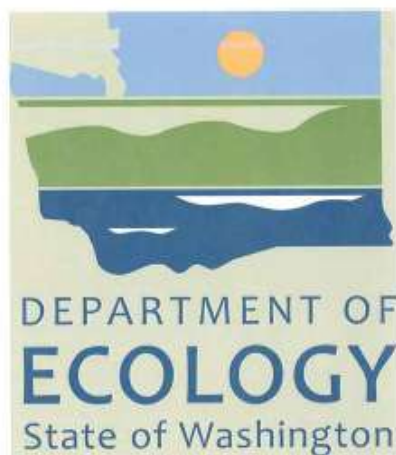


**Managing Chemicals in Products—
Best Practices in Moving Beyond Chemicals
of Concern to Safer Alternatives**

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QUESTIONS for Small Groups: Benchmarking Progress to Knowing and Disclosing Chemicals

1. Challenges: What challenges do you confront in knowing chemical ingredients in products?
2. Solutions: How do you overcome these challenges? What are your solutions? What successes have you had? What's your ideal solution?
3. Tools and resources: What tools and resources do you need to overcome your challenges?

Know / Disclose

1. Variations in products from suppliers
 1. How do you keep up with knowing when suppliers are changing materials
 2. Solution:
 1. data updates frequently
 2. Audits – catch changes that were not disclosed
 3. Front end: require changes in materials

Know / Disclose

1. Supplier compliance
 1. Educate the supply chain
2. Communication across the supply chain Language barriers, multi-cultural
3. Disconnect across the supply chain from chemical manufacturers to suppliers
4. Solution
 1. Standardization: SAICM, GHS
 2. TSCA Reform
 3. Collaboration
 4. Tools: improved MSDS -> eMSDS

Know/Disclose

1. Unintentional components in products, impurities, naturally occurring
 1. What do you disclose?
2. Solution: if you know it's there need to disclose to customer
 1. Create open atmosphere of dialogue with suppliers
 2. But lock out suppliers that don't want to disclose
 3. Find out challenge to disclosure

Know/Disclose

1. Challenge: convincing supply chain to provide data, esp. when small co.
2. Lack of standardization
3. Not being part of new product development, can lead to chems of concern in products
4. Lack of education x supply chain
5. Rapid changes within supply chain

Solutions (including tools): Know/Disclose

1. Supplier education
2. Robust chain of custody, passed along the supply chain
 1. Chemical content + purpose /functionality of chemical -> this would help with alts assessment
3. Standardizing information across supply chain and requests for data
 1. Get groups to work together

Know/Disclose

1. Challenges

1. CBI -> how to protect relevant CBI data
2. Too many degrees of separation to collecting data
3. Need chemical names and concentrations

2. Solutions

1. Developing Trust with suppliers
2. Wall of shame: don't play don't buy; also name those

Know/Disclose

1. How are co's successful in approaching suppliers

Know/Disclose

1. Reporting standards – why is ipc 1752 only 30%
2. Set contracts with suppliers, and include fines for non-compliance
3. Standardized test methods

QUESTIONS for Small Groups: Identifying Chemicals of Concern & Select Safer Alternatives

1. Challenges: What challenges do you confront in assessing and avoiding chemicals of concern in products?
2. Solutions: How do you overcome these challenges? What are your solutions? What successes have you had? What's your ideal solution?
3. Tools and resources: What tools/resources do you need to overcome your challenges?

Assess & Avoid

- Challenges
 - How do you prioritize chemicals? Hazard, then concentration
 - Lack of accuracy and validation of supplier claims
 - Lack of internal subject matter expertise
 - Solution: collaborate as an industry. E.g., Nike creative commons
 - Cultural differences across supply chain
 - Brands have market vulnerability, not the supplier
 - Lack of consistency of standards across sectors
 - Lack of harmonization x certification bodies
 - Lack of transparency in certification bodies
 - Id hazard as 1st step, end use affects prioritization
 - Different camps on hazard, exposure, LCA perspectives
 - Suppliers: alts will cost

Assess & Avoid

- All chemicals have powerful friends
 - Chemicals proven safe before use
- Lag time between id of problem & safer alts
- Data are available but not provided
- Need space to make mistakes and own up
 - Positive engagement with those trying to do the right thing
 - Hazards not always fully understood x life cycle
- Improve tools we have, e.g., LCA
- Green chemistry
- Material rules parallel Michael Pollen's food rules

Assess & Avoid

- Corporate integrity is on the line, take adv to use social media to get voices of concern heard
- Standardization
- Positive lists
- Tools
 - Credible data, e.g. Green Screen List Translator
 - Publicly accessible Alts Assessments
 - Regulation
 - Gov't tax incentive programs
 - Safe Harbor – co's are not free to discuss certain issues because of anti-trust issues
 - Database, eg life cycle impacts
 - Data to see EPP / Ecolabel
 - Framework for universal reporting – e.g. HPD

