

Greenlist Bulletin

From the Toxics Use Reduction Institute
at the University of Massachusetts Lowell

February 13, 2015

In This Issue

Effect of company size on potential for REACH compliance and selection of safer chemicals

Green Studies That Bring Green Award

Are dollar stores shortchanging us on toxic chemicals?

EPA Expands the Definition of Solid Waste Rule

Earthquakes and Fracking Activities Linked In Environmental Protection Agency Report

Improved Alternatives for Estimating In-Use Material Stocks

Exposure to mercury, seafood associated with risk factor for autoimmune disease

EPA Floats Aerospace Coating Rule

Air toxics and birth defects: a Bayesian hierarchical approach to evaluate multiple pollutants and spina bifida

Novel Fluorinated Surfactants Discovered In Firefighters' Blood

[Join Our Mailing List!](#)

Quick Links

[Greenlist Bulletin Archives](#)

[TURI Website](#)



Like us on Facebook

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.



Effect of company size on potential for REACH compliance and selection of safer chemicals

[Source: Environmental Science & Policy, January 2015](#)

Authors: Carline E. Scruggs, Leonard Ortolano, Michael P. Wilson, Megan R. Schwarzman

REACH represents a global paradigm shift in chemical regulation, and it has introduced a new, complex regulatory process to which chemical producers and users throughout supply chains must adapt. This paper presents results of survey research to illustrate whether and how the business members of a large Scandinavian trade organization understand and comply with REACH. It also explores how these businesses obtain information about the chemicals they use in their products, and whether they feel that the information they have is sufficient to meet their needs. In addition, the paper describes how business size affects these issues. The survey results show that, at the time of this study, many small and medium-sized enterprises (SMEs) and a number of larger firms were unaware of REACH. Survey results consistently showed that the size of a company is an important factor in both understanding of and compliance with REACH, with respondents from large firms having a better grasp of REACH and its implications than smaller companies. An effective implementation of REACH will require, at the most basic level, more attention to educating EU companies, especially smaller ones, on how and why REACH applies to them. Survey respondents who were aware of REACH and its applicability to their firms also reported the types of support they needed in order to better understand and comply with the regulation, with nearly 40% of all respondents expressing a need for help with data systems or tools to manage REACH requirements and communicate REACH requirements to suppliers and customers. Many companies reported needing more information from their suppliers on chemical composition and related health impacts of materials and products. Ensuring that this information is readily available throughout supply chains is essential to reducing the negative impacts of chemicals and products on human health and the environment.

[Read more...](#)

Green Studies That Bring Green Award

Source: [Lowell Sun, January 2, 2015](#)

Author: Chelsea Feinstein

LOWELL -- Zarif Farhana Mohd Aris, 29, traveled all the way from her home in Kuala Lumpur, Malaysia, to earn a master's degree and doctorate in plastics engineering from UMass Lowell.

Aris was chosen as one of just four students in the U.S. to win the 2014 Ciba Travel Award in Green Chemistry from the American Chemical Society. The award comes with a \$2,000 stipend to participate in an ACS conference focused on green chemistry.

[Read more...](#)

TURI's Note: This article highlights one of the many stellar students TURI has the honor of funding through our academic research program. Farhana has worked on projects to identify safer surfactants, adhesives and thermosets -- all projects that could provide valuable solutions to MA companies as they search for more sustainable formulations and products. She's a shining example of how TURI is working with UMass Lowell to help create the next generation of thoughtful scientists and engineers.

Are dollar stores shortchanging us on toxic chemicals?

Source: [GreenBiz.com, February 9, 2015](#)

Authors: Jose Bravo and Frank Knapp Jr.

Sometimes it feels like there's a Target or Walmart around every corner -- and rightly so in many areas, because at last count nearly 6,000 of them were sprinkled across the U.S.

While that may seem like a sizable amount, consider this: There are roughly 24,000 dollar stores, and that's just counting the Big 3: Dollar Tree, Dollar General and Family Dollar.

With such a pervasive presence, it should come as no surprise that in many neighborhoods and communities, dollar stores are often literally the only store selling household goods, including food.

A new report about toxic chemicals found in dollar store products, published by environmental justice initiative the Campaign for Healthier Solutions, found that 81 percent of the products tested -- or 133 out of 164 products -- contained at least one hazardous chemical above levels of concern.

