

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.

Buyer Beware Of 3-D Printer Emissions

[Source: Chemical & Engineering News, January 25, 2016](#)

Author: Jyllian Kemsley

As costs of three-dimensional printers drop and the devices increasingly make their way into offices, schools, and homes, users should consider how to limit exposure to emissions of particles and gases in the space where the printer is located. This caution stems from research by a team led by Brent Stephens of Illinois Institute of Technology and Neil E. Crain of the University of Texas, Austin The researchers tested the emissions of five commercially available desktop 3-D polymer-extrusion printers for ultrafine particles, which have a diameter less than 100 nm, and volatile organic compounds, including caprolactam and styrene. They used the printers to make a standard part from nine different polymer filament starting materials. The emissions varied more by the type of material than they did by the type of printer. Modeling the emissions in a 45 m³ air-conditioned office, the team predicts that caprolactam and styrene would reach concentrations that could be harmful to health.

[Read more...](#)

See original article in *Environmental Science & Technology*, "[Emissions of Ultrafine Particles and Volatile Organic Compounds from Commercially Available Desktop Three-Dimensional Printers with Multiple Filaments](#)".

In This Issue

[Buyer Beware Of 3-D Printer Emissions](#)

[How Michigan's Flint River came to poison a city](#)

[Toxic chemicals found in most outdoor gear](#)

[Animal-Free Toxicity Testing](#)

[As Washington state decides on stronger toxics law, residents are breathing flame retardants](#)

[Mercury-Added Product Fact Sheets](#)

[List of Furniture and Materials that Meet the HH Healthy Interiors Goal](#)

[Chemical used to replace BPA in plastic accelerates embryonic development, disrupts reproductive system](#)

[Soy May Protect Against Harmful Reproductive Effects of BPA](#)

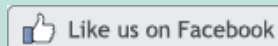
[Why materials will make or break the circular economy](#)

[Join Our Mailing List](#)

Quick Links

[Greenlist Bulletin Archives](#)

[TURI Website](#)



How Michigan's Flint River came to poison a city

Source: [The Guardian, January 18, 2016](#)

Author: Tafline Laylin

Lee-Anne Walters and her family in Flint, Michigan, drank water laced with hazardous levels of lead contamination for nearly eight months, beginning in the spring of 2014.

The water was brown. Her three-year-old son Gavin broke out in a rash every time he had any contact with the water in their home. He would have clear water lines on his body after getting out of the bath. He stopped growing. The whole family broke out in rashes five times, and doctors treated them for scabies.

On April 2, 2015, Gavin was diagnosed with lead poisoning. Today he is one of at least 27,000 children in the city who have been exposed to lead contamination, according to local news sources.

[Read more...](#)

Also see from *PaintSquare*, "[EPA Takes Over Lead Testing in Flint](#)".

Toxic chemicals found in most outdoor gear

Source: [The Guardian, January 25, 2016](#)

Greenpeace said on Monday that hazardous chemicals were "widely present" in a range of outdoor gear it tested, from clothing and footwear to backpacks, tents and sleeping bags.

The environmental activist group said out of 40 products tested, only four were free of per- and polyfluorinated chemicals (PFCs).

The study showed that toxic chemicals are "still widely present in products by brands such as Jack Wolfskin, the North Face, Patagonia, Mammut, Norrona and Salewa, especially in the production of footwear, trousers, sleeping bags and some jackets."

[Read more...](#)

See report from Greenpeace product test 2016, "[Leaving Traces: The hidden hazardous chemicals in outdoor gear](#)".

Animal-Free Toxicity Testing

Source: [The Scientist, January 26, 2016](#)

Author: Anna Azvolinsky

Toward reducing animal testing while predicting a chemical's effects on human health, researchers at the National Institutes of Health (NIH)'s National Center for Advancing Translational Sciences (NCATS) and their colleagues have developed an in vitro robotic screening tool able to systematically screen thousands of chemicals in human cell lines. In a study published today (January 26) in *Nature Communications*, the NIH-led team demonstrates an ability to test environmental chemicals found in drugs, food and food packaging, consumer products, and chemicals produced during manufacturing and industrial processes using cell-based assays.

The work is part of Tox21, a collaboration among four government agencies -- the NIH, the Environmental Protection Agency (EPA), the National Toxicology Program (NTP), and

the Food and Drug Administration (FDA) -- that officially kicked off in 2008.

[Read more...](#)

See study in *Nature Communications*, "[Modelling the Tox21 10K chemical profiles for *in vivo* toxicity prediction and mechanism characterization](#)".

