Informal Workshop on Stakeholders' Information Needs on Chemicals in Articles/Products

Business and NGO Strategies for Addressing Chemicals in Articles/Products

Mark Rossi, PhD

CLEAN PRODUCTION ACTION

Outline

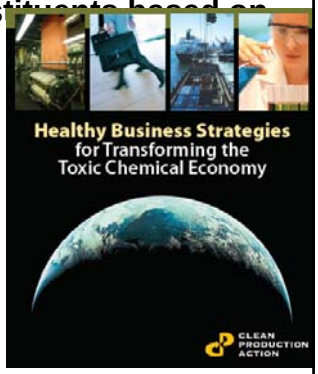
1. Guiding Principles
2. Strategies of Business Leaders
3. Challenges
4. Critical Needs

Guiding Principles
(for addressing chem's in articles/products)

- Precautionary Principle
- Green Design
- Right to Know (RTK)
- Substitution
- Green Procurement
- Supply Chain Communication
- Extended Producer Responsibility (EPR)

Strategies of Business Leaders
(for addressing chem's in articles/products)

1. **Know (and disclose) chemical constituents in products**
2. **Assess + categorize chemical constituents based on hazards**
3. **Prioritize + eliminate chemicals of high concern**
4. **Re-design products:** select more sustainable chemicals & materials
5. **Take responsibility from cradle to cradle**

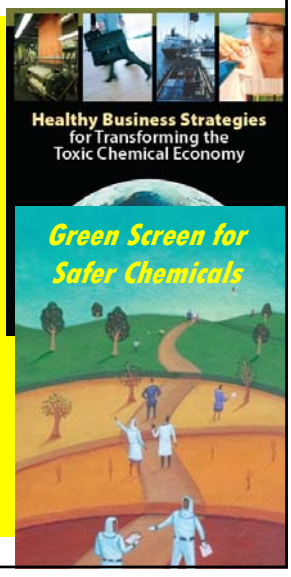


Challenges to Implementing Strategies

Business Strategies	Challenges
1. Know & disclose product chemistry	• Proprietary data • Complex supply chains • Complex products
2. Assess + categorize chemicals	• Lack of comprehensive data • Lack of agreement on categorization protocols
3. Prioritize & eliminate chemicals of high concern	• Limited agreement on priorities • Finding greener options • Limited criteria for identifying safer alternatives • Costs of (+ lack of incentives) for change • Failure to address in design stage
4. Re-design	• Finding greener options • Limited criteria for identifying safer alternatives
5. Take responsibility for product	• Few requirements

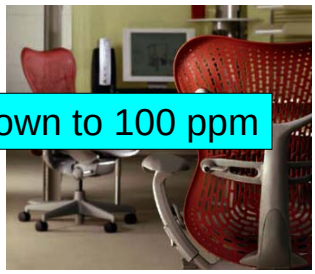
Critical Needs for Addressing Chemicals in Products/Articles

1. Knowing & disclosing chemical constituents
2. Having complete data sets on chemical hazards
3. Categorizing chemicals by levels of concern
4. Prioritizing & substituting chem's of high concern
5. Defining, developing & using safer alternatives
6. Creating demand for greener, safer, more sustainable products through procurement



1. Know and disclose chemical consistituents in products, examples …

HermanMiller



Collects chemical constituent data down to 100 ppm

CALIFORNIA REPUBLIC

AB 1879: "… to adopt regulations [by 2011] to establish a process by which chemicals or **chemical ingredients in products may be identified"**

2. Complete hazard data sets on chemicals …

Human Health Effects

- Cancer
- Reproductive
- Developmental
- Genotoxicity (mutagenicity)
- Neurological
- Systemic
- Skin/Respiratory Sensitizer
- Endocrine disruption
- Immune system
- Corrosion/irritation skin/eye

