

# Building with Safer Products

*Finding out what's inside*

November 30, 2011  
BizNGO Annual Meeting  
Framingham, MA

Tom Lent  
Healthy Building Network



**Ceiling tile**



**Paint**



**Casework**



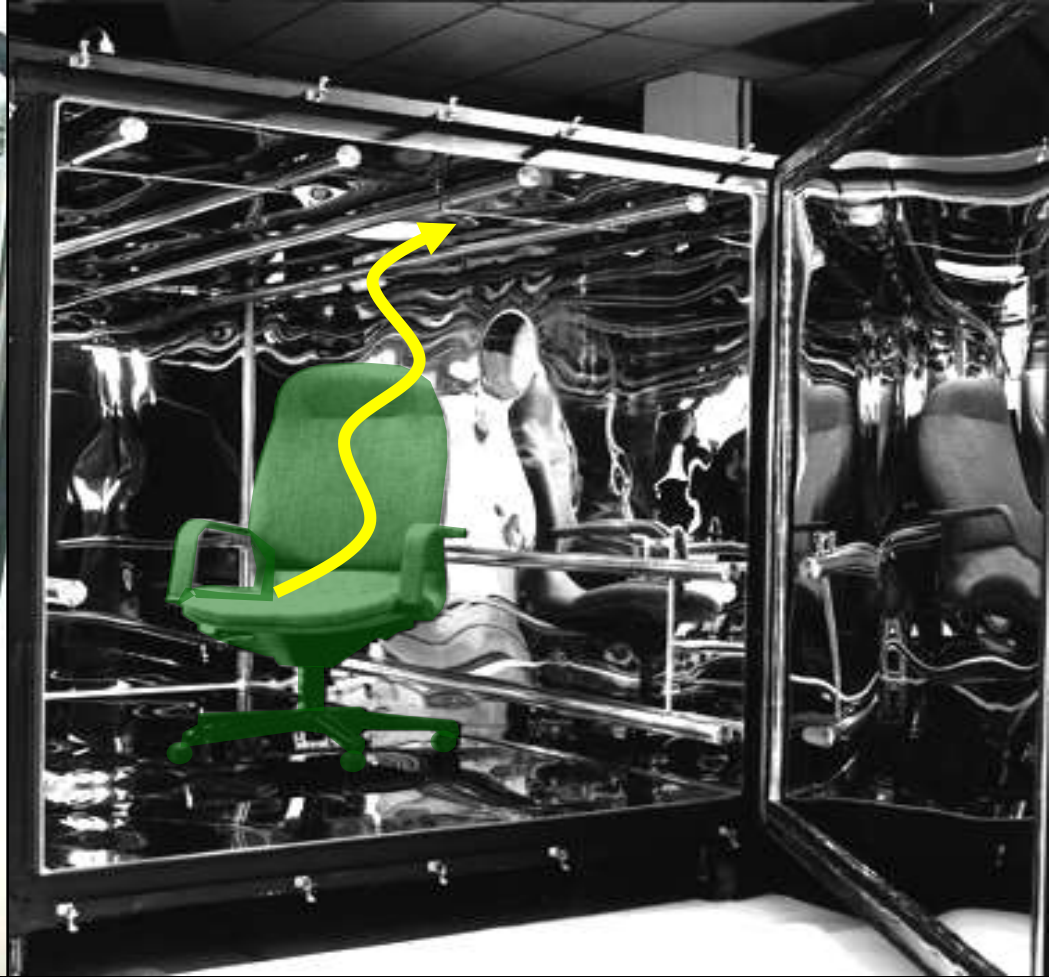
**Furniture**



**Flooring**



**Volatile Organic Compounds (VOCs)**  
asthma, cancer



**Measured  
Emissions**>

*Model*  
Amount of product  
Volume of building  
Ventilation rate

**Predicted  
>Concentration**



# Sick of Dust

Chemicals in Common Products—  
A Needless Health Risk in Our Homes

Pat Costner, Beverley Thorpe  
& Alexandra McPherson

70 household dust samples - 10 states

**Phthalate** plasticizers ubiquitous

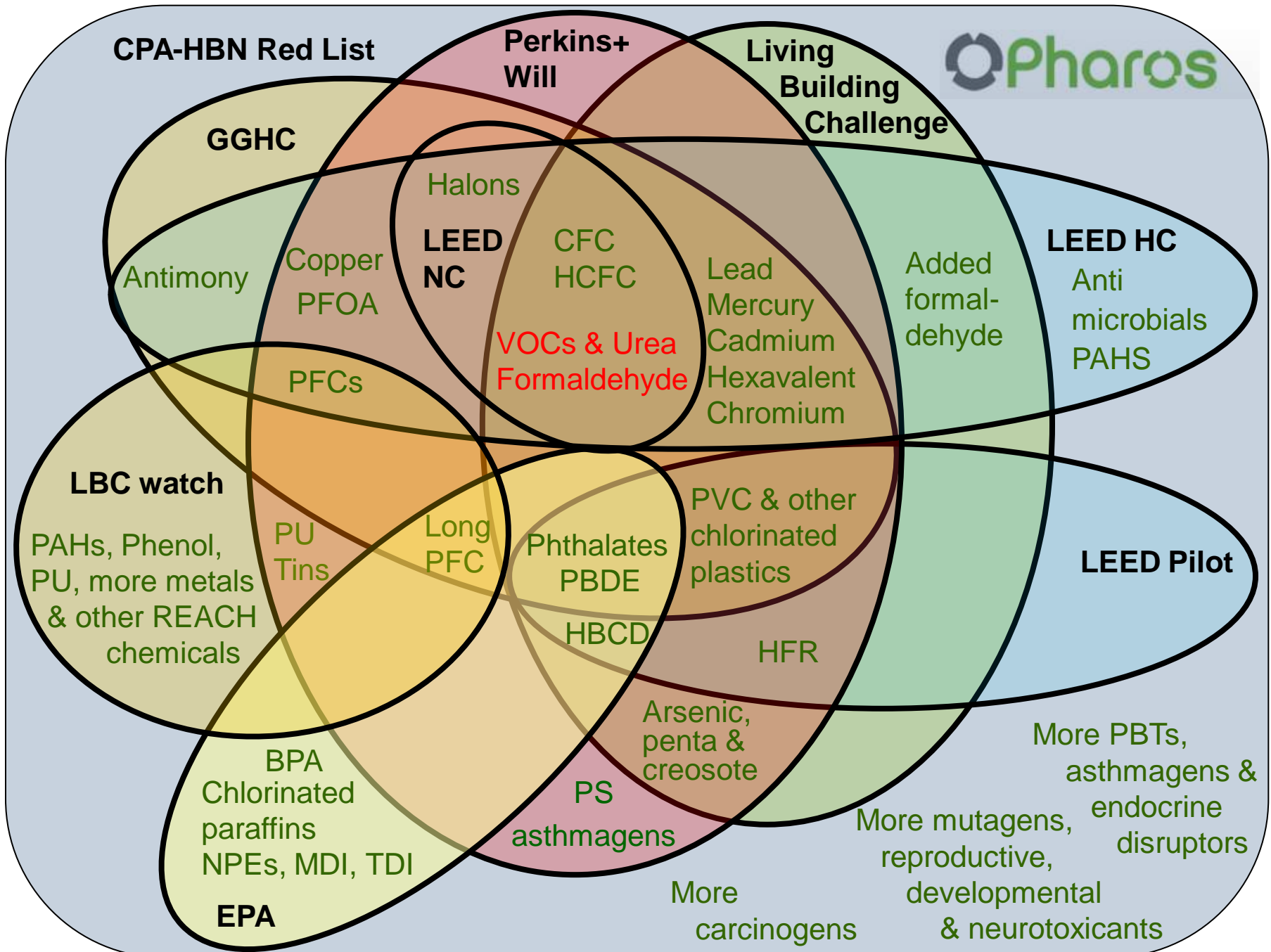
Used to make PVC flooring flexible

**Polybrominated Diphenyl Ether (PBDE)**

Widely used in foams, fabrics, and plastic

**NOT VOCs**





& More beyond...

This chemical passes all of the criteria.

