Greenlist BULLETIN

TURI
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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.

Retailers Lead the Charge toward Bio-Based Packaging

Source: *Environmental Leader*, May 17, 2017
Author: Jennifer Hermes

Retailers, with their increased use of sustainable packaging, are playing a leading role in encouraging consumers to adopt bio-based packaging materials; manufacturers and retailers that adopt biodegradable packaging materials will benefit through cost cuts and tax reductions, according to a Technavio market research analysis.

Technavio says the global biodegradable paper packaging materials market will grow at a CAGR of close to 11% from now through 2021. The increased adoption of sustainable packaging products by retailers will increase the replacement of non-renewable packaging materials with renewable ones.

Food manufacturers are also speeding the adoption of bio-based packaging materials as consumers are increasing their demand for fresh and minimally processed food and beverages.

Read more...

Also see from *Sustainable Brands*, "Experts from EMF, GreenBlue, Recycling Partnership Ponder Principles of Sustainable Packaging".

In This Issue

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Harvard Targets a Clean Sweep of Harmful Flame Retardants on Campus

Source: The RESULTS Project, 2017
Author: Heather Henriksen

There is a growing awareness that toxic chemicals unnecessarily used to manufacture everyday products and building materials have harmful health impacts to people. To successfully address these chemicals of concern in the built environment requires commitment, buy-in and a road map for effective action.

Harvard University is taking action on this issue to enhance the health and productivity of its community of over 37,000 students, faculty, and staff.

Heather Henriksen, Director of Harvard's Office for Sustainability and her colleagues across the University's Schools and departments are forging a unique partnership with faculty to use the latest in cutting-edge research to identify harmful chemicals used in buildings across campus and take steps to reduce exposure.

Spurred by clear scientific evidence and a change in fire safety codes, they began with a project to eliminate the use of harmful chemical flame-retardants in upholstered furniture. "It's all part of a larger focus on translating Harvard's research into practice and reinforcing our belief that well-being must be a core component of an organization's sustainability strategy," says Henriksen, who serves on the Board of the Health Product Declaration Collaborative.

Read more...

See more information on The RESULTS Project. See information on the Health Product Declaration Collaborative.

Also find links to information from presentations at the 8th International Symposium on Flame Retardants - BFR York 2017.

Is 3D printing safe? Analysis of the thermal treatment of thermoplastics: ABS, PLA, PET, and nylon

Source: *Journal of Occupational and Environmental Hygiene*, February 6, 2017
Authors: Szymon Wojtyla, Piotr Klama & Tomasz Baran

The fast development of low-cost desktop three-dimensional (3D) printers has made those devices widely accessible for goods manufacturing at home. However, is it safe? Users may belittle the effects or influences of pollutants (organic compounds and ultrafine particles) generated by the devices in question. Within the scope of this study, the authors attempt to investigate thermal decomposition of the following commonly used, commercially available thermoplastic filaments: acrylonitrile-butadiene-styrene (ABS), polylactic acid (PLA), polyethylene terephthalate (PET), and nylon. Thermogravimetric analysis has shown the detailed thermal patterns of their behavior upon increasing temperature in neutral atmosphere, while GC analysis of organic vapors emitted during the process of heating thermoplastics have made it possible to obtain crucial pieces of information about the toxicity of 3D printing process. The conducted study has shown that ABS is significantly more toxic than PLA. The emission of volatile organic compounds (VOC) has been in the range of 0.50 μmol/h. Styrene has accounted for more than 30% of total VOC emitted from ABS, while for PLA, methyl methacrylate has been detected as the predominant compound (44% of total VOCs emission). Moreover, the authors have summarized available or applicable methods that can eliminate formed pollutants and protect the users of 3D printers. This article summarizes theoretical knowledge on thermal degradation of polymers used for 3D printers and shows results of authors' investigation, as well as presents forward-looking solutions that may increase the safety of utilization of 3D printers.

Read more...

