

Greenlist Bulletin

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

August 23, 2013

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This is the 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.



Sticking Power of Plant Polyphenols Used in New Coatings

[Source: Northwestern University, August 22, 2013](#)

Author: Megan Fellman

EVANSTON, IL -- A simple kitchen sink experiment helped Northwestern University researchers discover that green tea leaves not only can be used to steep a good cup of tea, but they make an excellent antibacterial coating, too.

And so can red wine, dark chocolate and cacao beans, they found. It's the powerful and healthful polyphenols at work in a new way. (Polyphenols are naturally occurring molecules found in plants whose functions include structural support and defense against bacteria and oxidative damage.)

Polyphenols are sticky, and the researchers exploited this useful property, while also retaining some of the compounds' well-known biological properties. They made new multifunctional coatings based on tannic acid and pyrogallol -- inexpensive compounds resembling the more complex polyphenols found in tea, wine and chocolate.

[Read more...](#)

Read article in *Angewandte Chemie*, "[Colorless Multifunctional Coatings Inspired by Polyphenols Found in Tea, Chocolate, and Wine.](#)"

OSHA and NIOSH Issue Hazard Alert on 1-bromopropane

[Source: Metal Finishing, August 13, 2013](#)

The U.S. Department of Labor's Occupational Safety and Health Administration and the National Institute for Occupational Safety and Health recently issued a hazard alert to urge employers that use 1-bromopropane, or 1-BP, to take appropriate steps to protect workers from exposure. 1-BP, also known as n-propyl bromide, is used in vapor immersion and degreasing operations for cleaning metals and other materials, and is utilized in solvent sprays for aircraft maintenance.

"The use of 1-bromopropane has increased in workplaces over the last 20 years," said Dr. David

Michaels, assistant secretary of labor for occupational safety and health. "Workers exposed to this toxic chemical can suffer serious health effects, even long after exposure has ended. Hazardous exposure to 1-BP must be prevented. Employers have a responsibility to ensure the safety of their workers."

[Read more...](#)

Access Hazard Alert [here](#).

TURI's Note: Read our [4-page fact sheet on n-propyl bromide](#) and view a fact sheet on [how to reduce your exposure to nPB](#).

Urinary Phthalates and Increased Insulin Resistance in Adolescents

[Source: *Pediatrics*, August 19, 2013](#)

Authors: Leonardo Trasande, Adam J. Spanier, Sheela Sathyanarayana, Teresa M. Attina, and Jan Blustein

BACKGROUND: Di-2-ethylhexylphthalate (DEHP) is an environmental chemical commonly found in processed foods. Phthalate exposures, in particular to DEHP, have been associated with insulin resistance in adults, but have not been studied in adolescents.

METHODS: Using cross-sectional data from 766 fasting 12- to 19-year-olds in the 2003-2008 NHANES, we examined associations of phthalate metabolites with continuous and categorical measures of homeostatic model assessment of insulin resistance (HOMA-IR). . . .

CONCLUSIONS: Urinary DEHP concentrations were associated with increased insulin resistance in this cross-sectional study of adolescents. This study cannot rule out the possibility that insulin-resistant children ingest food with higher phthalate content, or that insulin-resistant children excrete more DEHP.

[Read more...](#)

Also view fact sheet from Health Care Without Harm, "[Hazardous Chemicals in Medical Devices: Phthalates](#)."

Flame-retardant chemicals deadline delayed

[Source: *San Francisco Chronicle*, August 22, 2013](#)

Author: Stephanie M. Lee

A [California] state law that would eliminate flame-retardant chemicals from new furniture by next summer is being delayed six months to allow manufacturers more time to get ready.

The state Department of Consumer Affairs, the agency proposing the law, had announced in February that manufacturers would have to comply by July 1, 2014. The agency plans to undo a 38-year-old flammability law that led to the inclusion of the chemicals, many of them toxic, in the manufacture of upholstered furniture sold in California.

