

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](mailto:mary@turi.org) if you would like more information on any of the articles listed here, or if this email is not displaying properly.

## Danish EPA publish series of nanosafety reports

[Source: Safenano, January 5, 2016](#)

The Danish Environmental Protection Agency (EPA) has published several new reports in the field of nanotechnology health and safety arising from an extensive programme of research. These include the following publications:

**Better Control of Nanomaterials** (Environmental project no. 1797, 2015). This report presents the results of [the] "Better control of nano" initiative and summarises the main conclusions of a total of 30 reports that were prepared during the four years of effort.

**Environmental Effects of Engineered Nanomaterials** (Environmental project no. 1787, 2015). This report presents ecotoxicological data and Predicted No-Effect Concentrations (PNECs) for nine selected nanomaterials which are considered to be environmentally relevant due to high usage or how they are used. These data will, together with data from other reports/projects, be used in an overall assessment of the environmental risk of nanomaterials in Denmark.

**Dermal Absorption of Titanium Dioxide and Zinc Oxide Based Sunscreen** (Environmental project no. 1736, 2015). This report presents the results of toxicity testing of sunscreen containing nano TiO<sub>2</sub> using *in vitro* and *in vivo* mouse and human skin models. SAFENANO's Senior Toxicologist Dr. Craig Poland formed part of the

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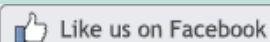
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## A New Year's Toast to Practically Perfect Products

[Source: \*Environmental Building News\*, January 2016](#)

Author: Brent Ehrlich

In our quest to provide unbiased information, *BuildingGreen* often plays the role of the critic. We risk championing products while also acknowledging their faults and knocking them down a peg or two.

We loved the energy efficiency of fluorescent lamps, for example, but we hated their light quality, poor dimming, and mercury content. When the first commercially viable residential white LEDs became available back in 2005, we recognized that they were the future of lighting and gave them a Top 10 award.

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Also see from *Chemical Watch*, "[Kaiser Permanente bans PFCs from its building projects](#)".

## Seeing Red on Food Dyes

[Source: Environmental Defense Fund, January 20, 2016](#)

Author: Tom Neltner

The Center for Science in the Public Interest's (CSPI) "Seeing Red: Time for Action on Food Dyes" report, released [yesterday], makes clear that certified colors added in food are not safe at the current levels that children consume them. The Food and Drug Administration (FDA), the food industry, and consumers should take action to protect children from the behavior problems associated with these chemicals.

Last Friday, FDA released a stream of five consecutive tweets telling people why certified artificial color additives, commonly known by their FD&C number, are used and how to avoid them if people are sensitive to them. The tweets, while true, said nothing about who may be sensitive to the chemicals. They should have said that any child may be sensitive and that the 6.4 million children diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) appear to be particularly sensitive.

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See report from the Center for Science in the Public Interest, "[Seeing Red: Time for Action on Food Dyes](#)".

## How HP and Dell are reducing the toxics in their electronics

[Source: GreenBiz.com, January 20, 2016](#)

Author: Rachel Cernansky

On a Wednesday in late February 2010, Hewlett-Packard hosted an unusual training session at its offices in Fort Collins, Colorado. The technology company had decided to eliminate polyvinyl chloride, or PVC -- a type of plastic that releases harmful chemicals during production and when burned after disposal -- from its power cords. But it realized that to get PVC out of its products, it would have to get its suppliers to do so, too.

This training was an opportunity for those supplying power cables to the company (now

known as HP) to learn about a tool that could help identify alternatives to PVC: GreenScreen for Safer Chemicals. Developed by the nonprofit Clean Production Action, GreenScreen provides a means of comparing hazard assessments of chemicals in order to choose safer alternatives.

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## **EPA Announces 2014 Toxics Release Inventory Report**

[Source: U.S. Environmental Protection Agency, January 21, 2016](#)

WASHINGTON -- In 2014, 84% of the 25 billion pounds of toxic chemical waste managed at the nation's industrial facilities was not released into the environment due to the use of preferred waste management practices like recycling, energy recovery and treatment, according to the U.S. Environmental Protection Agency's (EPA) annual Toxics Release Inventory (TRI) report. The remaining 16% was released to the air, water or placed in some type of land disposal. Most of these releases are subject to a variety of regulatory requirements designed to limit human and environmental harm.

The 2014 TRI data show a 6 percent decrease in total disposal or other releases to the environment from 2013 to 2014. Notably, air releases from industrial facilities decreased by 4 percent during this period, mainly due to decreases from chemical manufacturing facilities and electric utilities. Air releases have decreased 55% since 2003.

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Also see from *Chemical & Engineering News*, "[Barriers To Pollution Prevention](#)".

## **New Plastics Economy Report Offers Blueprint To Design A Circular Future For Plastics**

[Source: Ellen MacArthur Foundation, January 19, 2016](#)

Applying circular economy principles to global plastic packaging flows could transform the plastics economy and drastically reduce negative externalities such as leakage into oceans, according to the latest report by the World Economic Forum and Ellen MacArthur Foundation, with analytical support from McKinsey & Company.

*The New Plastics Economy: Rethinking the future of plastics* provides for the first time a vision of a global economy in which plastics never become waste, and outlines concrete steps towards achieving the systemic shift needed. The report, financially supported by the MAVA Foundation, was produced as part of Project MainStream, a global, multi-industry initiative that aims to accelerate business-driven innovations to help scale the circular economy.