Inside NIOSH: Research Suggests Link Between Work-related Styrene Exposure and Lung Disease

Source: National Institute for Occupational Safety and Health, May 10, 2017

With more plastic-based products on the market than ever before, concern about the work-related risks of the chemicals used to make them is increasing. One of these chemicals is styrene, a compound used extensively in plastic and rubber for cars, food packaging, boats, and many other products.

Scientific studies have linked work-related styrene exposure to asthma and an irreversible lung disease known as obliterative bronchiolitis. This rare lung disease causes scar tissue and inflammation in the small airways, which eventually makes it difficult to breathe. NIOSH recommends a styrene exposure limit of 50 ppm, or parts per million, over an 8-hour workday to prevent adverse health effects.

Read more...

See the webpage for the NIOSH Respiratory Health Division (RHD).

See article in the *American Journal of Industrial Medicine*, "Non-malignant respiratory disease among workers in industries using styrene -- A review of the evidence".

Dating site opens for hazard-free chemicals

Source: *Chemical & Engineering News*, May 29, 2017
Authors: Alex Scott

The Swedish environmental group ChemSec has introduced the Marketplace, a website linking companies selling alternatives to hazardous chemicals with those seeking to buy them.

Chemical firms can advertise hazard-free products on the site for free. Buyers seeking such chemicals may post requests, also at no cost. The website acts only to introduce parties and does not facilitate transactions.

Read more...

See link to Marketplace by ChemSec.

BPA alternatives in thermal paper may cause developmental effects

Source: *Chemical Watch*, June 1, 2017

Some bisphenol A (BPA) alternatives used in thermal paper may have the potential to cause developmental effects, according to a Dutch study.

Structural analogues to BPA are widely used as alternatives, but little is known about their possible toxic effects, says a team from Vrije University.

The researchers screened 100 cash receipts and 41 other paper products including cinema tickets and boarding passes. As well as BPA and BPS, they found a range of structurally related chemicals, including Pergafast 201, D-8, D-90, TGSA and BPS-MAE,

some of which have not been reported before.

Around half of the receipts from The Netherlands, Sweden and Norway contained Pergafast 201 and D-8. Although Pergafast 201 has a more complex structure than BPS, D-8 is very similar, with one additional alkyl group.

The team's tests on zebrafish embryos suggest that D-8 and TGSA (which has one more benzene ring than BPS) may have similar "abnormal developmental effects" to BPA.

Read more...

See study in *Science of the Total Environment*, "Bisphenol A alternatives in thermal paper from the Netherlands, Spain, Sweden and Norway. Screening and potential toxicity".

New Report: Access to Information Powers Safer Chemicals Innovation

Source: Environmental Defense Fund, May 24, 2017
Author: Amy Morse

(Washington, D.C. -- May 24, 2017) A new report from Environmental Defense Fund reveals key barriers to innovation in an important, but challenging class of chemistry -- preservatives. Data gaps were identified among all 16 preservatives evaluated -- including around endocrine activity and neurotoxicity. Common hazards among the preservatives included skin allergies and aquatic toxicity. The report finds that to meet increasing consumer and retailer demand for safer chemicals, health and safety information must be more widely shared along the supply chain.

Market demand for safer chemicals is growing -- 87% of consumers globally seek out beauty and personal care products made without harsh or toxic chemicals. Major retailers including Walmart, Target, and CVS have released chemicals policies that aim to drive chemicals of concern off their shelves and ensure consumer access to safer chemicals and products. Notably, all three retailers have targeted certain preservatives for removal from products including baby and beauty and personal care products. Smart innovation is necessary to ensure that products are adequately preserved against problematic microbial contamination *while also* satisfying demands for safer chemicals.

Read more...

See the EDF page on "Smart Innovation: The Opportunity for Safer Preservatives".
Access the full report here.

Also see article from *Chemical Watch*, "GreenScreen reveals hazard 'hotspots' for preservatives used in cosmetics".

