	NDA	YES
	NDA	Wax based lubricant	NDA	NDA	GOLD	YES
	NDA	Silicon-free detergent, low foaming, easily biodegradable	NDA	NDA	GOLD	YES
	NDA	Detergents pre-treatment protein fibers	NDA	NDA	GOLD	YES
	NDA	Oxidizing agent pre-treatment protein fibers (post-scouring)	NDA	NDA	SILVER/GOLD	YES
	NDA	Levelling agent for protein fibers and acid dyes	NDA	NDA	SILVER/GOLD	YES
	NDA	Defoaming agent pre-treatment protein fibers (post-scouring)	NDA	NDA	GOLD	YES
	NDA	Softner pre-treatmentprotein fibers (post-scouring)	NDA	NDA	GOLD	YES
	Terilan CH	Detergent for protein fibers with high degreasing and dispersing power	FRATELLI RICCI	NDA	GOLD	YES
	PERMASEAL WSR-XF	Dynamic repellency and soil resistance for PET, nylon, wool and blends	PHOENIX CHEMICAL COMPANY, INC.	MHC 3100	GOLD	YES
	NDA	Dispersing agent	NDA	NDA	SILVER/GOLD	YES

PRINTING INKS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Printing Ink	Bezaprint Yellow RR	Printing Ink	CHT	Goal MHC	SILVER	YES
	Bezaprint Yellow 3GT	Printing Ink	CHT	Goal MHC	SILVER	YES
	Bezaprint Blue RR	Printing Ink	CHT	Goal MHC	SILVER	YES
	Bezaprint Red KCG	Printing Ink	CHT	Goal MHC	PLATINUM	YES
	Bezaprint Scarlet RR	Printing Ink	CHT	Goal MHC	PLATINUM	YES
	Bezaprint Violet FB	Printing Ink	CHT	Goal MHC	PLATINUM	YES
	Bezaprint Black DW	Printing Ink	CHT	Goal MHC	PLATINUM	YES
	Bezaprint Blue TB	Printing Ink	CHT	Goal MHC	PLATINUM	YES

2. GARMENTING

SEWING THREAD

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Sewing Thread	Sewing Yarn Natura	Organic cotton	Mueller	C2CC 3006	GOLD	YES
	Sewing Yarn Natura	Tencel	Mueller	C2CC 3006	GOLD	YES
	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	YES

LABEL

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Label	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	YES
Neck Label Ink	Sapphire SB White	Neck Ink	Inkcups	Goal MHC	PLATINUM	YES
	Sapphire SB Black	Neck Ink	Inkcups	Goal MHC	PLATINUM	YES
	Sapphire SB Gray	Neck Ink	Inkcups	Goal MHC	PLATINUM	YES

INTERLINING

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Interlining	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	Prototype

ELASTIC BANDS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Elastic Bands	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	YES
	NDA	NDA TN	NDA	NDA	NDA	Prototype
	NDA	NDA BN	NDA	NDA	NDA	YES

METALLIC TRIMS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Metallc trims	NDA	NDA	NDA	NDA	NDA	R&D Project

TRIMS FOR BIOLOGICAL NUTIENTS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Trims for BN	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	YES



INTRODUCTION

Printed garments are the fifth category in scope for this study, to give an overview of techniques and products that can be used to finish garments, beyond dyes and embellishments. The present lists proposes 137 materials and chemicals currently available in the market, which can be used in different steps of printed garment manufacturing and finishing: 13 fibers (natural and synthetic), 39 dyes, and 58 other auxiliaries. Also, 27 elements to transform a denim fabric into a finished garment are proposed, from which 19 are printing chemicals.