#### BENCHMARK 4

ready biodegradability (low P) + low B + low Human Toxicity + low Ecotoxicity (+ additional ecotoxicity endprints when available)

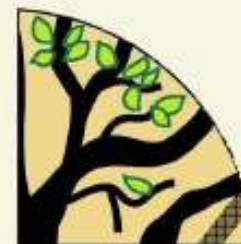
**Prefer—Safer Chemical**



#### BENCHMARK 3

- moderate P or moderate B
- moderate Ecotoxicity
- moderate Human Toxicity
- moderate Flammability or moderate Explosiveness

**Use but Still Opportunity for Improvement**



If this chemical and its breakdown products pass all of these criteria, then move on to Benchmark 4

#### BENCHMARK 2

- moderate P + moderate B + moderate T (moderate Human Toxicity or moderate Ecotoxicity)
- high P + high B
- (high P + moderate T) or (high B + moderate T)
- moderate Human Toxicity for any priority effect or high Human Toxicity
- high Flammability or high Explosiveness

**Use but Search for Safer Substitutes**



If this chemical and its breakdown products pass all of these criteria, then move on to Benchmark 3

#### BENCHMARK 1

- PBT: high P + high B + high T<sup>1</sup> (high Human Toxicity<sup>1</sup> or high Ecotoxicity)
- vPvB: very high P + very high B
- vPT (vP + high T) or vBT (vB + high T)
- high Human Toxicity for any priority effect<sup>1</sup>

**Avoid—Chemical of High Concern**



If this chemical and its breakdown products pass all of these criteria, then move on to Benchmark 2





# Over 9000 chemicals

## Screened against 26 authoritative chemical hazard lists

### Ranked on a GreenScreen-informed hazard scale

- Priority health endpoints
- Confidence in the science

#### US EPA IRIS Carcinogens, NWMP Priority PBTs, TRI PBT, Global Warming Potentials

- and Ozone
- NTP ROC
- NIOSH Ca
- IARC Canc
- European
- State of V
- State of C
- OSPAR Pr
- Rotterdam
- Stockholm
- State of C
- Association of Occupational and Environmental Clinics Exposure Codes

	<b>Very High Concern</b>	Persistent Organic Pollutants (POPs) targeted in the Stockholm POPs treaty and other Persistent Bioaccumulative Toxicants (PBTs)*	<p>Highest priority to eliminate</p> <p>Use with caution. Avoid where possible</p> <p>Prefer</p>
	<b>High Concern</b>	Known or likely carcinogens, mutagens, reproductive toxicants, developmental toxicants or endocrine disruptors.	
	<b>Moderate Concern</b>	Significant possibility of above hazards but lower confidence or known or likely neurotoxicants, respiratory sensitizers or leading to other chronic human or ecotoxicity endpoints.	
	<b>Caution</b>	Moderate concern for any of the above health endpoints or preliminary indications of higher concern but with inadequate test data or acute human health concern	
	<b>Low Concern</b>	Tested with low concern for any of the above endpoints**	


[the signal news & notes](#)
[building product library](#)
[chemical and material library](#)
[evaluation framework](#)

## Chemical and Material Library

TI

### BUTYL BENZYL PHTHALATE (BBP)

**CAS RN: 85-68-7**

Synonyms: 1,2-benzenedicarboxylic acid, butyl phenylmethyl ester, BzBP, benzyl butyl phthalate

Direct Chemical and Compound Hazard Quickscreen

[Detailed Hazard Listings](#)

Very High Hazard of...

- DEVELOPMENTAL** [US NIH NTP - Reproductive & Developmental Monographs: A-Clear evidence of adverse developmental toxicant effects in humans or laboratory animals {and 2 others}](#)
- REPRODUCTIVE** [EC - REACH SVHC: Toxic to reproduction - Listed in Annex XIV - Banned unless authorized {and 3 others}](#)
- ACUTE AQUATIC** [EC - Risk Phrases: R50: Very toxic to aquatic organisms.](#)
- RESTRICTED LIST** [US EPA - PPT Chemical Action Plans: Listed Chemical of Concern - Action Plan published {and 4 others}](#)

High Hazard of...

- ENDOCRINE** [EC - Endocrine Disruptors Strategy : Category 1 - Evidence of endocrine disruption activity {and 1 other}](#)
- CHRON AQUATIC** [EC - Risk Phrases: R53: May cause long-term adverse effects in the aquatic environment.](#)

Medium Hazard of...

- CANCER** [US EPA - IRIS Carcinogens: 1986 Guidelines Group C: Possible human carcinogen {and 1 other}](#)

Potential concern...

This chemical is NOT present on the hazard lists scanned for the following health and ecotoxicity endpoints...

PBT	GENE MUTATION	RESPIRATORY	NEUROTOXICITY	MAMMALIAN
EYE IRRITATION	SKIN IRRITATION	SKIN SENSITIZE	ORGAN TOXICANT	TERRESTRIAL
FLAMMABLE	REACTIVE	GLOBAL WARMING	OZONE DEPLETION	

Lifecycle Hazard Quickscreen

[Full Lifecycle Map](#)

Research Status: Preliminary literature review drafted

The Pharos team has undertaken a preliminary literature review of some of the processes involved in the manufacture of this substance and identified the following chemicals. This list of chemicals is not exhaustive of all chemicals that may be involved

[\[136-60-7\] BUTYL B](#)
[\[85-68-7\] BUTYL BE](#)
[\[78-77-3\] ISOBUTYL](#)

For biobased material threatened.

Click on the Chemical I

[Chemical Hazard](#)

The Library identifies substances that ma

- Direct health potential hazards receive the 1 reproductive
- Life cycle hazard used, create identify potential minimized or gro

Pharos staff Pharos listed a work-in-pr

#### Compound Groups

This chemical is a member of the following compound groups:

[PHTHALATES](#)

#### Tags for this chemical

There are no tags for this chemical yet.

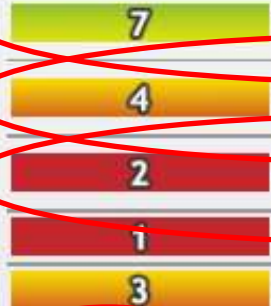
[Add a New Tag](#)

#### Sources

[Hazardous Substances Databank \(HSDB\) \(NHIS\)](#)


## Estal Vinyl Composition Tiles

### Impact Category Scores



### Material Content

LIMESTONE; CALCIUM CARBONATE  
CAS RN: 1317-65-3

POLYVINYL CHLORIDE (PVC)  
CAS RN: 9002-88-2

BUTYL BENZYL PHTHALATE (BBP)  
CAS RN: 85-68-7

DIISONONYL PHTHALATE (DINP)  
CAS RN: 28553-12-0

DI(2-ETHYLHEXYL)PHTHALATE (DEHP)  
CAS RN: 117-81-7

### BUTYL BENZYL PHTHALATE (BBP)

CAS RN: 85-68-7

Synonyms: 1,2-benzenedicarboxylic acid, butyl phenylmethyl ester, BzBP, benzyl butyl phthalate

#### Direct Chemical and Compound Hazard Quickscreen

[Detailed Hazard Listings](#)

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- RESTRICTED LIST** US EPA - PPT Chemical Action Plans: Listed Chemical of Concern - Action Plan published {and 4 others}

12.0 - 12.0

RESPIRATORY

PBT

4.0 - 1.0

REPRODUCTIVE

REPRODUCTIVE

4.0 - 1.0

DEVELOPMENTAL

DEVELOPMENTAL

4.0 - 1.0

PBT

PBT

### Pros

- Content: Fully disclosed
- No Bisphenol A (BPA) listed

### Compound Classification

This chemical is classified as follows

PHTHALATES

### Used In Products

This chemical is used as an ingredient in a variety of products

Tags for this chemical

### Unknown

- Antimicrobials unknown



the signal news & notes

building product library

chemical and material library

evaluation framework

## Search Results for Flooring

There are 49 products that meet your search criteria.

