

The background of the slide features a series of laboratory flasks, likely Erlenmeyer flasks, arranged in a row. They are filled with a dark liquid, possibly water or a dye solution. The entire image is overlaid with a semi-transparent blue filter, giving it a monochromatic, scientific feel. The flasks are slightly out of focus, with the one in the foreground being sharper than the others.

Payette Architecture Forum

A Healthy Transparency

December 18, 2013

US Chemicals Policy: By the Numbers

From the Toxic Substances Control Act (TSCA)



registered



monitored



tested



BANNED.

“Chemicals of Concern”

EPA Definition:

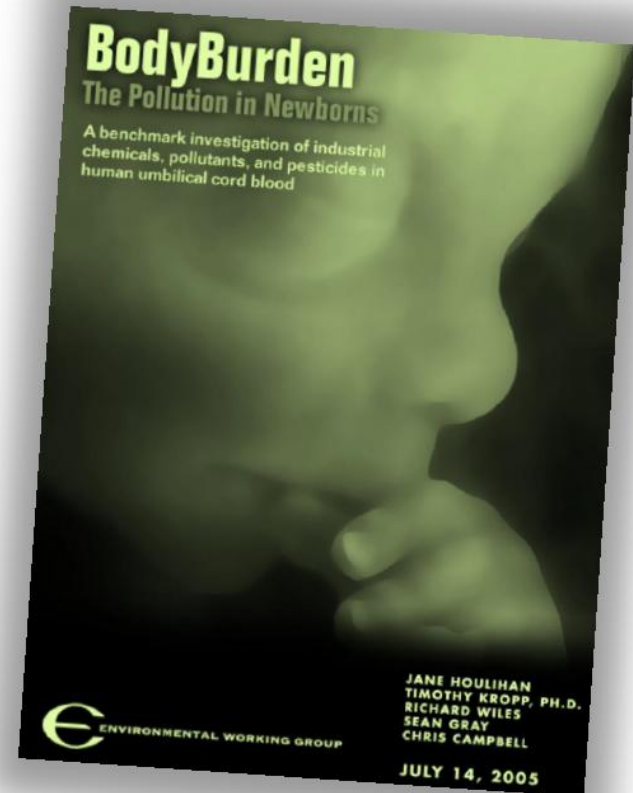
Serious environmental or health concerns and in some cases may present an unreasonable risk of injury to health and the environment.

What is the impact of the materials in our buildings?



250+

Substances common building products found in newborn blood



250+

Substances common building products found in newborn blood

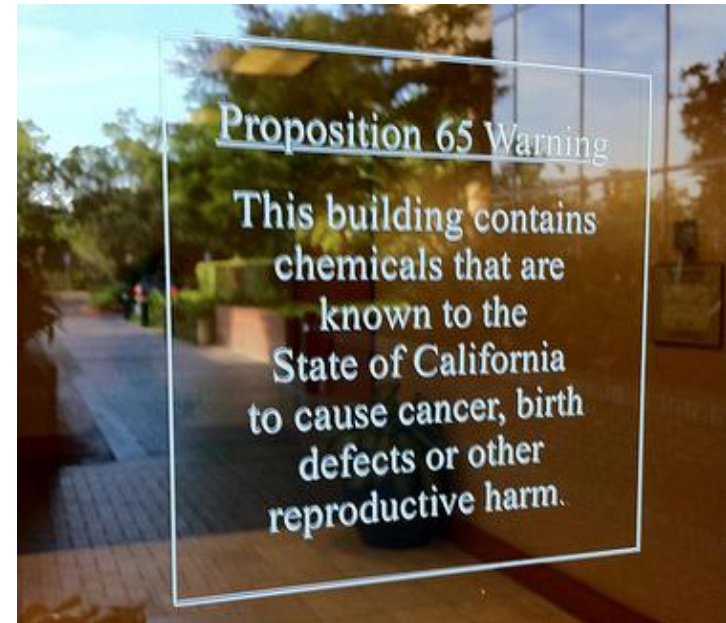
Ex – flame retardants are found in newborn umbilical cords
(and nearly all Americans have trace amounts in their blood)

Shown to have serious health risks – cancer, brain damage, thyroid damage

What is the impact of the materials in our buildings?