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3-D images show flame retardants can mimic estrogens in NIH study

[Source: National Institutes of Health, August 19, 2013](#)

By determining the three-dimensional structure of proteins at the atomic level, researchers at the National Institutes of Health have discovered how some commonly used flame retardants, called brominated flame retardants (BFRs), can mimic estrogen hormones and possibly disrupt the body's endocrine system. BFRs are chemicals added or applied to materials to slow or prevent the start or growth of fire.

"We're beginning to have a better understanding of flame retardants and their effect on human health. This particular study helps us literally see what brominated flame retardants do when they get in the body -- they interfere with the body's natural hormones," said Linda Birnbaum, Ph.D., director of the National Institute of Environmental Health Sciences (NIEHS), part of NIH, and National Toxicology Program (NTP). "Using the 3-D imaging capabilities, we can see the flame retardants binding, or

attaching, to proteins like estrogens do."

[Read more...](#)

Read the original study article in *Environmental Health Perspectives*, "[Mimicking of Estradiol Binding by Flame Retardants and Their Metabolites: A Crystallographic Analysis.](#)"

Data Gaps in Toxicity Testing of Chemicals Allowed in Food in the United States

[Source: *Reproductive Toxicology*, August 13, 2013](#)

Authors: Thomas G. Neltner, Heather M. Alger, Jack E. Leonard, Maricel V. Maffini

In the United States, chemical additives cannot be used in food without an affirmative determination that their use is safe by FDA or additive manufacturer. Feeding toxicology studies designed to estimate the amount of a chemical additive that can be eaten safely provide the most relevant information. We analyze how many chemical additives allowed in human food have feeding toxicology studies in three toxicological information sources including the U.S. Food and Drug Administration's (FDA) database. Less than 38% of FDA-regulated additives have a published feeding study. For chemicals directly added to food, 21.6% have feeding studies necessary to estimate a safe level of exposure and 6.7% have reproductive or developmental toxicity data in FDA's database. A program is needed to fill these significant knowledge gaps by using in vitro and in silico methods complemented with targeted in vivo studies to ensure public health is protected.

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Getting Our (Toxic Substances) Act Together

[Source: *Ensia*, August 13, 2013](#)

Author: Elizabeth Grossman

Synthetic chemicals permeate every aspect of our lives. Virtually every type of product we use -- from personal care products to electronics, food packaging to building materials, clothing to furniture - is likely to contain materials that occur nowhere in nature. While it cannot be assumed that synthetics are hazardous or that naturally occurring substances are safe, we are now exposed to scores of synthetic chemicals throughout our lives. Many of these chemicals are in the food we eat, the water we drink and the air we breathe, both indoors and out. They are in our bodies and those of newborn babies.

To manage these chemicals, a law called the Toxic Substances Control Act was put in place 37 years ago. TSCA was designed to regulate chemicals used commercially, and it has helped reduce use of some particularly hazardous substances. What TSCA does not do, however, is guarantee the safety of chemicals or require that all chemicals be thoroughly tested before they're put into use. With 84,000 chemicals registered for commerce in the United States, new chemicals being invented daily and growing scientific evidence of chemicals' effects on human and environmental health, chemical regulation has become a pressing concern.

TSCA has not been updated since President Gerald Ford signed it into law in 1976, and there is now broad agreement that it needs to be revised. But how this should be done is a matter of considerable debate -- a debate that is likely to heat up when Congress returns from its summer recess next month.

In late May of this year, a bill known as the Chemical Safety Improvement Act of 2013 was introduced by the late senator Frank Lautenberg, D-N.J., and Sen. David Vitter, R-La. Its bipartisan backing has been welcomed and it has the support of the chemical industry, but the bill as drafted is opposed by many environmental advocates, state elected officials and other policy makers, and legal scholars because of provisions they fear could weaken existing environmental health protections and omissions they say could harm those most vulnerable to or impacted by chemical pollution.

[Read more...](#)

TURI's Note: This article highlights TURA as a key example of chemicals policy achievement at the state level.

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., Woburn Millis
Lowell MA 01854
978-934-4365
978-934-3050 (fax)
mary@turi.org