Helping Material Suppliers Verify and Amplify Their Safer Alternatives

LISTED Program Description

May 2021
Who We Are

A science-based, non-profit, value chain collaboration

Our goal is to be the trusted source for cost-effective, verified information on chemical hazards and safer alternatives.

Co-design partners include:
ChemFORWARD Listed

A resource for suppliers to verify and amplify their "ingredient" raw material products that meet ChemFORWARDS rigorous GHS-based criteria for safer alternatives

Access Safer Alternatives by Trade Name

Formulators and brands can easily access ingredients and raw materials by trade name that have been assessed by a third-party and verified to present only moderate or low hazards to humans and the environment

List and Amplify Your Safer Alternatives

Suppliers have their raw materials reviewed by a third party profiler who verifies the material disclosure, assesses substances subject to review and determines that the material presents only moderate to low hazard on human and environmental impacts according to the ChemFORWARD Listed Program Requirements
How it Works

<table>
<thead>
<tr>
<th>Listed Ingredients</th>
<th>Rapid Adoption</th>
<th>Better Products for People and Planet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suppliers select a ChemFORWARD Assessor to review the constituents present in their trade name raw materials. Qualifying ingredients may be displayed by trade name as “Listed” in ChemFORWARD. Ingredients with exceptionally low inherent hazard are displayed as “Preferred”</td>
<td>Build trust with a rigorous, verified assessment easily communicated to buyers, investors, and other stakeholders using the Listed and Preferred label. Participating suppliers increase market share while meaningfully improving outcomes for humans and the environment</td>
<td>ChemFORWARD is the trusted source for chemical hazard assessments and safer alternatives enabling a prosperous future for all people, the planet and commerce using better chemistry</td>
</tr>
</tbody>
</table>
Assess your product once.
Amplify your verified safer alternative.
Trusted, third-party data flows to your stakeholders through ChemFORWARD and our data partners

Leading Brands + Retailers
Product Designers + Formulators
Customers + Prospective Customers
Investors + Stakeholders
Data Platforms
Product Certifications
## Designations

<table>
<thead>
<tr>
<th>Designation</th>
<th>Icon</th>
<th>Rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>ChemFORWARD LISTED</td>
<td><img src="image" alt="Icon" /></td>
<td>All chemicals (at or above the disclosure threshold) have been assessed, and all constituents have a C or higher hazard band rating*</td>
</tr>
<tr>
<td>ChemFORWARD PREFERRED</td>
<td><img src="image" alt="Icon" /></td>
<td>All chemicals (at or above the disclosure threshold) have been assessed, and all constituents have a B or higher hazard band rating*</td>
</tr>
</tbody>
</table>

*Hazard band ratings are assigned according to the [ChemFORWARD Program Description](#).
### ChemFORWARD Chemical Hazard Bands

**An actionable summary rating and a meaningful measure of progress**

<table>
<thead>
<tr>
<th>ChemFORWARD Hazard band</th>
<th>Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Low hazard and low risk</td>
</tr>
<tr>
<td>B</td>
<td>Some moderate hazards but low risk</td>
</tr>
<tr>
<td>C</td>
<td>Moderate to high hazards and moderate risk; or uncertainty that could result in moderate risk</td>
</tr>
<tr>
<td>F</td>
<td>High hazards and high risk in most scenarios</td>
</tr>
<tr>
<td>U</td>
<td>CHA has been completed but with excessive data gaps, rating is not possible</td>
</tr>
<tr>
<td>?</td>
<td>Seek additional information, request a CHA to inform a decision</td>
</tr>
</tbody>
</table>
## Harmonized ratings = flexibility, portability, and ROI

<table>
<thead>
<tr>
<th>ChemFORWARD Hazard band</th>
<th>C2CC Chemical Rating</th>
<th>US EPA SCIL</th>
<th>GreenScreen Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>a</td>
<td>--</td>
<td>4</td>
</tr>
<tr>
<td>B</td>
<td>b or c/b</td>
<td>green full circle</td>
<td>3 (3tp, 3dg)</td>
</tr>
<tr>
<td>C</td>
<td>C, x/c, x/c-CMR(Cat 2), grey/c, c/b-CRE</td>
<td>green half circle, yellow triangle</td>
<td>2 (2tp, 2dg)</td>
</tr>
<tr>
<td>F</td>
<td>x-PBT, x-CMR, x/c-CMR(Cat 1), x/c-E (also x*, x*-CMR and banned)</td>
<td>grey square</td>
<td>1 (1tp), LT-1</td>
</tr>
<tr>
<td>U</td>
<td>No CHA</td>
<td>--</td>
<td>BM U</td>
</tr>
<tr>
<td>?</td>
<td>No CHA</td>
<td>No CHA</td>
<td>No GS, , LT-UNK, LT-P1</td>
</tr>
</tbody>
</table>
Program Requirements
Disclosure

Disclosure to Third-Party Assessor under NDA

- All constituents intentionally added and present at or above 100 ppm (including additives and impurities)

Intent

1. Avoid toxic impurities in safer ingredients
   - Disclose all constituents intentionally added and/or present at 100ppm

2. Capture hazard data on impurities that are relevant and potentially hazardous
   - All intentionally added ingredients should have a full CHA
   - All impurities above 1000 ppm should have a full CHA

3. Judicious use of resources. Avoid full CHAs on impurities that aren’t particular toxic and that aren’t intentionally added
   - Use List Translator to screen to identify high hazards but not required to create a CHA for a low concern chemicals or chemicals with data gaps
Substances Subject to Review

Assessment and Screening Requirements

- Full ChemFORWARD chemical hazard assessment (CHA) for all constituents intentionally added and/or present at or above 1000 ppm;
- Screening is permitted in lieu of a full CHA for constituents present at or above 100 ppm and below 1000 ppm.
  - Chemicals with a ? or U (LT-P1 and LT UNK) would not affect the listed status
  - Chemicals with an F (or LT-1) would not be allowed
Building Trust in the Science of CHAs

ChemFORWARD’s program is unique and features:

- Built on proven existing hazard classification methodologies (starting with GHS, C2CC). ChemFORWARD is NOT a new CHA method.
- Qualified Assessors own and maintain the data they create and participate in a community of practice
- Peer review/verification by independent toxicologists who assure assessments are comprehensive, consistent, and credible - thereby increasing user trust
- A technical challenge process that promotes continuous improvement and results in a definitive dataset that justifies having one CHA per chemical
- A policy for reviewing, incorporating, and protecting unpublished private data into CHAs
- Governance that promotes inclusion, transparency, and best practices
Next steps

1. Select an Assessor from our list of qualified firms

2. Enter into NDA with your assessor
   ○ Provide ingredient disclosure to assessor based on disclosure rules
   ○ Assessor will provide an estimate to assess the product based on disclosure leveraging existing assessments in the repository

3. Assessor will assess the product using the ChemForward assessment and verification process

4. You will review the final assessment with the assessor before it is released to ChemForward with right-of-refusal to withdraw the product

5. Sign the license agreement and pay a two-year license fee

6. Your verified product will be posted and promoted on the ChemForward platform and pushed to our data partners
Contact Us

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Know better chemistry
www.chemforward.org