1. CIRCULAR KNITS

FIBERS AND YARNS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Organic Cotton	Organic Cotton	Cellulose BN	Multiple Options	GOTS others	GOLD	YES
	Organic Cotton	Cellulose BN	NDA	GOTS	GOLD	YES
	Organic Cotton	Natural (raw) color cotton (different brown hues)	Organic Cotton Colours	GOTS	GOLD	YES
Biodegradable Elastomer	Rojca V550	Biodegradable Polymer BN/TN	Asahi Kasei Spandex Europe GmbH	MHC 3214	GOLD	YES
Cellulose Fibers	Birla Spunshades	Viscose Staple Fibre	Grasim Industries Ltd	MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	SILVER/GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
	NDA	Cellulose BN	NDA	NDA Goal MHC	GOLD	YES
Synthetic Fibers	NDA	PA 6 TN	NDA	NDA	NDA	YES
	NDA	PES TN	NDA	NDA	NDA	YES

LUBRICANTS FOR YARNS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Spinning lubricants	NDA	Lubricants BN	NDA	NDA	GOLD	YES
	NDA	Lubricants BN	NDA	NDA	GOLD	YES
	NDA	Lubricants BN	NDA	NDA Goal MHC	NDA	YES
	NDA	Lubricants BN/TN	NDA	NDA	NDA	in development

REACTIVE DYES

Sub-Category	Material- / Chemical Name	Material- / Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Reactive Dyes	Remazol Brilliant Yellow GL	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol Yellow GR 133%	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol Ultra Orange RGBN	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol Brilliant Red F3B	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol Ultra Carmine RGB	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol Brilliant Blue RN	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Remazol luminous Yellow FL	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Levafix Eco Forest	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Levafix Eco Black	Reactive Dyes	DyStar	MHC 2659	GOLD	YES
	Drimaren Yellow HF-3GL cdg	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Red CL-5B gr	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Red CL-5B p	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Red HF-3B gr	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Red HF-6BL cdg	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Red HF-CD cdg	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Scarlet HF-3G cdg	Reactive Dyes	Archroma	MHC	GOLD	YES
	Drimaren Navy HF-GN gr	Reactive Dyes	Archroma	MHC	GOLD	YES
	Avitera Black SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Avitera Brilliant Yellow SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Avitera Deep Blue SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Avitera Deep Sea SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Avitera Gold SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Avitera Light Red SE	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Black NN	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novaron Brilliant blue W-BR	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Navy EC-BN	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Navy S-G	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Navy S-GI	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Orange EC-3R	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Red EC-2BL	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Red S-B	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Ruby S-3B	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Yellow EC-2R	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES
	Novacron Yellow S-3R	Reactive Dyes	Huntsman	MHC 3274	GOLD	YES

ACID DYES

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Acid Dyes	Nylosan Orange N-RL p 250	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Red E-BL sgr 180	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Violet E-2R sgr 300	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Brilliant blue N-FL sgr 180	Acid Dyes	Archroma	MHC	GOLD	YES
	Lanasyn Brilliant Green F-6GLN sgr	Acid Dyes	Archroma	MHC	GOLD	YES
	Lanasyn Flavine F-5G	Acid Dyes	Archroma	MHC	GOLD	YES
	Lanasyn Red F-6B 140	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Red S-3B sgr	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Orange S-3R sgr	Acid Dyes	Archroma	MHC	GOLD	YES
	Nylosan Navy S-3G sgr	Acid Dyes	Archroma	MHC	GOLD	YES

DISPERSE DYES

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Disperse Dyes	Foron Vermillion S-WF	Disperse Dyes	Archroma	MHC	GOLD	YES
	Foron Blue S-WF	Disperse Dyes	Archroma	MHC	GOLD	YES
	Foron Red S-WF	Disperse Dyes	Archroma	MHC	GOLD	YES
	Foron Brilliant Yellow S-WF	Disperse Dyes	Archroma	MHC	GOLD	YES
	Dianix Yellow AM-SLR 200%	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Yellow S-3G	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Orange AM-SLR	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Turquoise S-BG	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Brilliant Violet R	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Red AM-SLR	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix Rubin XF2	Disperse Dyes	DyStar	MHC 2659	GOLD	YES
	Dianix ECO Black HF	Disperse Dyes	DyStar	MHC 2659	GOLD	YES

