Declare.℠

## Your Product
## Your Company

**Final Assembly:** City, State, Country
**Life Expectancy:** 000 Years
**End of Life Options:** Recyclable (42%), Landfill (58%)

**Ingredients:**

**Your First Component/Part: Sustainably Sourced Ingredient** (Location, ST)**, Non-Toxic Ingredient; Your Second Component/Part: Living Building Challenge Red List, Proprietary Ingredient** (0.07%)[1]**, US EPA Chemical of Concern**

[1]LBC Temp Exception I10-E4 Proprietary Ingredients <1%

**Living Building Challenge Criteria:**

XXX-0000
VOC Content: 0 g/L
**Declaration Status**

EXP. 01 OCT 2020
VOC Emissions: CDPH Compliant
- ☐ LBC Red List Free
- ■ LBC Compliant
- ☐ Declared

MANUFACTURER RESPONSIBLE FOR LABEL ACCURACY
INTERNATIONAL **LIVING FUTURE** INSTITUTE℠ declareproducts.com

# DECLARE MANUFACTURER'S GUIDE

OCTOBER 2018

INTERNATIONAL
**LIVING FUTURE**
INSTITUTE℠

# DECLARE MANUFACTURERS' GUIDE



## COPYRIGHTS AND TRADEMARKS



## LABEL USE

Manufacturers that are provided a Declare label have the right to use the label on general marketing materials and registered product materials. The label cannot be used on or associated with any other product than the product designated on the label. The label cannot be modified, altered or otherwise tampered with in any way.

## TERMS & CONDITIONS

To read the full Declare Terms & Conditions, visit living-future.org/wp-content/uploads/2016/12/Declare-Terms-and-Conditions-Agreement.pdf.

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INTERNATIONAL LIVING FUTURE INSTITUTE

## THE INTERNATIONAL LIVING FUTURE INSTITUTE

The International Living Future Institute is an inspiring hub for visionary programs. Our mission is to lead and support the transformation toward communities that are socially just, culturally rich and ecologically restorative. Composed of leading green building experts and thought-leaders, the Institute is premised on the belief that providing a compelling vision for the future is a fundamental requirement for reconciling humanity's relationship with the natural world. The Institute runs the Living Building Challenge, Living Community Challenge, Living Product Challenge, Net Zero Energy Certification, the Cascadia Green Building Council, Ecotone Publishing, Declare, JUST, and other leading programs.

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# DECLARE

The demand to understand building product health impacts is increasing. Human and environmental health considerations have emerged as a crucial factor in material selection. Declare allows manufacturers of ecologically sound products to demonstrate market leadership in the growing movement toward product transparency and secure a competitive advantage through transparent ingredient reporting.

Declare also offers manufacturers an expanded point of entry into the world's most groundbreaking sustainable projects. Over 450 teams currently pursuing the Living Building Challenge—widely accepted to be the most advanced green building standard in the world—will use the Declare database and label to select products that meet the Living Building Challenge Materials Petal. The declaration on the label simplifies the process for materials specification and project certification, ultimately aligning with the Materials and Health + Happiness Petals in the Living Building Challenge.

For more about Declare, visit living-future.org/declare/declare-about/.

To access our Declare database, visit living-future.org/declare.

For Declare inquiries, contact our team at declare.support@living-future.org.

## THE LIVING BUILDING CHALLENGE

The Living Building Challenge acts to rapidly diminish the gap between current limits and end-game positive solutions. It aims to transform how we think about every single act of design and construction as an opportunity to positively impact the greater community of life and the cultural fabric of our human communities.

The Challenge is a philosophy first, an advocacy tool second and a certification program third. Within the larger Living Future Challenge framework that covers the creation of all human artifacts and edifices, the Living Building Challenge focuses on humanity's largest creations—its buildings. It is in essence a unified tool for transformative thought, allowing us to envision a future that is Socially Just, Culturally Rich and Ecologically Restorative.

The Living Building Challenge is comprised of seven performance categories, or "Petals": Place, Water, Energy, Health + Happiness, Materials, Equity, and Beauty. Petals are subdivided into a total of twenty Imperatives, each of which focuses on a specific sphere of influence. This compilation of Imperatives can be applied to almost every conceivable building project, of any scale and any location—be it a new building or an existing structure.

To learn more about the Living Building Challenge, visit living-future.org/lbc.

## PROGRAM EXPLANATION

Declare is a voluntary self-disclosure program aiming to transform the building materials industry toward healthier products through ingredient transparency.

**"Red List Free"** product ingredients are 100% disclosed to 100 ppm and do not contain any Red List chemicals. They have been shown to meet the Materials Petal requirements of the Living Building Challenge and, if applicable, emissions testing criteria for the Health + Happiness Petal.

**"LBC Compliant"** products meet the written requirements of the Living Building Challenge, but rely on one or more Exceptions (see appendix B) to demonstrate compliance. Product ingredients are, at minimum, 99% disclosed to 100 ppm and/or may contain one or more Red List chemicals that fall under an existing, published LBC Exception. They have been shown to meet the Materials Petal requirements of the Living Building Challenge and, if applicable, emissions testing criteria for the Health + Happiness Petal.

**"Declared"** product ingredients are 100% disclosed to 100 ppm, but contain one or more Red List chemicals that are not covered by an existing Exception. Additionally, applicable products that do not meet emissions testing criteria are considered "Declared". "Declared" labels require additional product research and vetting to locate a fully compliant product before the "Declared" product may be used on a Living Building Challenge project.

## PROGRAM ALIGNMENT

### LEED v4 Building Product Disclosure and Optimization—Material Ingredients, Option 1

Declare has been approved as a compliance pathway for the LEED v4 Building Product Disclosure and Optimization Credit, Option 1. The LEED v4 credit calls for the chemical inventory of a product to at least 1000ppm; Declare labels that achieve a declaration status of "Red List Free" or "Declared" fulfill the credit disclosure requirements. Additionally, any fully disclosed "LBC Compliant" label and any "LBC Compliant" label using the I10-E4 Proprietary Ingredients Exception, with a minimum disclosure threshold of 99.9%, meets the LEED v4 Building Product Disclosure and Optimization Credit, Option 1 reporting requirements.

### United States Environmental Protection Agency (EPA) Recommendations to Federal Purchasers

Declare is now recognized by the US EPA in its Recommendations of Specifications, Standards, and Ecolabels for federal purchasers. The recommendations, which help federal purchasers identify and procure environmentally sustainable products and services, include Declare as a recommended standard for a range of low-emitting materials, including carpet, flooring products, furniture, and interior latex paint.

### International WELL Building Standard

Declare products that are "Red List Free" or "LBC Compliant", have been approved as a compliance pathway for the International WELL Building Standard's Feature 26 for Enhanced Material Safety. The Feature takes a precautionary approach to hazards by emphasizing healthy material selection to minimize risks.

### New Zealand Greenstar

Declare is now recognized as a pathway in New Zealand Green Star v3. Declare is compliant with the MAT-3 Sustainable Materials Credit.

### mindful MATERIALS

A group of leading architecture firms created the mindful MATERIALS initiative to provide a simple platform for manufacturers to communicate transparency and optimization for their products, while also providing designers a single place to search for materials. Declare product information is directly entered into the mindful MATERIALS database.

## READING THE DECLARE LABEL

1. Product & Manufacturing Information
   - Product Identifiers
   - Final Assembly Location
   - Life Expectancy
   - End of Life Options

The top portion of the label helps consumers confirm they are specifying the product that matches the ingredients list. Life cycle information aligns with the Living Economy Sourcing and Net Positive Waste Imperatives of the Living Building Challenge.

2. Ingredient Reporting

Ingredients are reported by component/part. Ingredients without restriction appear in **grey**; Red List chemicals appear in **dark orange**; EPA COC and REACH chemicals appear in **light orange**. Reported raw material extraction locations and percentage of proprietary ingredients are listed in parentheses. LBC Temp Exceptions are also listed under the ingredients when applicable.

3. Living Building Challenge Criteria

Declare labels are active for one year, then require renewal. Manufacturers are required to report VOC content for site-installed, wet applied products. Products that exceed the CARB or SCAQMD applicable limits will be reported as “Declared.” Manufacturers are required to demonstrate compliance with CDPH Standard Method v1.1-2010, or the AgBB Scheme when applicable. Products that are not compliant with CDPH or AgBB are reported as “Declared.”