Should buildings come with warning labels?



History of Material Transparency

1999 – LEED Pilot, Low VOC Materials

2002 – American Society of Healthcare Engineering (ASHE) list of materials to avoid

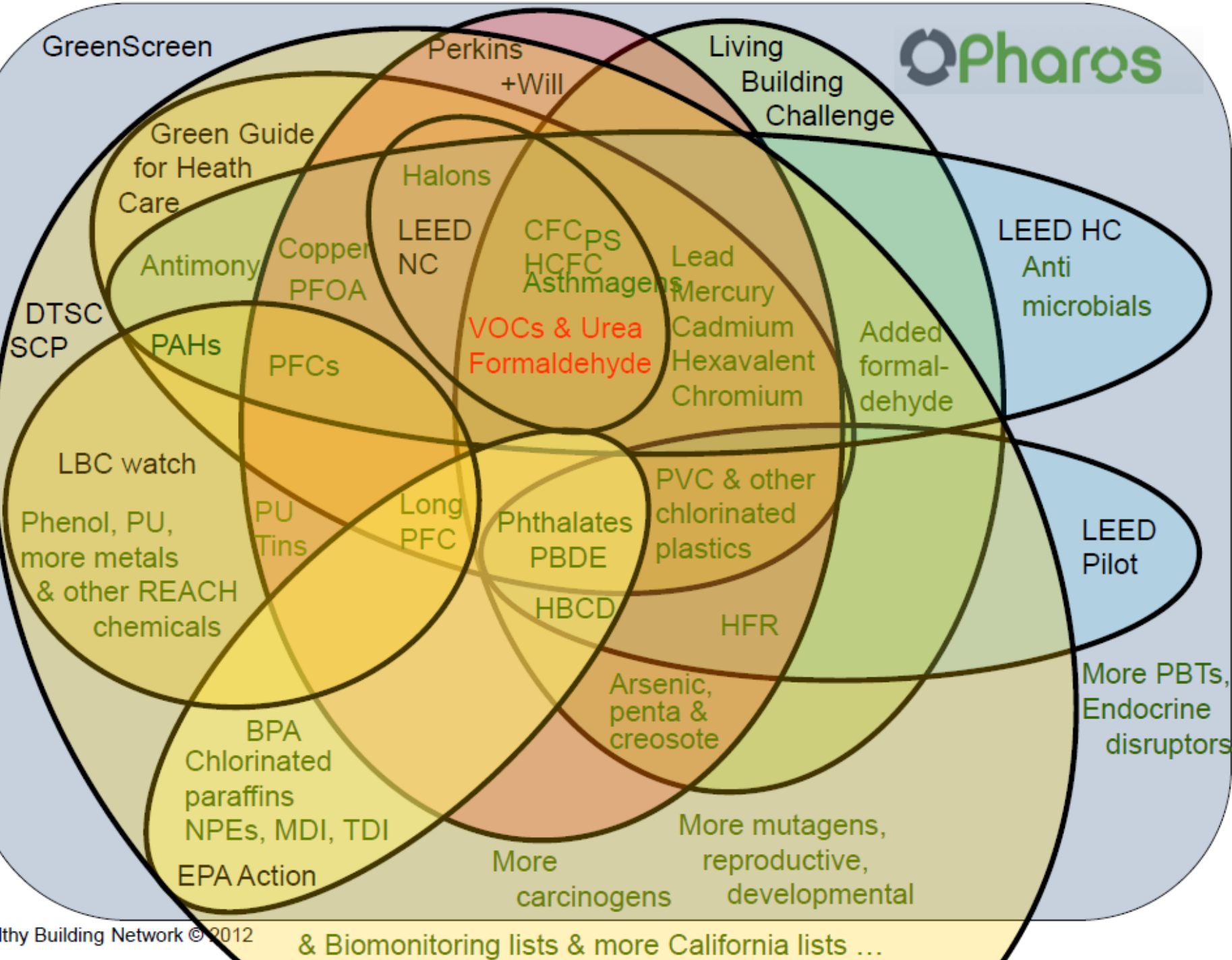
2004 – Green Guide For Healthcare Pilot, eliminates mercury, dioxins, lead & cadmium

