Greenlist BULLETIN

TURI TOXICS USE REDUCTION INSTITUTE UMASS LOWELL

Toxics Use Reduction Institute February 3, 2017

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.

Special Issue: Perfluorinated Chemicals

Dear Greenlist Subscriber,
Perfluorooctanoic acid (PFOA) and Perfluorooctane sulfonate (PFOS) have been in the news for the past year or so as drinking water contaminants in the New England area and beyond. This special issue includes news as well as several resources on health effects and alternatives with regard to PFOA, PFOS and other perfluorinated substances.

Best,
Mary

Perfluorinated chemicals taint drinking water

Source: *Chemical & Engineering News*, May 16, 2016
Author: Jessica Morrison

Remnants of past industrial chemical innovation linger in rivers and aquifers that supply drinking water to millions of people in the U.S., and more worldwide, potentially putting their health at risk. Dissolved in the water are perfluorinated compounds that gave rise to iconic household brands such as 3M's Scotchgard and DuPont's

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Also see from the U.S. EPA, September 2013, "Contaminants of Emerging Concern (CECs) in Fish: Perfluorinated Compounds (PFCs)".

PFOA in Drinking Water 2016

Source: Vermont Department of Health, February 1, 2017

Following news in early 2016 of PFOA-contaminated municipal water wells in Hoosick Falls, New York, and concerns about the former Chemfab property in North Bennington, the Vermont Agency of Natural Resources/Department of Environmental Conservation sampled five private drinking water wells and the No. Bennington municipal water supply for perfluorinated compounds and volatile organic compounds. The five private wells tested showed the presence of perfluorooctanoic acid (PFOA) at concentrations ranging from 40 to 2,880 parts per trillion, above the Vermont Department of Health's drinking water health advisory level of 20 parts per trillion. The Department of Environmental Conservation continued to test residential drinking water wells in North Bennington and Bennington...

Read more...

See in the *Boston Globe*, "Cape Cod's big drinking water problem".

See information from the NY State Department of Health, "PFOA in Drinking Water in the Village of Hoosick Falls and Town of Hoosick" and "In-home Water Filtration Options for Household Drinking Water".

Also see from NH Department of Environmental Services, "Investigation into Perfluorooctanoic Acid (PFOA) Found in Southern New Hampshire Drinking Water", and additional resources from the NH Department of Health and Human Services, "Additional PFC Resources".

Fast food packaging contains potentially harmful chemicals

Source: Silent Spring Institute, 2017

Many Americans, with the start of the New Year, will resolve to cut back on fast food to avoid an overload of fat and calories. Yet, there is another reason to resist the temptation to indulge in fast food. The greaseproof packaging holding your burger and fries may contain potentially harmful fluorinated chemicals that can leach into food, according to a new peer-reviewed study.

In the most comprehensive analysis to date on the prevalence of highly fluorinated chemicals in fast food packaging in the United States, researchers tested more than 400 samples from 27 fast food chains throughout the country. The samples, consisting of paper wrappers, paperboard, and drink containers, were analyzed for a class of chemicals called PFASs (per- and polyfluoroalkyl substances), also known as PFCs. These highly fluorinated chemicals are widely used in an array of nonstick, stain-resistant, and waterproof products, including carpeting, cookware, outdoor apparel, as well as food packaging.

Read more...

See article in *Environmental Science & Technology Letters*, "Fluorinated Compounds in

U.S. Fast Food Packaging".

See from *The Denver Post*, "Toxic chemicals tainting Colorado groundwater also found in fast-food packaging".

Also see from *Environmental Health Perspectives*, "Perfluorinated Compounds, Polychlorinated Biphenyls, and Organochlorine Pesticide Contamination in Composite Food Samples from Dallas, Texas, USA".

Alternatives to perfluoroalkyl and polyfluoroalkyl substances (PFAS) in textiles

Source: Danish Environmental Protection Agency, 2015
Authors: Carsten Lassen, Allan Astrup Jensen, and Marlies Warming

The objectives of this study are to identify non-fluorinated alternatives available for surface treatment and impregnation of textiles and to provide environmental and health assessments for the chemical alternatives.

Impregnation agents based on polyfluoroalkyl substances (PFAS) are widely used in textiles in order to achieve water, oil and dirt repellency of the fabric, while at the same time maintaining breathability. Besides repellency to water, oil and dirt, the PFAS-based impregnation agents provide repellency to alcohol and a high level of washing and dry cleaning durability. ...