[Reset Search](#)

Sort by: [VOC](#) | [USETOX](#) | [MFRTOX](#) | [RnMTRL](#) | [RnENRG](#) | [DISCLOSURE](#) | [PRODUCT TITLE](#) | [MANUFACTURER](#)

### RE-Tire Shades of Black recycled rubber

VOC	USETOX	MFRTOX	RnMTRL	RnENRG
7	4	4	8	1
Capri Cork				
Fully disclosed				

### Essentials Vinyl Composition Tiles

VOC	USETOX	MFRTOX	RnMTRL	RnENRG
7	4	2	1	3
Mannington				
Fully disclosed				

### Re-Tire Kaleidoscope recycled rubber

VOC	USETOX	MFRTOX	RnMTRL	RnENRG
7	4	4	2	1
Capri Cork				
Fully disclosed				

### Re-Tire Basics recycled rubber

VOC	USETOX	MFRTOX	RnMTRL	RnENRG
7	4	4	2	1
Capri Cork				
Fully disclosed				

### Filter by Minimum Disclosure Level

- No disclosure
- Partially disclosed
- Disclosed with Common Ingredient List
- Fully disclosed

### Filter by Restricted Substance List

- No EPA Chemicals of Concern
- No Living Building Challenge Red List
- No LEED Pilot Credit 11 Chemicals

### Filter by Attributes

- No Bisphenol A
- No Added Formaldehyde
- No Phthalates
- No Halogenated Flame Retardants
- No Perfluorocarbons
- No Antimicrobials

Product code WOPX700-B

Date of issue 28 April 2009

Version 3.02

Product name PSX 700 CURE

### 3. Composition/information on ingredients

<u>Name</u>	<u>CAS number</u>	<u>%</u>
Proprietary silane	Proprietary	60 - 100
dibutylbis(pentane-2,4-dionato-O,O')tin	22673-19-4	3 - 7

### 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Material Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do not use solvents or thinners.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.



## Nutrition Facts

Serving Size: About (20g)

Servings Per Container: 16

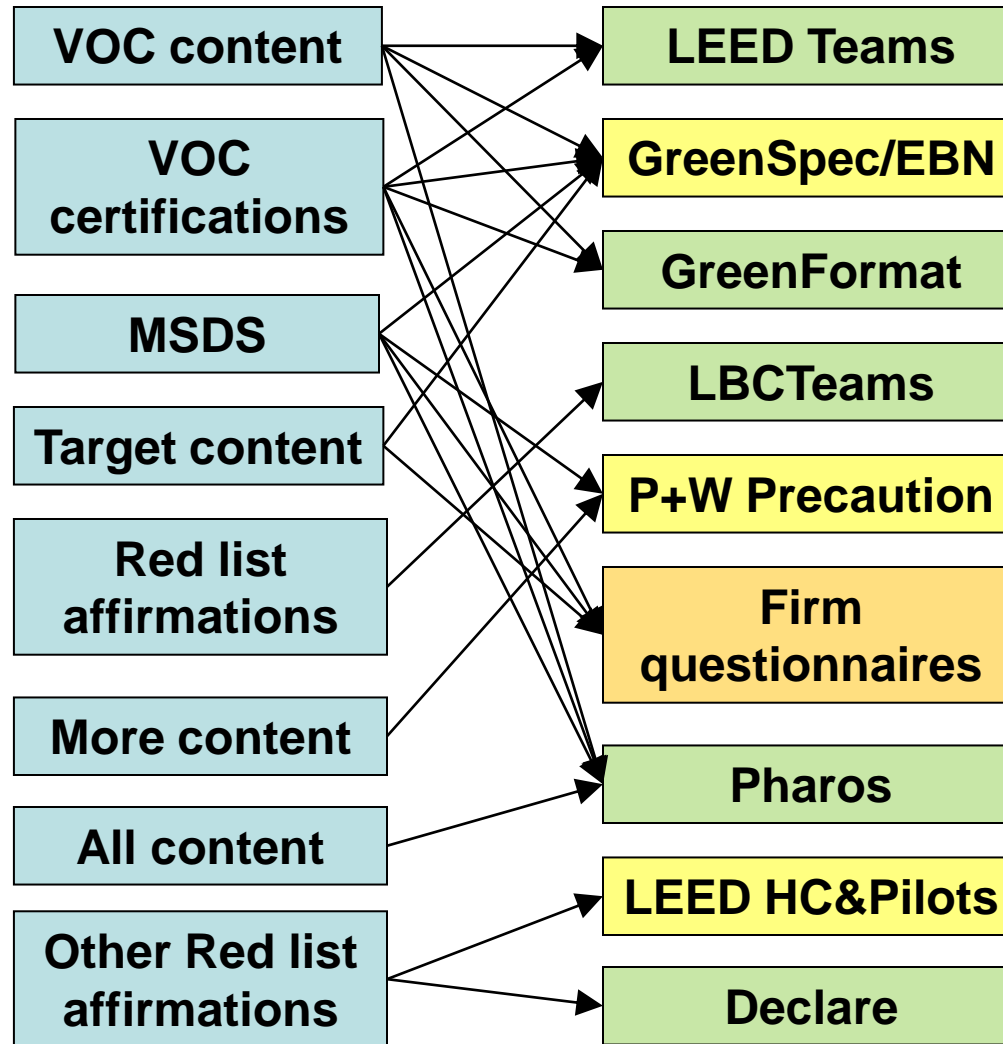
	Amount Per Serving	% Daily Value*
<b>Total Calories</b>	60	
Total Fat	15 g	3%
Saturated Fat	10 g	4%
Trans Fat	0 g	
<b>Cholesterol</b>	0 mg	0%
<b>Sodium</b>	45 mg	2%
<b>Total Carbohydrates</b>	15 g	5%
Dietary Fiber	10 g	17%
Sugars	4 g	
Alcohol	0 g	
<b>Protein</b>	2 g	
Vitamin A		0%
Vitamin C		0%
Calcium		2%
Iron		2%

\*Percent Daily Values are based on a 2,000 calorie diet.

**Ingredients:** Wheat flour, unsweetened chocolate, erythritol, inulin, oat flour, cocoa powder, evaporated cane juice, whey protein concentrate, corn starch (low glycemic), natural flavors, salt, baking soda, wheat gluten, guar gum

**Low  
fat!**

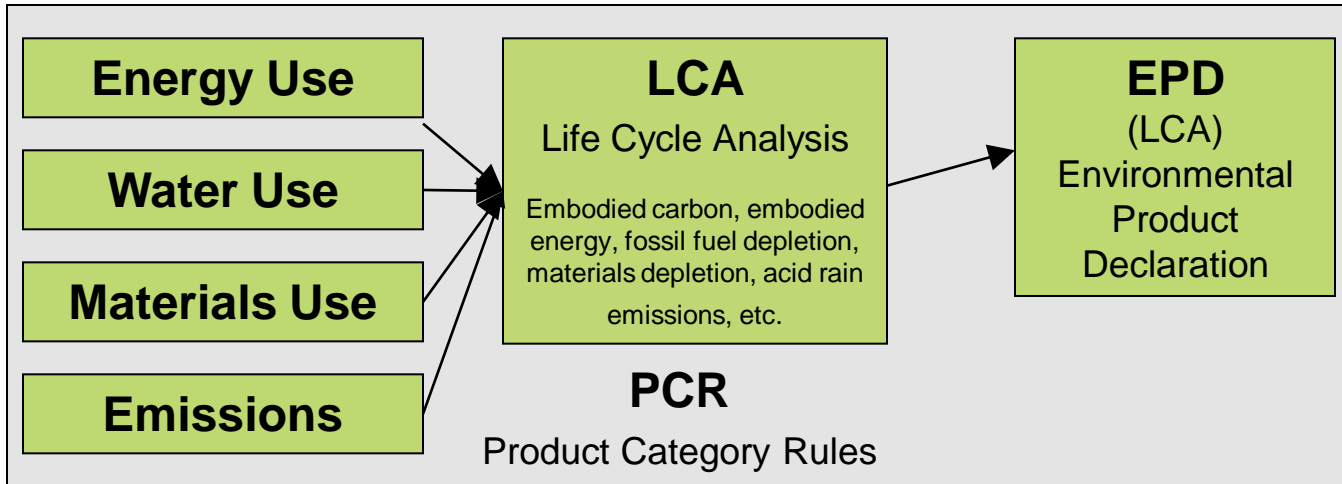
# User demand for transparency at all time high



