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Toxics in Packaging: It's Still An Issue

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December 2007



Presentation Outline

- Background on Toxics in Packaging Laws
- Compliance Screening Results
- Why Are We Detecting Toxics Today?
- TPCH Outreach to Supply Chain
- What Can State & Local Government Do?

Toxics in Packaging Laws

- Model Toxics in Packaging Legislation approved by CONEG in 1990
- Adopted by 19 US States, most recently California in 2003
- Basis for EU Packaging Directive

Toxics in Packaging Requirements

- Prohibits **intentional introduction** of any amount of 4 regulated metals – lead, mercury, cadmium & hexavalent chromium
- Limits **incidental presence** of these metals to **100 ppm (0.01%)** - total concentration of 4 heavy metals
- Applies to packaging, packaging components, & packaged products sold or distributed in states with legislation

How Do the Laws Work?

- Creates **supply chain responsibility**
- Companies self-certify
 - Based on analytic tests or supplier certification
- Provide Certificate of Compliance to customers
 - Must furnish to states upon request
- Most laws provide state authority to levy substantial monetary penalties

Toxics in Packaging Clearinghouse

Supports & Coordinates Implementation of Model

- Centralized location for information & processing requests to minimizing administrative burden for states & industry
- Promotes consistency and uniformity among states
- Venue for ongoing review of Model Legislation

Enforcement is at the discretion of individual states.

Compliance Screening Project



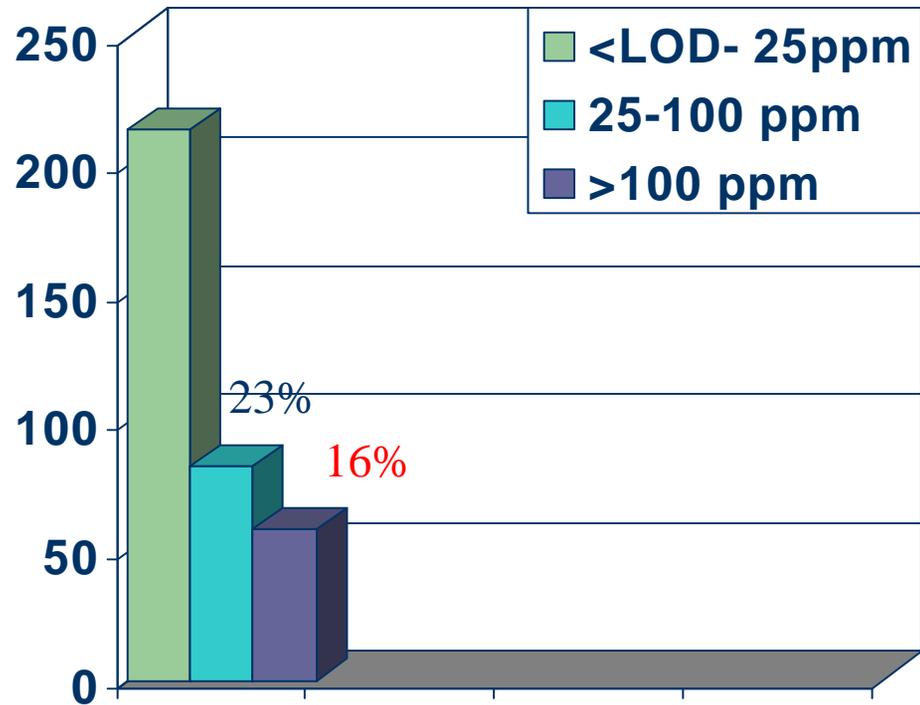
- First comprehensive screening October 2005 – February 2006 with funding support by U.S. EPA
- Screened over 350 packages (over 550 components) using a portable x-ray fluorescence analyzer
- Tested variety of packaging materials, product categories, and component types
- Notified manufacturers or brand owners of results >100 ppm

Product Categories

- Shopping bags
- Mailing/Shipping
- Textiles
- Food & Beverage
- Toys & Games
- Electrical & Electronic
- Personal & Healthcare
- Hardware
- Apparel
- Entertainment
- Cleaning Products
- Home Furnishings
- Pet Supplies
- Office Supplies
- Sporting Goods
- Novelty
- Fast Food
- Strapping
- Deli/Produce Bags

