

C2C Certified Material Health Certificate™ GOLD LEVEL

ISSUED TO CHT Germany GmbH

Gold Textile Finishing & Coating Auxiliaries by CHT

STANDARD VERSION 4.0

EFFECTIVE DATE 3 August 2022

EXPIRATION DATE 9 April 2024

LEAD ASSESSMENT BODY

EPEA GmbH - Part of Drees & Sommer

PHASES AND PROCESSES CONSIDERED IN THE CHEMICAL TOXICITY ASSESSMENT

Manufacturing (mixing/blending, heating, cooling, filling, preceding synthesis); Professional use; Use (textile applications); Intended end of use: recycling, release to the environment via wastewater treatment plant; Unintended end of use: landfilling, incineration, uncontrolled burning, release to the environment

PRODUCTS COVERED

ARRISTAN AIR, ARRISTAN BVA, AVISTAT 3 P, LUSTRAFFIN MO, LUSTRAFFIN RTK, POLYAVIN PEN, POLYAVIN SEW, REAKNITT CAT ABT, TUBINGAL EOS, TUBINGAL KRE, TUBINGAL R 20, TUBINGAL RNJ

This product range was assessed exclusively for use by professional textile manufacturers trained in the proper handling and use of protective equipment for sensitizing and/or corrosive and/or irritating chemicals. The requirements for certification have only been met under these conditions.

PRODUCT OPTIMIZATION SUMMARY

- Cradle to Cradle Certified Restricted Substances List compliant
- Material Health optimization strategy not required
- No exposure to EU CLP Category 1 & 2 Carcinogens, Mutagens and Reproductive toxicants or Substances of Very High Concern; Carbon-bonded halogens are <1% of each material (exemptions apply)
- VOC emissions testing not required
- VOC content requirements not applicable
- Product is optimized for material health (no grey or x-assessed chemicals)
- Process chemicals are assessed and optimized
- Actions taken to reduce and eliminate emissions of hazardous chemicals in the product's supply chain

PERCENTAGE ASSESSED

100%

Percentage assessed is a weighted average based on the lower of the percentage of chemical substances assessed by number or by weight for each material

Inventory threshold for chemicals in each material = 100 ppm

ASSESSMENT RATINGS



A/a or B/b: 17-75%



C/c: 25-83%



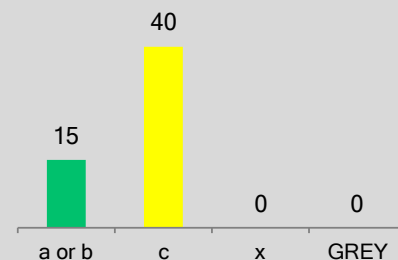
X/x: 0%



GREY: 0%

% CHEMICAL SUBSTANCES

PRODUCT OPTIMIZATION



55 CHEMICAL SUBSTANCES



Silver Textile Finishing and Coating Auxiliaries by CHT

ISSUED TO CHT Germany GmbH

STANDARD 3.1

EXPIRES 16 June 2023

LEAD ASSESSMENT BODY

MBDC

PHASES AND PROCESSES CONSIDERED IN THE CHEMICAL TOXICITY ASSESSMENT

Manufacturing; Professional Use; Use; Intended end of use: release to the environment; Unintended end of use: landfilling, incineration, uncontrolled burning

PRODUCTS COVERED

ECOPERL YWR, POLYAVIN NBL, REAKNITT ZF, ARRISTAN CPU, NouWell CDL, TUBINGAL BTN, TUBINGAL 7023, TUBINGAL RSK, TUBINGAL HWS

PRODUCT OPTIMIZATION SUMMARY

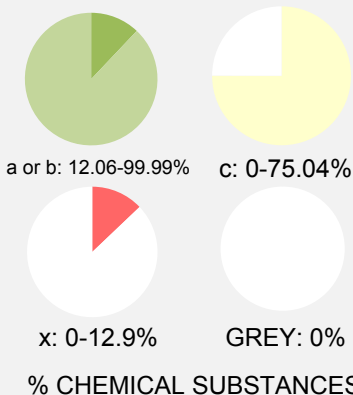
- Cradle to Cradle Certified*® Banned List compliant
- Material Health optimization strategy developed
- No exposure from carcinogens, mutagens, or reproductive toxicants
- Meets VOC emissions testing requirements
- Product is fully optimized - does not contain any GREY or x-assessed chemicals
- Process chemicals have been identified and none are GREY or x-assessed

PERCENTAGE OF CHEMICAL SUBSTANCES ASSESSED BY WEIGHT

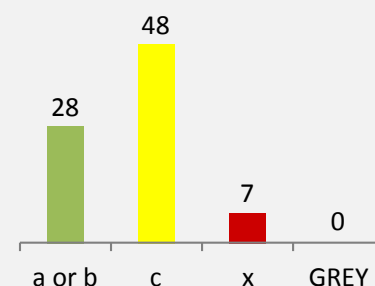
100%

Inventory threshold for chemicals in each material = 100 ppm

ASSESSMENT RATINGS BY WEIGHT



PRODUCT OPTIMIZATION



83 CHEMICAL SUBSTANCES

Material Health Certificate Guide

The Material Health Certificate is awarded to products assessed against the requirements in the Material Health category of the *Cradle to Cradle Certified*® Product Standard. The Material Health achievement level (Basic, Bronze, Silver, Gold, or Platinum) is shown in the certificate's upper right corner. A Material Health Certificate does not indicate that a product is *Cradle to Cradle Certified*®, which requires assessment against all five Standard categories.

