Greenlist BULLETIN

TURI TOXICS USE REDUCTION INSTITUTE UMASS LOWELL

Toxics Use Reduction Institute November 7, 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.

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EPA Awards $270K for Environmental and Health Projects in New England Communities

Source: U.S. Environmental Protection Agency, October 25, 2016

BOSTON -- EPA has awarded 12 grants across New England under its 2016 Healthy Communities Grant Program, totaling approximately $270,566, to fund community projects addressing environmental and public health issues. The projects will reduce environmental risks, protect and improve human health, and improve the quality of life for communities and residents across New England.

The Healthy Communities Grant Program combines resources from several EPA programs to strategically address the environmental and public health issues burdening New England communities. Contributing programs include Assistance & Pollution Prevention; Asthma; Children's Environmental Health and Clean, Green and Healthy Schools Initiative; Toxics; Urban Environmental Program; and Water Infrastructure (Stormwater, Wastewater, and Drinking Water).

Read more...

Seven Substances Added to 14th Report on Carcinogens

Source: National Institute of Environmental Health Sciences, November 3, 2016
Author: Robin Mackar

Today's release of the U.S. Department of Health and Human Services 14th Report on Carcinogens includes seven newly reviewed substances, bringing the cumulative total to 248 listings.

The chemical trichloroethylene (TCE), and the metallic element cobalt and cobalt compounds that release cobalt ions in vivo, are being added to the list, as well as five viruses that have been linked to cancer in humans. ...

Trichloroethylene (TCE) is an industrial solvent used primarily to make hydrofluorocarbon chemicals. It is being listed in the Report on Carcinogens as a known human carcinogen. Since 2000, TCE had been listed as a reasonably anticipated human carcinogen. However, numerous human studies showing a causal association between TCE exposure and an increased risk for kidney cancer have led NTP to reevaluate and reclassify TCE as known to be a human carcinogen. There are many ways people can be exposed to TCE. It can be released into the air, water, and soil at places where it is produced or used. It breaks down slowly and can move readily through soil to make its way into underground drinking water sources. Because of its widespread use as a metal degreasing agent to maintain military equipment, it has been found in the groundwater at many military and Superfund sites.

Read more...

See 14th Report on Carcinogens fact sheet from the National Toxicology Program on Trichloroethylene.

Also find additional information regarding TCE on the main web page for the 14th Report on Carcinogens (RoC).

Fracking Linked to Cancer-Causing Chemicals, New YSPH Study Finds

Source: Yale School of Public Health, October 24, 2016
Author: Denise L. Meyer

An expansive new analysis by Yale School of Public Health researchers confirms that numerous carcinogens involved in the controversial practice of hydraulic fracturing have the potential to contaminate air and water in nearby communities.

Fracking is now common in the United States, currently occurring in 30 states, and with millions of people living within one mile of a fracking site. The study suggests that the presence of carcinogens involved in or released by hydraulic fracturing operations has the potential to increase the risk of childhood leukemia. The presence of chemicals alone does not confirm exposure or risk of exposure to carcinogens and future studies are needed to evaluate cancer risk.

"Because children are a particularly vulnerable population, research efforts should first be directed toward investigating whether exposure to hydraulic fracturing is associated with an increased risk," said lead author Nicole Deziel, Ph.D., assistant professor. Childhood leukemia is a particular concern because of the severity and short latency period of the disease.

Read more...

See original study in *Science of the Total Environment*, "Unconventional oil and gas development and risk of childhood leukemia: Assessing the evidence".

Environmental and Economic Strategies for Primary Prevention

of Cancer in Early Life

Source: *Pediatrics*, November 2016
Authors: David Kriebel, Polly J. Hoppin, Molly M. Jacobs, Richard W. Clapp

This article summarizes the evidence for environmental toxic exposures contributing to cancers in early life, focusing on the most common cancer sites in this age group. It provides examples of widespread avoidable exposures to human carcinogens through air, water, and food and then describes recent examples of successful initiatives to reduce exposure to chemicals linked to these cancer sites, through government policy, industry initiatives, and consumer activism. State government initiatives to reduce toxic chemical exposures have made important gains; the Toxics Use Reduction Act of Massachusetts is now 25 years old and has been a major success story. There are a growing number of corporate initiatives to eliminate toxics, especially carcinogens, from the products they manufacture and sell. Another important opportunity for cancer prevention is provided by online databases that list chemicals, their toxicity, and lower-toxicity alternatives; these can be used by businesses, health care institutions, consumers, and workers to reduce exposures to chemicals of concern. The article concludes by inviting pediatricians and public health professionals to include elimination of carcinogen exposures in their work to promote primary prevention of cancer in early life.

Read more...

Also see the full special supplement (from the CDC Division of Cancer Prevention & Control) to the journal *Pediatrics* on Opportunities for Cancer Prevention During Early Life.

Researchers invent 'perfect' soap molecule

Source: University of Minnesota, October 26, 2016

A team of researchers, led by the University of Minnesota, has invented a new soap molecule made from renewable sources that could dramatically reduce the number of chemicals in cleaning products and their impact on the environment.

The soap molecules also worked better than some conventional soaps in challenging conditions such as cold water and hard water. The technology has been patented by the University of Minnesota and is licensed to the new Minnesota-based startup company Sironix Renewables.

The new study is now online and will be published in the next issue of the American Chemical Society's *ACS Central Science*, a leading journal in the chemical sciences. Authors of the study include researchers from the University of Minnesota, University of Delaware, University of Massachusetts Amherst, Sironix Renewables, and the U.S. Department of Energy's Catalysis Center for Energy Innovation and Argonne National Laboratory.

