Building with Safer Products

Finding out what’s inside

November 30, 2011
BizNGO Annual Meeting
Framingham, MA

Tom Lent
Healthy Building Network
Volatile Organic Compounds (VOCs) can cause asthma and cancer.
Measured Emissions > Model
Amount of product
Volume of building
Ventilation rate

Predicted
> Concentration
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
**BENCHMARK 4**

ready biodegradability (low P) + low B + low Human Toxicity + low Ecotoxicity

( + additional ecotoxicity endpoints when available)

**Prefer—Safer Chemical**

**BENCHMARK 3**

- a. moderate P or moderate B
- b. moderate Ecotoxicity
- c. moderate Human Toxicity
- d. moderate Flammability or moderate Explosiveness

**Use but Still Opportunity for Improvement**

**BENCHMARK 2**

- a. moderate P + moderate B + moderate T
t (moderate Human Toxicity or moderate Ecotoxicity)
- b. high P + high B
- c. (high P + moderate T) or (high B + moderate T)
- d. moderate Human Toxicity for any priority effect or high Human Toxicity
- e. high Flammability or high Explosiveness

**Use but Search for Safer Substitutes**

**BENCHMARK 1**

- a. PBT: high P + high B + high T1 (high Human Toxicity2 or high Ecotoxicity)
- b. vPvB: very high P + very high B
- c. vPT (vP + high T) or vBT (vB + high T)
- d. high Human Toxicity for any priority effect2

**Avoid—Chemical of High Concern**
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 Depleting Potentials
- NTP ROCs and NTP DARTs
- NIOSH Carcinogens
- IARC Cancer Monographs
- European Commission SVHC, CLP, ESIS PBT, and Endocrine Disruptors
- State of Washington PBTS
- State of Oregon P3s
- OSPAR Priority Chemicals
- Rotterdam PICs
- Stockholm POPs
- State of California Prop 65
- Association of Occupational and Environmental Clinics Exposure Codes
**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**

**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

**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**

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 in the lifecycle processes.

- Full Lifecycle Map
### Estal Vinyl Composition Tiles

#### Impact Category Scores

- **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

**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.
- **DEVELOPMENTAL**

#### Material Content

<table>
<thead>
<tr>
<th>Material</th>
<th>Direct Chemical and Compound Hazard Quickscreen</th>
<th>PBT</th>
<th>Developmental</th>
<th>Reproductive</th>
<th>Acute Aquatic</th>
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</thead>
<tbody>
<tr>
<td>LIMESTONE; CALCIUM CARBONATE</td>
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<td>CAS RN: 1317-63-5</td>
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<td>POLYVINYL CHLORIDE (PVC)</td>
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<tr>
<td>BUTYL BENZYL PHTHALATE (BBP)</td>
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<td>CAS RN: 85-68-7</td>
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<tr>
<td>DIISONONYL PHTHALATE (DINP)</td>
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<td>CAS RN: 28553-12-0</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>DI(2-ETHYLHEXYL)PHTHALATE (DEHP)</td>
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<td></td>
<td></td>
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<tr>
<td>CAS RN: 117-81-7</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Unknown**
- Antimicrobials unknown
There are 49 products that meet your search criteria.

### Search Results for Flooring

#### RE-Tire Shades of Black recycled rubber
- VOC: 7
- USETOX: 4
- MFROTOX: 4
- RnMTRL: 8
- RnENRG: 1
- Manufacturer: Capri Cork
- Disclosure: Fully disclosed

#### Essentials Vinyl Composition Tiles
- VOC: 7
- USETOX: 4
- MFROTOX: 2
- RnMTRL: 1
- RnENRG: 3
- Manufacturer: Mannington
- Disclosure: Fully disclosed

#### Re-Tire Kaleidoscope recycled rubber
- VOC: 7
- USETOX: 4
- MFROTOX: 2
- RnMTRL: 1
- Manufacturer: Capri Cork
- Disclosure: Fully disclosed