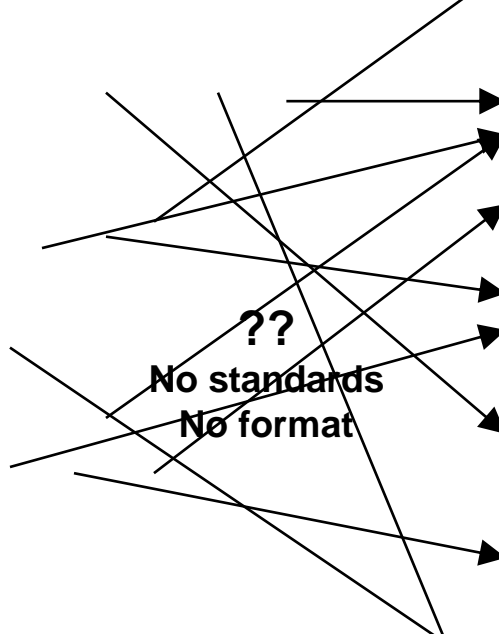
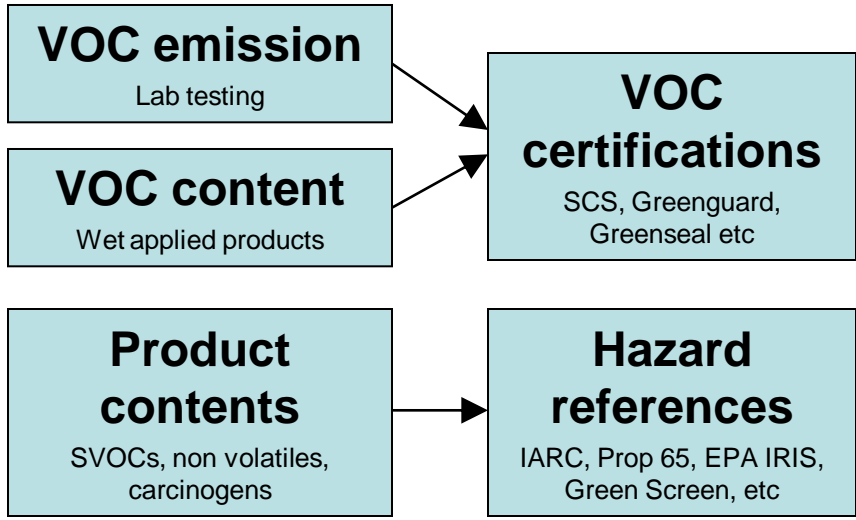
**Result = Chaos**