One of the main concerns regarding the PFAS-based impregnating agents is the formation and release of persistent PFAS or precursors for persistent PFAS. Some uncertainty exists as to the potential release of persistent siloxanes during the lifecycle of silicone-based repellents. For the other alternatives, the available data do not indicate the potential for any significant releases of persistent substances.

Read more...

Polyfluoroalkyl substances (PFASs) in textiles for children

Source: Danish Environmental Protection Agency, September 28, 2015
Authors: Carsten Lassen, Jesper Kjolholt, Sonja Hagen Mikkelsen, Marlies Warming, Allan Astrup Jensen, Rossana Bossi, and Inge Bondgaard Nielsen

Polyfluoroalkyl substances (PFASs) is a large family of surfactants with different uses and environmental and health properties. There are major differences in how thoroughly the substances are tested for hazardous effects on human health and the environment. Among the substances studied most thoroughly, carcinogenic, toxic for reproduction and acute toxic effects have been observed. PFAS-based coatings are being used in garments and other textiles in order to make the materials water and dirt repellent.

The purpose of this report is to investigate which consumer products of textiles for children contain PFASs and analyse which PFASs ... can be found in the materials. Further the extent to which PFASs may be released during wear and washing of textiles is investigated and it is assessed whether the release of the substances poses health and environmental risk. Relevant waste streams, waste amounts and fates of the substances in waste treatment are also assessed.

Read more...

See link to report here.

See article from the Danish EPA, "Nordic guidelines and co-operation on green

procurement of textiles in hospitals".

Also see publications from the Danish EPA, "Short-chain Polyfluoroalkyl Substances (PFAS)", "Survey of PFOS, PFOA and other perfluoroalkyl and polyfluoroalkyl substances", and "Perfluoroalkylated substances: PFOA, PFOS and PFOSA".

Sweden aims to cut use of PFAS

Source: *Chemical Watch*, September 22, 2015
Author: Leigh Stringer

The Swedish Chemicals Agency (Kemi) will propose national measures for improving information on, and reducing the use of, perfluorinated and polyfluorinated alkyl substances (PFAS).

According to a recently published Kemi report on PFAS use and alternatives, the government's objectives are to:

- understand the full extent of their uses; and
- establish proposals to decrease use, such as restrictions.

Potential regulations will be proposed to the government by summer 2016, and a national action plan by autumn 2017.

To better understand PFAS use, the agency conducted a survey in the spring, which involved screening national inventory lists, regulatory databases, scientific studies and company information.

The results show there are more than 3,000 PFAS on the global market, it says, but information on total quantities and the extent of usage, in various areas of application, is limited.

Read more...

See reports from Kemi, "Occurrence and use of highly fluorinated substances and alternatives" and "Strategy for reducing the use of highly fluorinated substances, PFASs".

Per- and Polyfluoroalkyl Substances and Your Health

Source: Agency for Toxic Substances and Disease Registry, September 19, 2016

Per- and Polyfluoroalkyl Substances (PFAS) are a large group of man-made chemicals that have been used in industry and consumer products worldwide since the 1950s. In the United States, making and using these chemicals in consumer products has greatly decreased during the last 10 years, but people can still be exposed to PFAS because they are still present in the environment. Scientists have studied how PFAS affect animals' health but are still trying to understand how exposure to PFAS affects human health. Over the last decade, interest in PFAS has been growing. ATSDR and our state health partners are investigating exposure to PFAS at a number of sites.

Read more...

See recent document from ATSDR, "PFAS Continuing Education for Clinicians".

See from the U.S. EPA, "Drinking Water Health Advisories for PFOA and PFOS".

See from the New Jersey Drinking Water Quality Institute Health Effects Subcommittee, "Health-Based Maximum Contaminant Level Support Document: Perfluorononanoic Acid

(PFNA)".

Also see from *Environmental Science & Technology*, "Breastfeeding as an Exposure Pathway for Perfluorinated Alkylates".

Target Tightens Grip Over Chemicals in Bid to Make Goods Safer

Source: *Bloomberg*, January 25, 2017
Authors: Lauren Coleman-Lochner and Andrew Martin

Target Corp. introduced a sweeping new policy governing chemicals in products, a move that will push hundreds of suppliers to list ingredients in everything from fragrances to floor cleaner.

The guidelines, due to be unveiled Wednesday, include removing perfluorinated chemicals and flame retardants from textiles in the next five years, as well as eventually disclosing ingredients in all products.

Target's new rules come amid growing consumer demand for green goods -- whether it's organic food, natural cosmetics or cleaning products -- that have fewer controversial ingredients. Sales of the retailer's Made to Matter line, which touts "cleaner" ingredients, rose 30 percent last fiscal year. The move follows a similar effort by Wal-Mart Stores Inc. in July, when the world's largest retailer moved toward banning eight chemical groups, including formaldehyde and triclosan.

