Greenlist BULLETIN

TURI TOXICS USE REDUCTION INSTITUTE UMASS LOWELL

Toxics Use Reduction Institute November 28, 2016

This is the bi-weekly bulletin of the TURI Library at the University of Massachusetts Lowell. Greenlist Bulletin provides previews of recent publications and websites relevant to reducing the use of toxic chemicals by industries, businesses, communities, individuals and government. You are welcome to send a message to mary@turi.org if you would like more information on any of the articles listed here, or if this email is not displaying properly.

Can Chemical Class Approaches Replace Chemical-by-Chemical Strategies? Lessons from Recent U.S. FDA Regulatory Action on Per- and Polyfluoroalkyl Substances

Source: *Environmental Science & Technology*, November 7, 2016

Authors: Alissa Cordner, Lauren Richter, and Phil Brown

Concern about the toxicity and exposure of per- and polyfluoroalkyl substances (PFASs) is growing among scientists, regulators, and residents of contaminated communities. In 2016, the United States Food and Drug Administration (FDA) removed three food contact substances (FCSs) containing perfluorinated chemicals from the list of approved FCSs due to concerns regarding chemical safety. To investigate the significance and limitations of the FDA's regulatory action for environmental health research, advocacy, and regulation, we conducted a media analysis and qualitative interviews with a range of involved stakeholders. We find that the FDA's regulatory action represents a potential shift from chemical-by-chemical regulation toward class-based regulation, where groups of chemicals can be identified as sharing properties and risks, and are thus evaluated and regulated together. The FDA decision sets an important precedent of using a petition process to delist chemicals based on a safety standard. However, the narrow reach of this action also highlights the need for more comprehensive, precautionary chemical regulation capable of thoroughly evaluating classes of

In This Issue

Join Our Mailing List

Quick Links

Greenlist Bulletin Archives

TURI Website

Like us on Facebook

chemicals, and raises important questions about how classes of chemicals are delimited in environmental health science and regulation.

Read more...

OSHA Weighs In on EPA Proposed Rule Governing the Use of New Chemical Substances

Source: *JDSupra Business Advisor*, November 8, 2016
Authors: Kay Bonza, Brent Clark, and Craig Simonsen

Dr. David Michaels, the Assistant Secretary of Labor for the U.S. Occupational Safety and Health Administration (OSHA), recently weighed in in favor of the U.S. Environmental Protection Agency's (EPA) rulemaking concerning the Significant New Uses of Chemical Substances: Updates to the Hazard Communication Program and Regulatory Framework, Minor Amendments to Reporting Requirements for Premanufacture Notices. 81 Fed. Reg. 49598 (July 28, 2016). ...

EPA's regulations establishing workplace restrictions on the use of new chemicals had not previously considered existing OSHA controls. EPA subsequently proposed changes to its regulations governing significant new uses of chemical substances under the Toxic Substances Control Act (TSCA) to align these regulations with revisions to the OSHA Hazard Communications Standard (HCS), the OSHA Respiratory Protection Standard, and the National Institute for Occupational Safety and Health (NIOSH) respirator certification requirements pertaining to respiratory protection of workers from exposure to chemicals. EPA's proposed changes that reference OSHA regulations include: (1) a requirement that persons subject to significant new use rules (SNURs) use engineering and administrative controls to protect workers before resorting to use of personal protective equipment, similar to OSHA's regulation at 29 C.F.R. § 1910.134(a)(1); (2) revisions to require a written hazard communication program that includes criteria for classifying chemical hazards in each workplace, similar to OSHA's regulation at 29 C.F.R. § 1910.1200; and (3) a requirement that any safety data sheet developed to comply with OSHA or other requirements be submitted as part of the reporting requirements under the TSCA.

Read more...

Flavoring Compounds Dominate Toxic Aldehyde Production during E-Cigarette Vaping

Source: *Environmental Science & Technology*, November 8, 2016
Authors: Andrey Khlystov and Vera Samburova

The growing popularity of electronic cigarettes (e-cigarettes) raises concerns about the possibility of adverse health effects to primary users and people exposed to e-cigarette vapors. E-Cigarettes offer a very wide variety of flavors, which is one of the main factors that attract new, especially young, users. How flavoring compounds in e-cigarette liquids affect the chemical composition and toxicity of e-cigarette vapors is practically unknown. Although e-cigarettes are marketed as safer alternatives to traditional cigarettes, several studies have demonstrated formation of toxic aldehydes in e-cigarette vapors during vaping. So far, aldehyde formation has been attributed to thermal decomposition of the main components of e-cigarette e-liquids (propylene glycol and glycerol), while the role of flavoring compounds has been ignored. In this study, we have measured several toxic aldehydes produced by three popular brands of e-cigarettes with flavored and unflavored e-liquids. We show that, within the tested e-cigarette brands, thermal decomposition of flavoring compounds dominates formation of aldehydes during vaping, producing levels that exceed occupational safety standards. Production of aldehydes was

found to be exponentially dependent on concentration of flavoring compounds. These findings stress the need for a further, thorough investigation of the effect of flavoring compounds on the toxicity of e-cigarettes.

Read more...

Who's Minding the Store? - A report card on retailer actions to eliminate toxic chemicals

Source: Safer Chemicals, Healthy Families, November 16, 2016

"Who's Minding the Store? - A Report Card on Retailer Actions to Eliminate Toxic Chemicals," is the first major evaluation of the United States' largest retailers' safer chemicals programs.

The investigation revealed that while some leading retailers are making significant progress to move the market away from toxic chemicals, other top retailers remain serious laggards.