# Environmental Product Declaration

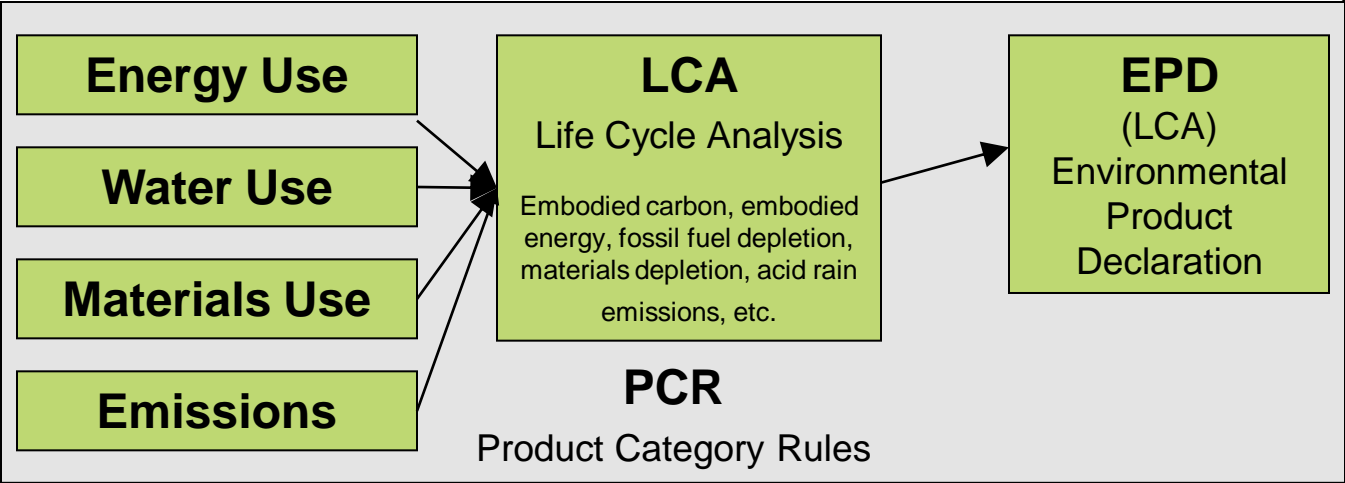
*Health???*



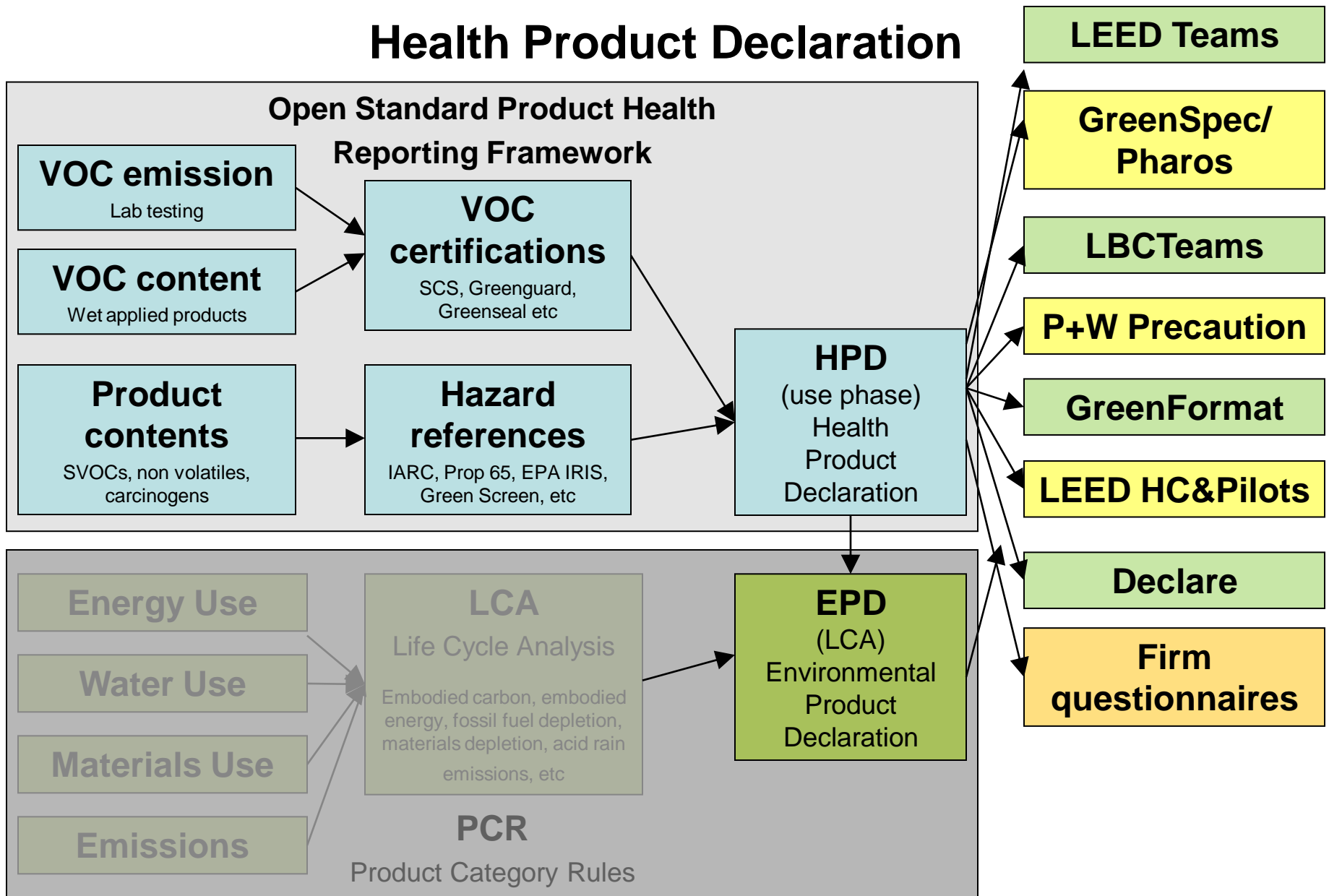
# No Health Equivalent to the EPD



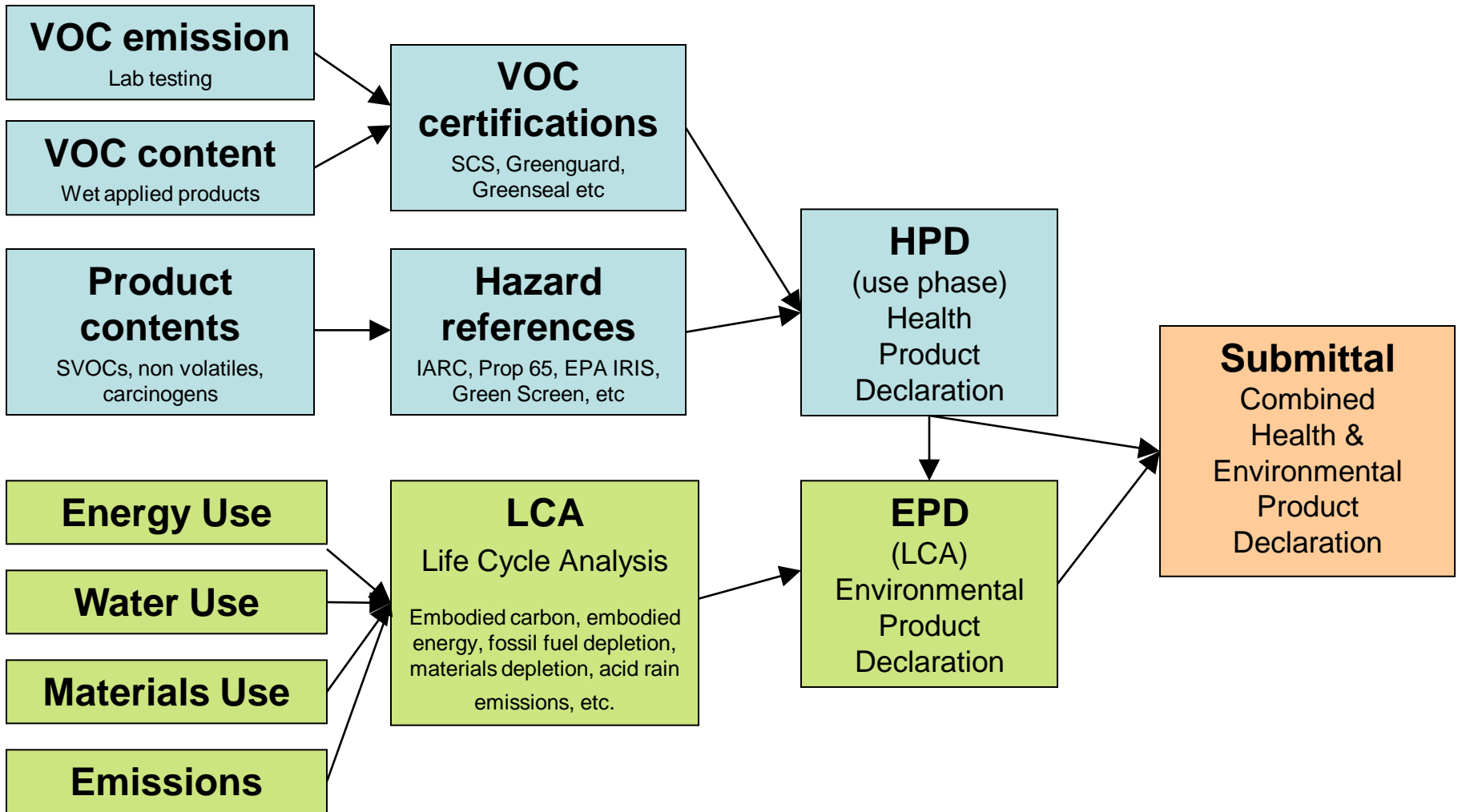
- LEED Teams
- GreenSpec/Pharos
- LBC Teams
- P+W Precaution
- GreenFormat
- LEED HC&Pilots
- Declare
- Firm questionnaires