#### Re-Tire Basics recycled rubber
- VOC: 7
- USETOX: 4
- MFROTOX: 2
- RnMTRL: 1
- Manufacturer: Capri Cork
- Disclosure: Fully disclosed
3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprietary silane</td>
<td>Proprietary</td>
<td>60 - 100</td>
</tr>
<tr>
<td>dibutylbis(pentane-2,4-dionato-O,O')tin</td>
<td>22673-19-4</td>
<td>3 - 7</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Amount Per Serving</th>
<th>% Daily Value*</th>
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<tbody>
<tr>
<td>Total Calories</td>
<td>60</td>
</tr>
<tr>
<td>Total Fat</td>
<td>3 g</td>
</tr>
<tr>
<td>Total Saturated Fat</td>
<td>0 g</td>
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<tr>
<td>Total Cholesterol</td>
<td>0 mg</td>
</tr>
<tr>
<td>Sodium</td>
<td>45 mg</td>
</tr>
<tr>
<td>Total Carbohydrates</td>
<td>15 g</td>
</tr>
<tr>
<td>Total Sugars</td>
<td>14 g</td>
</tr>
<tr>
<td>Protein</td>
<td>2 g</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>0%</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>0%</td>
</tr>
<tr>
<td>Calcium</td>
<td>2%</td>
</tr>
<tr>
<td>Iron</td>
<td>2%</td>
</tr>
</tbody>
</table>

*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

- VOC content
- VOC certifications
- MSDS
- Target content
- Red list affirmations
- More content
- All content
- Other Red list affirmations

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

Result = Chaos
Environmental Product Declaration

Health???

- PCR (Product Category Rules)
  - Life Cycle Analysis (LCA)
    - Embodied carbon, embodied energy, fossil fuel depletion, materials depletion, acid rain emissions, etc.
  - EPD (Environmental Product Declaration)
- Energy Use
- Water Use
- Materials Use
- Emissions
No Health Equivalent to the EPD

- **VOC emission**
  - Lab testing

- **VOC content**
  - Wet applied products

- **Product contents**
  - SVOCs, non volatiles, carcinogens

- **VOC certifications**
  - SCS, Greenguard, Greenseal etc

- **Hazard references**
  - IARC, Prop 65, EPA IRIS, Green Screen, etc

- **Energy Use**
- **Water Use**
- **Materials Use**
- **Emissions**

- **LCA**
  - Life Cycle Analysis
  - Embodied carbon, embodied energy, fossil fuel depletion, materials depletion, acid rain emissions, etc.

- **EPD (LCA) Environmental Product Declaration**

- **PCR**
  - Product Category Rules

- **LEED Teams**
- **GreenSpec/Pharos**
- **LBCTeams**
- **P+W Precaution**
- **GreenFormat**
- **LEED HC&Pilots**
- **Declare**
- **Firm questionnaires**
Health Product Declaration

Open Standard Product Health Reporting Framework

- **VOC emission**
  - Lab testing

- **VOC content**
  - Wet applied products

- **Product contents**
  - SVOCs, non volatiles, carcinogens

- **VOC certifications**
  - SCS, Greenguard, Greenseal etc

- **Hazard references**
  - IARC, Prop 65, EPA IRIS, Green Screen, etc

- **HPD** (use phase)
  - Health Product Declaration

- **Energy Use**

- **Water Use**

- **Materials Use**

- **Emissions**

- **LCA**
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- **PCR**
  - Product Category Rules

- **LEED Teams**
  - GreenSpec/Pharos
  - LBCTeams
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  - GreenFormat
  - LEED HC&Pilots
  - Declare
  - Firm questionnaires
Combined Health & Environmental Product Declaration

- **VOC emission**
  - Lab testing

- **VOC content**
  - Wet applied products

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- **Materials Use**

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- **VOC certifications**
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- **HPD (use phase)**
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- **LCA**
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  - Embodied carbon, embodied energy, fossil fuel depletion, materials depletion, acid rain emissions, etc.