THE SEAL OF THE STATE OF WASHINGTON 1889

Design for the Environment U.S. EPA

Ecotoxicity

- Acute
- Chronic

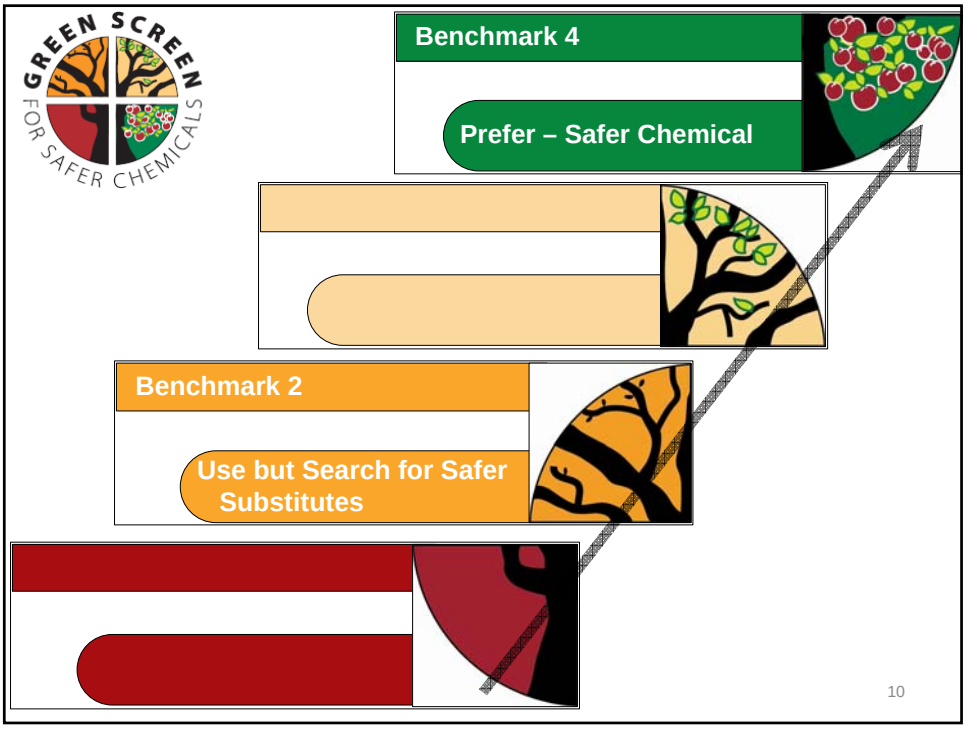
Environmental

- Persistence
- Bioaccumulation

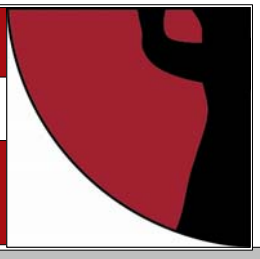
3. Categorize individual chemicals by level of concern …

into levels of concern – high, moderate, low, unknown -- based on hazards …

- EU REACH – vPvBs and PBTs = substances of very high concern
- Canada – priority substances list
- Washington State – assessment of alternatives to decaBDE
- State of Maine – commitment to categorizing chemicals by level of concern
- Green Screen for Safer Chemicals (Clean Production Action)



Benchmark 1



Avoid – Chemical of High Concern

Bioaccumulation +
high Toxicity

b. **vPvB** = very Persistent + very Bioaccumulative

c. **vPT** or **vBT**

d. **high human Toxicity** for any "priority effect": cancer, reproductive/developmental, mutagenicity, neurotoxicity, endocrine disruption

4. Prioritize Chemicals of High Concern for Reduction

Criteria

- Production Volume
- End use: consumer, children's products; toys; dispersive end uses
- Certain hazard traits: PBT, vPvB, CMR, etc.
- Present in humans or wildlife
- Present in food, drinking water, indoor air or

Examples

- EU REACH, Canada, California
- Substitute It Now (SIN) List (ChemSec)

4. Substitute Chemicals of High Concern

Interface FABRIC™

Evaluates and eliminates chemicals of high concern in its fabrics through its "Dye and Chemistry Protocol"

"The protocol screens out lead, mercury, perfluorinated alkyl surfactants, polychlorinated or polybrominated biphenyls, and other persistent, bioaccumulative and toxic substances commonly found in fabrics."

4. Substitute Chemicals of High Concern

H&M

Chemical Restriction List

All suppliers must comply

- Azo dyes
- Flame retardants
- Formaldehyde
- Phthalates
- PVC
- Organotins
- Bisphenol A
- Triclosan
- Cd, Cr, Hg, Ni, & Pb
- Phenols
- Perfluorinated substances
- Chlorinated bleaches

5. Green Design – Defining, Developing & Using Safer Alternatives

6. Creating demand through procurement

KAISER PERMANENTE®

Kaiser Permanente Environmental Supplier Disclosure Form - Electronics

- Do you have a program to **track the chemical constituents/ingredients in your products**?
- Do you have a program to **identify and reduce the use of components that contain chemicals of high concern**?
- Are **brominated flame retardants**, **PVC**, or **phthalates** used in any of the product's components?
- Does your product contain any other chemical listed under **CA Prop 65 or as PBT by WA State, European Union or the US**

7. Take responsibility for products from cradle to cradle

- Design for disassembly & recyclability
- Establish product takeback programs
  - WEEE Directive
  - Sony, Apple, Dell, HP, Samsung, Ericsson, Nokia

Opel Priority List for Plastics with regard to Recycling Aspects	
Prefer	
▲	Polypropylene, Polyethylene
▲	Polyoxymethylene (POM), Polyamide, Thermoplastic Urethane (TPU)
▲	Acrylonitrile Butadiene Stryene (ABS), Polymethylmethacrylate (PMMA, i.e., acrylic), Styrene Maleic Anhydride (SMA) copolymer, Acrylonitrile Styrene

8. Communicating across the supply chain

Supply Chain Management

- Present restricted substance list (170+) to suppliers and:
  - required testing procedures & recommended labs
  - requirement to share list with dye mills, print mills, tanneries & chemical manufacturers
- H&M chemists assess likely chemicals to be in a product
- H&M performs random testing of products
- Suppliers pay for the tests ($1.75 million/year)

In Summary

1. Know & disclose chemical constituents
2. Compile complete data sets on chemical hazards
3. Categorize chemicals by levels of concern
4. Prioritize & substitute chemicals of high concern
5. Define, develop & use safer alternatives
6. Create demand for greener, safer, more sustainable products through procurement
7. Take responsibility for products from cradle to cradle
8. Communicate across supply chain

Thank You!

Mark Rossi, PhD
Research Director
Medford, MA -- USA
Mark@CleanProduction.org
+1 781.391.6743
www.cleanproduction.org