2006 – Living Building Challenge, Red List & Watch List

2009 – Perkins & Will Precautionary List

2012 – LEED v4, material ingredient reporting, optimization & supply chain optimization





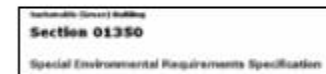
Red Lists



Red Lists



Product Certifications



Single Attribute



The standard for sustainable living[®]

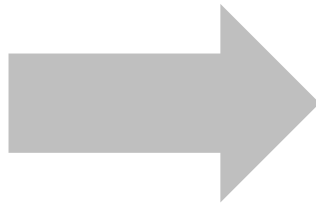


Multiple Attribute

Disclosure



Disclosure



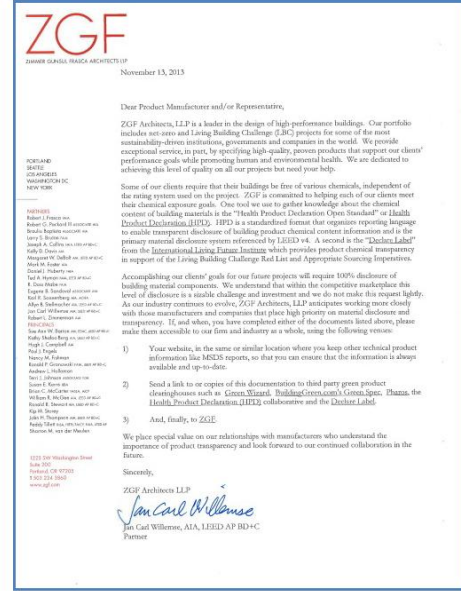
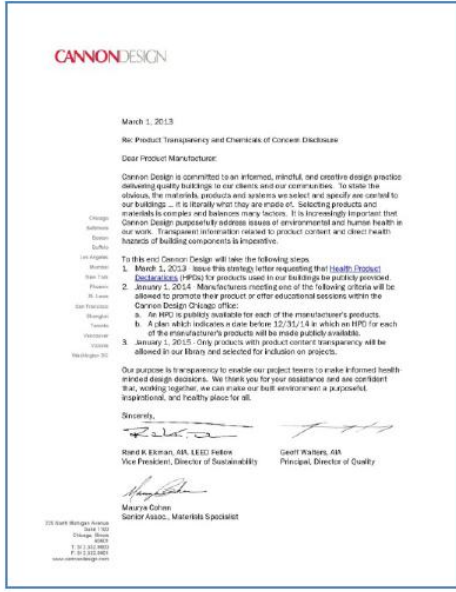
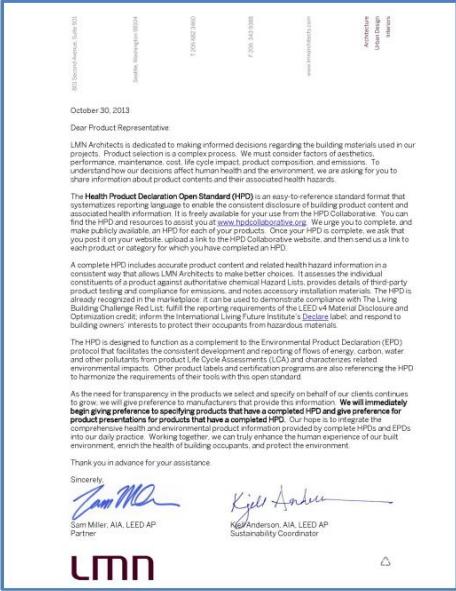
Disclosure