TEXTILE AUXILIARIES AND FINISHING CHEMICALS (1/2)

Sub-Category	Material- / Chemical Name	Material- / Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Textile Auxiliaries and Finishing Chemicals	Tannex Noveco	Multi-purpose, clay based product, bleach stabilizer	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Persoftal L	Dyebath lubricant, fatty based	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Levelgal RL	Levelling agent for reactive dyes	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Plexene QXL	Biodegradable sequestrant for bleaching and dyeing	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Respumit BA 2000	Biodegradable, natural oil based defoamer	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Tanapal M-RE	Postscouring agent for reactive dyeings based on minerals	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Tanwet Q	Wetting and deaerating agent	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Tanazym CS	Non-GMO biopolishing enzyme	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Persoftal HNS	Hydrophilic softener, fatty based	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Persoftal NANO-S2G	Hydrophilic softener, based on unique silicone	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Protorex FFO 01	Crosslinker for easy care finishing of textiles composed of cellulosic fibers and ist blends with synthetic fibers	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Curite 5184N	Catalyst for resin finishing	Tanatex Chemicals	NDA Goal MHC	GOLD	YES
	Alvicon GPL	Dyeing auxiliary, levelling agents	Texticolor	MHC	GOLD	YES
	Alvicon W	Versatile applicable dyeing auxiliary; levelling dispersing and aftersoaping	Texticolor	MHC	GOLD	YES
	Lavan NH	Washing agents	Texticolor	MHC	GOLD	YES
	Seventin PEF flüssig	Fibre protecting agents	Texticolor	MHC	GOLD	YES
	Sevofix NHP	Aftertreating agents	Texticolor	MHC	GOLD	YES
	Softycon HGS	Softening agents	Texticolor	MHC	GOLD	YES
	TC-Dispergator BL	Dispersing agent	Texticolor	MHC	GOLD	YES
	TC-Dispergator BL 200%	Dispersing agent, concentrates	Texticolor	MHC	GOLD	YES
	TC-Kantenseife BS	Selvedge stiffing agents	Texticolor	MHC	GOLD	YES
	Tecovin FGA	Yarn finishing	Texticolor	MHC	GOLD	YES
	Lavan CBW	Washing agents, stain remover	Texticolor	MHC	GOLD	YES
	Alvirol AGK	Sequestering agents	Texticolor	MHC	GOLD	YES
	TC-Säurespender SWP 200%	Dyeing auxiliary, acid donor	Texticolor	MHC	GOLD	YES
	NDA	Bleaching Agent for Cellulosic	NDA	MHC in process	GOLD	YES
	NDA	Alkali for pretreatment	NDA	NDA Goal MHC	GOLD	YES
	NDA	Bleaching Chemical	NDA	NDA Goal MHC	GOLD	YES
	NDA	Neutralizing Acid	NDA	NDA Goal MHC	GOLD	YES
	NDA	Peroxide Stabilizer	NDA	NDA Goal MHC	GOLD	YES
	NDA	Wetting Agent	NDA	NDA Goal MHC	GOLD	YES
	NDA	Demineralizing chemical	NDA	NDA Goal MHC	GOLD	YES
	NDA	Core pH neutralizer	NDA	NDA Goal MHC	GOLD	YES
	NDA	Dye exhaustion	NDA	NDA Goal MHC	GOLD	YES
	NDA	Dye Fixation	NDA	NDA Goal MHC	GOLD	YES
	NDA	Soaping Agent	NDA	NDA Goal MHC	GOLD	YES

TEXTILE AUXILIARIES AND FINISHING CHEMICALS (2/2)