## APPROVED PROGRAM AND LABEL REFERENCE

Manufacturers that have received a Declare label have the right to refer to their products as the following:

If your product has been issued a “Declared” label: “Product X” is participating in Declare.

If your product has been issued a Declare label and determined to be “LBC Compliant" due to a temporary Red List Exception: “Product X” is Living Building Challenge Compliant.

If your product has been issued a Declare label and determined to be “Red List Free”: “Product X” is Red List Free.

Manufacturers may not make any environmental claims about their products in relationship to Declare and the Living Building Challenge other than those listed above. Manufacturers specifically cannot claim that their product has been certified by Declare or the Living Building Challenge or endorsed by Declare or the Living Building Challenge. Any manufacturer with an active, published Declare label may represent themselves as “Participating in Declare.”

## PROGRAM REQUIREMENTS AND CONTENTS

**General Product Information Reported**
A product’s identifying information must be included in the Declare application:
- Product Name
- Product Manufacturer
- Life Expectancy, in years
- Product End of Life Options
- CSI MasterFormat Classification
- Regulatory VOC Content in grams per liter, wet applied products only
- Product Description
- Product Image, optional

**Ingredient Information Reported**
Declare requires the reporting of all intentionally added ingredients plus residuals at or above 100 ppm.

Ingredient: In Declare, the term “ingredient” is synonymous with a “substance.” A substance is a matter of constant composition best characterized by the entities (molecules, formula units, atoms) it is composed of and by its physical properties such as density, refractive index, electric conductivity, melting point, etc. (i.e., intentionally used substances, intentional reaction products, impurities). Ingredients are commonly identified by a single Chemical Abstract Services Registry Number (CASRN).

Each ingredient/substance must be reported with the chemical name, CASRN, and the percentage or percentage range by weight for each ingredient in regards to the finished product. Naturally occurring impurities, and process chemicals do not need to be reported, will not be listed on the label, and will not be used to determine if a product is either “Red List Free” or “LBC Compliant”. All Declare product content disclosure MUST be no less than 99% of the total product by weight, with allowance for up to 1% proprietary ingredient withholding (if the I10-E4 Proprietary Ingredients

<1% Exception is used, the product cannot contain any Red List chemicals that are not covered by an LBC Temporary Exception).

All ingredients must be reported with a fixed percentage by weight or percentage ranges. If reported using a percentage range, the percentage delta may not exceed 20. Ranges exceeding a delta of 20 must be justified and have their rationale reported to declare.support@living-future.org for approval. Ingredient ranges may be required to accurately represent available product dimensions, multiple raw material suppliers, or slight changes due to multiple manufacturing locations; ingredient ranges may also be used to mask the exact formulation of a product on the public database listing. A product family can be listed on a single Declare label if each of the products has identical ingredients or if the ingredient differences between the products do not exceed 10% of the total mass of the product.

Manufacturers must list the generic name for the components/parts and chemicals reported. Manufacturers may not list the trade name or brand name of supplied components or their ingredients without the expressed written consent of the supplier. The exception to this requirement is a supplier with an active Declare label. Manufacturers may reference the Declare ID for components that have already been disclosed through Declare.

**Special CASRN reporting requirements:**

Biological Ingredients: Biological ingredients such as wood and agrifiber do not require disclosure of a CASRN unless the ingredient is already registered with Chemical Abstract Services, in which case the number should be reported.

Electronic Components: Small electrical components do not require CASRN reporting, but the manufacturer must verify that these components are RoHS compliant. These components must be documented using the Small Electrical Components Exception.

Float Glass: Float glass does not require CASRN reporting, but all glass coatings/interlayers/films must be reported.

Geological Materials: Geological materials such as natural granite do not require disclosure of a CASRN; manufactured stone products require the disclosure with a CASRN of all resins/binders/sealers, but geological materials do not require a CASRN.

Metal Alloys: Metal alloys that do not have an assigned CASRN do not require CASRN reporting, but the alloy number must be reported. Materials that are registered with Chemical Abstract Services, such as carbon steel and stainless steel, should be reported with a CASRN.

Recycled Content: Recycled content should be reported using all known primary ingredients; a CASRN should be reported as applicable (based on guidance above).

Reaction Products: When a reaction occurs during the manufacturing of the product, the final reacted substance must be reported with a CASRN. If any residual reaction substances remain in the product above 100 ppm that are not covered by the CASRN of the reaction substance, they must also be reported with a CASRN.

Impurities: There are instances when a Red List chemical is present in a product because it naturally occurs in the product's raw materials or was unintentionally added

through certain manufacturing or reclamation processes. Impurities do not require reporting on a Declare label.

Small Product Hardware: Small metal hardware must be reported with the metal type (i.e. steel), but reporting an alloy number is not required. Hardware materials with an applicable CAS Number, must report the CAS Number.

## CHAMBER TESTING COMPLIANCE FOR INTERIOR INSTALLED PRODUCTS

All building products that have the potential to emit Volatile Organic Compounds (VOCs) and are intended for installation within the building envelope (defined as interior of the wall and roof vapor barrier) must supply a laboratory certificate of compliance with the California Department of Public Health (CDPH) v1.1-2010 Standard Method, or the AgBB Health-related Evaluation for VOC Emissions from Building Products Scheme. All building products, to which chamber testing is required, that do not supply a laboratory certificate of compliance or conformant product certification will be listed as "Declared" regardless of ingredient content.

## CONFORMANT CERTIFICATIONS THAT USE CDPH AS TESTING STANDARD:

- SCS Indoor Advantage Gold, EC 10.2 Standard Addendum
- FloorScore, EC 10.2 Standard Addendum
- Collaborative for High Performance Schools (CHPS), Procedures and Standards for Product Inclusion Version
- NSF 332
- UL Greenguard Gold, UL 2818 and UL 2821
- Intertek Sustainability, Clean Air

Other certifications may be submitted to declare.support@living-future.org for evaluation. Please provide an explanation of their conformance with CDPH or AgBB Scheme testing methods.

## THIRD-PARTY VERIFICATION

The International Living Future Institute has collaborated with approved third-party assessors to provide manufacturers with the opportunity for third-party verification of Declare label claims. This optional program offers an additional level of confidence and risk mitigation through the review of all ingredients, supply chain information, and Declare label claims.

Labels with the Declare third-party verified mark and those listed in the database as "Third-Party Verified" have been assessed by a professional third-party assessor to ensure the accuracy of the manufacturer's supply chain, purchasing, and ingredient claims.

Manufacturers must provide supplier confirmation of all ingredient claims to the contracted assessor. Manufacturers can use the supply chain reporting tools within Toxnot to collect and report the required supplier backup for verification; alternately manufacturers may compile supplier data and transfer to the assessor by email or agreed upon digital platform. Final approval of the Declare claims must be made by the assessor through Toxnot.

## DECLARE INTERNATIONAL

To meet the increasing demands for transparent building materials in international markets, the Institute has partnered with capacity-building organizations to provide outreach and support to international markets. The Declare International Partner program provides local resources and expertise, along with label translation services, to manufacturers and suppliers in select markets. For additional details and a full list of Partner markets, visit living-future.org/declare/declare-about.

## DECLARE LABEL TRANSLATION PROTOCOL

As a supplement to the Declare International Partner Program, the Institute has launched a Declare Label Translation Protocol for manufacturers interested translating their Declare labels in multiple languages. Manufacturers must adhere to the following criteria:

- All Declare labels must be published in English, at minimum. The English version of the Declare label is considered the original.
- Language translations available by a signed Declare International Partner must be completed by the International Partner. Contact ILFI for the complete list of international partners that offer translations.
- Languages not available for translation by an International Partner may be completed by a translation service, with advanced written approval from ILFI.
    - Manufacturers must contract with a translating service directly.
    - ILFI will send all relevant Declare forms/files for translation in Word and Excel format.
    - The manufacturer must provide translated files back to ILFI as Word/Excel documents
    - The manufacturer/translator is responsible for including any font files, as applicable.
- Translations are considered a new format of the existing Declare label and license. They will be issued using the same Declare ID as the original label.
    - For the purposes of label counting, a product/product family receives one Declare label for each final point of assembly; translations of this label are under the original license and should not be counted as separate labels.
- The ILFI label drafting fee for translated labels is $500/language; the renewal fee for translated labels is $250/language.
    - The ILFI fee includes formatted files for translation, redrafted/formatted jpeg and eps files, updated Declare database entry, and linking to the language filter on the Declare database.
    - Renewals may only include updates to the Declare ID and expiration date. Any changes to the product information or ingredient list will incur the full translation fee.
- ILFI will provide all translated and reformatted jpeg/eps files to the manufacturer for review and approval prior to publishing
    - It is recommended that the manufacturer send the final jpeg file(s) to the hired translation company prior to approval. Changes required after approval and publishing may incur a label redraft fee.

