

BUSINESS SOLUTIONS



Environmental Regulations and Their Impact To The Electronics Industry

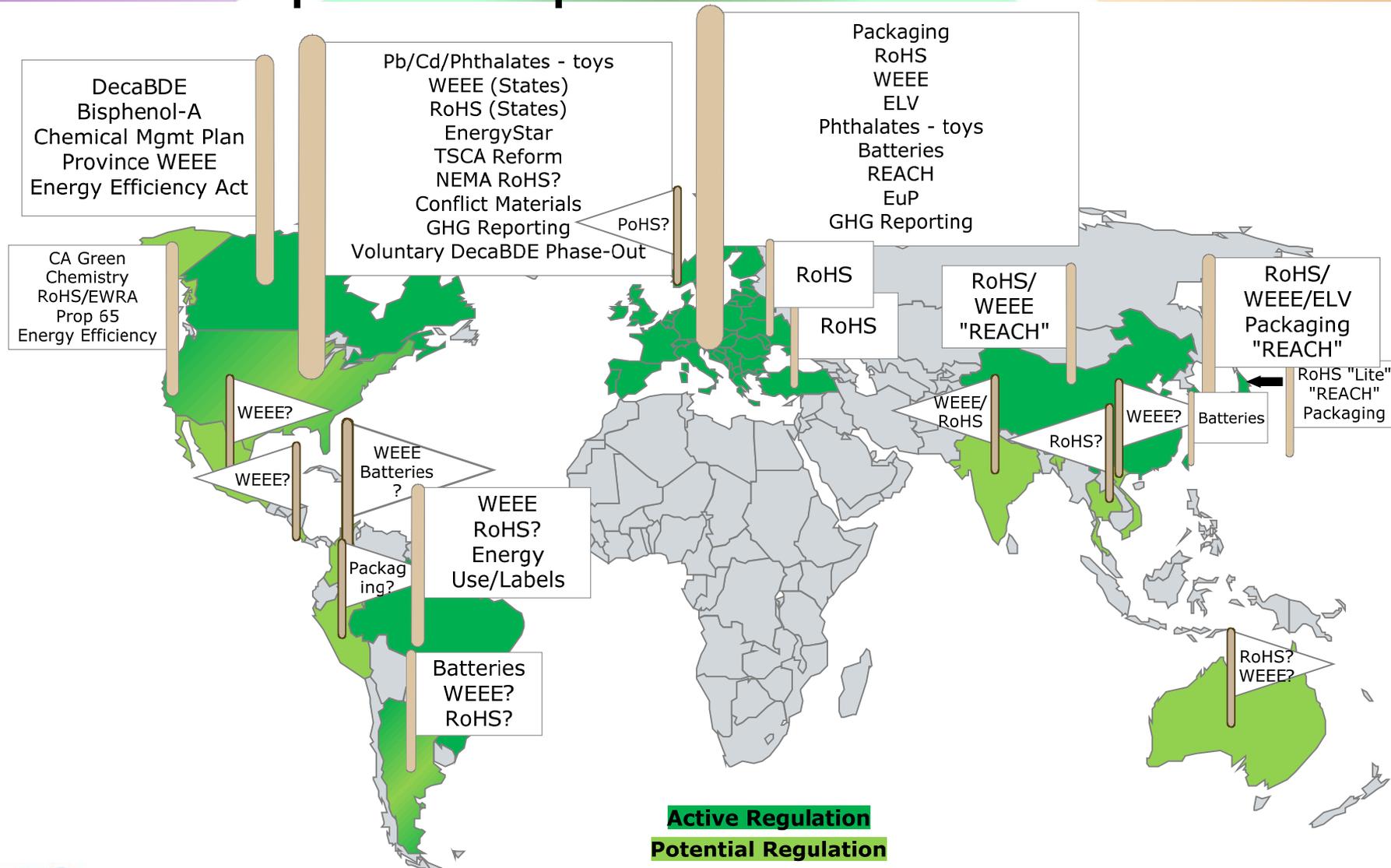


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Agenda

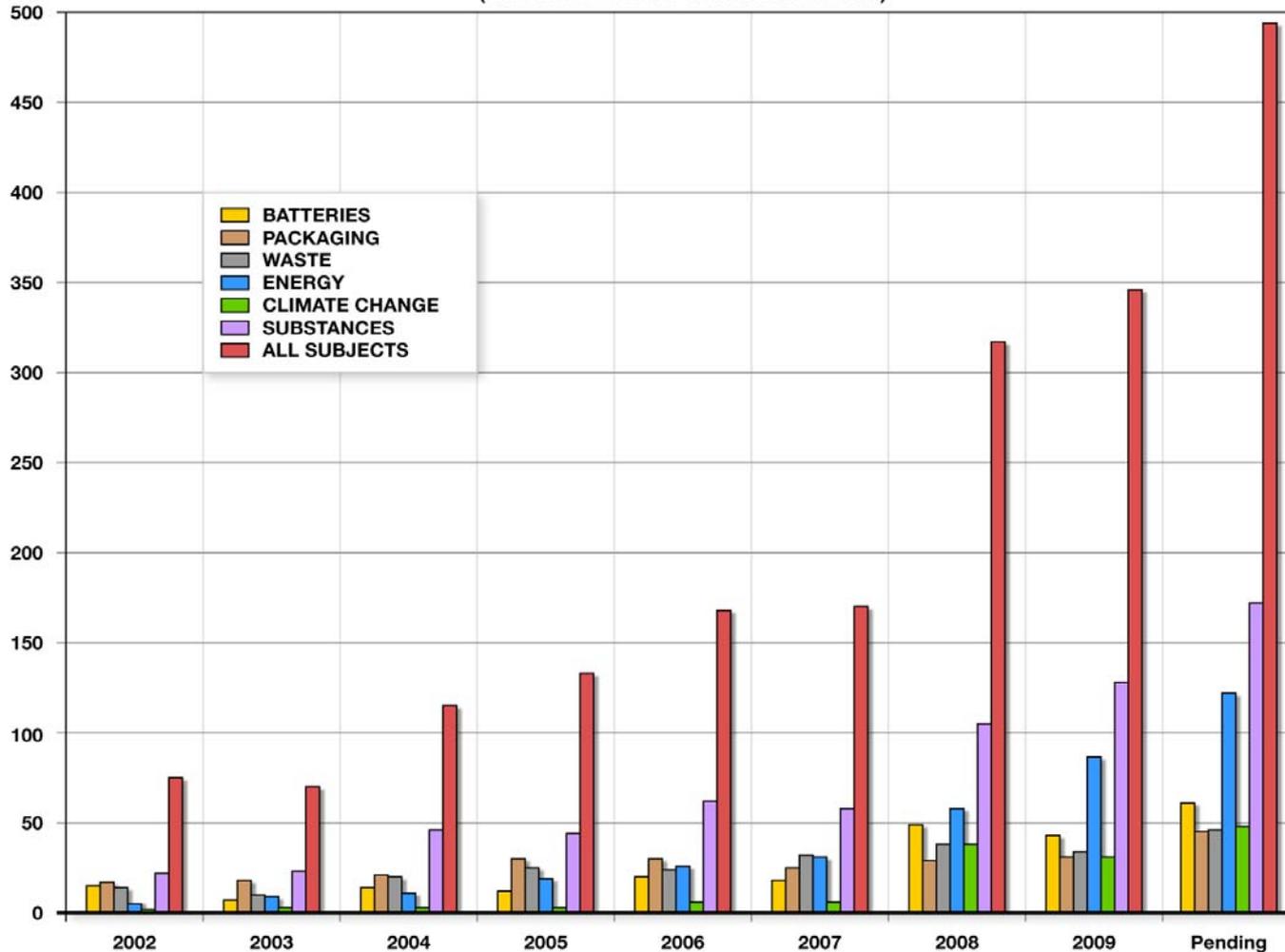
- ❖ Product-Targeted Environmental Regulation (PTER) Landscape
- ❖ Major Drivers
 - RoHS Recast Update
 - RoHS Exemption Update
 - REACH SVHC Disclosure study
 - California Safer Consumer Products Regulation
- ❖ The Impact
- ❖ Industry Response

INCOMPLETE Environmental Regulatory Landscape "Snapshot"