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Textile Auxiliaries and Finishing Chemicals	NDA	Dye Fixation	NDA	NDA Goal MHC	GOLD	YES
	NDA	Anti-creasing agent/Lubricant	NDA	NDA Goal MHC	GOLD	YES
	NDA	Optical Brightener	NDA	NDA Goal MHC	GOLD	YES
	NDA	Wetting Agent	NDA	NDA Goal MHC	GOLD	YES
	NDA	Sequestering Agent	NDA	NDA Goal MHC	GOLD	YES
	NDA	Pretreatment	NDA	NDA Goal MHC	GOLD	YES
	NDA	Low foaming stabiliser for bleaching regenerated cellulose fibres	NDA	NDA	NDA	YES
	NDA	Wetting agent	NDA	NDA	GOLD	YES
	NDA	Wetting agents	NDA	NDA	NDA	YES
	NDA	Wax like softener	NDA	NDA	GOLD	YES
	NDA	Rope openers, softeners	NDA	NDA	NDA	YES
	NDA	Concentrated detergent and wetting agent. Fat and oil propierties for all fibre types	NDA	NDA	NDA	YES
	NDA	pH neutralizer	NDA	NDA	GOLD	YES
	NDA	Reducing agent for sulphur dyes	NDA	NDA	GOLD	YES
	NDA	Dispersing agent	NDA	NDA	NDA	YES
	NDA	Wax based lubricant	NDA	NDA	GOLD	YES
	NDA	Silicon-free detergent, low foaming, easily biodegradable	NDA	NDA	GOLD	YES

2. GARMENTING

SEWING THREAD

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Sewing Thread	Sewing Yarn Natura	Organic cotton	Mueller	C2CC 3006	GOLD	YES
	Sewing Yarn Natura	Tencel	Mueller	C2CC 3006	GOLD	YES
	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	YES

LABEL

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Label	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	YES

INTERLINING

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Interlining	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	Prototype

ELASTIC BANDS

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Elastic Bands	infinito®	infinito®	Lauffenmuehle	C2CC 2747	GOLD	YES
	NDA	NDA TN	NDA	NDA	NDA	Prototype
	NDA	NDA BN	NDA	NDA	NDA	YES

TRANSFER PRINTING

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Printing Ink Pigment	NDA	Colorant	NDA	NDA Goal MHC	GOLD	YES
	NDA	Colorant	NDA	NDA Goal MHC	GOLD	YES
Printing Ink Fixer	NDA	Pigment Fixing	NDA	NDA Goal MHC	GOLD	YES
	NDA	Pigment Fixing	NDA	NDA Goal MHC	GOLD	YES
Printing Ink Binder	NDA	Pigment Binder	NDA	NDA Goal MHC	GOLD	YES
	NDA	Pigment Thickener	NDA	NDA Goal MHC	GOLD	YES
Printing Ink	Bezaprint Yellow RR	Printing Ink	CHT	Goal MHC	SILVER	YES
	Bezaprint Yellow 3GT	Printing Ink	CHT	Goal MHC	SILVER	YES
	Bezaprint Blue RR	Printing Ink	CHT	Goal MHC	SILVER	YES
	Bezaprint Red KCG	Printing Ink	CHT	Goal MHC	PLATINUM	YES
	Bezaprint Scarlet RR	Printing Ink	CHT	Goal MHC	PLATINUM	YES
	Bezaprint Violet FB	Printing Ink	CHT	Goal MHC	PLATINUM	YES
	Bezaprint Black DW	Printing Ink	CHT	Goal MHC	PLATINUM	YES
	Bezaprint Blue TB	Printing Ink	CHT	Goal MHC	PLATINUM	YES
Neck Label Ink	Sapphire SB White	Neck Ink	Inkcups	Goal MHC	PLATINUM	YES
	Sapphire SB Black	Neck Ink	Inkcups	Goal MHC	PLATINUM	YES
	Sapphire SB Gray	Neck Ink	Inkcups	Goal MHC	PLATINUM	YES

INKTJET PRINTING

Sub-Category	Material-/ Chemical Name	Material-/ Chemical Function	Supplier	Assessment	C2C Level	Commercial Readiness
Ongoing project with EPEA CH	NDA	NDA TN	NDA	NDA	GOLD	NDA
Ongoing project with EPEA CH	NDA	NDA BN	NDA	NDA	NDA	NDA

MATERIAL REUTILISATION SCORES

INTRODUCTION

A significant focus of Cradle to Cradle® as a product design framework is to promote the creation of an optimized materials economy that eliminates the concept of “waste.” This category of the program is intended to create incentives for the industry to design products with materials that may be perpetually cycled to retain their value. This dimension, on top of the Material Health assessments detailed in the preceding tables, is important in achieving C2C Certification.