### FORMAL CLARIFICATION REQUESTS ON DECLARE CLAIMS

When a manufacturer, supplier, consumer or organization feels the reporting requirements of Declare have not been fully met by a manufacturer, or they have formal questions regarding a product or supply chain claim, they may submit a formal request for clarification. The formal clarification request must include a thorough explanation of the contents or claim in question, along with the product manufacturer name and Declare ID. Formal clarification requests must be submitted directly to the Declare Support team by emailing declare.support@living-future.org. The formal clarification request must include the contact information of the individual or organization representative submitting the request; anonymous requests will not be processed.

The submitted clarification request will be reviewed by the Institute's Materials team and, if warranted, the Institute's Program team. Following this review, the request will be submitted to the manufacturer for response. The manufacturer in question has 30 days from the day the request is forwarded by the Institute to respond and provide appropriate documentation or the label will be temporarily suspended. The manufacturer response will be reviewed by the Institute and sent to the individual or organization responsible for submitting the original clarification request.

If errors are found, the label must be redrafted and published to the Declare database. If the label error or errors are determined to be the fault of the manufacturer or manufacturer's consultant, labels will be redrafted and published at the expense of the manufacturer. Redrafted labels require full vetting by the Declare team and will be processed and invoiced as a full label. If the label error or errors are determined to be the fault of the Institute, labels will be redrafted and published free of charge.

## TOXNOT AND DECLARE

Starting in 2018, ILFI partnered with ToxNot, a technology partner with a focus on product transparency and hazards screening. ToxNot has an existing data management platform that aligns with the needs of Declare manufacturers and allows ILFI to better scale the Declare program, while easing the burden of technology management.

### ABOUT TOXNOT

Toxnot is an integrated software platform to streamline chemical transparency for products. Through Toxnot, it's easy to upload the data you need from an ERP/PLM or excel sheet and pull chemical content information from suppliers using customizable surveys. Use regulatory list data to ensure compliance with regulations and hazard data to optimize your product chemistry. Report out using the product transparency standards, such as Declare and HPD. Toxnot increases operational efficiency around chemical transparency efforts, enabling manufactures to find better, safer materials for their products. Toxnot also powers the Declare label submission process. Through ILFI Premium Membership, each manufacturer receives access to create, submit, and maintain Declare labels. This access can be seamlessly integrated with the rest of Toxnot's capabilities if a manufacturer chooses to upgrade.

Toxnot manages the platform and supports Declare customers' IT needs; ILFI manages the Declare program, sets the technical standard, and provides customer service and support related to program requirements.

For ToxNot inquiries, contact the ToxNot team at support@toxnot.com.

# HOW TO DECLARE

## 5 SIMPLE STEPS

1. Go to living-future.org/membership, select the "Premium Membership" and pay the annual premium membership fee.
2. Go to Toxnot at toxnot.com or navigate to Toxnot through the ILFI Member Dashboard and connect your ILFI Membership to Toxnot. Toxnot membership is included with ILFI Premium Membership.
3. Create your new product on the Toxnot platform.
    a. Build your Bill of Materials (BOM) by importing a CSV file or manually inputting product data by CASRN.
    b. Create a draft Declare label by opening a product from your library and selecting Report > Declare Template > Preview
    c. Submitting label to ILFI:
        i. Share for Feedback to get feedback on your product entry before submitting and paying for the label. Use this when you are looking for feedback only, before label creation or publication.
        ii. Submit for approval to submit the label for approval to ILFI. Use this when you are ready to pay for your label and get it published.
4. Complete payment on Toxnot, submit label for review, and pay the corresponding label fee. Enter any coupon codes and pay for the full value or the rest of the cost using a credit card. Payment is required before labels can be published. It is recommended that manufacturers pay by credit card for quickest turnaround time; Invoices can be sent by ILFI upon request.
5. Approve the drafted labels through Toxnot, and ILFI publishes labels.

The Declare support team will process the information, draft the Declare label, and follow up with any questions or comments. Manufacturers that require a written invoice to process payment may request an invoice by contacting the Declare Support team at declare.support@living-future.org. Allow additional processing time for those product labels paid via invoice.

A draft of all new labels must be approved by the manufacturer prior to publishing. Manufacturers will be able to review and approve labels on Toxnot. Any product changes requested after approval and publishing are subject to a label redraft fee.

## REPORTING LIFE EXPECTANCY

Manufacturers should report the expected life of the product, in years, from manufacturing to the end of its useful life and/or the end of the product's warranty period.

## REPORTING END OF LIFE OPTIONS

A minimum of one product end of life option must be reported. Packaging and process materials should not be reported within end of life options.

Take Back Program: To be used when the manufacturer or industry trade group offers a mechanism both implemented and overseen by a manufacturer/trade group to assume physical responsibility of a product, product component, and/or packaging at the end of their useful lives with the intent to reuse or recycle the items received into new useful goods.

Salvageable/Reusable in its Entirety: To be used when a product or assembly of a particular service that is capable of being reused without significant remanufacturing or alteration after it has been retired from its initial consumer-based installation or function.

Biodegradable/Compostable: To be used when all or a portion of the product is composed of organic matter that can be naturally broken down by microorganisms and the product does not contain any ingredients that would negatively alter the natural ecosystem. If only a portion of the product is biodegradable/compostable, the manufacturer must report the percentage by weight of the portion.

Recyclable: To be used when a product, or portion thereof, can be processed into new saleable goods. If only a portion of the product is recyclable, the manufacturer must report the percentage by weight of the portion.

Hazardous Waste: To be used when a product, or a portion of a product, is considered hazardous to humans or the environment and requires specific end of life processing to mitigate risk of exposure to hazardous ingredients. The portion of the product that requires hazardous waste processing must be reported if selected.

Landfill: To be used when a product, or a portion of a product, has no other end of life option and the product, or a portion of the product, must be sent to municipal landfill for disposal. The manufacturer must report the percentage by weight of the portion. By default, unreported percentages will be listed as landfill.

## FEES AND RENEWALS

The Institute does not review applications or draft labels before the product application is formally submitted and all fees are paid.

The Declare fee corresponds with each label. A single label covers a product, or product family, and a single final assembly location. If a product has more than one final assembly location, then the manufacturer will be charged full label price for each location.

Manufacturers wishing to submit a product with five or more manufacturing locations may take advantage of bulk label pricing. To qualify for bulk pricing, all five-plus manufacturing locations must be submitted with the original application. Only additional labels for the same product are eligible for bulk label pricing. The first label for the product will be charged the full fee, with subsequent chemically identical labels charged half the fee. All renewals will be calculated per the standard renewal rate.

The Declare label license is valid for a 12-month period. After this period, manufacturers pay a renewal fee and either confirm that the information contained within the Product Declaration Form has not changed or submit a new form. Confirmed renewals with no product or chemistry changes are eligible for renewal pricing; labels that require significant updates and redrafting are subject to the full label fee. The renewal fee is 50% of the full label fee.

Renewals must be submitted within 30 days of expiration. To renew your product, visit ToxNot and select the product or products you wish to renew. For products that are not renewed within the 30-day window, the manufacturer must submit a new product and pay the corresponding Declare license fee.

Fees are subject to changes. Once a new product is submitted and paid for, there are no refunds. For the current fee schedule, visit living-future.org/declare/declare-about/.

## MID-CYCLE UPDATE POLICY

Changes to product formulation invalidate the Declare label and require the manufacturer to resubmit documentation and may be subject to a product license fee.