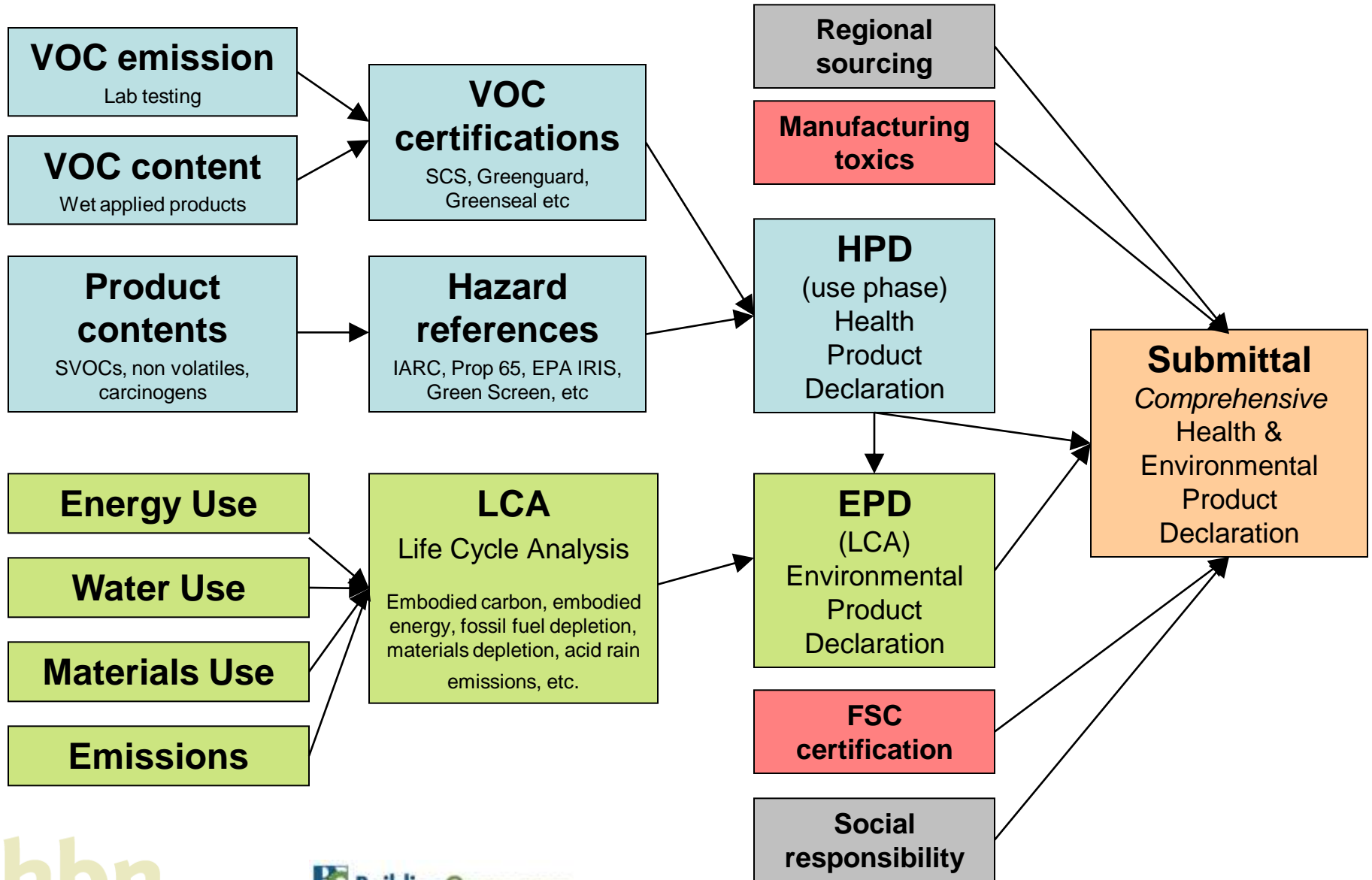
# Health Product Declaration



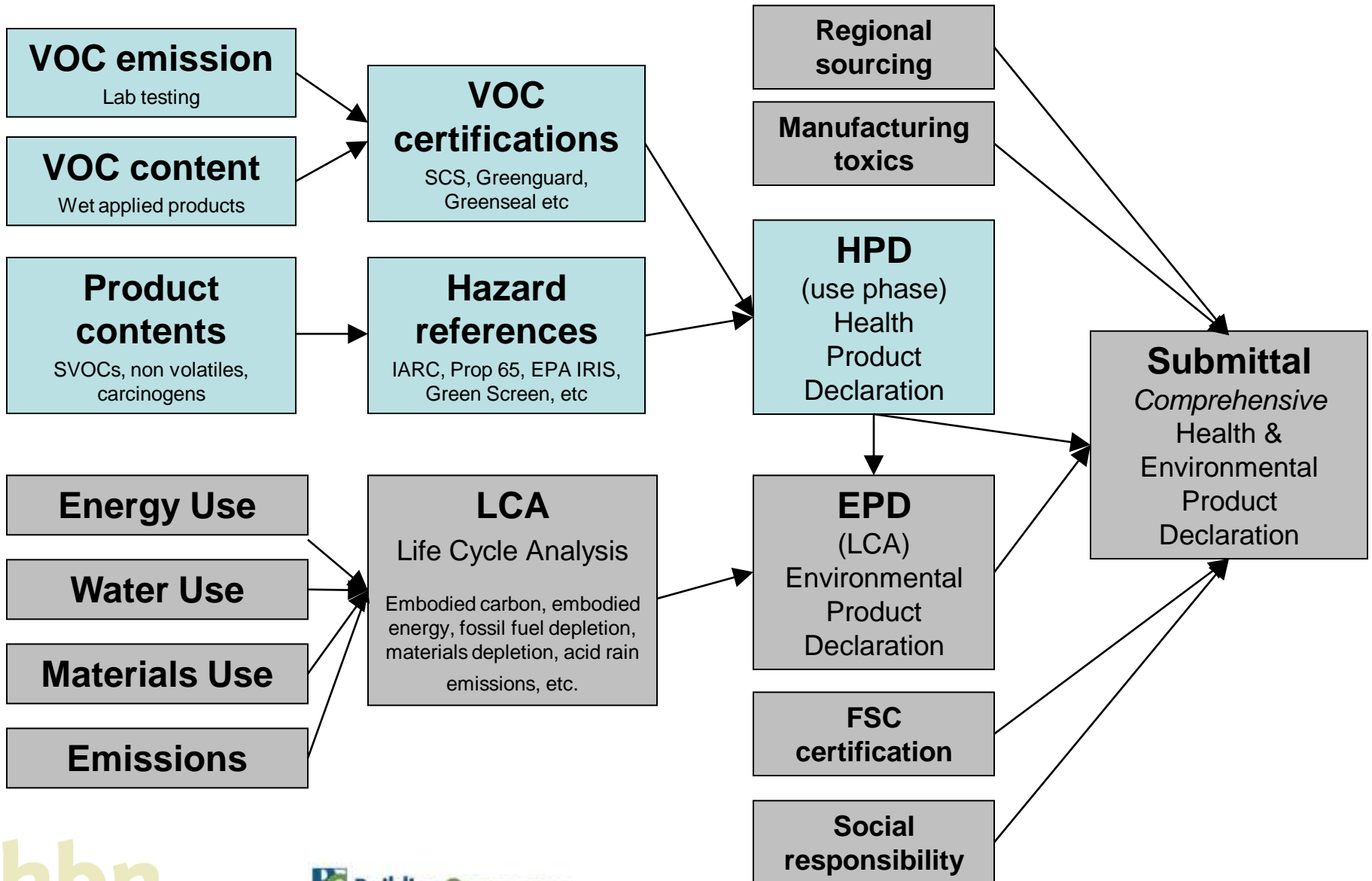
# Combined Health & Environmental Product Declaration



# Comprehensive Health & Environmental Product Declaration



# Product Health Reporting Framework



# Goal:

**A Health Product Declaration  
Designed by and for  
design professionals  
and building owners**

**HPD Working Group  
Representatives of 30 firms**

Convener



## Steering Committee

Anthony Bernheim	AECOM
Eden Brukman	International Living Building Challenge
Mary Davidge	Mary Davidge Associates
Susan M Kaplan	HLW International
Nadav Malin	BuildingGreen, Inc.
Mike Manzi	boora architects
Peter Syrett	Perkin + Will
Bill Walsh	Healthy Building Network

## Sample Health Product Declaration - 9/26/2011 draft

### 1) Product Description

<b>Name &amp; IDs</b>	Tuff Stuff X42, product SKU SB4353	<b>MasterFormat</b>	09 96 00 (MF10)
<b>Manufacturer</b>	Ajax Manufacturing	<b>Declaration date</b>	June 9, 2011
<b>Description</b>	High performance coating designed for painting bath stall walls and other wet surfaces.		

### 2) Product Contents Disclosure

<b>Disclosure level</b>	94	percent of intentionally added content s fully disclosed (100 percent is ideal).						
Name	CAS RN	%	Health Hazard Warnings			RC	Nano	
1	Phenyl Glycidyl Ether	122-60-1	55%	Cancer and Male reproductive toxicity (CA Prop 65) R37 Irritating to respiratory system and R53 May cause long-term adverse effects in the aquatic environment (EC Risk)			N	N
2	Alkyl (C12, C14) Glycidyl Ether	68609-97-2	21%	Irritating to skin and May cause sensitization by skin contact. (EC Risk) Full Green Screen assessed at Benchmark 2 by ChemService on 6/6/2011. Report is at <a href="http://www.ChemService.com/GS54345">www.ChemService.com/GS54345</a>			N	N
3	Bis(2-(dimethylamino)ethyl) ether	3033-62-3	8%	No warnings found			N	N
4	Polyethylene	9002-88-4	7%	No warnings found			PC	N
5	Trade secret	Not disclosed	3%	Category 1 Evidence of endocrine disruption activity (EC Endocrine) Very toxic to aquatic organisms and possible risk of impaired fertility (EC Risk)			N	N
6	Acme Zap-It Antimicrobial	Content not disclosed	3%	Not available			N	N
7	Silver	7440-22-4	2%	No warnings found			N	Y
8	Distillate Fuel Oils, Light	13463-41-7	1%	No warnings found			N	N
<b>All known residuals disclosed to</b>		Lowest requirements (ideal)	X	100 ppm	1000 ppm	As required on MSDS	Not disclosed	
9	Formaldehyde	50-00-0	<1000 ppm	Group 1: Agent is carcinogenic to humans (IARC) and other cancer warnings (see notes) Generally accepted asthmagen (AOEC) R23: Toxic by inhalation and R24: Toxic in contact with skin and R25: Toxic if swallowed and R34: Causes burns and R43: May cause sensitization by skin contact.(EC Risk)			N	N
The manufacturer affirms that all known material contents were screened for chemicals of concern and health warning listings using:				Pharos Chemical and Material Library from the Healthy Building Network	Screening date	June 6, 2011		
Hazard warnings associated with each ingredient must be listed for all chemicals listed on any of the Health Product Declaration (HPD) Priority lists found at <a href="http://www.healthproductdeclaration.org/prioritylists">www.healthproductdeclaration.org/prioritylists</a> .								
RC = Recycled Content; PC=Post Consumer PI = Post industrial Nano = comprised of nanoscale particles or nanotechnology								
<b>Total Volatile Organic Compound Content (TVOC)</b>		<b>Material VOC</b>	50 g/l	<b>Regulatory VOC</b>	30 g/l	<b>Total VOC incl. EPA exempt compounds</b> 60 g/l		

# Contents Inventory

## 2) Product Contents Disclosure

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2	Alkyl (C12, C14) Glycidyl Ether	68609-97-2	21%	Irritating to skin and May cause sensitization by skin contact. (EC Risk) Full Green Screen assessed at Benchmark 2 by ChemService on 6/6/2011. Report is at <a href="http://www.ChemService.com/554345">www.ChemService.com/554345</a>			N	N
All known residuals disclosed to		Lowest requirements (ideal)		X	100 ppm	1000 ppm	As required on MSDS	Not disclosed
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RC = Recycled Content: PC-Post Consumer PI = Post industrial Nano = comprised of nanoscale particles or nanotechnology								

