BANN Textile Dyes

ISSUED TO Bann Química Ltda.

STANDARD 3.1

EXPIRES 16 September 2021

LEAD ASSESSMENT BODY
Eco Intelligent Growth

MATERIAL HEALTH ASSESSMENT BODY
MBDC

ASSESSED APPLICATIONS
Manufacture, use as colorant in textiles, reutilization through recycling, incineration in waste-to-energy, backyard burning, composting and landfilling

PRODUCTS COVERED
BANN TEXTILE DYSES, created for application in textiles, includes: Indigo Bann 35 Reduzido (liquid pre reduced indigo blue for textile use), Indigo Bann 35 Reduzido Premium (liquid pre reduced indigo blue for textile use), Corante Bann Black SLB1 (liquid pre reduced sulphur black for textile use), Corante Bann Black SLB2 (liquid pre reduced sulphur black for textile use), Corante bann Black SLB3 (liquid pre reduced sulphur black for textile use)

PRODUCT OPTIMIZATION SUMMARY
✓ Cradle to Cradle Certified™ Banned List compliant
✓ Material Health optimization strategy not required
✓ No exposure from carcinogens, mutagens, or reproductive toxicants
✓ VOC emissions testing not required for this product type
✓ 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

- a or b: 50-61%
- c: 39-50%
- x: 0%
- GREY: 0%

PRODUCT OPTIMIZATION

<table>
<thead>
<tr>
<th>a or b</th>
<th>c</th>
<th>x</th>
<th>GREY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

6 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

<table>
<thead>
<tr>
<th>Field</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issued To</td>
<td>Company that sells the assessed product(s).</td>
</tr>
<tr>
<td>Assessed By</td>
<td>Accredited Assessment Body responsible for conducting the product assessment.</td>
</tr>
<tr>
<td>Expires</td>
<td>Date the certificate expires. Certificate renewal is required biennially.</td>
</tr>
<tr>
<td>Standard</td>
<td>Version of the Standard (Material Health subsection only) the product was assessed against.</td>
</tr>
<tr>
<td>Assessed Scenarios</td>
<td>Use and end-of-use scenarios that the assessor considered in the exposure portion of the Material Health assessment. Assessment results are only valid for these scenarios.</td>
</tr>
<tr>
<td>Products Covered</td>
<td>Products included in the scope of the certificate. Certificates may cover multiple product variations.</td>
</tr>
</tbody>
</table>

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.)

<table>
<thead>
<tr>
<th>a or b (A or B)</th>
<th>Optimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>c (C)</td>
<td>Moderately problematic, but acceptable for use</td>
</tr>
<tr>
<td>x (X)</td>
<td>Highly problematic; targeted for phase out</td>
</tr>
<tr>
<td>GREY</td>
<td>Considered unassessed due to unknown identity or lack of toxicity information</td>
</tr>
</tbody>
</table>

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.

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