Major U.S. retailers earned grades ranging from B for good progress to F for failing to develop and make public even basic safer chemical policies. The average grade was a D+, indicating a significant need for improvement by retailers to meet rising consumer demand for safer products.

Read more...

See a fact sheet, "Who's Minding The Store? - A report card on retailer actions to eliminate toxic chemicals".

Criteria for a Recommended Standard: Occupational Exposure to Diacetyl and 2,3-Pentanedione

Source: CDC - National Institute of Occupational Safety and Health, October 2016

Diacetyl and its substitute, 2,3-pentanedione, are widely used as flavoring compounds. The National Institute for Occupational Safety and Health (NIOSH) objective in establishing recommended exposure limits (RELs) for diacetyl and 2,3-pentanedione is to reduce the risk of respiratory impairment (decreased lung function) and the severe irreversible lung disease obliterative bronchiolitis associated with occupational exposure.

In this Criteria Document, NIOSH reviews the scientific literature concerning potential health effects, toxicology, and risk assessment pertaining to diacetyl and 2,3-pentanedione. Recommendations are provided on engineering controls, work practices, and personal protective equipment to prevent and control workplace exposures to diacetyl and 2,3-pentanedione.

Read more...

See Executive Summary here. Read entire document here.

EPA proposes adding NPEs to community list of toxic chemicals

Source: *Chemical Watch*, November 17, 2016

The US EPA has proposed adding nonylphenol ethoxylates (NPEs) to its list of toxic chemicals, subject to reporting requirements under section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA).

If added to the EPA's Toxics Release Inventory (TRI), facilities that manufacture, process or use the short- and long-chain NPEs, covered by the proposal, would be required to report environmental releases and other waste management measurements.

Read more...

See page from the U.S. EPA, "Addition of NPEs Category to TRI List Proposed Rule".

Bromine-containing dyes dwarf flame retardants in house dust

Source: *Chemical & Engineering News*, November 11, 2016
Author: Janet Pelley

The health hazards of brominated flame retardants lurking in household dust have made the news for years because of the ease with which humans can be exposed to the endocrine-disrupting compounds. Studies have hinted there are also large concentrations of unknown and potentially harmful brominated compounds in dust, but the number of compounds remained unclear and scientists didn't have an efficient way to identify them, says Jianxian Sun, an environmental toxicologist at the University of Saskatchewan.

Now, Sun, John P. Giesy, and colleagues show that flame retardants in dust are dwarfed by another class of brominated compounds, azo dyes, that are known mutagens and commonly used to color clothing and furniture... . A novel method employed by the study can sift through the thousands of compounds in complex mixtures such as dust to identify and prioritize compounds for hazard assessment.

Brominated flame retardants have received scrutiny because they disrupt hormones and impair the central nervous system. "Since dust is one of the primary routes of exposure to brominated flame retardants, we wondered if there were other brominated compounds in dust that might be of concern," Sun says. ...

"The results are surprising because few researchers have looked at brominated azo dyes and it raises questions about why they haven't been discovered before," says Miriam L. Diamond, an environmental chemist at the University of Toronto. Yet the findings line up with growing recognition that textiles could be an important source of humanmade contaminants, she says.

Read more...

New ISO standard provides overview of frameworks for developing OELs for nano-objects

Source: *Safenano*, November 25, 2016

The International Organization for Standardization (ISO) has released ISO/TR 18637:2016, "Nanotechnologies - Overview of available frameworks for the development of occupational exposure limits and bands for nano-objects and their aggregates and agglomerates (NOAAs)."

ISO notes that occupational exposure limits (OELs) are generally substance-specific. In some cases, there is insufficient data to develop an OEL, especially for substances such as nano-objects and their aggregates and agglomerates (NOAAs) used in emerging technologies. Under hazard banding, substances are assigned to a hazard band based on limited toxicity data. ISO states that to date, few OELs and occupational exposure bands (OEB) have been developed for specific NOAAs and none have been formally regulated by a government agency.

Read more...

Access the standard here.

UMass Lowell to Receive $80,000 EPA Pollution Prevention Grant

Source: U.S. Environmental Protection Agency, November 18, 2016

BOSTON -- The University of Massachusetts Lowell has been selected to receive $80,000 over two years as one of five Pollution Prevention grants being awarded by EPA's New England Regional Office for the FY2016-FY2017 Pollution Prevention Grants cycle.

Pollution Prevention grants fund programs or projects that measurably reduce the environmental footprints of local and regional businesses through projects that significantly reduce or eliminate pollution from air, water and/or land prior to relying on recycling or waste clean-up. In total EPA is awarding approximately $689,000 for Pollution Prevention grants in New England over the next two years.

Under this grant, the Lowell Center for Sustainable Production at UMass Lowell will advance the awareness and adoption of pollution prevention practices to reduce the use of energy, water, and toxics in the food and beverage manufacturing and processing sector with an emphasis on seafood processing and dairy pasteurization. Roundtable meetings will be supported by audits, assessments, and technical assistance offered to companies by a wide range of project partners.

Read more...

TURI's Note: See our recent case study with Merrimack Ales describing the performance testing of electrochemical activation (ECA).

Greenlist Bulletin is compiled by:
Mary Butow
Research and Reference Specialist
Toxics Use Reduction Institute
University of Massachusetts Lowell
600 Suffolk Street, Wannalancit Mills Suite 501
Lowell, MA 01854-2866
978-934-4365
978-934-3050 (fax)
mary@turi.org