To encourage companies to develop nontoxic alternatives, the fee is waived if the change is to remove a Red List ingredient or provide additional transparency. Manufacturers that change their product chemistry and are able to move up a Declaration Status or remove all proprietary ingredients are eligible for the fee waiver.

Changes to product chemistry that do not result in an improvement in Declaration Status will be subject to a redrafting fee. Requested changes to a product name, listed manufacturer, life expectancy, end of life options, or company name are subject to a partial label redraft fee.

## DECLARE AND THE LIVING BUILDING CHALLENGE

Declare offers a transparency platform to help project teams select materials that comply with the product-related requirements of the Health + Happiness and Materials Petals, ensuring not only that the projects are free of worst-in-class toxins, but that they support a materials industry that safeguards the health of the environment and workers throughout the supply chain.

- **Imperative 08**, Healthy Interior Environment, requires compliance with the California Department of Public Health (CDPH) Standard Method v1.1-2010 (or international equivalent) for all interior building products that have the potential to emit Volatile Organic Compounds. The Declare label confirms a product's compliance with the CDPH emissions standards.
- **Imperative 10**, Red List, requires that manufacturers disclose the ingredients in their products to ensure that they are free of Red List chemicals. Declare supports the Living Building Challenge by providing a transparent materials database that project teams can select from to meet the Red List requirements.
- **Imperative 12**, Responsible Industry, requires that all projects must use—at a minimum—one Declare product for every 500 square meters of gross building area.
- **Imperative 13**, Living Economy Sourcing, requires that products are sourced locally to support regional economies. The manufacturing location and raw material sourcing information on the Declare label assists project teams in determining which products will help them comply with this Imperative.
- **Imperative 14,** Net Positive Waste, requires that the project meet aggressive material diversion rates throughout the design, construction, operation, and end of life phases of the building.

# APPENDIX A

## LIVING BUILDING CHALLENGE: RED LIST SUMMARY STATEMENTS

### RED LIST

The Red List represents the "worst in class" materials, chemicals, and elements known to pose serious risks to human health and the greater ecosystem. The Institute believes that these materials should be phased out of production due to health/toxicity concerns. While there are certainly other items that could be added, this list was determined by selecting items with the greatest potential impact if they were significantly curbed or eliminated from the building industry. The International Living Future Institute worked with the Healthy Building Network and the Pharos Project to develop the Red List, and new items will be added as research and information becomes available.

The original Red List, launched in 2006, has been significantly updated with the release of LBC 3.1 in May 2016. The update ensures that the program aligns with other authoritative hazard lists, including the EPA Action Plan Published Lists, the REACH Substances of Very High Concern (SVHC) List, and the Cradle to Cradle Banned List. The current Red List includes 22 chemical groups, represented by over 800 individual CASRN. The specific CASRN list was created in collaboration with the Healthy Building Network and the Pharos Chemical and Materials Library.

While any material can be listed in the Declare database, a Living Building Challenge Project cannot contain any of the following materials or compounds:

- Alkylphenols
- Asbestos
- Bisphenol A (BPA)
- Cadmium
- Chlorinated Polyethylene and Chlorosulfonated Polyethlene
- Chlorobenzenes
- Chlorofluorocarbons (CFCs) and Hydrochlorofluorocarbons (HCFCs)
- Chloroprene (Neoprene)
- Chromium VI
- Chlorinated Polyvinyl Chloride (CPVC)
- Formaldehyde (added)
- Halogenated Flame Retardants (HFRs)
- Lead (added)
- Mercury
- Polychlorinated Biphenyls (PCBs)
- Perfluorinated Compounds (PFCs)
- Phthalates
- Polyvinyl Chloride (PVC)
- Polyvinylidene Chloride (PVDC)
- Short Chain Chlorinated Paraffins
- Wood treatments containing creosote, arsenic or Pentachlorophenol
- Volatile Organic Compounds (VOCs) in wet applied products

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Wet applied products (coating, adhesives and sealants) must have VOC levels below the South Coast Air Quality Management District (SCAQMD) RULE 1168 for Adhesives and Sealants or the Carbon 2007 Suggested Control Measure (SCM) for Architectural Coatings as applicable. Containers of sealants and adhesives with capacity of 16 ounces or less must comply with applicable limits in the California Air Resources Board (CARB) Regulation for Reducing Emissions from Consumer Products.

There are also temporary Imperative Exceptions for Red List items due to current limitations in the materials economy. More information about the health and environmental effects of specific Red List chemicals, as well as a full list of temporary Exceptions, is available in the appendix of this document.

The list of CASRN that correspond with each Red List item is available on the Declare website: living-future.org/declare/declare-about/red-list/#red-list-cas-guide.

## ALKYLPHENOLS

Alkylphenols are a large family of organic compounds used in a wide variety of products, including cleaning products, beauty products, contraceptives, coatings, fragrances, thermoplastics, carbonless copy paper, and agrochemicals. Most concerns are focused on alkylphenol ethoxylates (APEs), which bioaccumulate and have been shown to cause endocrine disruption in fish. APEs are in cleaning products that end up in waterways from wastewater treatment effluent. Some alkylphenols, especially nonylphenol, are being phased out in Europe, and more research into their impacts is needed. A few governments with environmentally preferable purchasing programs restrict or ban APEs.

REF: http://www2.mst.dk/Udgiv/publications/2013/04/978-87-92903-99-0.pdf

## ASBESTOS

Asbestos is a mineral fiber that is used in a variety of construction materials for its strength and heat resisting capabilities. It is often found in wall insulation, vinyl floor coverings, paint compounds, roofing, heat-resistant fabrics, and automobile brakes. Exposure occurs as asbestos fibers are released into the air during use, demolition, work, building, or repair of asbestos-containing materials. Asbestos is a known human carcinogen, increasing risks of lung cancer, mesothelioma, and asbestosis.

REF: http://www2.epa.gov/asbestos/learn-about-asbestos#asbestos

## BISPHENOL A (BPA)

Bisphenol A (BPA) is used to manufacture polycarbonate (clear, hard) plastics and epoxy resins. The plastics are used in many consumer products, such as drink bottles, DVDs, eyeglass lenses, electronics, car parts, and other products that must not break easily. Epoxy resins are used for lining food cans and water pipes, and for many sales receipts. Most recent testing has shown the largest health-related concern to be potential impacts on the brains, behavior, and prostate glands of fetuses, infants, and small children. Most health organizations advise against the use of BPA for baby bottles and related products. BPA has also been found in breast milk.

REF: http://www.fda.gov/newsevents/publichealthfocus/ucm064437.htm

## CADMIUM

The US Department of Health and Human Services and the International Agency for Research on Cancer have determined that cadmium is a known human carcinogen associated with lung cancer. Additionally, acute and long-term exposures can lead to lung and kidney damage, bone loss, and hypertension. In sufficient quantities, cadmium is lethal. Cadmium's extreme toxicity means that overexposure can occur even when only trace amounts are present, such as during smelting and electroplating activities.

REF: http://www.inchem.org/documents/iarc/vol58/mono58-2.html

## CHLORINATED POLYETHYLENE AND CHLOROSULFONATED POLYETHYLENE

Chlorinated Polyethylene (CPE) and Chlorosulfonated Polyethylene (CSPE) are Persistent Organic Pollutant Source Materials: due to their carbon-chlorine bases, these products contribute to the creation of dioxins and furans at different points in their life cycle (often manufacturing and/or disposal). According to the World Health Organization, dioxins are some of the most potent toxins known to humans, with no known safe limit for exposure and a strong propensity for bioaccumulation. In addition, dioxins are highly persistent in the environment. Similarly, furans accumulate in animal fat, concentrating as they travel up the food chain. Non-chlorinated polyethylene products are readily available in many product categories.

REF: http://www.who.int/mediacentre/factsheets/fs225/en/index.html

## CHLOROBENZENES

Chlorobenzene is used primarily as a solvent, a degreaser for auto parts, and a chemical intermediary for making other chemicals, so exposures are primarily a risk to workers making or using it. Most exposures are through inhalation of fumes. Short-term exposure can cause headaches, sleepiness, nausea, numbness, muscle spasms, and in extreme cases, unconsciousness. Chronic (long-term) exposure can cause increased signs of neurotoxicity (numbness, etc.) and irritation of the upper respiratory tract. In animals, chronic exposure has also caused kidney and liver damage. Chlorobenzene is broken down by sun and bacteria in the environment and does not accumulate in the food chain.