"Our team created a soap molecule made from natural products, like soybeans, coconut and corn, that works better than regular soaps and is better for the environment," said Paul Dauenhauer, a University of Minnesota associate professor of chemical engineering and materials science and a co-author of the study. "This research could have a major impact on the multibillion-dollar cleaning products industry."

Read more...

See article in *ACS Central Science*, "Tunable Oleo-Furan Surfactants by Acylation of Renewable Furans".

Also see from the University of Minnesota, "Like to get more bang for your sustainability-

boosting buck? Here's how."

Washington updates candidates for high concern list

Source: *Chemical Watch*, October 27, 2016
Author: David Stegon

Washington state has updated the chemicals it will consider adding or removing from its Chemicals of High Concern to Children (CHCC) list.

Washington's Children's Safe Products Act (CSPA) requires manufacturers of covered children's products to report the presence of CHCCs in them.

And as of its 25 October stakeholder workshop, Washington's Department of Ecology said it was considering 18 substances for listing and two for delisting.

Since the initial draft, the department has expanded the substances under discussion for the CHCC list. New candidates are:

- several additional flame retardants: TBPP, TDBPP, TNBP and EHDPP; and
- the bisphenols BPF and BPS (alternatives to current CHCC-listed chemical BPA).

It is, however, no longer considering listing the phthalates DEMP, DNPP or DIOP, nor the flame retardants BTBPE or dechlorane plus.

Read more...

Also see from *Chemical Watch*, "No surprises in TSCA first ten substances, says EPA official", and "Brexit could mean more risk-based chemicals regulation, CIA (Chemical Industries Association) says".

Adverse Outcome Pathways

Source: *Environmental Science & Technology* and *Chemical Research in Toxicology*, 2016
Authors: Gerald Ankley, Beate Escher, Thomas Hartung, and Imran Shah

Environmental toxicologists supporting risk assessments of human or ecological health are responsible for generating data for possible adverse effects of a rapidly increasing number of substances. New approaches in systems biology and systems toxicology aim to computationally reconstruct core components of molecular, cellular and organ level networks that are responsible for normal functions or adverse outcomes due to chemical exposure. By using systems toxicology tools, it is now feasible to use large-scale data-streams to develop an integrative qualitative and quantitative view of complex networks operative in cells.

Translation of this information into endpoints of direct applicability to risk assessment remains a major challenge. The Adverse Outcome Pathway (AOP) framework was developed to identify and depict causal linkages between mechanistic in vitro or in vivo data and biological endpoints meaningful to risk assessment.

Chemical Research in Toxicology and *Environmental Science & Technology* have compiled a Virtual Issue with articles from 2014 to 2016, organized into four categories, that collectively describe the tremendous progress to formalize and implement mechanistic toxicology for risk assessment purposes.

Read more...

It's So Hard to Make Blue Jeans Without Nasty Chemicals

Source: *Bloomberg*, November 1, 2016
Author: Lauren Coleman-Lochner

What's in your jeans? A rogue's gallery of unpronounceable chemicals whose effects on humans are suspect.

Perfluorochemicals, phthalates and azo dyes are among the substances that are widespread in making clothes. Under pressure from consumers demanding safer alternatives to harmful chemicals, American companies including Levi Strauss & Co. are taking a more European approach. The European Union has banned or restricted more than 1,000 chemicals; in the U.S., fewer than 50.

Consumer demand for safe products has global companies scrambling for greener ingredients, but obstacles are daunting. Suppliers are often reluctant to share their formulations, buyers balk at higher costs, and in some cases cost-effective safer substitutes simply aren't available.

Levi's has prohibited certain chemicals since 2000, but this is different. The jeans maker and other companies are asking suppliers to use materials generated from bacteria, fungus, yeast and methane gas to replace the petroleum-based substances that make up more than 95 percent of U.S. products' inventory of chemicals.

Read more...

Recent Activities for the New Chemicals Program under the Toxic Substances Control Act

Source: U.S. Environmental Protection Agency, October 28, 2016

October 27, 2016 -- EPA proposed significant new use rules (SNURs) for 3 chemical substances **--** two isocyanates and one for functionalized carbon nanotubes **--** which were the subject of premanufacture notices (PMNs), P-15-276, P-15-378, and P-15-559. These SNURs would require persons who intend to manufacture or process any of these chemical substances for an activity that is designated as a significant new use to notify EPA at least 90 days before commencing that activity. The Agency will take comment on the SNURs until November 28, 2016.

Read more...

See more information about the SNUR on the federal page, 'Significant New Use Rule on Certain Chemical Substances'.

Also see article in *The National Law Review*, "EPA Proposes SNUR for Functionalized Carbon Nanotubes (Generic)".

US vs. EU: Chemicals substitution faceoff

Source: *GreenBiz.com*, October 27, 2016
Authors: Molly Jacobs and Joel Tickner

The European Union is far ahead of the United States in terms of legislative mandates that restrict the use or require substitution of highly hazardous chemicals. How well are EU governments and companies doing to develop safer substitutes, and how does their investment of resources and capacity building compare to the US?

The European Chemicals Agency (ECHA) commissioned the Lowell Center for Sustainable Production at the University of Massachusetts to conduct an assessment of

current capacity and needs to enhance support for the informed substitution of substances of very high concern in the EU.

This was stimulated by the ECHA's desire to improve government and industry practices in identifying, evaluating and adopting safer substitutes in the context of applications for authorization and restriction under the EU's Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) regulation, and to more broadly enhance support for the substitution of hazardous chemicals. Our new report provides important lessons for federal, state and local government agencies and showcases areas where the US can be a model.

Read more...

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