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Got plants? Bio-based shoes, lingerie, auto parts and more

[Source: GreenBiz.com, May 11, 2017](#)

[Author: Barbara Grady](#)

For all the hope of ridding our energy and transportation systems of petroleum dependence, there's also the pesky little problem that so many materials that industry and consumers use day-to-day are made from petroleum: plastics; nylons; and fiberglass.

Lately, bio-based alternatives have begun making inroads. Now, businesses can buy durable plastic-like industrial materials without petroleum-based polymers. And consumers can -- and do -- buy grocery bags, cups, forks and spoons that act like plastic but are biodegradable and compostable. They can even buy soft, washable fabrics that seem like nylon but are made of plants and biodegrade. Even shoemakers are walking in this direction: Adidas AG's Reebok unit is manufacturing a corn-based sneaker for sale later this year.

Moreover, manufacturers say they are introducing these products in response to market demand, so a flurry of bio-based, compostable and biodegradable products is making its way from research and development labs to market.

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[See article in the *Journal of Cleaner Production*, "Technological aspects of the production of biodegradable polymers and other chemicals from](#)

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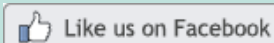
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[renewable sources using lactic acid](#)".

Also see report from Wageningen Food & Biobased Research, "[Bio-based and biodegradable plastics - Facts and Figures: Focus on food packaging in the Netherlands](#)".



Manufacturers May Struggle to Keep Up w/ EPA's Aggressive Schedule to Pass New Chemical Regs

Source: [Environmental Leader, May 10, 2017](#)

Author: Jennifer Hermes

The Frank R. Lautenberg Chemical Safety for the 21st Century Act, which amended the 1976 Toxic Substances Control Act, was passed in June of 2016 and made sweeping changes to the nation's primary chemical law. The new law requires the EPA to implement the changes through a number of regulations, which are critical for companies to stay abreast of and respond to.

Those rules relate to reporting on chemicals active in commerce or imports, risk evaluations of those compounds, how they are used, and specific controls to prevent harmful exposures. The EPA has an aggressive schedule to implement the law, including 17 proposed rules, which it put out for comment in March, Mary Ann Grena Manley, deputy editorial director of *Bloomberg BNA* told *Environmental Leader*. With the potentially fast-moving schedule to put the law into place, manufacturers could be hard-pressed to keep up -- which can lead to fines and even loss of license to practice business.

On the other hand, a better understanding of state and federal requirements can help companies to not only avoid fines, but to manage resources, time, and shifting priorities. *Bloomberg BNA* says its new Chemicals Management Guide offers help with these challenges, providing in-depth analysis, primary source material, chart builders and guidance to help compliance professionals easily get or stay in compliance.

[Read more...](#)

See from *Bloomberg BNA -- Chemical Regulation Reporter*, "[Pruitt, EPA Working on Ways to Speed Up New Chemical Review Process](#)".

See from Environmental Defense Fund, "[Red tape and over-reach: That is the Regulatory Accountability Act, in a word -- and a graphic](#)".

EPA Delays Effective Date of TSCA Section 8(a) Rule Concerning Nanoscale Materials

Source: [Bergeson and Campbell PC, May 12, 2017](#)

Authors: Lynn Bergeson and Carla Hutton

The U.S. Environmental Protection Agency (EPA) published on May 12, 2017, a Federal Register notice delaying the effective date of the January 12, 2017, rule concerning Toxic Substances Control Act (TSCA) Section 8(a) reporting requirements from May 12, 2017 to August 14, 2017. EPA notes that Section 553(b)(1)(B) of the Administrative Procedure Act (APA) allows EPA to take action without providing an opportunity for notice or comment when it for good cause finds that "notice and public procedure thereon are impracticable, unnecessary, or contrary to the public interest." APA Section 553(d)(3) allows the effective date of an action to be less than 30 days when a good cause finding is made. EPA states that because of the complex issues regarding the reporting requirements of the rule and the "immediate pendency" of the effective date of the reporting requirements, "it would be impractical to make the effective date of this

extension 30 days after its publication, and it would be impractical to get public comments on an extension of the effective date of the rule." In addition, according to EPA, the public interest is served by complete and accurate reporting under the rule, "which would be greatly facilitated by publication of the guidance."

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See Federal Register notice [here](#).

Also see from Bergeson and Campbell PC, "[EPA Will Publish Draft Guidance for Reporting Nanoscale Materials for Comment](#)".

TURI's Note: Find several interesting articles with regard to nanotechnology on the "[Nano and Other Emerging Chemical Technologies Blog](#)" from Bergeson & Campbell PC.

Substitution of PFAS chemistry in outdoor apparel and the impact on repellency performance

Source: [Chemosphere, August 2017](#)

Authors: Phillipa J. Hill, Mark Taylor, Parikshit Goswami, and Richard S. Blackburn

Intensifying legislation and increased research on the toxicological and persistent nature of per- and polyfluoroalkyl substances (PFASs) have recently influenced the direction of liquid repellent chemistry use; environmental, social, and sustainability responsibilities are at the crux. Without PFAS chemistry, it is challenging to meet current textile industry liquid repellency requirements, which is a highly desirable property, particularly in outdoor apparel where the technology helps to provide the wearer with essential protection from adverse environmental conditions. Herein, complexities between required functionality, legislation and sustainability within outdoor apparel are discussed, and fundamental technical performance of commercially available long-chain (C8) PFASs, shorter-chain (C6) PFASs, and non-fluorinated repellent chemistry finishes are evaluated comparatively. Non-fluorinated finishes provided no oil repellency, and were clearly inferior in this property to PFAS-finished fabrics that demonstrated good oil-resistance. However, water repellency ratings were similar across the range of all finished fabrics tested, all demonstrating a high level of resistance to wetting, and several non-fluorinated repellent fabrics provide similar water repellency to long-chain (C8) PFAS or shorter-chain (C6) PFAS finished fabrics. The primary repellency function required in outdoor apparel is water repellency, and we would propose that the use of PFAS chemistry for such garments is over-engineering, providing oil repellency that is in excess of user requirements. Accordingly, significant environmental and toxicological benefits could be achieved by switching outdoor apparel to non-fluorinated finishes without a significant reduction in garment water-repellency performance. These conclusions are being supported by further research into the effect of laundering, abrasion and ageing of these fabrics.