Assess & Avoid

- Tox testing is expensive and can be localized
eg EU, Japan, US
- Silos, Green Ghetto, marginalization of evtl
issues
- Pharos – keep updated and maintained
- Chemical manufacturers perspective: we're
not hearing the demand for safer alternatives
 - Formulators sitting on safer alts, if something not
in it for them, won't change

Assess & Avoid

- Red lists are not the solution
 - Need safer alts
- Cooperative dialogue, REACH – x supply chain
- Prioritization –
 - ACC, EPA, EDF and other NGOs
- Need Transparency
- Green Screen
- Education: B2B, consumers, universities, k-12
- Computational toxicology
- Challenge programs: e.g., low zinc roofs for Puget Sound
- Fragrances

Assess & Avoid

- Credibility gap in claims being made
- Standards: Green screen, ISO
- Products: ULE, etc.
- Verification of results and data to back it up
- Ideal tool & solution
 - Industry, Sector, Function tiering of activity
- Lack of expertise of suppliers
 - Solution: training, AAFA – training Indian suppliers on RSL; EHS training academies in China

Panel

- How do you start to engage suppliers?
 - Communication & training
 - Target the employees who do the work, WebEx's
 - Contact rep from co. – “we'll help you, here's my #, here's when you can reach me”
 - Surprisingly hard to say yes (in large co's) to new materials technologies chemicals
 - Future proof products, look for safer chems in each functional class, FRs, UV stabilizers
 - Find speciality partners amenable to this work: flexible, interested, skill alignment
 - Small co's can look at innovative tech's materials

Panel

- Suppliers
 - Outreach in A&D to suppliers
 - Know your priorities, don't say everything is important
 - Be prepared to compromise
 - Create a positive, engaging environment – 1 on 1
 - Create a questionnaire in advance
 - Building materials questionnaire
- Fast, flexible, fluid -> small businesses
 - Do this quickly for you
- Get to the right people

Panel

- Collaborative research?
 - Bring purchasing power together to encourage research on safer alts
 - OR Best – 4 OR U's
 - Symposium on their research and brings practitioners and big business
 - Decide upon projects to focus on
 - Opportunity for experiments in academia

- CBI
- # Panel
- Shorter term solutions to proprietary info
 - Ask what's really confidential
 - Reward those that disclose with dollars
 - Keep asking for response – persistence
 - Often don't trust that you'll hold proprietary secure
 - Make them document more around it
 - Find different supplier
 - Suppliers share that information
 - Having a dialogue is really important
 - Reasons vary widely, barriers can be overcome
 - Think of it as a long term relationship
 - Use metaphor to get out of their product, such as food ingredient labels
 - Ask question the right way – CBI is a data gap and we view data gaps negatively

Panel

- Other benefits to Seagate data collection?
 - Declaration, lab data changes
 - Find that there are changes that lead to functional changes
 - When conflict metals arose, we could quickly track down suppliers

Panel

- How do we capture buying power in this room to leverage greater change?
 - Use dollars for good.
 - Ask for Ecolabel data – triggers flag internally
 - HP – Annually evaluates how many tenders requested environmental info and dollars associated with that ask?
 - Want sales and marketing to know that these questions are being asked
 - Make it very clear in purchasing requests
 - Want purchasers to ask us these questions
 - See the request play out across supply chain from purchaser to distributor to manufacturer

Panel

- Trade-offs, e.g., toxics v. recycled content – how do you deal with legacy of toxics in products
 - Living Building Challenge doesn't track or reward recycled content
 - Low hanging fruit
 - Perpetuates more of the wrong thing
 - Looks at whole system and impacts, tracks carbon footprint, responsible industry, red list, and appropriate sourcing
 - Mary: we're focused on what we don't want in materials. Are we studying the best manner for dealing with these materials? E.g., fly ash. Don't want it interiors, but which products should it be in
 - Difference between post industrial and post consumer recycled content
 - Electronics very limited because of chemical content issues
 - HP we'd like to reclaim everything if don't have problems with content
 - Staples: takeback ink cartridges, purchase recycled content products
 - Contamination of recycled stream – paper stream contaminated with BPA
 - Google concerned with chemicals in recycled content

Next Steps

- Evaluation Forms!
- PPTs posted on BizNGO.org
- Synopsis of Small Group Discussions (sent to participants)
- BizNGO Annual Meeting
 - Framingham, MA - Staples
 - November 30 – December 1, 2011
- Green Screen Training
 - Ann Arbor, MI – NSF International
 - May 8, 2012