## 1. All intentionally added contents

- plus health hazard warnings from hazard lists

## 2. Known residuals (contaminant from manufacturing or feedstock)

- accommodating varying levels of disclosure

# Testing & Certifications

## 3) Product Testing & Certifications

Type	Standard or certification	Certifier / laboratory	Certify party	Test Date	Expires	Certificate URL	Applicable Facilities	CA DP V1.1 St
VOC emissions	Indoor Advantage Gold	Scientific Certifications Systems / Berkeley Analytic Associates	3 <sup>rd</sup>	5/12/2010	6/1/2012	<a href="http://www.scscertified.com/products/cert_pdfs/Ajax010611.pdf">http://www.scscertified.com/products/cert_pdfs/Ajax010611.pdf</a>	Smithville TX, Jonesville OK	Yes
VOC content	SCAQMD Rule 1113	Manufacturer self-certified claim	1 <sup>st</sup>	4/11/2009	N/A	N/A	all	
Recycled content	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
<i>Other</i>								

Certifying party: Manufacturer is 1st party, Trade association or other interested party is 2nd party, Independent certifier is 3rd party

Applicable facilities: Manufacturing sites to which the testing applies

- Type (VOC content, emissions or recycled content)
- Certifying program (or standard)
- Certifier/laboratory
- Certifier type (1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>)
- Date of testing & Expiration & URL
- Applicable Facilities
- CADPH V1.1 (VOC emissions testing)

# Accessory Materials

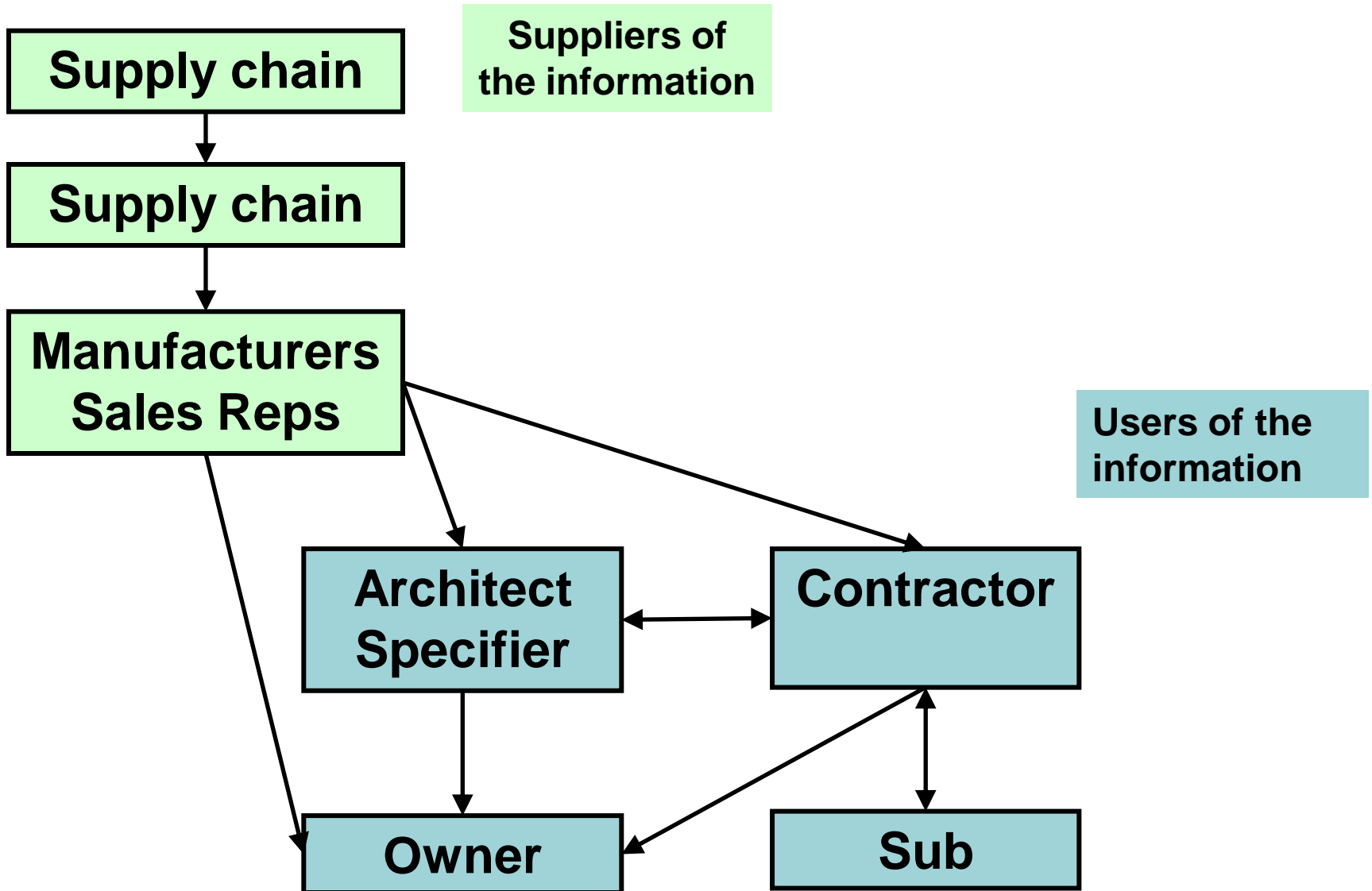
**4) Accessory Materials** Additional products required for an installation such as adhesives, fasteners, or factory coatings) or for maintenance, cleaning or operation

Required or recommended products	Condition when required/recommended	Health Product Declaration URL
Tuff Stuff Precoat Sealer	When applying to highly absorbent surfaces	<a href="http://www.Ajax.com/pdfs/TuffStuffDecl103">www.Ajax.com/pdfs/TuffStuffDecl103</a>

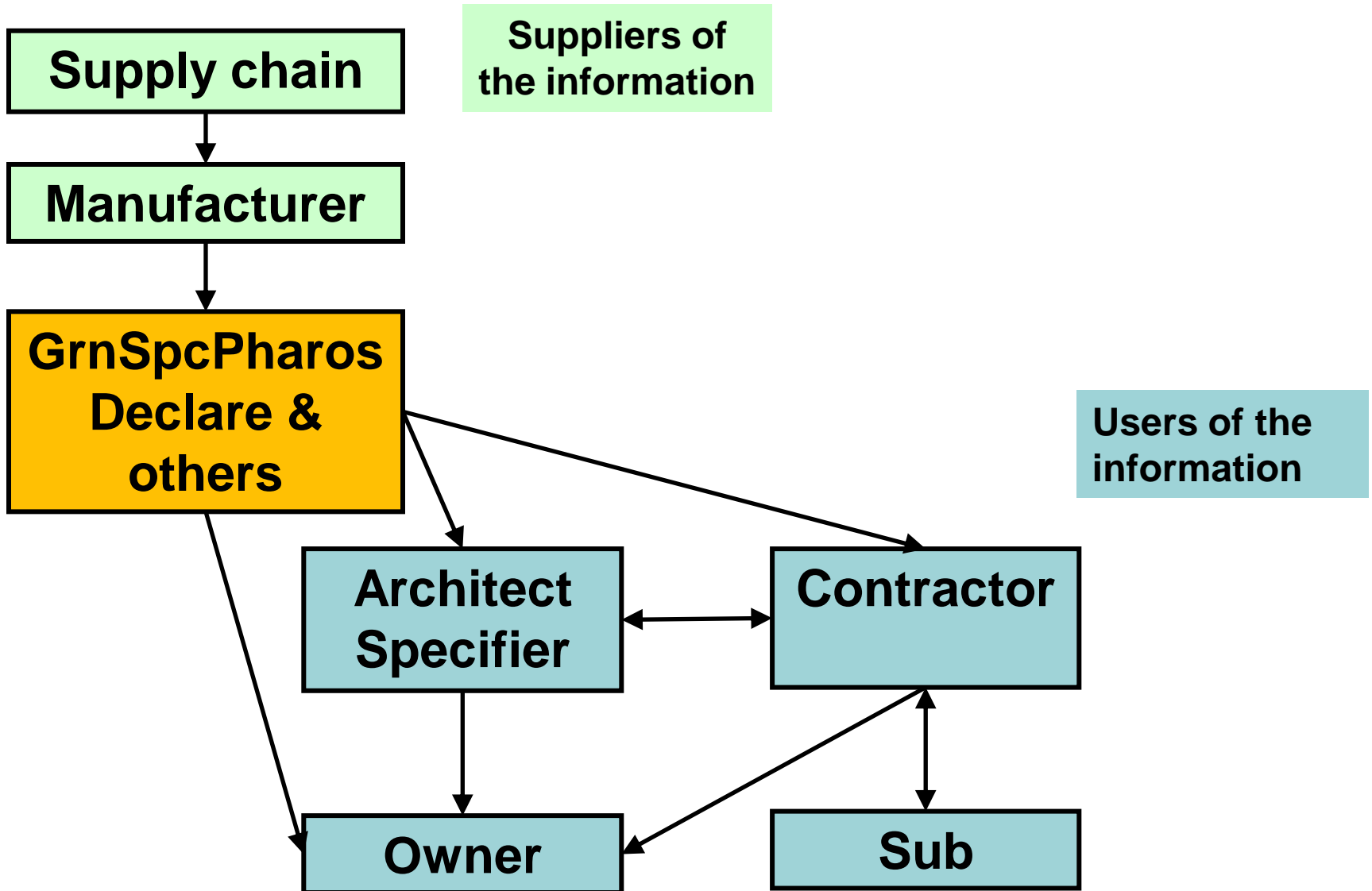
All products required for installation of the product (such as an adhesive or top coat), maintenance, cleaning or operation under the manufacturer warranty as well as options are listed here. Listed Health Product Declarations for those products to get a complete view of the product.