The program challenges companies to take more responsibility for creating the infrastructure and systems necessary for recovering and recycling materials as the nutrients necessary to fuel our global economies.

The following table lists each requirement within the Material Reutilization category. To achieve a given level, the requirements at all lower levels are to be met as well. The sections that follow provide interpretation and suggested methods for achievement.

Material Reutilisation	Basic	Bronze	Silver	Gold	Platinum
Each generic material in the product is clearly defined as an intended part of a biological or technical cycle (this is covered by the Material Health requirement at Basic level).	●	●	●	●	●
Designed or manufactured for the technical or biological cycle and has a material (re)utilization score ≥ 35 .		●	●	●	●
Designed or manufactured for the technical or biological cycle and has a material (re)utilization score ≥ 50 .			●	●	●
Designed or manufactured for the technical or biological cycle and has a material (re)utilization score ≥ 65 .				●	●
Well-defined nutrient management strategy (including scope, timeline, and budget) for developing the logistics and recovery systems for this class of product or material.				●	●
Designed or manufactured for the technical or biological cycle and has a material (re)utilization score of 100.					●
The product is actively being recovered and cycled in a technical or biological metabolism.					●

MATERIAL REUTILISATION SCORE CALCULATION

The first intent of the Material Reutilization Quality Category is to understand the material reutilization potential of a product, its capacity to maintain its value over different cycles, and to be perpetually cycled. This potential is determined by the Material Reutilization Score (MRS) formula. The MRS formula takes into account four categories of materials, two pertaining to the Biological Cycle (recycled content and recyclable materials), two to the technical cycle (rapidly renewable content, biodegradable or compostable materials). The MRS is thus calculated as follows:

$$\frac{[\% \text{ recycled or rapidly renewable product content}] + [\% \text{ of product that is recyclable or biodegradable, compostable} * 2] * 100}{3}$$

Recyclable and biodegradable/compostable materials have a higher weight as they enable products to maintain value in future cycles, while recycled and renewable materials, although preferable sources from a cyclability standpoint, do not guarantee that a circular design is being considered.

DENIM, LINGERIE, ELASTICATED AND EMBELLISHED FABRICS AND GARMENTS: MRS

Nutrient Potential	Type	Assumptions	% Recycled content	% Rapidly renewable content	% Recyclable	% Bio-degradable	Reutilisation score
Biological	Stretch fabrics	<ul style="list-style-type: none"> Biodegradable elastomer (safe for biological cycles) content ~2% Organic cotton content ~98% 	0	98	0	100	99.33
Biological	Stretch garment	<ul style="list-style-type: none"> Metal components will need to be taken apart and put into a recycling system Sewing yarn and other components should be safe for biological cycles (alternatives are available) 	2	90	2	90	92
Technical	Fabrics with virgin materials	<ul style="list-style-type: none"> Biodegradable elastomer (safe for biological / technical cycles) content ~2% Technical nutrient raw material content ~98% 	0	0	98	2	66.66
Technical	Fabrics with recycled content	<ul style="list-style-type: none"> Biodegradable elastomer (safe for biological / technical cycles) content ~2% Technical nutrient raw material content ~98% 	98	0	98	2	99.33
Technical	Garments with virgin materials	<ul style="list-style-type: none"> Metal components will need to be taken apart and put into a recycling system Sewing yarn and other components should be safe for biological cycles (alternatives are available) 	0	0	90	2	61.33
Technical	Garments with recycled content	<ul style="list-style-type: none"> Metal components will need to be taken apart and put into a recycling system Sewing yarn and other components should be safe for biological cycles (alternatives are available) 	90	0	90	2	91.33