Material Disclosure Initiative

27

Firms have
sent letters to
manufacturers



Manufacturer's Information Forum

Chicago

Phoenix

Washington, DC

San Francisco

Dallas



Manufacturers Starting to Listen

Manufacturers have started to publicly disclosed the chemicals in their building products

ASSA ABLOY

Interface FLOR

SCRANTON
PRODUCTS
MOBILE DEVICE WEBSITE

YOLO
colorhouse

3form

Armstrong
CEILING & WALL SYSTEMS

Forbo

WILSONART

Herman Miller

GAF

STEGO
INTERIORS, LLC

Neil Kelly *Since 1907*

Benjamin Moore
PAINTS

THE #1 CHOICE OF
PAINTING PROFESSIONALS®

INPRO

Steelcase

LDI
ENVIRONMENTAL AND SAFETY SOLUTIONS

KNAUF

HAWORTH®
Furniture For What's Next®

JM
Johns Manville

CertainTeed
SAINT-GOBAIN

PROSOCO
SINCE 1909

alpar

Teknion

Globus Cork

Tandus
FLOORING

BASF
The Chemical Company

Kingspan

Shaw

CROSSVILLE

What do we do with this information?



CHEMICALS AND HUMAN HEALTH

- Chemical **LISTED** by reliable medical sources as agent toxic to human health
- Route of **EXPOSURE** likely in built environment
- Quantity of emissions leading to **CONCENTRATION** above safe limits

Architects need to collect information and prioritize actions on chemicals.