The *Cradle to Cradle Certified*® Material Health Assessment Methodology is a contextual assessment based on chemical hazard identification and qualitative exposure considerations during a product's final manufacture, use, and end-of-use. The exposure assessment is highly simplified and more conservative compared to a conventional, quantitative risk assessment.

Definitions of Administrative Fields

Field	Definition
Issued To	Company that sells the assessed product(s).
Assessed By	Assessment Body responsible for conducting the product assessment.
Expires	Date the certificate expires. Certificate renewal is required biennially.
Standard	Version of the Standard (Material Health subsection only) the product was assessed against.
Phases and Processes Assessed	Manufacturing, use, and end-of-use phases and processes that the assessor considered in the exposure portion of the Material Health assessment. Assessment results are only valid for those listed.
Products Covered	Products included in the scope of the certificate. Certificates may cover multiple product variations.

Definitions of Product Optimization Summary Fields

***Cradle to Cradle Certified*® Banned List compliant**

The product's materials are not known to contain chemicals on the Banned Lists of Chemicals above permitted thresholds.

Material Health optimization strategy developed

Plan developed to phase out x assessed chemicals and assess GREY content.

No exposure from carcinogens, mutagens, or reproductive toxicants

Assessed materials do not contain carcinogens, mutagens, or reproductive toxicants with plausible exposure routes.

Meets VOC emissions testing requirements

The product meets the volatile organic compound (VOC) emissions testing requirements described in the Standard.

Does not contain any GREY or x-assessed chemicals; product is fully optimized

The product's materials contain chemicals with only a, b, or c risk ratings (no GREY or x). (Note: In the *Cradle to Cradle Certified*® Material Health Assessment Methodology, chemicals in each material are assigned a, b, c, x, or GREY risk ratings. Each material is then assigned an A, B, C, X, or GREY final assessment rating based on the risk ratings of its constituent chemicals. The following table explains the rating system.)

a or b (A or B)	Optimal
c (C)	Moderately problematic, but acceptable for use
x (X)	Highly problematic; targeted for phase out
GREY	Considered unassessed due to unknown identity or lack of toxicity information

Process chemicals have been identified and none are GREY or x-assessed

All process chemicals have been assessed and received an a, b, or c risk rating (no x-assessed or GREY).

Percentage Assessed by Weight

For single-material products, the cumulative percentage of assessed chemicals (a, b, c, and x). For other products, the cumulative percentage of assessed materials (A, B, C, and X). When a certificate represents a group of products, a percent range is shown.

Assessment Ratings by Weight

For single-material products, the percentage of a or b (shown in green), c (shown in yellow), and x (shown in red) assessed chemicals. For other products, the percentage of A or B (shown in green), C (shown in yellow), and X (shown in red) assessed materials. When a certificate represents a group of products, percent ranges are shown.

Product Optimization

Number of materials (or chemical substances for single-material products and multi-material product groups with uncountable color variations) assigned each assessment rating.



Bronze Textile Finishing and Coating Auxiliaries by CHT

ISSUED TO CHT Germany GmbH

STANDARD 3.1

EXPIRES 16 June 2023

LEAD ASSESSMENT BODY

MBDC

PHASES AND PROCESSES CONSIDERED IN THE CHEMICAL TOXICITY ASSESSMENT

manufacturing, use, release to the environment, incineration, uncontrolled burning, landfilling

PRODUCTS COVERED

ARRISTAN 71, ECOPERL 4, POLYAVIN CL 100, POLYAVIN EFA, TUBINGAL 3S, TUBINGAL BSM, TUBINGAL FMH, TUBINGAL GSI, TUBINGAL HWS CONC, TUBINGAL 9270, TUBINGAL ISP, TUBINGAL RGH, TUBINGAL RISE

PRODUCT OPTIMIZATION SUMMARY

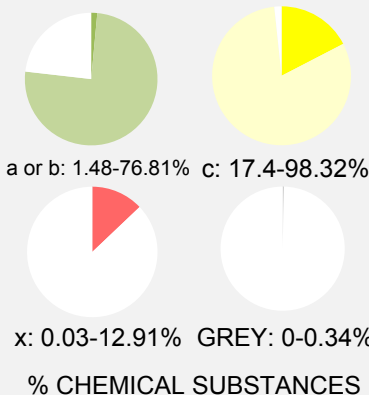
- Cradle to Cradle Certified*® Banned List compliant
- Material Health optimization strategy developed
- No exposure from carcinogens, mutagens, or reproductive toxicants
- Meets VOC emissions testing requirements
- Product is fully optimized - does not contain any GREY or x-assessed chemicals
- Process chemicals have been identified and none are GREY or x-assessed

PERCENTAGE OF CHEMICAL SUBSTANCES ASSESSED BY WEIGHT

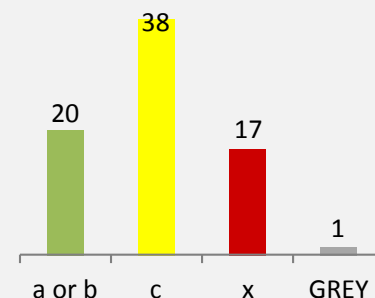
100%

Inventory threshold for chemicals in each material = 100 ppm

ASSESSMENT RATINGS BY WEIGHT



PRODUCT OPTIMIZATION



76 CHEMICAL SUBSTANCES

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Definitions of Product Optimization Summary Fields

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Product Optimization

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