Greenlist BULLETIN

TURI TOXICS USE REDUCTION INSTITUTE UMASS LOWELL

Toxics Use Reduction Institute March 21, 2016

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.

Green Materials: Adhesive Properties of Bio-oils Derived from Various Biorenewable Waste Streams: From Wood to Paper to Paper Deinking Residue

Source: *ACS Sustainable Chemistry & Engineering*, September 30, 2015
Authors: Zhanrong Zhang, Duncan K. Macquarrie, James H. Clark, and Avtar S. Matharu

Making innovative use of low-value and underutilized biorenewable waste streams, and the unavoidable losses resulting from industrial practices, is crucial for transitioning from a petro- to a biobased economy in the 21st century. This study provides a holistic and comprehensive overview of the adhesive properties of bio-oils generated from microwave-assisted low-temperature (<200 °C) pyrolysis of three biorenewable wastes: spruce wood chips, waste paper, and paper deinking residue (DIR). The spruce wood chips and waste paper derived bio-oil could bond two Al plates with high tensile strengths generally. Highest tensile strengths around 2520 N were reached with the spruce wood chips derived bio-oil. The ATR-IR and solid-state CP/MAS ^{13}C NMR characterization of the bio-oil polymer scrapings reveal that the bio-oil possibly undergoes homo- and/or cross-coupling reactions during curing. A model compound study using 5-hydroxymethylfurfural (HMF), levoglucosan, and catechol was conducted to study the role of different categories of compounds within bio-oil in terms of bonding. The adhesion properties of both single model compound, mixtures of each

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two and/or three of the model compounds with various molar ratios were explored. The results indicate that the presence of (hetero-) aromatic and furan compounds is crucial toward good adhesion.

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New Tutorials for CompAIR: Pharos's Tool for Comparing VOCs

Source: Pharos, March 3, 2016

The CompAIR volatile ingredients calculator helps users identify building products that release less chemicals into the air. Since we are exposed to these chemicals when we breathe, and some are hazardous, selecting products with lower or no volatile ingredients can help avoid damaging worker and occupant health.

Read more...

View tutorials here. Also click here to learn more about The Pharos Project.

Washington state legislature passes flame retardant bill

Source: *Chemical Watch*, March 10, 2016

The Washington state House of Representatives has concurred with the Senate's amendments to a bill to ban five flame retardants (HB 2545).

If the legislature's approved bill is signed into law by the governor, Washington will become the first state in the US to ban TBBPA in children's products and residential upholstered furniture, according to the NGO Washington Toxics Coalition.

Read more...

See full text of bill, Engrossed Substitute House Bill 2545.

Also see other chemicals policy in the news, "Wrap-Up of Federal and State Chemical Regulatory Developments, March 2016".

Committee for Risk Assessment concludes on restricting D4 and D5

Source: European Chemicals Agency, March 15, 2016

Helsinki, 15 March 2016 -- In its plenary meeting held from 29 February to 10 March, the Committee for Risk Assessment (RAC) agreed to support the proposal of the UK to restrict the placing on the market of siloxane substances D4 and D5.

Both substances are high tonnage substances in Europe and have direct uses in personal care products, cosmetics, cleaning products and a wide range of other uses. D4 is a persistent, bioaccumulative and toxic (PBT) substance and D5 is a very persistent, very bioaccumulative (vPvB) substance as agreed by the Member State Committee. Due to these properties, they have a potential to accumulate in the environment and cause effects that are unpredictable in the long-term and are difficult to reverse.

The restriction is targeted at the use of D4 and D5 in personal care products that are intended to be used or disposed with water, e.g. shower gels, shaving foams and

shampoos. These uses are a major source of these substances to the aquatic environment in the EU.

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Reducing Phthalate, Paraben, and Phenol Exposure from Personal Care Products in Adolescent Girls: Findings from the HERMOSA Intervention Study

Source: *Environmental Health Perspectives*, March 2016
Authors: Kim G. Harley, Katherine Kogut, Daniel S. Madrigal, Maritza Cardenas, Irene A. Vera, Gonzalo Meza-Alfaro, Jianwen She, Qi Gavin, Rana Zahedi, Asa Bradman, Brenda Eskenazi, and Kimberly L. Parra

Background: Personal care products are a source of exposure to potentially endocrine disrupting chemicals such as phthalates, parabens, triclosan, and benzophenone-3 (BP-3) for adolescent girls.

Methods: We enrolled 100 Latina girls in a youth-led, community-based participatory research intervention study to determine whether using personal care products whose labels stated they did not contain these chemicals for three days could lower urinary concentrations. Pre- and post-intervention urine samples were analyzed for phthalate metabolites, parabens, triclosan and BP-3 using high-performance liquid chromatography/tandem mass spectrometry. ...

Discussion: This study demonstrates that techniques available to consumers, such as choosing personal care products that are labelled to be free of phthalates, parabens, triclosan, and BP-3, can reduce personal exposure to possible endocrine disrupting chemicals. Involving youth in the design and implementation of the study was key to recruitment, retention, compliance, and acceptability of the intervention.

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Also see related article from Environmental Working Group, "Potentially Toxic Chemicals Plummet in Teens After Switching To Safer Cosmetics".

The big preservatives 'crisis'

Source: Chemical Watch, March 2016
Author: Vanessa Zainzinger

The cosmetics industry says a series of bans and restrictions, over the past two years, have curbed its ability to develop effective formulations, to protect products from fungi and bacteria. This is to a point where companies are alarmed about the future of their products. But the hazards and risks associated with this class of chemicals make adequately protecting human health, while satisfying consumer expectations for cosmetics which last long enough on the shelves, a challenge, industry says.