- **EPD (LCA)**
  - Environmental Product Declaration

- **Submittal**
  - Combined Health & Environmental Product Declaration

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*Healthy Building Network*  *BuildingGreen.com*
Comprehensive Health & Environmental Product Declaration

VOC emission
Lab testing

VOC content
Wet applied products

Product contents
SVOCs, non volatiles, carcinogens

Energy Use

Water Use

Materials Use

Emissions

LCA
Life Cycle Analysis
Embodied carbon, embodied energy, fossil fuel depletion, materials depletion, acid rain emissions, etc.

Hazard references
IARC, Prop 65, EPA IRIS, Green Screen, etc

VOC certifications
SCS, Greenguard, Greenseal etc

EPD
(LCA)
Environmental Product Declaration

Regional sourcing

Manufacturing toxics

HPD
(use phase)
Health Product Declaration

Submittal
Comprehensive Health & Environmental Product Declaration

FSC certification

Social responsibility

VOC emission
Lab testing

VOC content
Wet applied products

Product contents
SVOCs, non volatiles, carcinogens

Energy Use

Water Use

Materials Use

Emissions

LCA
Life Cycle Analysis
Embodied carbon, embodied energy, fossil fuel depletion, materials depletion, acid rain emissions, etc.

Hazard references
IARC, Prop 65, EPA IRIS, Green Screen, etc

VOC certifications
SCS, Greenguard, Greenseal etc

EPD
(LCA)
Environmental Product Declaration

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HPD
(use phase)
Health Product Declaration

Submittal
Comprehensive Health & Environmental Product Declaration

FSC certification

Social responsibility
Product Health Reporting Framework

- **VOC emission**
  - Lab testing

- **VOC content**
  - Wet applied products

- **Product contents**
  - SVOCs, non volatiles, carcinogens

- **Energy Use**

- **Water Use**

- **Materials Use**

- **Emissions**

- **VOC certifications**
  - SCS, Greenguard, Greenseal etc

- **Hazard references**
  - IARC, Prop 65, EPA IRIS, Green Screen, etc

- **LCA**
  - Life Cycle Analysis
    - Embodied carbon, embodied energy, fossil fuel depletion, materials depletion, acid rain emissions, etc.

- **EPD (LCA)**
  - Environmental Product Declaration

- **HPD**
  - (use phase)
    - Health Product Declaration

- **Submittal**
  - Comprehensive Health & Environmental Product Declaration

- **Regional sourcing**

- **Manufacturing toxics**

- **Social responsibility**

- **FSC certification**
Goal:
A Health Product Declaration
Designed by and for
design professionals
and building owners

HPD Working Group
Representatives of 30 firms

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
1) Product Description

<table>
<thead>
<tr>
<th>Name &amp; IDs</th>
<th>Tuff Stuff X42, product SKU SB4353</th>
<th>MasterFormat</th>
<th>09.96.00 (MF10)</th>
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</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>Ajax Manufacturing</td>
<td>Declaration date</td>
<td>June 9, 2011</td>
</tr>
<tr>
<td>Description</td>
<td>High performance coating designed for painting bath stall walls and other wet surfaces.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2) Product Contents Disclosure

<table>
<thead>
<tr>
<th>Disclosure level</th>
<th>94</th>
<th>percent of intentionally added content is fully disclosed (100 percent is ideal).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>CAS RN</td>
<td>%</td>
</tr>
<tr>
<td>Phenyl Glycidyl Ether</td>
<td>122-60-1</td>
<td>55%</td>
</tr>
<tr>
<td>Alkyl (C12, C14) Glycidyl Ether</td>
<td>68809-97-2</td>
<td>21%</td>
</tr>
<tr>
<td>Bis(2-(dimethylamino)ethyl) ether</td>
<td>3033-62-3</td>
<td>8%</td>
</tr>
<tr>
<td>Polyethylene</td>
<td>9002-88-4</td>
<td>7%</td>
</tr>
<tr>
<td>Trade secret</td>
<td>Not disclosed</td>
<td>3%</td>
</tr>
<tr>
<td>Acme Zap-It Antimicrobial</td>
<td>Content not disclosed</td>
<td>3%</td>
</tr>
<tr>
<td>Silver</td>
<td>7440-22-4</td>
<td>2%</td>
</tr>
<tr>
<td>Distillate Fuel Oils, Light</td>
<td>13463-41-7</td>
<td>1%</td>
</tr>
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</table>