[Read more...](#)

Access full report [here](#).

EPA Expands the Definition of Solid Waste Rule

Source: [The National Law Review, February 13, 2015](#)

Author: Erin Guffey

The United States Environmental Protection Agency (EPA) is cracking down on alleged sham recycling with the issuance of a final "Definition of Solid Waste" Rule. The rule aims to reestablish hazardous waste restrictions eased by the Bush administration in 2008. ... The 2008 rule exempted hazardous secondary materials that would be reclaimed from the definition of solid waste. Doing so, according to EPA, effectively de-regulated 1.5 million tons of materials, such as arsenic, benzene, trichloroethylene, lead and mercury. Environmental groups and EPA claim that the deregulation resulted in third-party recyclers over-accumulating materials, increasing the risk of accidents and environmental releases. Consequently, the Rule redefines certain materials as hazardous waste and implements stricter controls on facilities and processes.

The new Rule has the potential to affect numerous industries because it changes what may be recycled, and how, without being subject to hazardous waste requirements.

[Read more...](#)

See the U.S. Environmental Protection Agency page, "[Definition of Solid Waste \(DSW\) Rulemakings for RCRA Hazardous Waste Regulations](#)".

Also see presentations from the January 22, 2015, MassDEP Solid Waste Advisory Committee meeting [here](#).

Earthquakes and Fracking Activities Linked In Environmental Protection Agency Report

Source: [Chemical & Engineering News, February 13, 2015](#)

Author: Jessica Morrison

Increasingly, wastewater from oil and gas operations is pumped into the ground for disposal, and the pressure it creates might be causing small earthquakes, says a report released by EPA.

Concern about a connection between wastewater injection and seismic activity arose following a series of earthquakes in 2011, says Peter C. Grevatt, director of EPA's Office of Ground Water & Drinking Water. "We thought it was very timely to ask a group of experts to look into this issue."

The report was prepared by the Underground Injection Control National Technical Workgroup, a group of regional and state experts.

Advanced oil and gas recovery techniques, which include horizontal drilling and hydraulic fracturing, bring ancient seawater to the surface along with oil and gas. At the surface, the brine and other wastes are separated from the economically valuable hydrocarbons. The water's high salinity renders it too expensive to treat and discharge at the surface. Instead, it is often injected into deep wells for disposal. Over time, as pressure builds underground, release through ground-shaking tremors is possible, researchers say.

[Read more...](#)

Improved Alternatives for Estimating In-Use Material Stocks

Source: [Environmental Science & Technology, January 30, 2015](#)

Authors: Wei-Qiang Chen and T.E. Graedel

Determinations of in-use material stocks are useful for exploring past patterns and future scenarios of materials use, for estimating end-of-life flows of materials, and thereby for guiding policies on recycling and sustainable management of materials. This is especially true when those determinations are conducted for individual products or product groups such as "automobiles" rather than general (and sometimes nebulous) sectors such as "transportation." We propose four alternatives to the existing top-down and bottom-up methods for estimating in-use material stocks, with the choice depending on the focus of the study and on the available data. We illustrate with aluminum use in automobiles the robustness of and consistencies and differences among these four alternatives and demonstrate that a suitable combination of the four methods permits estimation of the in-use stock of a material contained in all products employing that material, or in-use stocks of different materials contained in a particular product. Therefore, we anticipate the estimation in the future of in-use stocks for many materials in many products or product groups, for many regions, and for longer time periods, by taking advantage of methodologies that fully employ the detailed data sets now becoming available.

[Read more...](#)

Exposure to mercury, seafood associated with risk factor for autoimmune disease

Source: [Health System - University of Michigan, February 10, 2015](#)

Author: Beata Mostafavi

ANN ARBOR, Mich. -- One of the greatest risk factors for autoimmunity among women of childbearing age may be associated with exposure to mercury such as through seafood, a new University of Michigan study says.

The findings, which appear in *Environmental Health Perspectives*, found that mercury -- even at low levels generally considered safe -- was associated with autoimmunity. Autoimmune disorders, which cause the body's immune system to attack healthy cells by mistake, affects nearly 50 million Americans and predominantly women.

[Read more...](#)

See original article in *Environmental Health Perspectives*, "[Mercury Exposure and Antinuclear](#)

TURI's Note: EHP article link may be unavailable from 2/13/15-2/18/15 due to their site maintenance.