Compliance Screening Test Results

Number
of
Packages



Samples Failing Screening (>100ppm)

- Cadmium & lead most frequently detected, some mercury
- Ranged mostly from 250 – 800 ppm
 - Up to 9000 ppm detected
- Prevalent packaging materials/types
 - Imported, clear flexible PVC bags/pouches
 - Inks & colorants on shopping and mailing bags

Flexible PVC Bags/Pouches



Toys



Textiles



Cosmetic



Pet Supply

- 61% of samples tested of this material exceeded 100 ppm for lead and/or cadmium
- Mostly imports
- Suspect additives such as UV stabilizers
- All blister/clamshell packaging below LOD for all metals

Inks & Colorants on Shopping Bags



Inks & colorants on shopping and mailing bags

- Likely imports based on discussions with suppliers, since not always labeled with country of origin
- Suspect solvent-based inks

TPCH Outreach to Supply Chain

- Notified 52 manufacturers or distributors that package failed screening test
 - Request certificate of compliance with documentation **OR** submit plan to bring package into compliance & discontinue its distribution and sale
 - Responses demonstrated lack of awareness and understanding of requirements
 - Only 15% of companies verified TPCH XRF screening results

Why the Discrepancy?

- Discontinued product, packaging not available to test
- Different packaging materials tested by company vs. TPCH
- Some laboratory test methods may be inappropriate for measuring total concentration in packaging samples
 - Suspect incomplete digestion of sample resulting in detection of soluble or leachable metals
 - Metals need to be liberated from matrix to measure total concentration

CA DTSC Initiated Comparison of Test Methods

- EPA SW-846 Method 3050B
Acid Digestion of sediments, sludges, soils
- EPA SW-846 Method 3051
Microwave alternative to Method 3050B
- EPA SW-846 Method 3052
Microwave digestion of siliceous and organically based matrices

CA DTSC Preliminary Comparison Results

Sample #	Elements	XRF Screening	3050B / ICP	3051/ICP Microwave	3052/ ICP Microwave vendor A	3052/ ICP Microwave vendor B
1	Cadmium	ND	ND	ND	NA	ND
	Lead	1,300	138	779	NA	1,101
	Chromium	420	30	198	NA	264
2	Cadmium	ND	ND	ND	NA	ND
	Lead	650	74	544	NA	561
	Chromium	ND	18	135	NA	142
3	Cadmium	ND	ND	ND	ND	ND
	Lead	257	154	187	332	305
	Chromium	ND	37	55	143	81

Why Are We Detecting Toxics in Packaging 15 Years Later?

- Changes in packaging technology
- Entry of new suppliers/manufacturers
- Shift in geographic location of manufacturing
- Fallen off “radar screen”
- US state legislation misunderstood

Example - Changes in Technology



“Innovative” marketing feature....blinking lights powered by electronic circuitry....with lead solder.

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TPCH Outreach to Supply Chain

- Preliminary indication that it's influencing supply chain practices
 - Knowledge of requirements
 - Actual presence of heavy metals in packaging
 - Quality assurance practices
- Follow up compliance screening in early 2008 with funding support of U.S. EPA Region 1
 - Assess the impact of outreach efforts
 - Screen new suspect packaging types to help target further outreach

What Can State & Local Government Do?

- Make companies aware of toxics in packaging requirements
 - Applies where packaging, packaging components & packaged products are sold or distributed
 - Responsibility of supply chain from raw materials to packaged products
- For states with legislation, join TPCH
 - Easiest, least expensive way to implement state laws
 - Strength in numbers
- If no state requirements, consider legislation

Actions Companies Can Take

- Incorporate requirements in purchasing specifications & contracts
- Contact suppliers directly to see if they're aware of and meet requirements
- Require Certificates of Compliance from all suppliers of packaging or packaging components with supporting documentation (including test methods)
- Develop QA/QC Systems to verify compliance & spot check incoming packaging materials and components since.....

“some companies will tell you whatever you want”

For Additional Information

Visit our website

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