All known residuals disclosed to

<table>
<thead>
<tr>
<th>Lowest requirements (ideal)</th>
<th>X</th>
<th>100 ppm</th>
<th>1000 ppm</th>
<th>As required on MSDS</th>
<th>Not disclosed</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 Formaldehyde</td>
<td>50-00-0</td>
<td>&lt;1000 ppm</td>
<td></td>
<td>Group 1: Agent is carcinogenic to humans (IARC) and other cancer warnings (see notes) Generally accepted asthma (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)</td>
<td>N</td>
</tr>
</tbody>
</table>

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.

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

Total Volatile Organic Compound Content (TVOC) Material VOC Regulatory VOC Total VOC incl. EPA exempt compounds

50 g/l 30 g/l 60 g/l
## Contents Inventory

2) **Product Contents Disclosure**

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS RN</th>
<th>%</th>
<th>Health Hazard Warnings</th>
<th>RC</th>
<th>Nano</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenyl Glycidyl Ether</td>
<td>122-60-1</td>
<td>55%</td>
<td>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)</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Alkyl (C12, C14) Glycidyl Ether</td>
<td>68809-97-2</td>
<td>21%</td>
<td>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/5654345">www.ChemService.com/5654345</a></td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>&lt;1000 ppm</td>
<td>Group 1: Agent is carcinogenic to humans (IARC) and other cancer warnings (see notes) Generally accepted as a human carcinogen (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)</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Screening date</th>
<th>June 6, 2011</th>
</tr>
</thead>
</table>

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).

**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

<table>
<thead>
<tr>
<th>Type</th>
<th>Standard or certification</th>
<th>Certifier / laboratory</th>
<th>Certify party</th>
<th>Test Date</th>
<th>Expires</th>
<th>Certificate URL</th>
<th>Applicable Facilities</th>
<th>CA DP V1.1 Std</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOC content</td>
<td>SCAQMD Rule 1113</td>
<td>Manufacturer self-certified claim</td>
<td>1st</td>
<td>4/11/2009</td>
<td>N/A</td>
<td>N/A</td>
<td>all</td>
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</tr>
<tr>
<td>Recycled content</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<td>N/A</td>
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<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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** (1st, 2nd, 3rd)
- **Date of testing & Expiration & URL**
- **Applicable Facilities**
- **CADPH V1.1 (VOC emissions testing)**
# Accessory Materials

Products suggested or required by warranty
Installation, maintenance or cleaning
HPD Communication Chains

- Supply chain
- Supply chain
- Manufacturers Sales Reps
  - Suppliers of the information
- Users of the information
- Architect Specifier
- Contractor
- Owner
- Sub
<table>
<thead>
<tr>
<th>HPD Founding Endorsers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google</td>
</tr>
<tr>
<td>The Durst Organization</td>
</tr>
<tr>
<td>Pankow</td>
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<td>Gensler</td>
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<td>MITHUN</td>
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<td>Perkins + Will</td>
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<td>Smithgroup</td>
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<tr>
<td>FXFowle</td>
</tr>
<tr>
<td>Yost Grube Hall</td>
</tr>
<tr>
<td>Cannon Design</td>
</tr>
<tr>
<td>International Living Future Institute™</td>
</tr>
</tbody>
</table>
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??
Our Challenges

• What levels of residuals matter?
  – How can we uniquely identify chemicals?

• Are any IP issues real?
  – How can we deal with complex supply chains?
  – Full disclosure vs. 3rd party assessment?