Products suggested or required by warranty  
Installation, maintenance or cleaning

# HPD Communication Chains



# HPD Communication Chains



# HPD Founding Endorsers

	 <p><b>The Durst Organization</b> Owner, Builder and Manager Since 1915</p>	 <p>MARY DAVIDGE ASSOCIATES STRATEGIC ENVIRONMENTS</p>
		 <p>TRINKING BEYOND THE BUILDING</p>
		
		 <p>PRESTIGIOUS URBAN DESIGN + PLANNING INTERIOR DESIGN</p>
 <p>architecture engineering interiors planning</p> 	 	  <p>INTERNATIONAL LIVING FUTURE INSTITUTE™</p>
		

# Pilot in Q1 2012



- **Tandus** flooring
- **Kingspan** insulated panels
- **Herman Miller** furniture
- **Steelcase** furniture
- **Teknion** furniture
- **Haworth** furniture
- **Knoll** furniture
- **Wilsonart** laminates
- **Neil Kelly** cabinets
- **3form** panels
- **Crossville** tile
- **Serious Energy** wallboard

**DON'T MOVE** OR I'LL FILL YOU FULL OF **98% LEAD**,  
**1% ANTIMONY**, **0.75% SILVER**, **200 PPM NICKEL**, WITH  
TRACE AMOUNTS OF **COBALT**, AND OTHER COMPONENTS  
BELOW THEIR RESPECTIVE DETECTION LIMITS !!!

WAIT A MINUTE!  
ARE THOSE VALUES  
CERTIFIED??



Estal Vinyl Composition Tiles

Impact Category Scores

7	VOC :: Volatile Organic Compounds	Meets California 01350 office or school VOC emissions test.
4	UseTox :: User Toxics	May meet at least basic VOC emissions test - but contains chemicals of concern that could become available.
2	MfrTox :: Manufacturer Toxics	Black flagged chemical/s in listed material contents or used integrally.
1	RnMtrl :: Renewable Materials	Low percentage of value renewable materials.
3	RnEng :: Renewable Energy	Modest renewable energy usage for manufacturing.

Pros

- Content: Fully disclosed
- No Bisphenol A (BPA) listed
- No Formaldehyde listed
- No Halogenated Flame Retardants (HFRs) listed
- No Perfluorocarbons (PFCs) listed
- No Nanomaterials listed

Cons



Material Content

Material	Max% - Min%	Toxic Content
LIMESTONE; CALCIUM CARBONATE CAS RN: 1317-65-3	84.0 - 84.0	
POLYVINYL CHLORIDE (PVC) CAS RN: 9002-86-2	12.0 - 12.0	RESPIRATORY
BUTYL BENZYL PHTHALATE (BBP) CAS RN: 85-68-7	4.0 - 1.0	REPRODUCTIVE
DIISONONYL PHTHALATE (DINP) CAS RN: 28553-12-0	4.0 - 1.0	DEVELOPMENTAL
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2 Alkyl (C12, C14) Glycidyl Ether	68609-97-2	21%	Irritating to skin and May cause sensitization by skin contact. (EC Risk) Full Green Screen assessed at Benchmark 2 by ChemService on 6/6/2011. Report is at <a href="http://www.ChemService.com/GS54345">www.ChemService.com/GS54345</a>	N	N
3 Bis(2-(dimethylamino)ethyl) ether	3033-62-3	8%	No warnings found	N	N
4 Polyethylene	9002-88-4	7%	No warnings found	PC	N
5 Trade secret	Not disclosed	3%	Category 1 Evidence of endocrine disruption activity (EC Endocrine) Very toxic to aquatic organisms and possible risk of impaired fertility (EC Risk)	N	N
6 Acme Zap-It Antimicrobial	Content not disclosed	3%	Not available	N	N
7 Silver	7440-22-4	2%	No warnings found	N	Y
8 Distillate Fuel Oils, Light	13463-41-7	1%	No warnings found	N	N
<b>All known residuals disclosed to</b>					
9 Formaldehyde	50-00-0	<1000 ppm	Group 1: Agent is carcinogenic to humans (IARC) and other cancer warnings (see notes) Generally accepted asthmagen (AOEC) R23: Toxic by inhalation and R24: Toxic in contact with skin and R25: Toxic if swallowed and R34: Causes burns and R43: May cause sensitization by skin contact.(EC Risk)	N	N

The manufacturer affirms that all known material contents were screened for chemicals of concern and health warning listings using: Pharos Chemical and Material Library from the Healthy Building Network Screening date June 6, 2011

Hazard warnings associated with each ingredient must be listed for all chemicals listed on any of the Health Product Declaration (HPD) Priority lists found at [www.healthproductdeclaration.org/prioritylists](http://www.healthproductdeclaration.org/prioritylists)

RC = Recycled Content: PC-Post Consumer PI = Post industrial Nano = comprised of nanoscale particles or nanotechnology

Total Volatile Organic Compound Content (TVOC)	Material VOC	50 g/l	Regulatory VOC	30 g/l	Total VOC incl. EPA exempt compounds	60 g/l
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For more extensive information on the human health impact and lifecycle information of this Peditred G4 product visit:

**CS** [transparency.c-sgroup.com](http://transparency.c-sgroup.com)

Manufacturer: Construction Specialties, Inc., Muncy, Pennsylvania 17756

Want Back Program: 800.233.8493 or [transparency.floor@c-sgroup.com](mailto:transparency.floor@c-sgroup.com)

Recycling Assistance: PCI FlorTech 630.458.0760 for carpet insert strips

**Product Content:**

Aluminum, Nylon carpet fiber, Polypropylene backing, Polypropylene monofilament, EPDM cushions and rail connectors

# EPA Eliminates "Confidential Business Information" Exemption For Reporting Of Chemical Hazards



TSCA reform  
CA Green Chemistry Initiative

Designer /Owner

Pharos  
HPD



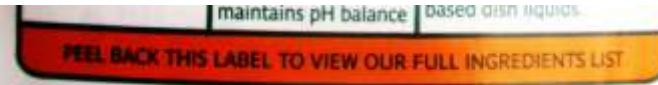
Customer



Retailer



Manufacturer



Safety Information: Please keep all products out of the reach of children.  
american cleaning inst  
for better living

CS transparency.c-sgroup.com

Supply Chain



CLEANGREDIENTS®



# *Our Challenges*

- **What levels of residuals matter?**
  - How can we uniquely identify chemicals?
- **Which IP issues are real?**
  - How can we deal with complex supply chains?
  - Full disclosure vs. 3<sup>rd</sup> party assessment?
- **Who else is moving to greater transparency & hazard assessment?**
  - How can we cross-fertilize?
  - How can messaging build on our efforts?

[www.HPDWorkingGroup.org](http://www.HPDWorkingGroup.org)

[www.PharosProject.net](http://www.PharosProject.net)