[Read more...](#)

Access the full report, "[The New Plastics Economy: Rethinking The Future of Plastics](#)".

## **Temporal Changes of PBDE Levels in California House Cats and a Link to Cat Hyperthyroidism**

[Source: \*Environmental Science & Technology\*, December 24, 2015](#)

[Authors: Weihong Guo, Stephen Gardner, Simon Yen, Myrto Petreas, and June-Soo Park](#)

In this study, we measured serum PBDE levels in California (CA) house cats during two time periods: 2008-2010 and 2012-2013 to assess the impacts of the decline in use of

these materials after the bans. The median  $\Sigma_{19}$ PBDE level in CA household cats (age  $\geq 10$  yr) was 3,479 ng/g lipid in 2008-2010 (1st time period,  $n = 21$ ) and 1,518 ng/g lipid in 2012-2013 (2nd time period,  $n = 22$ ), about 2 times lower than in the first time period ( $p = 0.006$ ). In contrast, PCB and OCP levels showed no statistically significant changes. With better matched group size and age (HT = 11 vs non-HT = 11, age  $\geq 10$  yr) in the second time period, we found that  $\Sigma_{19}$ PBDE level (mean  $\pm$  SE ng/g lipid) was significantly higher in the HT group ( $3,906 \pm 1,442$ ) than those in the non-HT group ( $1,125 \pm 244$ ) ( $p = 0.0030$ ). Higher levels of PCBs and OCPs were also found in HT group. Despite the declines of PBDE levels, our findings indicate that the current levels of PBDEs, as well as PCBs and OCPs, may still pose health effects for house cats and, possibly, humans.

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## Role of snow and cold environment in the fate and effects of nanoparticles and select organic pollutants from gasoline engine exhaust

*Source: Environmental Science: Processes & Impacts, December 21, 2015*

*Authors: Yevgen Nazarenko, Uday Kurien, Oleg Nepotchatykh, Rodrigo B. Rangel-Alvarado and Parisa A. Ariya*

Exposure to vehicle exhaust can drive up to 70% of excess lifetime cancer incidences due to air pollution in urban environments. Little is known about how exhaust-derived particles and organic pollutants, implicated in adverse health effects, are affected by freezing ambient temperatures and the presence of snow. Airborne particles and (semi)volatile organic constituents in dilute exhaust were studied in a novel low-temperature environmental chamber system containing natural urban snow under controlled cold environmental conditions. The presence of snow altered the aerosol size distributions of dilute exhaust in the 10 nm to 10  $\mu$ m range and decreased the number density of the nanoparticulate ( $< 100$  nm) fraction of exhaust aerosols, yet increased the 100-150 nm fraction. Upon 1 hour exhaust exposure, the total organic carbon increased in the natural snow from  $0.218 \pm 0.014$  to  $0.539 \pm 0.009$  mg L<sup>-1</sup>, and over 40 additional (semi)volatile organic compounds and a large number of exhaust-derived carbonaceous and likely organic particles were identified. The concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX) increased from near the detection limit to 52.48, 379.5, 242.7, and 238.1  $\mu$ g kg<sup>-1</sup> ( $\pm 10\%$ ), respectively, indicating the absorption of exhaust-derived toxic organic compounds by snow. The alteration of exhaust aerosol size distributions at freezing temperatures and in the presence of snow, accompanied by changes of the organic pollutant content in snow, has potential to alter health effects of human exposure to vehicle exhaust.

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## Lentils to battle arsenic poisoning from Bangladesh well water in new study

*Source: CBC News, January 4, 2016*

A professor at the University of Calgary is studying whether Saskatchewan-grown lentils can counteract chronic arsenic poisonings from well water that affect up to 77 million people in Bangladesh.

Researchers from the faculty of Veterinary Medicine at the University of Calgary are monitoring 400 people in the south Asian country. They're working to prove that the lentils can work as an antidote to naturally-occurring arsenic that contaminates drinking water.

Lentils are already a dietary staple in Bangladesh, but those grown in Saskatchewan have higher levels of selenium -- an element believed to counteract arsenic.

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## **The woman who loves garbage: Veena Sahajwalla on making the best of waste**

*Source: [The Guardian, January 20, 2016](#)*

*Author: [Brigid Delaney](#)*

Professor Veena Sahajwalla is passionate about rubbish.

Throughout her career, the director of the Centre for Sustainable Materials Research and Technology (SMaRT) at the University of New South Wales has been looking for ways to transform waste into something useful.

One of her greatest achievements is the invention of so-called "green steel", the environmentally friendly technology for recycling end-of-life rubber tyres to replace coal and coke in steelmaking. It has meant that more than 2m tyres have been diverted from landfill and greenhouse gas emissions have been reduced. ...

Sahajwalla is working with companies in the developing world to extract maximum value from electronic waste products, and at the same time finding ways to reduce pollution and harmful health effects.

"If someone in a developing region were just after the copper, and you were a little village somewhere, you had no facilities and some of the plastics were burnt in the open air and you were breathing in the toxins and carcinogens, then a lot of these gases could be lethal."

Instead she supports the creation of micro factories in developing countries, with cleaner technology. "If you can process things on a smaller scale -- in smaller towns and regions -- then you create an economy in those places."

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