How automation could simplify emissions reductions

Source: Greenbiz.com, May 25, 2017
Authors: Mark Dyson, James Mandel and Gavin McCormick

In March, Rocky Mountain Institute and our partners convened more than 60 stakeholders from across the electricity industry for two days in Chicago to explore the potential for a new and promising technology: automated emissions reduction, or AER.

At scale, this technology, deployed in residential loads such as air conditioners and water heaters across the United States, could reduce carbon emissions each year by the equivalent of taking 2 million to 3 million cars off the road. This does not count the

potential from other flexible loads in commercial and industrial settings; at least 30 percent of the total U.S. electricity consumption has some inherent flexibility that could be leveraged for carbon reduction using AER.

Building off new research that can identify marginal grid emissions signals from a variety of public data sources, the nonprofit WattTime pioneered AER in the last two years as a customer-facing service. AER reduces pollution by seamlessly shifting the timing of end-use loads to move consumption into the cleanest possible intervals, allowing customers to significantly reduce the environmental impact of their energy use.

Read more...

EPA Releases New Model To Calculate Exposure to Food Surface Sanitizers

Source: *The National Law Review*, June 1, 2017
Author: Lisa M. Campbell

On May 31, 2017, the U.S. Environmental Protection Agency (EPA) announced the release of its Food Contact Sanitizing Solutions Model (FCSSM), a pesticide risk assessment model that has been developed to "estimate indirect dietary exposure to components of sanitizing solutions used in commercial settings." EPA states that "the model offers guidance for estimating exposure where there may be inadvertent transfer of residue to edible items prepared or transported on surfaces treated with these pesticides." The model consists of spreadsheets that automatically calculate dietary exposure and risk estimates based on data entered by the user.

Read more...

See the U.S. EPA page on the Food Contact Sanitizing Solutions Model (FCSSM).

SC Johnson Tops Industry with Skin Allergen Transparency

Source: SC Johnson, May 25, 2017

RACINE, Wis., May 25, 2017 -- Continuing its leadership in ingredient transparency, SC Johnson today announced that it will disclose the presence of 368 potential skin allergens that may occur in its products.

"For us, transparency is a matter of principle. We're interested in helping people make the best choices for their families," said Fisk Johnson, Chairman and CEO of SC Johnson. "Just like when we started listing preservatives, dyes and fragrances, we didn't stop with the industry standard. We want to tell the whole story. This is just the next step we are taking in our journey to be more and more transparent." Other companies use similar ingredients. SC Johnson considers it important to disclose these ingredients particularly for people with a pre-existing skin allergy.

Today, SC Johnson added the list of fragrance and non-fragrance skin allergens to its ingredient website, WhatsInsideSCJohnson.com, and by 2018, this website will also list skin allergens when contained in a product. This new transparency initiative goes beyond regulations in the European Union and also in the United States where there are no rules requiring allergen transparency.

Read more...

See SC Johnson transparency website here.

Also see from *Chemical Watch*, "SC Johnson reveals 368 potential skin allergens in its

products", and "SC Johnson expands ingredient disclosure to Europe".

Industry groups name niche TSCA areas needing improvement

Source: *Chemical Watch*, May 26, 2017
Author: Kelly Franklin

Chemical industry trade groups have used the EPA's regulatory reform exercise to call for regulatory tweaks on a variety of lesser TSCA provisions.

The EPA's comment docket was opened in accordance with a Trump administration executive order tasking agencies with identifying regulations that can be repealed, replaced or modified. And it has received close to 200,000 comments from consumer, NGOs, and affected industries alike, as of press time.

Among the agency's many regulatory activities named in comments, several focused on specific rules under TSCA. These include those from half a dozen groups calling for amendments or a full repeal of the nanoscale materials reporting rule, as well as others urging substantive changes to the formaldehyde emissions from composite wood products rule.

Read more...

See U. S. EPA's FY 2018 "Budget in Brief".

See from *Chemical & Engineering News*, "Trump's proposed 2018 budget would gut science agencies".

Also see from *Environmental News Bits*, "EPA Rule Amendment - Compliance Date Extension for Formaldehyde Final Rule".

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