Growth in Environmental Regulations

C2P GLOBAL REGULATIONS BY SUBJECT AREA
(ENTERED INTO FORCE 2002-2009)



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Statistics reflect C2P content which is indicative of but not 100% equal to the growth in all regulations in the field

Major Drivers

❖ EU RoHS Recast

- Initial review started with 300 + amendments to consider
 - Broaden the scope of products
 - Open scope
 - an open scope approach covering all electrical and electronic equipment unless specifically excluded
 - Include Medical and monitoring
 - Increase the list of hazardous materials
 - addition of two further restricted substances, nanosilver and carbon nanotubes
 - Add a priority list of substances for review
 - Initial proposal included 37 substances
 - Possible ties to REACH SVHC list
- Published in the Official Journal of the European Union ?
 - Projected Q2 of 2011
 - Subject to change without notice - Stay tuned

Major Drivers

❖ RoHS Exemption Review

➤ Goals

- Remove unnecessary exemptions
- Reword to restrict the application of continued exemptions
- Establish sunset dates for new product use and for repair

➤ Scope

- 39 exemptions reviewed
- Many with broken down to multiple exemptions
 - 7(c)-I Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound
 - 7(c)-II Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher
 - 7(c)-III Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC
 - Expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013

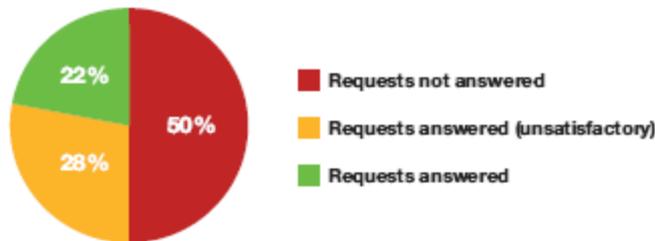
➤ Published in the Official Journal of the European Union

- 24 September 2010
 - <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:251:0028:0034:EN:PDF>

REACH SVHC Disclosure Study

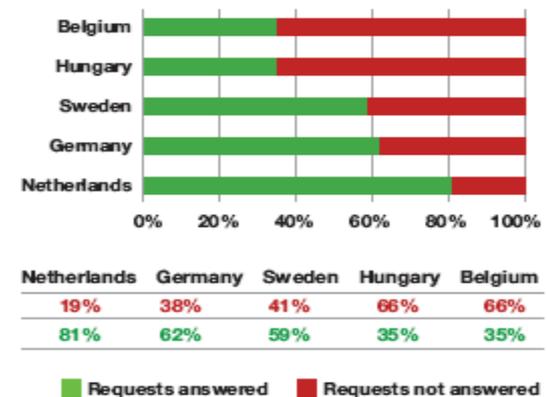
- ❖ The European Environmental Bureau (EEB) is a federation of over 140 environmental citizens' organisations based in EU Member States, and surrounding countries
- ❖ SVHC List contains 38 substances today
 - SVHCs contained in articles in excess of 0.1weight by weight
 - Suppliers are legally obliged to provide an answer with at least the name of the SVHC, and information allowing safe use of the article, within 45 days, free of charge.
 - In total, 158 'right to know' requests were sent to 60 retailers/brands established in five European countries (Belgium, Czech Republic, Germany, Hungary, Netherlands and Sweden).

Fig 2: Overall Answer rate



•Source EEB

Fig 5: Answer rate form request (EU)



•Source EEB

REACH SVHC Disclosure Study

❖ Example products

- Shoes, earphones, bath toy, eraser

❖ Findings

- DEHP was detected in 25 articles, among them 15 were contaminated at a level $>0,1\%w/w$
- DINP was detected in 20 articles, among them 12 were contaminated at a level $>0,1\%w/w$
- DIBP was detected in 9 articles, among them 3 were contaminated at a level $>0,1\%w/w$
- DBP was detected in 7 articles, among them 2 were contaminated at a level $>0,1\%w/w$

❖ Recommendation

- Action from REACH enforcement authorities is warranted
- EEB leaves it to the discretion of EEB members to initiate legal actions, where appropriate

- <http://www.eeb.org/EEB/index.cfm/news-events/news/big-retailers-caught-breaching-eu-chemicals-law/>