EPA Floats Aerospace Coating Rule

Source: [PaintSquare, February 12, 2015](#)

U.S. environmental authorities are proposing to tighten emission standards for hazardous air pollutants from coatings used in aviation and aerospace manufacturing or repair.

The Environmental Protection Agency released its proposed National Emission Standards for Aerospace Manufacturing and Rework Facilities Risk and Technology Review on Jan. 22.

The proposal, which would amend a 1995 standard, addresses Maximum Achievable Control Technology (MACT) for aerospace manufacturing under the National Emission Standards for Hazardous Air Pollutants (NESHAP).

[Read more...](#)

Air toxics and birth defects: a Bayesian hierarchical approach to evaluate multiple pollutants and spina bifida

Source: [Environmental Health, February 9, 2015](#)

Authors: Michael D Swartz, Yi Cai, Wenyaw Chan, Elaine Symanski, Laura E Mitchell, Heather E Danysh, Peter H Langlois and Philip J Lupo

While there is evidence that maternal exposure to benzene is associated with spina bifida in offspring, to our knowledge there have been no assessments to evaluate the role of multiple hazardous air pollutants (HAPs) simultaneously on the risk of this relatively common birth defect. In the current study, we evaluated the association between maternal exposure to HAPs identified by the United States Environmental Protection Agency (U.S. EPA) and spina bifida in offspring using hierarchical Bayesian modeling that includes Stochastic Search Variable Selection (SSVS). ...

Overall there is evidence that quinoline and trichloroethylene may be significant contributors to the risk of spina bifida. Additionally, the use of Bayesian hierarchical models with SSVS is an alternative approach in the evaluation of multiple environmental pollutants on disease risk. This approach can be easily extended to environmental exposures, where novel approaches are needed in the context of multi-pollutant modeling.

[Read more...](#)

Complete article is available as a provisional PDF [here](#).

Also see from The University of Montana, "[UM study finds air pollution affects short-term memory, IQ and brain metabolic ratios](#)".

Novel Fluorinated Surfactants Discovered In Firefighters' Blood

Source: [Chemical & Engineering News, February 3, 2015](#)

Author: Janet Pelley

Perfluorinated compounds, such as perfluorooctane sulfonate (PFOS), help firefighting foams rapidly flow over flaming liquids such as gasoline and jet fuel, cooling and quenching fires. But despite environmental scientists' concerns about these possibly toxic compounds accumulating in wildlife and lurking in firefighters' blood, researchers don't know the identity of many of the chemicals in the mixtures on the market. For the first time, a new study borrows a medical research tool to pinpoint fluorochemicals in the blood of firefighters, identifying novel compounds that have never before been publicly reported. ...


PFOS and other perfluorinated compounds are extremely persistent in the environment, and toxicological studies have linked the chemicals to kidney and bladder cancer and thyroid disease. Airports and military bases use large amounts of firefighting foams for training purposes, and in some cases, the perfluorinated surfactants have slipped into groundwater and surface water supplies, triggering drinking water shutdowns. The complex mix of largely unknown fluorinated compounds in foams included PFOS until 3M, the largest manufacturer of PFOS, voluntarily

phased out the compound in 2002 because of toxicity concerns. Firefighting foam manufacturers have since replaced PFOS with shorter chain fluorinated compounds, many of which are not named by manufacturers.

[Read more...](#)

See original study in *Environmental Science & Technology*, "[Novel Fluorinated Surfactants Tentatively Identified in Firefighters Using Liquid Chromatography Quadrupole Time-of-Flight Tandem Mass Spectrometry and a Case-Control Approach](#)".

Also see in *Environmental Health News*, "[Michigan's bald eagles full of flame retardants](#)".



Please send a message to mary@turi.org if you would like more information on any of these resources. Also, please tell us what topics you are particularly interested in monitoring, and who else should see Greenlist. An online search of the TURI Library catalog can be done at <http://library.turi.org> for greater topic coverage.

Greenlist Bulletin is compiled by:

Mary Butow
Research and Reference Specialist
Toxics Use Reduction Institute
University of Massachusetts Lowell
600 Suffolk St., Wannalancit Mills
Lowell MA 01854-2866
978-934-4365
978-934-3050 (fax)
mary@turi.org