REF: https://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=488&tid=87

## CHLOROFLUOROCARBONS (CFCs) AND HYDROCHLOROFLUOROCARBONS

According to US EPA, the depletion of the Earth's protective ozone layer by chlorofluorocarbons (or CFCs) is responsible for an increased incidence of skin cancer, cataracts, impairment of human immune systems, and damage to wildlife. CFCs have been banned from production in the United States since 1995.

REF (CFC effects on ozone):
http://www.epa.gov/ozone/science/sc_fact.html
REF (ozone depletion and human health):
http://www.who.int/globalchange/climate/summary/en/index7.html

Hydrochlorofluorocarbons (HCFCs) are potent ozone-depleting compounds. While less destructive than the now-banned chlorofluorocarbons, HCFCs are targeted for gradual phaseout by the US EPA, with a total ban going into effect in the year 2030. According to US EPA, the depletion of the Earth's protective ozone layer is responsible for an increased incidence of skin cancer, cataracts, impairment of human immune systems, and damage to wildlife.

REF: https://www.epa.gov/ods-phaseout

## CHLOROPRENE (NEOPRENE)

Chloroprene is a Persistent Organic Pollutant Source Material. Due to its carbon-chlorine base, chloroprene contributes to the creation of dioxins at different points in its life cycle (often manufacturing and/or disposal). According to the World Health Organization, dioxins are some of the most potent toxins known to humans, with no known safe limit for exposure and a strong propensity for bioaccumulation. In addition, dioxins are highly persistent in the environment.

REF (dioxins):
http://www.who.int/mediacentre/factsheets/fs225/en/index.html

## CHROMIUM VI

Although chromium is a naturally occurring element and chromium III (trivalent chrome) is an essential nutrient, chromium VI (hexavalent chrome) can cause serious health issues, especially for factory workers who can inhale or ingest it during manufacturing. There has been concern about it in drinking water and, lacking EPA maximum allowable levels, the State of California set a public health goal for it. Chromium VI is used primarily for chrome plating of metals for decorative or protective finishes, making stainless steel, leather tanning, anti-corrosive agents for paints, and in textile dyes and pigments. Long-term or high-level exposure through inhalation can cause nasal irritation and ulcers, breathing problems, and nasal and lung cancer in unprotected workers. Ingestion can cause anemia and/or stomach tumors. Skin contact can cause skin ulcers and allergic reactions.

REF: https://www.osha.gov/SLTC/hexavalentchromium/

## FORMALDEHYDE (ADDED)

Formaldehyde is classified by the International Agency for Research on Cancer and the State of California as a known human carcinogen. Common health effects at low levels of exposure to this volatile organic compound include irritation and sensitization, and the compound also acts as an asthma trigger. Long-term exposure is associated with nasal cancers and leukemia.

REF: http://www.cancer.gov/cancertopics/factsheet/risk/formaldehyde

## HALOGENATED FLAME RETARDANTS (HFRS)

Halogenated Fire Retardants (HFRs) are a broad class of flame retardants containing chlorine or bromine that have aroused concern due to their exponential

accumulation in human beings in recent years. HFRs are persistent bioaccumulative toxins, meaning that they accumulate in organisms and the broader environment, often reaching alarmingly high concentrations as they travel up the food chain. In addition, certain halogenated products have shown evidence of harm to humans and other animal species. According to the Washington State Department of Ecology, for example, the toxicity endpoints of concern for Penta-PBDE include adverse effects on neurological development, reproduction, thyroid hormone disruption and possible liver toxicity.

HFRs include PBDE, TBBPA, HBCD, Deca-BDE, TCPP, TCEP, Dechlorane Plus, and other retardants with bromine or chlorine. Boron is not an HFR and is allowed. Many products, including virtually all foam insulations, contain HFRs.

REF: http://www.ecy.wa.gov/biblio/0507048.html

## LEAD (ADDED)

According to the Agency for Toxic Substances and Disease Registry, the environmental levels of lead have increased more than 1000-fold over the last three centuries, due almost exclusively to human activities. Lead exposure is damaging to virtually every organ and system in the human body, but is particularly damaging to the brain and central nervous system—profoundly so for young children and developing fetuses. Lead exposure is correlated with decreased IQ and delayed learning in children; scientific research has identified no safe level of lead exposure, and effects are irreversible.

REF: http://www.who.int/mediacentre/factsheets/fs379/en/

## MERCURY

According to the World Health Organization, mercury produces a suite of ill effects, including harm to the nervous, digestive, and immune systems, and even death. WHO lists children and developing fetuses as especially vulnerable to damage from mercury. Mercury bioaccumulates in the environment, eventually reaching concentrations thousands of times more intense than ambient levels.

REF: http://www.epa.gov/hg/effects.htm

## POLYCHLORINATED BIPHENYLS (PCBS)

PCB manufacturing in the United States stopped in 1977 but the compound is long-lasting in the environment (mostly in soils) around old manufacturing and disposal sites, in old electrical transformers and electrical devices, and in fish and their predators. PCBs make good coolants, lubricants, and insulators for electrical equipment of all kinds. They are known to cause cancer in animals and are probable human carcinogens, but exposure tends to be limited to people who worked in the electrical industry many years ago, lived close to manufacturing sites, and/or ate contaminated fish. Health effects also include acne-like skin conditions and neurobehavioral and immunological changes in children.

REF: https://www.atsdr.cdc.gov/csem/csem.asp?csem=30&po=10

## PERFLUORINATED COMPOUNDS (PFCS)

PFCs are chemical compounds that exist in many variations with many uses, such as surface treatments to repel water and stains, acids used in chemistry and research, in the semiconductor industry, and in some medical imaging devices. Many of them are greenhouse gases and bioaccumulate in the environment, but are not stored in human body fat. Most exposure is from contaminated food or products that contain PFCs. Animal studies show endocrine disruption, immune function issues, liver and pancreas damage, and developmental problems.

REF: http://www.niehs.nih.gov/health/materials/perflourinated_chemicals_508.pdf

## PHTHALATES

Mounting evidence from animal studies show the hormone-disrupting potential of phthalates, prompting the National Research Council to urge the US Environmental Protection Agency to pursue a "cumulative risk assessment" of this class of chemicals to determine their interactivity. Testing by the Centers for Disease Control and Prevention shows that phthalates are nearly ubiquitous in the US population, with highest concentrations in women and in children aged 6 to 11 years. The endocrine disrupting nature of phthalates has implications for childhood and reproductive development, as well as cancer incidence. The European Union and over a dozen countries have banned the use of phthalates in children's products, as has the State of California.

REF: https://toxtown.nlm.nih.gov/text_version/chemicals.php?id=24
REF (cumulative risk assessment):
http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=12528

## POLYVINYL CHLORIDE (PVC), CHLORINATED POLYVINYL CHLORIDE (CPVC), POLYVINYLIDENE CHLORIDE (PVDC)

PVC's vinyl chloride monomer building block is a known human carcinogen, according to the US Department of Health and Human Services. In addition, PVC is a Persistent Organic Pollutant Source Material. Due to its chlorine content, PVC often contains other Red List ingredients, such as cadmium, lead, and phthalates. The manufacture and disposal of PVC can result in the production of dioxins and disposal phases. Dioxins, specifically TCDD, accumulate in human and animal tissue and are associated with immune system impairment, damage to developing nervous systems, and damage to the endocrine and reproductive systems. TCDD is listed as a "known human carcinogen" by the International Agency for Research on Cancer.

REF (dioxins): http://www.who.int/mediacentre/factsheets/fs225/en/index.html
REF: https://toxtown.nlm.nih.gov/text_version/chemicals.php?id=84

## SHORT CHAIN CHLORINATED PARAFFINS (SCCPS)

SCCPs are most commonly used as lubricants and coolants in metal cutting and forming operations and are also used as secondary plasticizers and flame retardants in plastics, such as PVC. Human exposure can be occupational, via inhalation of metalworking mists, or through contaminated food and dermal

contact. Environmental exposure is usually from manufacturing activities, such as production, disposal, incineration, spills into waterways, and sewage effluent. SCCPs are persistent and very bioaccumulative in sediment. They have been found in marine mammals, other biota, and human breast milk in both industrial and remote areas. Toxic effects on mammals can include liver, hormone, and kidney damage that over a long term could lead to cancer in those organs.