LIFE CYCLE OF CHEMICALS IN BUILDINGS

Mining and harvesting

Manufacturing

Selection for building design

Installation

Maintenance/wear

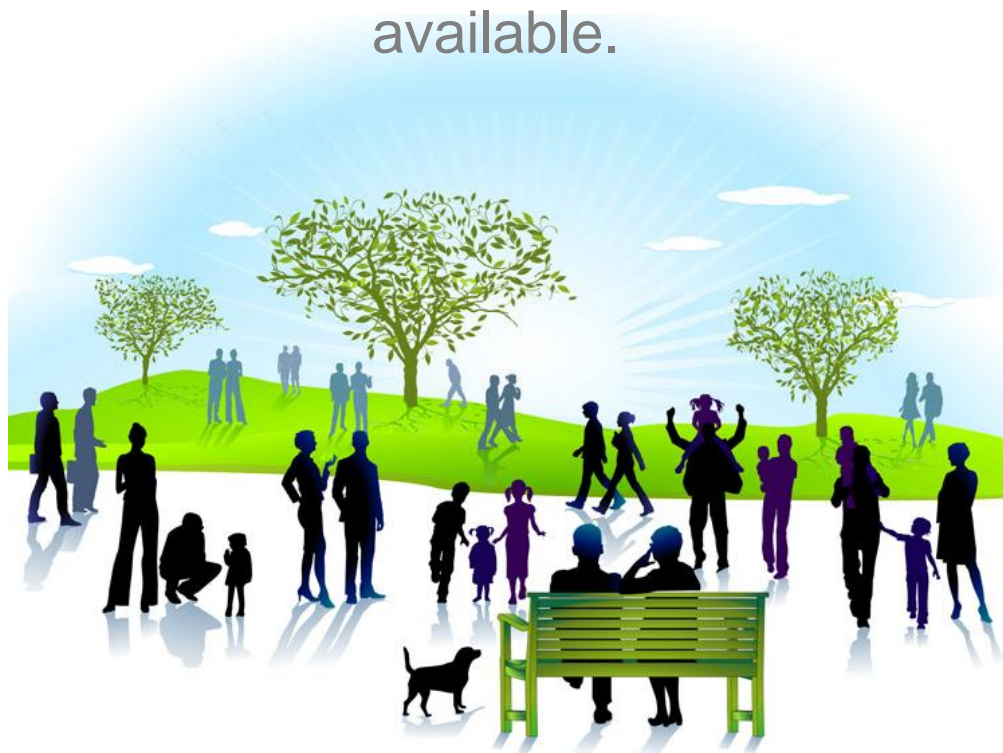
Demolition

Architects can be part of an extended community of concern.



PRIORITY #1

Minimize use of chemical compounds for which well-established scientific evidence of toxicity to **HUMAN HEALTH** is readily available.



PRIORITY #2



Consider impact of chemical compounds on the health of the environment during all stages of the **LIFE CYCLE** of a construction material.

PRIORITY #3

Defer evaluation of chemical compounds in **PERFORMANCE-
CRITICAL MATERIALS.**



Should we **care** as architects?

What is our **responsibility**?

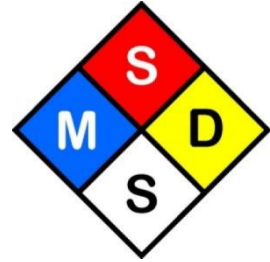
What **should we** be doing?

How can we **prioritize** chemicals to make the process manageable?

Who needs to be involved to address chemicals of concern?

How can **we change an industry**?

Resources



MSDS – Material Safety Data Sheets

OSHA requirement for application of products containing hazardous chemicals

EPDs – Environmental Product Declarations



ISO certified process of a Life Cycle Assessment on the environmental impact (energy, water, etc.) of a product

HPDs – Health Product Declarations



all added contents and health warnings from hazard lists

Resources

Pharos

Evaluates materials across 16 impact categories, such as energy, occupational safety, social justice, & toxicity