California Safer Consumer Products Regulation

<http://www.dtsc.ca.gov/PollutionPrevention/GreenChemistryInitiative/Proposed-Regulation.cfm>

Regulatory Objectives

- ❖ Establish a process to identify and prioritize those chemicals or chemical ingredients in consumer products that may be considered as being a chemical of concern
- ❖ Establish a process for evaluating chemicals of concern in consumer products, and their potential alternatives, to determine how best to limit exposure or to reduce the level of hazard posed by priority chemicals
- ❖ Specify the range of regulatory responses that California EPA's Department of Toxic Substance Control (DTSC) may take following the completion of the alternatives analysis

Scope

- ❖ All Consumer Products placed into the stream of commerce in California, except
 - Dangerous prescription drugs and devices
 - Dental restorative materials
 - Medical devices
 - Packaging associated with dangerous prescription drugs and devices, dental restorative materials and medical devices
 - Food
 - Pesticides
 - Mercury-containing lights (Mercury-containing lights are exempted only through December 31, 2011)

- ❖ Consumer Product = Nearly Anything that Anybody Sells to Anybody Else, from floor wax to Boeing 787s

It's Neither TSCA nor REACH

- ❖ Chemical substances in “consumer products” must be identified
 - TSCA covers substances, not substances in products (yet)
- ❖ It's not REACH either
 - REACH has a minimal Alternatives Assessment requirement that only applies in the authorization phase
 - REACH focuses on allowing the sale of chemical substances
 - It does not focus on products, though there are some article aspects to it
- ❖ This could be considered the follow-on step to REACH

A Three-Step Process

1. *DTSC* --- Evaluation and prioritization of chemicals and consumer products to develop a list of “Priority Products” that contain “Priority Chemicals”.
2. *Consumer Product Responsible Entities & Manufacturers* --- Assessment of alternatives, which must be performed for the Priority Chemical used in each product that is a listed Priority Product, with the objective of identifying and selecting a viable safer alternative (if one exists). Responsible entities must notify DTSC when their product is listed as a Priority Product, and DTSC posts this information on its website.
3. *DTSC* --- Identification and imposition of regulatory responses to effectively limit the public health and/or environmental threats, if any, posed by the consumer product (due to the Priority Chemical) or the threats posed by the alternative chemical/product selected to replace the Priority Product.