REF: https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/short-chain-chlorinated-paraffins

## WOOD TREATMENTS CONTAINING CREOSOTE, ARSENIC OR PENTACHLOROPHENOL

Many conventional wood treatments introduce a litany of human health and environmental problems. The traits that make wood treatments effective at retarding rot and insect damage are also effective at damaging many other forms of life. According to the US Department of Health and Human Services, creosote exposure is associated with skin and scrotum cancer in humans, and liver, kidney, and gestational problems in laboratory animals. Inorganic arsenic is not only an acute toxin; it is a known human carcinogen. Pentachlorophenol is linked to liver and immune system damage in humans, and reproductive and thyroid damage in laboratory animals.

REF (creosote): https://www.atsdr.cdc.gov/phs/phs.asp?id=64&tid=18
REF (arsenic): https://www.atsdr.cdc.gov/phs/phs.asp?id=18&tid=3
REF (pentachlorophenol): https://www.atsdr.cdc.gov/phs/phs.asp?id=400&tid=70

## VOLATILE ORGANIC COMPOUNDS (VOCS) IN WET APPLIED PRODUCTS

VOCs are members of a large group of organic chemicals that can evaporate into the indoor air under normal temperature conditions and into the outdoor air, causing environmental impacts such as photochemical smog. Their health effects vary widely, from respiratory irritants to human carcinogens (such as formaldehyde), which is a concern since they are ingredients in many products in the built environment. On-site wet applied products (paints, adhesives, and sealants) are of particular concern because they can directly impact the health of installers who may not be using breathing or dermal protection, unlike in-factory wet applied materials that are (usually) applied with worker and environmental protections in place.

REF: http://www.epa.gov/iaq/voc2.html

# APPENDIX B

## IMPERATIVE EXCEPTIONS THAT APPLY TO DECLARE

Although the aim of Declare and the Living Building Challenge is to move the building industry toward the complete phase-out of all chemicals on the Red List, the Living Building Challenge recognizes that there are current limitations in the building materials marketplace. The following temporary Exceptions are applicable to Declare manufacturers and have been granted by the Living Building Challenge to reflect current market limitations in the industry to develop alternatives. Exceptions are temporary and will be removed if new products and formulations become available. If a material contains a Red List item but has been granted a temporary Exception, the Red List chemical will still be listed on the ingredient label in red lettering. A footnote will be added identifying the specific Exception and stating that the product is "LBC Compliant". Exceptions listed on the label are valid for one year.

Only those Exceptions listed below may be applied to a Declare product label. Exception requirements as they apply to Declare products are included in this list and language may differ slightly from the exception language available to LBC project teams. The Exception list will be updated by the Institute as required.

### I10-E2 5/2013
### SMALL ELECTRICAL COMPONENTS

Complex electrical or data products that are made up entirely of small electrical components, such as fire alarms, meters, sensors, thermostats, and load break switches, do not need to be tracked for Red List. Instead, these products must meet the European Union's Restriction on the Use of Certain Hazardous Substances (RoHS) Directive, which establishes the following maximum concentration values for toxic chemicals tolerated by weight in homogeneous materials:

- Lead (0.1 %)
- Mercury (0.1%)
- Cadmium (0.01%)
- Hexavalent chromium (0.1%)
- Polybrominated biphenyls (PBB) (0.1%)
- Polybrominated diphenyl ethers (PBDE) (0.1%)

Large electrical equipment, such as a PV panel, is not considered a small electrical component, but may be partially comprised of small electrical components. Project teams must still gather supporting data for the equipment housing and other major components, such as glass.

### I10-E4 9/2012
### PROPRIETARY INGREDIENTS <1%

Due to market realities, manufacturers are allowed to withhold one or more ingredients if they add up to less than 1% of the product by both weight and volume. The manufacturer must confirm that the proprietary ingredients do not contain any Red List chemicals.

## I10-E6 9/2013
## GLASS-MAT GYPSUM SHEATHING

A small amount of formaldehyde is allowed in glass-mat gypsum sheathing products. Glass-mat decking is not included in this Exception since it is available without formaldehyde.

## I10-E7 5/2017
## LEAD BATTERY SYSTEMS

Deep-cycle lead acid batteries are allowed for solar and life-safety backup systems. Project teams are advised, but not required, to consider selecting products that are compliant with the provisions of the European Union's Batteries Directive.

## I10-E8 1/2009
## DOOR HARDWARE

Some lead is allowed in door hardware. Steel hardware and salvaged materials should be given preference when possible. Note that lead is added to brass to assist with the ease of casting/ machining. Lead-free and low-lead grade brass alloys are available, but are not yet typically used in architectural hardware applications.

## I10-E9 3/2013
## PHENOL FORMALDEHYDE IN MINERAL WOOL INSULATION

Phenol formaldehyde is allowed in rigid mineral wool insulation for exterior applications (such as rain screen assemblies or foundation insulation). While rigid mineral wool insulation does contain some formaldehyde, most of the formaldehyde is eliminated in the production process through a chemical reaction and high heat. Rigid mineral wool insulation installed on the exterior of the building poses less risk to humans and ecosystem than rigid foam insulation products, which almost always contain HFRs and use blowing agents with high global warming potential.

## I10-E10 8/2008
## STRUCTURAL COMPOSITE WOOD MEMBERS

Added phenol formaldehyde is allowed in composite structural members, such as glulam beams.

## I10-E11 1/2009
## COMPOSITE WOOD SHEET GOODS

Some composite wood sheet goods may contain specific types or levels of formaldehyde:

- Structural composite wood sheet goods may have added phenol formaldehyde (no urea formaldehyde).
- Door-rail joints may contain urea formaldehyde.
- Flush wood doors may contain no more than 2% added phenol or melamine formaldehyde.

- Furniture and cabinetry substrates may contain formaldehyde up to the following limits:
    - Particleboard 0.09ppm,
    - Medium Density Fiberboard 0.11ppm,
    - Thin Medium Density Fiberboard 0.13ppm, and
    - Plywood 0.05ppm.

Substrate products must be tested against a third party standard such as CARB Phase 2, TSCA Title VI, Engineered Wood Products of Australia Emission Class E0, or equivalent.

### I10-E12 9/2010
### HFRs IN FOAM INSULATION

Foam insulation with HFRs is allowed in the following applications, provided that the application requires a hydrophobic product; that space is limited; and that HFR-free alternative products cannot provide the required R-value performance in that limited space.

- Structural Insulated Panels (SIPS).
- Insulation in hollow metal doors.
- Spray insulation for renovation projects.
- Under- slab insulation.
- Roof and exterior insulation.
- Foam insulation in these cases must still meet all other Red List requirements.

Foam insulation is not allowed in cavity-fill applications where many alternative Red List–compliant options without HFRs are on the market.

### I10-E13 6/2012
### MERCURY IN UV DISINFECTION LAMPS

Mercury is allowed in UV filtration lamps for projects that pursue the Water Petal if no other acceptable non-chemical filtration methods can be identified.

### I10-E16 10/2013
### HFRs IN NON-PVC WIRING

Halogenated Flame Retardants (HFRs) are allowed in non-PVC electrical wiring, such as XHHW cables, due to National Electrical Code (NEC) requirements.

Data cables, such as low smoke zero halogen, are not eligible for this exception.

### I10-E17 8/2011
### PLUMBING

Low levels of lead are allowed in wet surfaces of plumbing pipes and fixtures connected to potable water systems provided they meet the federal definition of “lead-free” as defined in S. 3874 (111th): Reduction of Lead in Drinking Water Act, effective January 1, 2014.

## I10-E18 8/2011
## COMMERCIAL WATER SYSTEMS

Commercial water systems that don't connect to potable water (i.e., sprinklers, roof drains, backflow preventers) are allowed to meet a higher lead content than potable water systems.

## I10-E21 12/2015
## CHROMIUM VI IN PLUMBING FLUSH FIXTURES

Chromium VI is allowed in the plating of flush levers and commercial flush valves.