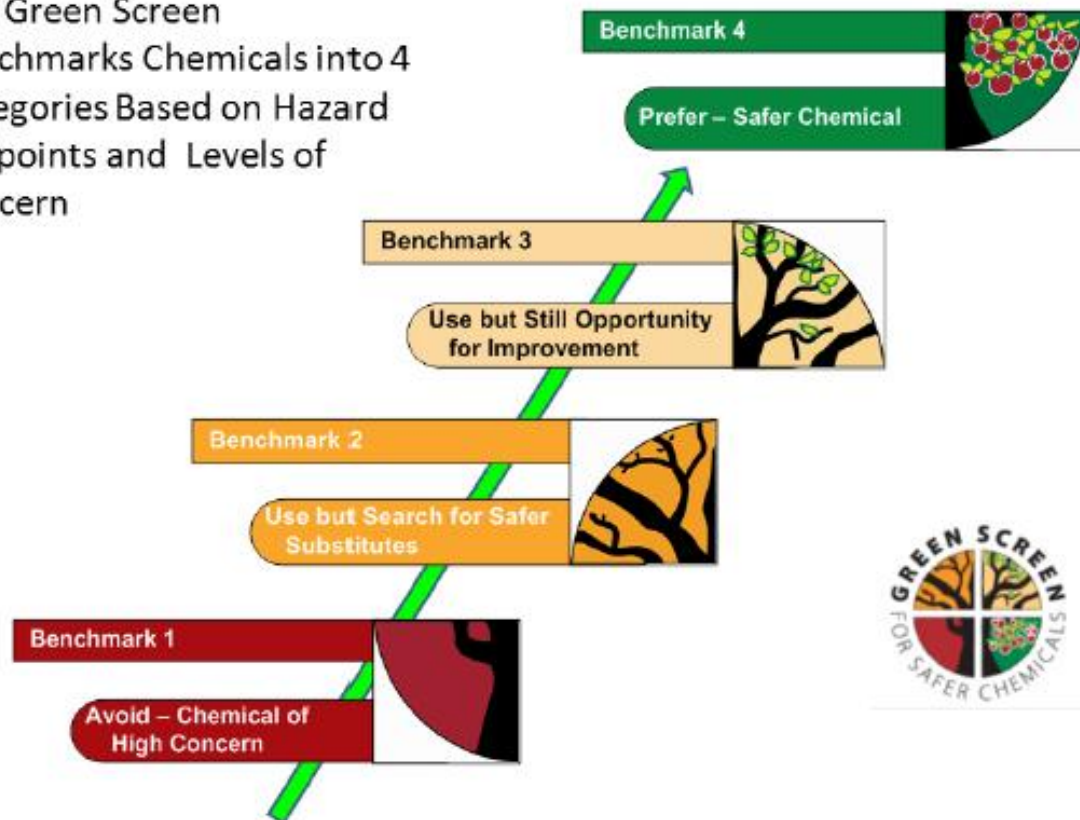


Resources

GreenScreen

Evaluates chemicals on 18 health and environmental endpoints and provides a score

The Green Screen
Benchmarks Chemicals into 4
Categories Based on Hazard
Endpoints and Levels of
Concern



Resources

Cradle to Cradle

Material certification that looks at 5 categories – material health, material reutilization, energy, water, and social responsibility

		CRADLE TO CRADLE CERTIFIED™ PRODUCT SCORECARD				
PROGRAM CATEGORY	BASIC	BRONZE	SILVER	GOLD	PLATINUM	
 MATERIAL HEALTH			✓			
 MATERIAL REUTILIZATION			✓			
 RENEWABLE ENERGY & CARBON MANAGEMENT				✓		
 WATER STEWARDSHIP			✓			
 SOCIAL FAIRNESS					✓	
OVERALL CERTIFICATION LEVEL			✓			

Resources

Declare

Ingredient label and other basic product information

IMAGE DEPICTS A 'BLANK' LABEL PRIOR TO CUSTOMIZATION BY MANUFACTURER

Declare.

Product Name
Manufacturer Name
Final Assembly: City, State, Country
Life Expectancy: 000 YEARS
End of Life Options: Recyclable (42%), Landfill

Ingredients:
Ingredient One (Location, ST), **The Second Item** (Location, ST), **NextIngredient** (Location, ST), **Living Building Challenge Red List***, **Different Part of the Product. Another Component. More Stuff. US EPA Chemical of Concern. Yet Another Item. Non-toxic Element. Pieceofthewhole. Component of Concoction. ThirdFromTheEnd. ECHA REACH Substance of Very High Concern. Last Ingredient.**

*LBC Temp Exception III-E11 Lead and Hardware

Living Building Challenge Criteria:
XXX-0000 EXP. 12/2010
LBC ZONE 0 00 00 00
Declaration Status
☐ LBC Red List Free
☒ LBC Compliant
☐ Declared

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

Intentionally simple in scope. By focusing on product ingredients, we hope to 'level the playing field' and create a platform for constructive conversations about the human health and ecological impacts of the decisions we make.

Options: Take back program; Salvageable or reusable; Recyclable (%); Landfill; Hazardous waste (%).

Raw Material and Final Assembly locations assist project teams in meeting the Appropriate Sourcing Imperative, intended to support the growth of regional economies rooted in sustainable practices, products and services.

All constituent parts of a product.
Items are color coded to communicate potential hazards:
Living Building Challenge Red List
US EPA Chemical of Concern Action Plan Published
ECHA REACH Substance of Very High Concern Candidate
Not referenced in any of the three programs noted above

Temporary Red List chemical exceptions applied for specific product types.

Declare identifier for company + product
Valid for 12 months, starting with the date of issue

CSI MasterFormat 2010 classification

Verification that a product complies with the Living Building Challenge Red List.

Thank you.