Heavy Metals Continued Presence in Consumer Packaging
Packaging!

- Packaging is one-third of the waste stream
- Most packaging is a single-use product
- Packaging is a strong candidate for recycling
- Packaging can contain toxic metals – impacts on waste and recycling
CONEG SRC
Coalition of Northeast Governors-Source Reduction Council
Toxics in Packaging!

- Lead
- Cadmium
- Mercury
- Hexavalent Chromium

\[
\begin{align*}
\text{Pb} & : \text{Lead} \\
& \text{82} \\
& \text{207.2}
\end{align*}
\]

\[
\begin{align*}
\text{Cd} & : \text{Cadmium} \\
& \text{48} \\
& \text{112.411}
\end{align*}
\]

\[
\begin{align*}
\text{Cr}^{6+} & : \text{Hexavalent Chromium} \\
& \text{80} \\
& \text{200.59}
\end{align*}
\]
Model Toxics in Pkg. Law

- Prohibits *intentional introduction* of *any amount* of the four regulated metals
- Limits *incidental presence* of the four metals to **100 ppm (0.01%)** total concentration
- Applies to finished packaging and each individual packaging component
- Limited exemptions available, e.g., recycled content, certain reusable packaging
- Model approved by CONEG Governors Jan. 3, 1990; enacted in Maine April 17 and New Hampshire April 19, 1990
How do the laws work?

- Creates supply chain responsibility
- **Producer** companies self-certify based on:
  - analytic tests
  - supplier certification
- Provide Certificate of Compliance to customers (downstream producers), and states on request
- Most laws provide state with authority to levy monetary penalties against packaging and product producers and distributors
TPCH

- Maintains/Updates the model law
- Coordinates implementation of state laws to promote consistency among states (and saves states lots of time!)
- Single point of contact for companies (save companies time)
- Packaging screening projects
members/non-members/no law
Success Stories

- Lead foil wine bottle wrappers (not addressed by FDA as food contact issue)
- Major manufacturer: cadmium pigment in yellow plastic container
- Lead solder in non-food cans (e.g., paint)
- Electronics and batteries in product packaging and displays
- Lead and cadmium in flexible plastic film
Screening Projects/Publications

2006-2007:
Screened 355 pkgs;
16% overall failure,
average Cd 449 ppm,
Pb 1,740 ppm

2009:
Screened 409 pkgs;
14% overall failure,
52% of imported PVC
**2011:** Laboratory Round Robin Testing: Assessing Performance in Measuring Toxics in Packaging – 16% of testing for Pb and Cd > 25% off

**2012:** Testing of packaging

“Cheap Junk from China” showed a “propensity” (almost 40%) to contain the restricted metals.

919 ppm lead in zipper pull!
2012: Screening of Inks & Colorants
(screened 125 bags; 3 failed big-time, but 17% failed in 2007)

2014: Evaluated test methods for determining total conc. of regulated metals in glass matrix packaging
(need SW-846 Method 3052, hydrofluoric acid)
2017 PVC Report

- Approx 20 products found with PVC packaging that contains Cadmium; no Lead
- Includes five suppliers to one major retailer
- Home furnishings, housewares, pet toy and chew packaging made overseas
- Several companies withdrew significant inventory from stores and distribution chain
Other recent findings in glass...

- High % of bottles from Argentina - Malbec! 😞
Ongoing Work of TPCH & Next Steps

- Updating model legislation?
- Screening projects
- New member recruitment
www.toxicsinpackaging.org

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