INTRODUCTION

Cradle to Cradle Certified™ Products Program investigates in five areas (use of materials and their health, potential cycling, use of renewable energy and climate, water stewardship, and social fairness) to understand where the good impacts are, and can be in the future, from the design, through its process and to the communication and commercialization of a finished product. This means that not only the product manufacturing is in scope, but also the intent and strategies of the company manufacturing it.

Manufacturers are key players in the design and actual production of good garment because optimization actions in line with the Cradle to Cradle principles are clearly good for people and the environment. Moreover, they need to make economic sense, and manufacturers – with external guidance or in collaboration with other partners – are usually best suited to define strategies to maximize all these benefits combined.

Here, we showcase a number of manufacturers who have already worked in certification projects, excel in their best practices, and who are intent to continue the path to optimization.

MANUFACTURERS

Manufacturer	Product type	Certification	Material Health	Material Reutilisation	Renewable Energy	Water Stewardship	Social Fairness
Artistic Milliners	Denim Fabrics	Cradle to Cradle™ Certified 3548	Platinum	Gold	Gold	Gold	Gold
Artistic Milliners	Denim Fabrics	Cradle to Cradle™ Certified 3523	Bronze	Gold	Bronze	Gold	Gold
Cotton Blossom	Apparel: Circular Knits	Cradle to Cradle™ Certified 3073	Platinum	Gold	Platinum	Platinum	Gold
Lauffenmuehle	Denim Fabrics	Cradle to Cradle™ Certified 2802	Platinum	Gold	Gold	Gold	Gold
Lauffenmuehle	Apparel	Cradle to Cradle™ Certified 2806	Gold	Gold	Gold	Gold	Gold
Lauffenmuehle	Apparel	Cradle to Cradle™ Certified in development	Silver	Gold	Gold	Gold	Gold
Pacific Jeans	Denim Garments	Cradle to Cradle™ Certified	Platinum	Gold	Gold	Gold	Gold
Pacific Jeans	Denim Garments	Cradle to Cradle™ Certified	Bronze	Gold	Gold	Gold	Gold
Pratibha Synthex	Apparel: Circular Knits	Cradle to Cradle™ Certified 3074	Platinum	Gold	Platinum	Platinum	Gold
Soorty	Denim Fabrics	Cradle to Cradle™ Certified 3688	Platinum	Gold	Gold	Gold	Gold
Trigema	Apparel: Circular Knits	Cradle to Cradle™ Certified 2945	Silver	Gold	Silver	Silver	Gold
Manufacturer under NDA	Elasticated fabrics in development	Cradle to Cradle™ Certified in development	Gold	Gold	Gold	Gold	Gold
Manufacturer under NDA	Lingerie in development	Cradle to Cradle™ Certified in development	Gold	Gold	Gold	Gold	Gold

BRANDS AND RETAILERS

Brands and Retailers	Product type	Certification	Material Health	Material Reutilisation	Renewable Energy	Water Stewardship	Social Fairness
C&A	Circular Knits	Cradle to Cradle™ Certified 3130	Platinum	Gold	Platinum	Platinum	Gold
C&A	Circular Knits	Cradle to Cradle™ Certified 3133	Platinum	Gold	Platinum	Platinum	Gold
Calida	Circular Knits	Cradle to Cradle™ Certified 3325	Silver	Gold	Gold	Silver	Gold
G star	Denim fabric	Cradle to Cradle™ Certified 3396	Platinum	Gold	Gold	Gold	Gold
Melawear Organic	Circular Knits	Cradle to Cradle™ Certified 2563	Silver	Silver	Gold	Gold	Silver
Wolford	Lingerie	Cradle to Cradle™ Certified 2563	Platinum	Gold	Gold	Gold	Gold