California Safer Consumer Products Process Flow



Regulations for Safer Products

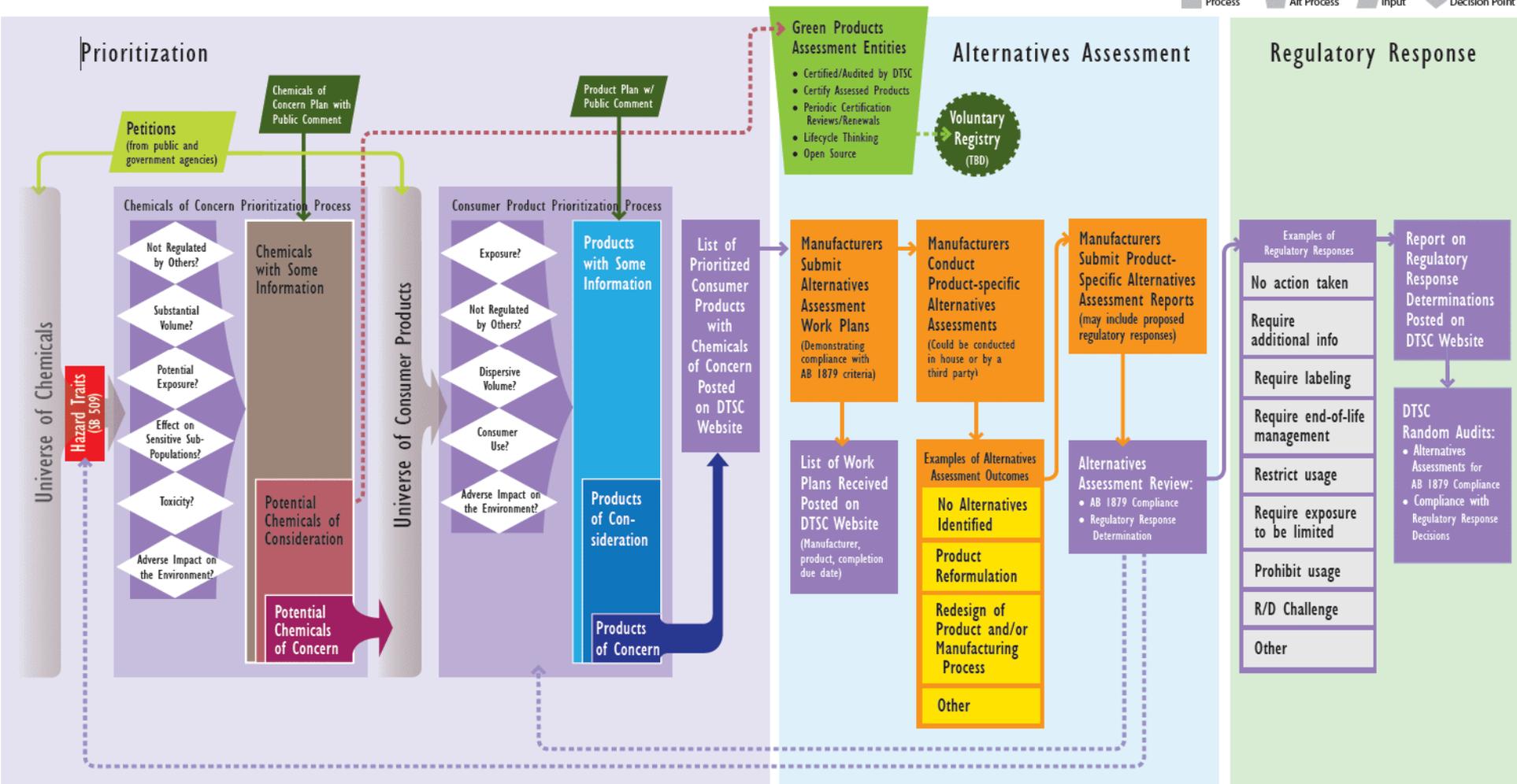
AB 1879 (FEUER) / SB 509 (SIMITIAN)
CONCEPTUAL FLOW CHART

D R A F T

(FEBRUARY 23, 2010)



Process Alt Process Input Decision Point



Proposed “No Later Than” Dates

- ❖ Jan 1, 2011: In force date
- ❖ June 1, 2011: Proposed Initial Chemicals under Consideration (CuC) list
- ❖ March 1, 2012: Final Chemicals under Consideration (CuC) list
- ❖ July 1, 2012: Proposed Initial Priority Chemicals list
- ❖ March 1, 2013: Proposed Initial Products under Consideration (PuC) list
- ❖ Sept. 1, 2013: Proposed Initial Priority Products list
- ❖ Dec. 1, 2013: Final Initial Priority Products list
 - Speculation: expect chemical intensive products with high exposure like shampoo or cleaners to be on the initial list...
- ❖ Stay tuned

The Impact

- ❖ “Chemicals are guilty until proven innocent”
 - Substitution without knowing the consequences is not acceptable
 - Tin lead solder vs. Lead free solder
 - Better or worse – depends upon who you talk to
 - Product design, Product manufacturing
 - Product reliability, Product safety
 - Consumer safety

- ❖ A tsunami of global chemical regulations
 - USA China, EU, Canada, South America, Asia, ?
 - Shooting at a moving target

- ❖ Industry Specifications
 - HP, IBM, Dell, GE, Wal-Mart, ?
 - Trying to stay ahead

- ❖ Supply chain disruption
 - Material disclosure
 - Material substitution
 - Limited sources

Industry Actions

- ❖ Environmental compliance specifications
 - Customers
 - Suppliers
 - Product Change Notifications
 - Form, Fit, Function and Material Composition
- ❖ Complete material disclosure requirements
 - In God we trust, all others provide objective evidence
 - What, Where, How much
- ❖ Tracking chemical regulations
 - Regulatory , Industry
 - In force today, pending, crystal ball?
- ❖ Engaged Participants
 - Legislation
 - Industry standards
 - Consumer awareness
 - Environmental stewardship

Thank You For Your Attention

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