Bans and restrictions on widely used substances have come into force over the last two years. Propylparaben and butylparaben were banned from some leave-on products, and restricted in all cosmetics. The transitional period for selling off existing stocks ended in October last year. Five more parabens -- isopropylparaben, isobutylparaben, phenylparaben, benzylparaben and pentylparaben -- were banned in all cosmetic products. And the mixture of methylchloroisothiazolinone and methylisothiazolinone (MCI/MI) has been banned from leave-on products, since July last year. It is restricted in rinse-off products to a maximum concentration of 0.0015%.

Read more...

See additional information about European Cosmetics Regulation.

See from *Environmental Science & Technology*, "Potential Environmental Impacts and Antimicrobial Efficacy of Silver- and Nanosilver-Containing Textiles".

Also see information on the Green Chemistry and Commerce Council's (GC3) Collaborative Innovation Project Group, Preservatives Project.

BASF's new strategy for a greener supply chain

Source: GreenBiz.com, March 16, 2016
Author: Margo Mosher

SustainAbility's recently released research, Sustainability Incorporated: Integrating Sustainability into Business, calls out the need for business to further embed sustainability into its core strategies.

The report highlights five pathways that sustainability practitioners can leverage to more deeply integrate sustainability into their business: employing business model thinking; putting materiality to use; applying a sustainability lens to products and services; tapping into culture; and leveraging transparency. ...

For example, BASF used its methodology to assess its paper coatings and classified some as Challenged due to environmental concerns about polyfluorinated substances. BASF decided to stop selling these products and instead developed safer, biodegradable and recyclable products. The two new products, ecovio and Epotal, are both categorized as Accelerator and offer a more sustainable product.

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TURI's Note: See information on how some Massachusetts companies working with TURI are more deeply integrating sustainability into their business via Peer Mentoring Workgroups.

Prenatal Exposure to Air Pollution Linked to Impulsivity, Emotional Problems in Children

Source: Columbia Center for Children's Environmental Health, March 17, 2016

Exposure to common air pollutants during pregnancy may predispose children to problems regulating their thoughts, emotions, and behaviors later on, according to a new study led by researchers at the Columbia Center for Children's Environmental Health within Columbia University's Mailman School of Public Health and New York State Psychiatric Institute. The new study is the first of its kind to examine the effects of early life exposure to a common air pollutant known as PAH (polycyclic aromatic hydrocarbons) on self-regulating behaviors and social competency that incorporates multiple assessment points across childhood. Children with poor self-regulation skills have difficulty managing disruptive thoughts, emotions, and impulses; poor social competency limits their ability to get along with others. The findings appear in the *Journal of Child Psychology and Psychiatry*.

PAH are ubiquitous in the environment from emissions from motor vehicles; oil, and coal burning for home heating and power generation; tobacco smoke; and other combustion sources. (More on PAH and ways to limit exposure can be found on the CCCEH website.) Prenatal exposure to PAH has been associated with ADHD; symptoms of anxiety, depression and inattention; and also behavioral disorders, which are all thought to be related to deficits in self-regulation.

Read more...

See original article in the *Journal of Child Psychology and Psychiatry*, "Longitudinal effects of prenatal exposure to air pollutants on self-regulatory capacities and social competence".

Also see from *Environmental Science & Technology*, "Urinary Metabolites of Polycyclic Aromatic Hydrocarbons and the Association with Lipid Peroxidation: A Biomarker-Based Study between Los Angeles and Beijing".

Hazardous Chemicals in Products Easier to Identify with New Tool Released [Today]

Source: Clean Production Action, March 8, 2016

Somerville, MA -- [Today] Clean Production Action (CPA) released the next version of the GreenScreen® for Safer Chemicals Hazard Assessment Guidance, adding detailed information for using the GreenScreen® List Translator as a first step in identifying hazardous chemicals in products. GreenScreen® List Translator is a tool for readily identifying known chemicals of high concern to human health and the environment. Companies will now be able to rapidly assess if products contain chemical hazards such as carcinogens, reproductive toxicants, or endocrine disrupting compounds, for example. The Healthy Building Network's Pharos on-line tools help to automate the screening process.

"Clean Production Action developed GreenScreen® as a publicly available and transparent chemical hazard screening method to help move our society quickly and effectively toward the use of greener and safer chemicals," said CPA's GreenScreen® Program Manager, Michelle Turner, PhD. "It is used by a wide range of professionals, governmental bodies, non-profits, businesses, formulators, and product developers - anybody interested in assessing the inherent hazards of chemicals and their potential impacts."

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EPA Awards $500,000 to Help Reduce Children's Exposure to Pesticides

Source: U.S. Environmental Protection Agency, March 17, 2016

WASHINGTON -- U.S. Environmental Protection Agency (EPA) announced two grants to help reduce students', teachers' and staffs' exposure to pests and pesticides in our nation's schools, while saving money, energy and pesticide treatment costs.

"Children are among the most vulnerable members of our society, and EPA is working to protect them from needless threats," said Jim Jones, assistant administrator for the office of chemical safety and pollution prevention. "Our goal is to have schools across the nation implement sustainable pest management practices to provide a healthier learning environment for our students and teachers."

Integrated pest management (IPM) is a sustainable approach to controlling pests that focuses on prevention. This program is designed to utilize all appropriate pest management strategies, including the judicious use of pesticides.

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