Read more...

Also see article in *Environmental Leader*, "Target Posts Chemical Policy. Will Other Retailers Follow Suit?".

Research on Per- and Polyfluoroalkyl Substances (PFAS)

Source: U.S. Environmental Protection Agency, August 12, 2016

Per- and polyfluoroalkyl substances (PFAS) are a diverse group of compounds resistant to heat, water, and oil. For decades, they have been used in hundreds of industrial applications and consumer products such as carpeting, apparels, upholstery, food paper wrappings, fire-fighting foams and metal plating. PFAS have been found at very low levels both in the environment and in the blood samples of the general U.S. population.

These chemicals are persistent, and resist degradation in the environment. They also bioaccumulate, meaning their concentration increases over time in the blood and organs. At high concentrations, certain PFAS have been linked to adverse health effects in laboratory animals that may reflect associations between exposure to these chemicals and some health problems such as low birth weight, delayed puberty onset, elevated cholesterol levels, and reduced immunologic responses to vaccination.

Read more...

See the Long-Chain Perfluorinated Chemicals (PFCs) Action Plan from the U.S. EPA.

C8 Science Panel

Source: C8 Science Panel, January 4, 2017

During 2005-2013, the C8 Science Panel carried out exposure and health studies in the

Mid-Ohio Valley communities, which had been potentially affected by the releases of PFOA (or C8) emitted since the 1950s from the Washington Works plant in Parkersburg, West Virginia. They then assessed the links between C8 exposure and a number of diseases. The C8 Science Panel has completed its work and no longer exists; this website summarizes the results.

The Science Panel consisted of three epidemiologists: Tony Fletcher, David Savitz, and Kyle Steenland, who were chosen jointly by the parties to the legal settlement of a case between plaintiffs and DuPont regarding releases of C8 from the plant. ...

The main conclusions are in the form of Probable Link reports which summarize in each case whether the Science Panel found or did not find a link between exposure and disease. The detailed science behind the summaries in the Probable Link reports is published in articles in scientific journals. Many articles have been published and a few more are still in the process of publication.

Read more...

See Probable Link reports for the six disease categories that the Science Panel concluded there was a Probable Link to C8 exposure: diagnosed high cholesterol, ulcerative colitis, thyroid disease, testicular cancer, kidney cancer, and pregnancy-induced hypertension.

Immunotoxicity Associated with Exposure to Perfluorooctanoic Acid (PFOA) or Perfluorooctane Sulfonate (PFOS)

Source: National Toxicology Program, December 12, 2016

Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) are extremely persistent chemicals that are widely distributed in the environment as a result of high chemical stability under normal environmental conditions and extensive use over the last 50 years in commercial and industrial applications including fluoropolymer manufacturing, food packaging, lubricants, water-resistant coating, and fire-fighting foams. PFOS was phased out of production and use in 2002, and US manufacturers eliminated PFOA emissions and product content at the end of 2015. Although emissions have been dramatically reduced in the United Status and Western Europe, it is not clear if global production has changed as there has been a shift in productions to Asia. Some published studies of PFOA and PFOS raised concerns about potential immune system health effects and the NTP received nominations to conduct a review of immune effects for these chemicals.

The NTP conducted a systematic review to evaluate the evidence on exposure to PFOA or PFOS and immune-related health effects to determine whether exposure to either chemical is associated with immunotoxicity for humans. The NTP concludes that both PFOA and PFOS are presumed to be an immune hazard to humans based on a high level of evidence from animal studies that PFOA and PFOS suppressed the antibody response and a moderate level of evidence from studies in humans. The evidence that these chemicals affect multiple aspects of the immune system supports the overall conclusion that both PFOA and PFOS alter immune functions in humans.

Read more...

Access the September 2016 monograph here.

Also see from *Bloomberg BNA - Chemical Regulation Reporter*, "PFOA, PFOS Likely Hazardous to Immune System: Scientists".

US companies sign chemicals in furniture pledge

Source: *Chemical Watch*, January 25, 2017
Author: Tammy Lovell

More than 200 US businesses have pledged to ask their suppliers if the materials and furnishings they supply contain any of five groups of chemicals.

The *What's it made of?* campaign, launched by the American Sustainable Business Council (ASBC) and Sustainable Furnishings Council (SFC), targets flame retardants, fluorinated stain treatments, anti-microbials, vinyl and volatile organic compounds (VOCs) including formaldehyde.

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