As Washington state decides on stronger toxics law, residents are breathing flame retardants

Source: [Environmental Health News, January 25, 2016](#)

Author: Brian Bienkowski

A new generation of chemicals added to furniture, building insulation and baby products like car seats to slow the spread of flames are escaping into air at higher levels than previously thought, according to a new study out of Washington state.

The findings come as Washington lawmakers decide on bolstering flame retardant bans. The state was one of the first to ban an earlier generation of retardants, known as PBDEs.

The new research found flame retardant chemicals used to replace polybrominated diphenyl ethers (PBDEs) also escape, are ubiquitous in indoor air and suggest inhalation is a major route of exposure for people.

[Read more...](#)

See study in *Chemosphere*, "[Inhalation a significant exposure route for chlorinated organophosphate flame retardants](#)".

Mercury-Added Product Fact Sheets

Source: [Northeast Waste Management Officials' Association \(NEWMOA\), January 21, 2016](#)

The Mercury-Added Product Fact Sheets summarize data provided by manufacturers and distributors of mercury-added products to the IMERC-member states in compliance with the state Notification requirements. The Fact Sheets cover the amount of mercury used in the products, why mercury has been or continues to be used in the products, the manufacturers of the products, and other useful information.

[Read more...](#)

List of Furniture and Materials that Meet the HH Healthy Interiors Goal

Source: [Healthier Hospitals, January 25, 2016](#)

Author: Lauren Kleinman

Healthier Hospitals (HH) makes it easier for hospitals to select furniture and materials that meet the Healthy Interiors goal of the Safer Chemicals Challenge.

HH worked with furniture and textile manufacturers to identify products that meet the Healthy Interiors goal. An important note: this is NOT a certification, and Healthier Hospitals does NOT verify this information. Hospitals are encouraged to seek verification from individual manufacturers.

[Read more...](#)

Chemical used to replace BPA in plastic accelerates embryonic development, disrupts reproductive system

[Source: UCLA Newsroom, February 1, 2016](#)

Author: Elaine Schmidt

Companies advertise BPA-free plastic as a safer version of products ranging from water bottles to sippy cups to toys. Many manufacturers stopped [using] bisphenol A, a chemical that is used to strengthen plastic, after studies linked it to early puberty and a rise in breast and prostate cancers.

However, bisphenol S, or BPS, a common replacement for BPA in plastics, has also been linked to health risks. New UCLA-led research demonstrates some of the mechanisms that make BPS just as harmful as BPA. The study found that BPS speeds up embryonic development and disrupts the reproductive system in animals.

[Read more...](#)

See article in *Endocrinology*, "[Actions of Bisphenol A and Bisphenol S on the Reproductive Neuroendocrine System During Early Development in Zebrafish](#)".

Soy May Protect Against Harmful Reproductive Effects of BPA

[Source: Endocrinology Advisor, January 28, 2016](#)

Author: Melissa Foster

Regular soy intake may protect women undergoing infertility treatment from low success rates associated with bisphenol A (BPA) exposure, data published in the *Journal of Clinical Endocrinology & Metabolism* suggest.

"Our study is the first to show a possible interaction between soy and BPA in humans," study researcher Jorge E. Chavarro, MD, ScD, of Harvard T.H. Chan School of Public Health, Brigham and Women's Hospital, and Harvard Medical School in Boston, said in a press release.

"This is consistent with research in mice that found a soy-rich diet could protect against reproductive health problems associated with BPA exposure. More research is needed to determine why soy has this effect in humans."

[Read more...](#)

See article in the *Journal of Clinical Endocrinology & Metabolism*, "[Soy Intake Modifies the Relation Between Urinary Bisphenol A Concentrations and Pregnancy Outcomes Among Women Undergoing Assisted Reproduction](#)".

Why materials will make or break the circular economy

[Source: GreenBiz.com, February 3, 2016](#)

Author: Lauren Hepler

For sporting goods giant Adidas, a foray into the world of upcycled goods started with a reality TV show. On an episode of "Whale Wars," where marine avengers aboard a ship called the Sea Shepherd chase down illegal fishing boats, the crew found themselves with tons and tons of contraband gillnets.

What happened next is emblematic of a much bigger shift in the way companies

conceive of the materials that make up their products in the age of the "circular economy," or the push for production models that reduce reliance on raw materials by continuously cycling materials of all types back through supply chains.

In the case of the fishing nets, the would-be refuse found its way to green chemistry pioneer John Warner, who devised a way to extract and repurpose the nylon covered in polypropene, lead, pigment and other additives. The result was a poster product for the circular economy; Adidas turned the new nylon into a futuristic pair of knitted running shoes.

[Read more...](#)

*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*