## I10-E22 6/2016
## FORMALDEHYDE IN SYSTEMS FURNITURE LAMINATE

Systems furniture surfaces may contain a small amount of formaldehyde in the laminate binder and adhesive. Manufacturers must demonstrate through emissions testing that formaldehyde emissions from the finished product are below that allowed by CDPH standard method v1.1-2010 or international equivalent.

## I10-E23 5/2017
## PHENOL FORMALDEHYDE POLYMERS IN FOAM BOARD INSULATION

Foam board insulations containing phenol formaldehyde polymers may be used if, as specified in the California Air Resources Board (CARB) Regulation:

- the phenol formaldehyde polymer in the insulation contains acceptable levels of free/residual formaldehyde, and
- the phenolic foam boards' are between formaldehyde and phenol, resorcinol, cresols, or a mixture of thereof.

To demonstrate compliant levels of free/residual formaldehyde, the manufacturer or supplier must:

- conduct testing of the polymer in accordance with ISO 11402 (Formaldehyde content) or EN 717 (Formaldehyde emissions) or an equivalent standard, and
- document that test results were below the CARB formaldehyde limits (content or emissions).

## I10-E24 4/2017
## LEAD PRODUCTS IN MEDICAL FACILITIES

When required for protection from internal radiation sources such as X-ray and MRI machines, doors and other building products in medical facilities may contain lead. Non-protective doors and building products may not contain lead.

## I10-E25 8/2018
## PTFE IN HIGH PERFORMANCE APPLICATIONS

Polytetrafluoroethylene is allowed in industrial metal coil coatings and ancillary plastic components where high heat, friction and impact resistance is required for product performance and when the manufacturer has demonstrated there are no alternate Red List free suppliers to meet the performance criteria.

## CLARIFICATIONS:

### UNINTENTIONAL TRACE AMOUNTS

There are instances when a Red List ingredient is present in a product because it naturally occurs in the product's raw materials or was unintentionally added through certain manufacturing or reclamation processes. Therefore, as a general rule, products should have no "intentionally added" Red List ingredients. Intentionally added ingredients are defined as each discrete chemical, polymer, metal, bio-based material, or other substance added to the product by the manufacturer or suppliers that exists in the product as delivered for final use. Although trace amounts of unintentional ingredients are allowed, a full list of all intentionally added ingredients is still required. The following products are known to fall under this Clarification:

Unintentional Trace Amounts

- Clay
- Minerals
- Wood
- Gypsum

Unintentional Trace Amounts from Manufacturing

- Recycled steel
- Galvanized metal
- Portland cement
- Fly ash
- Magnesium oxide board
- Paint

### RECYCLED CONTENT

Recycled content requires disclosure of all known ingredients in the recycled content feedstock. At minimum, the primary recycled ingredient must be reported.  Unknown residuals in recycled content are considered unintentional trace amounts. that may be present in the product, including the potential HFRs. Thorough reporting of all ingredients, including pre-consumer waste generated by the manufacturer, is required.

Pre-consumer recycled content generated by the product manufacturer must be reported with all intentionally added ingredients at or above 100ppm. Recycled content from within the manufacturer's own feedstock may not use the intentional trace amounts clarification.

# APPENDIX C

## THIRD PARTY VERIFICATION OVERVIEW

The International Living Future Institute has collaborated with approved third-party assessors to provide manufacturers with the opportunity for an independent, objective verification of Declare label claims. This optional program offers an additional level of confidence and risk mitigation through the review of all ingredients, supply chain information, and Declare label claims.

Assessors review and confirm the Declare application for completeness and accuracy. All published manufacturer product data; chamber testing results (when applicable); and manufacturer purchase orders and/or supplier contracts are reviewed. The product ingredient disclosure is reviewed to confirm accuracy. The assessor ensures all program requirements are met and suppliers are contacted to confirm disclosed materials and any proprietary ingredients are free of Red List chemicals. The final assessor-confirmed Declare application is then reviewed by ILFI before the Declare label is published.

The third-party verified assessors confirm manufacturer ingredient claims and add a layer of accountability and rigor to the program. The program gives product specifiers additional confidence in the products they are selecting.

## ASSESSMENT REQUIREMENTS AND DOCUMENTATION COLLECTION PROCESS

All Declare third-party verification claims must be reviewed by an ILFI-approved Assessor. The Assessor must have a current signed agreement with ILFI and be an ILFI Premium Member in good standing.

1. The Assessor will review the manufacturer-provided documentation confirming:
   - All ingredients/materials included in the product at 100ppm or greater are represented
   - CASRNs are provided for all applicable ingredients/materials and reported correctly
   - All required product and manufacturer information has been provided
   - Any additional required testing data, such as air chamber testing or tests specifically called out in applied Red List Exceptions, have been provided and are current.
2. The Assessor will coordinate with the manufacturer to collect all applicable supplier data to verify the constituent chemistry of all raw materials within their products.
   - The Assessor will verify the full Product Inventory, to 100ppm, and confirm 100% of ingredients have been reviewed.
   - As ILFI has a 1% by weight allowance of proprietary ingredients/materials, the Assessor will review and verify a manufacturer's Product Inventory to 100ppm and determine that 1% or less of the product consists of proprietary chemistries and all proprietary chemistries are free of Red List chemicals.
3. The Assessor will vet the bill of materials against the Red List, assuring all ingredients/materials that appear on the Red List, EPA Chemicals of Concern, and REACH SVHC Lists are identified.

- The full list of Red List CASRNs is published to the ILFI website. The full list of Red List, EPA Chemicals of Concern, and REACH SVHC CASRNs are included in the Declare submission platform.

4. The Assessor will complete a supply chain review, documentation collection, and a verification of information. The Assessor will request the following information from participating Declare manufacturers:
   - Product inventory, product recipe and/or bills of material for the specified products being assessed. All information will be reported down to the 100 ppm level to verify constituents are listed in accordance with the Declare program requirements.
   - Supplier formulation confirmation for each ingredient/materials listed on the bill of materials. Any combination of the following may be used to confirm 100% of a finished product's formulation:
     - SDS or MSDS sheets for raw material ingredients within the Product Inventory/Recipe/BOM.
     - A written statement from the supplier listing the ingredient/material name and CASRN for all ingredients/materials in the supplied material to 100ppm of the finished product pursuing a Declare label.
     - Reaction ingredients with a written statement from the manufacturer or supplier's chemist detailing the inputs and results of the reaction.
     - Testing data confirming the materials make-up of the finished part/material. Testing data must explicitly show what is present in the product; testing data may not be used to simply show the absence of chemicals of concern.
     - Small product hardware must be reported with an ingredient name and CASRN, when appropriate. Alloy numbers do not require reporting for metal small product hardware. Inventory or verification are not required for components that meet the definition of small product hardware. Product hardware will impact Declaration Status if Red List chemicals are used.
   - Materials purchase confirmation for each ingredient/material present in the final product at or above 100ppm. The following may be used to demonstrate purchasing compliance:
     - Purchase Orders from each supplier to validate the material they supplied is purchased by the product manufacturer.
     - Executed supplier contracts for parts/components whose formulation is specified as part of contract.
     - For parts/components with testing data confirming the formulation, ingredient/material purchasing confirmation is not required.
   - Supplier Contact information including contact name, phone number and email address for suppliers or complete supplier surveys through Toxnot.
   - Product emissions chamber testing for all interior products with the potential to emit; emissions testing against CDPH Standard Method v1.1-2010 or approved equivalent. All equivalent emissions test must be either published as acceptable by ILFI or approved in writing prior to product submission.
   - Confirmation of RoHS compliance for electrical components, including testing data or certification markers
   - Confirmation of FSC COC for any FSC Certified Wood claims.
   - All additional documentation as required by applicable LBC Red List Exceptions.

5. The product's bill of materials should be drafted through the manufacturer's Toxnot account. ILFI will then assign the assessor the role of "Partner" to allow for review of the full Declare application and electronic sign-off by the assessor for all Declare submission claims prior to drafting of the Declare label.
6. The product is submitted for review by ILFI once all Declare fees are paid. ILFI will confirm all required product data is provided and notify assessor of any missing information. The label is drafted and returned to assessor and manufacturer for review. The drafted label must be approved by both the assessor and manufacturer prior to publication.
7. Changes to the above written assessor Toxnot workflow must be approved by ILFI in writing prior to product submission.