• Who else is moving to greater transparency & hazard assessment?
  – How can we cross-fertilize?
  – How can messaging build on our efforts?
### Impact Category Scores

<table>
<thead>
<tr>
<th>Impact Category</th>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOC: Volatile Organic Compounds</td>
<td>7</td>
<td>Meets California OCS350 office or school VOC emission test.</td>
</tr>
<tr>
<td>UseTox: User Toxics</td>
<td>4</td>
<td>May meet at least basic VOC emission test - but contains chemicals of concern that could become available.</td>
</tr>
<tr>
<td>MtTox: Manufacturer Toxins</td>
<td>2</td>
<td>Black flagged chemical/finished materials or not used integrally.</td>
</tr>
<tr>
<td>RnMTox: Renewable Materials</td>
<td>1</td>
<td>Low percentage of value renewable materials.</td>
</tr>
<tr>
<td>RnEnE: Renewable Energy</td>
<td>1</td>
<td>Modest renewable.</td>
</tr>
</tbody>
</table>

### Material Content

<table>
<thead>
<tr>
<th>Material Content</th>
<th>Value</th>
<th>Toxic Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limestone</td>
<td>84.0%</td>
<td></td>
</tr>
<tr>
<td>Calcium Carbonate</td>
<td>16.0%</td>
<td></td>
</tr>
<tr>
<td>PVC</td>
<td>12.0%</td>
<td></td>
</tr>
<tr>
<td>Butyl Benzoate</td>
<td>4.0%</td>
<td></td>
</tr>
<tr>
<td>Diglycol Phthalate</td>
<td>4.0%</td>
<td></td>
</tr>
<tr>
<td>Butyl Phthalate</td>
<td>4.0%</td>
<td></td>
</tr>
<tr>
<td>Ethylene Glycol</td>
<td>4.0%</td>
<td></td>
</tr>
</tbody>
</table>

### Product Description

1) **Product Description**

- **Name & IDs:** Tuff Stuff X42, product SKU SB-8553
- **Description:** High performance coating designed for painting bath stall walls and other wet surfaces.

2) **Product Contents Disclosure**

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS RN</th>
<th>% Intentionally Added</th>
<th>Health Hazard Warnings</th>
<th>RC</th>
<th>Nano</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenyl Glycidyl Ether</td>
<td>122-46-1</td>
<td>55%</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Alkyl (C12, C14) Glycidyl Ether</td>
<td>68808-97-2</td>
<td>21%</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Bis(2-ethylhexyl)phthalate</td>
<td>3033-62-3</td>
<td>0%</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Polyethylene</td>
<td>9002-88-4</td>
<td>0%</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Trade Secret</td>
<td>Not Disclosed</td>
<td></td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Acet Izbi Antimicrobial</td>
<td>Content Not Disclosed</td>
<td></td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Silver</td>
<td>7440-22-4</td>
<td>2%</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Distilled Fuel Oil, Light</td>
<td>1348-1-7</td>
<td>1%</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>All Known Residuals Disclosed</th>
<th>Lowest Requirement (Ideal)</th>
<th>X1 100 ppm</th>
<th>X10 1000 ppm</th>
<th>As Required</th>
<th>MSDS X100 ppm</th>
<th>Not Disclosed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>-10.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The manufacturer affirms that all known material contents were screened for chemicals of concern and health hazards using the Pharos Chemical and Material Library from the Healthy Building Network. 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](http://www.healthproductdeclaration.org).
EPA Eliminates "Confidential Business Information" Exemption For Reporting Of Chemical Hazards

Customer

Retailer

Manufacturer

Supply Chain

Designer /Owner

---

TSCA reform
CA Green Chemistry Initiative

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GoodGuide
Find Safe, Healthy, and Green Products

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WAL*MART

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STAPLES®
Race to the Top: The Staples Supplier Collaboration Initiative

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GreenWERCS®

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transparency.c-s-group.com

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gadsl

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BOMcheck.net

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IMDS Advanced Solutions

---

GC³ Green Chemistry & Commerce Council

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CLEANGREDIENTS®

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Pharos
HPD

---

U.S. GREEN BUILDING COUNCIL
LEED

---

EWG's SKIN DEEP cosmetic safety database

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CA Green Chemistry Initiative

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HPD

---

TSCA reform

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www.HPDWorkingGroup.org
www.PharosProject.net