DTSC's Safer Consumer Products Program and Work on the Coho Salmon Toxicant 6PPD

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SAFER CONSUMER PRODUCTS (SCP) PROGRAM
SCP Process

1. Candidate Chemical List
   - Menu of chemicals that we can choose from

2. Priority Products
   - Prioritize Product-Chemical combinations that may cause harm + Rulemaking

3. Alternatives Analysis
   - Manufacturer evaluation of alternatives

4. Regulatory Response
   - Wide range of possible actions
SCP Process

1. Candidate Chemical List

Menu of chemicals that we can choose from.

2. Priority Products

3. Alternatives Analysis

4. Regulatory Response
SCP Process

Menu of chemicals that we can choose from.

- Taken from 23 authoritative lists.
- Viewable on CalSAFER (http://calsafer.dtsc.ca.gov)
- Includes individual chemicals (e.g., 6PPD) as well as large classes (e.g., PFASs)
Prioritize Product-Chemical combinations that may cause harm + Rulemaking
SCP Process

Prioritize Product-Chemical combinations that may cause harm + Rulemaking

- Menu of products comes from Work Plan
  - Draft 2021-2023
  - New addition: motor vehicle tires

- Evaluate chemicals in the context of products.
- Consider the potential for:
  - Exposure to the chemical from the product
  - Significant or widespread harm from that exposure

SCP Process

Prioritize Product-Chemical combinations that may cause harm + Rulemaking

- Potential is important
- Definition of harm is inclusive:
  - Sensitive sub-populations disproportionately impacted by a chemical or product exposure
  - Environmentally sensitive habitats
  - Endangered and threatened species
  - Impaired environments
SCP Process

- Research & prioritize product-chemical combinations
- Stakeholder engagement
- Rulemaking
- Officially a Priority Product

Prioritize Product-Chemical combinations that may cause harm + Rulemaking

**Adopted**
- Children’s Foam-Padded Sleeping Products with TDCPP or TCEP
  - Effective as of 7/1/17
- Spray Polyurethane Foam with Unreacted MDI
  - Effective as of 7/1/18
- Paint or Varnish Paint Strippers Containing Methylene Chloride

**Proposed**
- Carpets and Rugs with Perfluoroalkyl and Polyfluoroalkyl Substances (PFASs)
- *Laundry Detergents Containing the Surfactants Nonylphenol Ethoxylates (NPEs)
- *Paint and Varnish Strippers and Graffiti Removers Containing N-Methylpyrrolidone
- *Nail Products Containing Toluene
- *Treatments Containing PFASs for Use on Converted Textiles or Leathers
- *Nail Products Containing Methyl Methacrylate
- *Food Packaging Containing PFASs
- *Motor Vehicle Tires Containing Zinc

*Pre-regulatory Priority Products

[https://dtsc.ca.gov/scp/priority-products/](https://dtsc.ca.gov/scp/priority-products/)
SCP Process

Prioritize Product-Chemical combinations that may cause harm + Rulemaking

- SCP Timeline provides up-to-date information about our work.

https://dtsc.ca.gov/scp
SCP Process

1. Candidate Chemical List
2. Priority Products
3. Alternatives Analysis
4. Regulatory Response

Manufacturer evaluation of alternatives
SCP Process

 Manufacturers notify DTSC if they sell a Priority Product in California (public)

 In most cases, each manufacturer conducts an Alternatives Analysis (AA):

 - Life cycle evaluation of the chemical in the product
 - Comparison of possible alternatives
 - Use their own knowledge and values to decide on alternatives

https://dtsc.ca.gov/scp/alternatives-analysis/
SCP Process

Key questions:
- Is the chemical of concern necessary?
- Is there a safer alternative?
- Have regrettable substitutes been avoided?

AAs are submitted to DTSC
- Posted on CalSAFER, final AAs available for public comment

https://dtsc.ca.gov/scp/alternatives-analysis/
SCP Process

1. Candidate Chemical List
2. Priority Products
3. Alternatives Analysis
4. Regulatory Response

Wide range of possible actions
SCP Process

- DTSC proposes regulatory response for each responsible entity
  - Available for public comment

- Menu of responses:
  - No response
  - Additional info to DTSC
  - Additional info to consumers
  - Additional safety measures
  - Sales restrictions/prohibitions
  - End-of-life product stewardship
  - Research funding
We’re hiring!

- Scientific Aid – part time position
  - Due May 14, 2021

QUESTIONS?
A ubiquitous tire rubber–derived chemical induces acute mortality in coho salmon

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THE 6PPD STORY

Mass die-offs of coho salmon in Washington

- Washington state has observed mass pre-spawn die-offs of coho salmon for years
  - Discovered during surveys of habitat restoration efforts
  - Urban Runoff Mortality Syndrome (URMS)

- Die-offs correlated with:
  - Rain events
  - Proximity to roads/impervious surfaces

Unique impacts to coho salmon

- In the lab, coho died in a number of hours after exposure to road stormwater, but not chum.

- Observed impacts:
  - Surface swimming and gaping
  - Sideways or circular swimming
  - Loss of equilibrium
  - Splaying of fins

- Not able to reproduce with typical stormwater toxicants
Finding the culprit

- Intensive forensic effort, toxicant a previously unreported compound
- Employed:
  - non-targeted analysis
  - successive chemical separations and regroupings
  - repeated exposures to coho salmon

The culprit: 6PPD-quinone.
6PPD and 6PPD-quinone

- **6PPD:**
  - Antidegradant used in presumably all tires
  - Prevents cracking of rubber
  - 1-2% concentration (10,000-20,000 µg/g)
  - Migrates to the tire surface by design, creates protective film

- **6PPD-quinone:**
  - Reaction product of 6PPD and ozone
  - Previously unknown
  - Detected in San Francisco streams, LA runoff above LC50

6PPD-quinone

- Many unknowns, including:
  - Exactly how and where it forms
  - Physical properties and environmental fate
  - Presence in the environment beyond initial detections
  - Impacts to other aquatic organisms
DTSC and 6PPD

- Currently in step 2:
  - Evaluating *potential* for exposure to 6PPD, 6PPD-quinone from tires
  - Evaluating *potential* for resulting harm to California people & environments
- Part of larger tire effort
- Technical document preparation underway
DTSC Next Steps

- Document release end of May/early June
- Summer workshop on 6PPD, zinc, and other chemicals of concern in tires
  - Continue to gather information

Specific information needs:
- Importance of coho to tribal communities
- Any recent or historical observations that may indicate presence of Urban Runoff Mortality Syndrome in California
QUESTIONS?

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