## DECLARE THIRD-PARTY VERIFICATION LICENSE FEES

All Declare license fees and membership dues are due to ILFI at the time of label publication. Declare licenses are calculated by label, with one label required for each product final point of assembly. The fees listed in the Manufacturers' Guide charged by ILFI, additional fees may be charged and invoiced separately by the assessor; all verification fees are set individually, by approved Assessors.

Declare labels are valid for 12 months, after which confirmation that the product formulation has not changed is required. A renewal fee equal to one-half the price of the full label fee is due at the time of renewal. Renewal fees related to the assessment and confirmation for Third Party Verified Declare labels are set by the assessor and will be invoiced by the assessor directly.

## APPROVED PROGRAM AND LABEL REFERENCE FOR THIRD-PARTY VERIFIED DECLARE LABELS

Manufacturers that have received a Declare label have the right to refer to their products as the following:

If your product has been issued a "Declared" label: "Product X" is participating in Declare.
If your product has been issued a Declare label and determined to be "LBC Compliant" due to a temporary Red List Exception: "Product X" is Living Building Challenge Compliant.
If your product has been issued a Declare label and determined to be "Red List Free": "Product X" is Red List Free.

Manufacturers cannot make any environmental claims about their products in relationship to Declare and the Living Building Challenge other than those listed above. Manufacturers specifically cannot claim that their product has been certified by Declare or the Living Building Challenge or endorsed by Declare or the Living Building Challenge. Any manufacturer with an active, published Declare label may represent themselves as "Participating in Declare."

Manufacturers who have completed the third-party verification process for their Declare labels may also note their product as Third-Party Verified Red List Free" Third-Party Verified LBC Compliant", or "Third-Party Verified Declared" as applicable. Manufacturers who have not been issued Third-Party Verified Declare labels by ILFI may not use the phrase "Third-Party Verified" in reference to their Declare claims.

## RENEWALS AND REASSESSMENT

All third-party verified Declare labels must be renewed every 12 months. Renewals are confirmed by the original Assessor and are subject to ILFI Declare label renewal rules and fees; additional fees may be charged by the assessor for renewal confirmation.

Products must be reassessed every three years. At this time the product Assessor will complete a full supply chain and reporting assessment to confirm all Declare label claims.

## DECLARE ASSESSOR QUALIFICATIONS AND PARTNERSHIP AGREEMENT

All Declare third-party assessors must meet one of the following criteria:

Member of the Living Product Challenge Ecosystem, in good standing
Approved Verifier through the Health Product Declaration Collaborative Third-Party Verification program. Both the organizational and individual qualification criteria must be met.
Firm or personal invite from ILFI based on assessor reputation.

In addition, all of the following criteria must be met:

Declare Assessor (individual or firm) holds a Premium ILFI Membership and remains a member in good standing
Assessor has signed and returned the ILFI Declare Assessor Agreement
Assessor has reviewed and understands the Declare Manufacturer's Guide
Assessor has reviewed and understands the Declare Terms and Conditions Agreement for manufacturers
Assessor has completed all required Declare program training hosted by ILFI

## DECLARE THIRD-PARTY VERIFICATION AND THE LIVING PRODUCT CHALLENGE

All manufacturers attempting the Living Product Challenge (LPC) are required to hold a third-party verified Declare label for all products attempting LPC, unless exempted per a formal program Exception. For manufacturers attempting the Living Product Challenge it is recommended that a member of the LPC Ecosystem act as the assessor for the product attempting LPC certification, or confirm with the Ecosystem auditor that the assessor partnership is approved. LPC products not assessed by the selected LPC Ecosystem auditor may require re-review as part of LPC certification. A Third Party Verified Declare label is not required prior to the start of LPC Certification, but may expedite the Living Product Challenge certification process.

# APPENDIX D

## DECLARE PROGRAM DEFINITIONS

### SYSTEMS FURNITURE:
For the purposes of the LBC, systems furniture is defined as a modular furniture system that might include work surfaces, cabinetry, file systems, flexible partitions and office chairs to create or furnish a series of office workspaces. Only those furniture elements that are designed for repetitive use in commercial office environments (regardless of the number of times they are used in the project) must comply with LBC requirements.

### SMALL ELECTRICAL COMPONENTS:
Any discrete component shipped as a unit from a supplier with any number of terminals or leads. These leads connect to create an electronic circuit with a particular function. Small electrical components may be active, passive or electromechanical.

Manufacturer installed cable, wiring, and wall plugs are not considered small electrical components.

### SMALL PRODUCT HARDWARE:
Product hardware consists of a single ingredient and is required for the connection of components within a product. Individual pieces of product hardware are less than 0.5% of the weight of the finished product and no more than 5% by weight of the complete product.

## DECLARE REFERENCE LINKS

The Living Building Challenge: https://living-future.org/lbc/

The Living Product Challenge: https://living-future.org/lpc/

The Declare Database: https://living-future.org/declare/

The Declare About Page: https://living-future.org/declare/declare-about/

Toxnot: https://toxnot.com/

Connect ILFI Membership to Toxnot: http://help.toxnot.com/reporting/connect-your-ilfi-membership-and-toxnot-account

Toxnot and Declare: http://help.toxnot.com/reporting/declare-labels

Submission, Review, and Publishing: http://help.toxnot.com/reporting/declare-label-submission-review-and-publishing

The Pharos Project: https://www.pharosproject.net/

Health Product Declaration Collaborative: http://www.hpd-collaborative.org/

US Green Building Council, LEED v4: http://www.usgbc.org/leed-v4

California Department of Public Health Standard Method V1.1-2010: http://standards.nsf.org/apps/group_public/download.php/11782/CDPH-IAQ_StandardMethod_V1_1_2010%5B1%5D.pdf.

AgBB Health-related Evaluation Procedure for Volatile Organic Compounds Emissions from Building Products: https://www.umweltbundesamt.de/sites/default/files/medien/355/dokumente/agbb_evaluation_scheme_2015.pdf

South Coast Air Quality Management District, Rule 1168: http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1168.pdf

California Air Resources Board 2007 Suggested Control Measure for Architectural Coatings: https://www.arb.ca.gov/coatings/arch/Approved_2007_SCM.pdf

Declare Online Education: https://living-future.org/online-learning/?program=declare

# MOVING FORWARD WITH DECLARE

## DECLARE AND THE LIVING PRODUCT CHALLENGE

In addition to Declare, the Institute runs the Living Product Challenge (LPC), a holistic, third-party verified product standard that empowers manufacturers to create, measure, and celebrate the positive impacts of their products. Transcending simple harm reduction and based on a foundation of transparency, LPC requires that manufacturers engage with Life Cycle Assessment as well as demonstrate safer ingredient selection and responsible social impacts at all levels of certification. The program is divided into seven performance areas or Petals: Place, Water, Energy, Health + Happiness, Materials, Equity and Beauty.

## THIRD-PARTY VERFIED TO LPC

As Declare and the Red List are key components of LPC, manufacturers with a third-party verified Red List Free or LBC Compliant Declare label are well on their way to creating a Living Product by having already completed a Core Imperative. The Institute recorded a free webinar to explain how Declare manufacturers can leverage the work they have done in transparency and material health to achieve a certified Living Product. Visit living-future.org/lpc to learn more about the program, and contact LPC.support@living-future.org to speak with the LPC team about pursuing certification for a product.

## VALUE SUMMARY

Living Product certification provides companies the opportunity to:

- Lead the industry and build brand reputation through the world's most holistic, third-party certification for product sustainability.
- Flip the script, from doing less bad to doing more good, through an inspiring Net Positive framework that promotes and rewards innovation.
- Leverage data and communicate complex multi-attribute sustainability information, including Life Cycle Assessment and material health, in an elegant, easy-to-understand label.
- Gain market access to a large and growing network of programs and customers that are creating demand for sustainable products, including LBC, LEEDv4, WELL and the GSA.
- Count double toward the Living Building Challenge's Declare requirements, making them a preferred product for LBC projects and highlighted in case studies.