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Toward cellulose nanomaterial commercialization: Knowledge gap analysis for Safety Data Sheets according to the Globally Harmonized System

Source: [TAPPI Journal, June 2016](#)

Authors: Jo Anne Shatkin, Kimberly Ong, James Ede, Theodore Wegner, and Michael Goergen

Commercialization of cellulose nanomaterials (CNs) is rapidly advancing, to the benefit of many end-use product sectors, and providing information about the safe manufacturing and handling for CNs is a priority. Safety Data Sheets (SDS) are required

for industrially produced materials to communicate information on their potential health, fire, reactivity, and environmental hazards, and to provide recommendations on how to safely work with these materials. Cellulose and cellulose pulp, which have widespread commercial end uses, can create nuisance dusts when dried and are required to have SDS. We therefore expect that nanoscale forms of cellulose will also require SDS. This study identifies the currently available SDS information for CNs and highlights existing gaps in our knowledge. With U.S. and international adoption of the Globally Harmonized System (GHS) for Hazard Communication, producers are required to report SDS known data and data gaps. Given the novelty of all nanomaterials, it is preferable to fill these gaps in SDS as a demonstration of our commitment to the safe production and use of these materials. To evaluate the availability of SDS information and prepare for commercialization of CNs, we assessed available safety information for CNs to identify available GHS SDS data, data gaps, and what data need to yet be developed to fully classify CNs according to the GHS. Specifically, we report on the available data and gaps regarding the toxicological profile, environmental characteristics, physical and chemical properties, exposure controls, and personal protection for cellulose nanomaterials, to encourage the development of missing data and advance safe commercialization.

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South Korea proposes recognition of 29 alternative test methods

Source: [Chemical Watch, May 10, 2017](#)

The South Korea Ministry of Environment has proposed permitting the use of 29 alternative test methods to fulfill the data requirements for registrations under K-REACH. If the proposal is adopted, it will significantly increase the number accepted. Currently only eight can be used.

Recognition of the 29 test methods is part of a proposed shift in policy to automatically adopt those allowed by "internationally recognised" organisations such as the OECD and, therefore, to adopt testing methods found in the OECD Guidelines for the Testing of Chemicals.

Endpoints covered by the alternative methods include 90-day repeat dose toxicity, carcinogenicity, and reproductive toxicity.

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Potential of Sorghum Husk Extracts as a Natural Functional Dye for Wool Fabrics

Source: [ACS Sustainable Chemistry & Engineering, May 4, 2017](#)

Authors: [Xiuliang Hou](#), [Fangfang Fang](#), [Xueling Guo](#), [Jakpa Wizi](#), [Bomou Ma](#), [Yongying Tao](#), and [Yiqi Yang](#)

We report a novel application of sorghum husk extracts (SHE) as a natural functional dye for wool fabrics. Sorghum husk is an abundant, cheap and readily available agricultural byproduct. A small proportion of sorghum husk has been used to extract food colorants. In order to add value to sorghum and decrease environmental pollution, a number of investigations need to be undertaken to explore newer application for the husk. This paper investigated the stability of SHE, the colorfastness, UV-protection and fluorescence properties of dyed wool fabrics with SHE by different dyeing methods. SHE had good thermal and pH stability suitable for the dyeing and finishing processes of textiles. Wool fabrics dyed directly or with Al^{3+} and Fe^{2+} mordant demonstrated good colorfastness to washing, to rubbing, to wet ironing and acceptable colorfastness to light. The dyed wool fabrics showed good UV-protection and fluorescence properties. After 30 home

laundering cycles, the UV-Protection Factor (UPF) and fluorescence intensity of wool fabrics dyed with SHE were still remarkably higher than those of wool fabrics dyed with mixed synthetic dyes with similar shade and depth and undyed fabric. SHE would be a feasible alternative for some synthetic dyes and functional finishing agent.

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See from *Sustainable Brands*, "[Trending: Cutting-Edge Textile Policies Set New Bar for Apparel Industry](#)".

Freedom Industries Chemical Release

[Source: U.S. Chemical Safety and Hazard Investigation Board, May 11, 2017](#)

Incident Description

A leak originating from a storage tank at Freedom Industries contaminated the local water supply leaving hundreds of thousands of West Virginia residents without clean drinking water.

Investigation Status

The CSB's final investigation report was released on 5.11.2017.

[Read more...](#)

See U.S. Chemical Safety and Hazard Investigation Board's February 2017, "[Final Investigation Report: Chemical Spill Contaminates Public Water Supply In Charleston, West Virginia](#)".

Press Release: Loopholes for DecaBDE and SCCPs Undercut Treaty Additions

[Source: IPEN, May 7, 2017](#)

GENEVA: Governments at the Stockholm Convention 8th Conference of the Parties (COP8) agreed to add three toxic chemicals to the treaty, but granted extensive loopholes for two of them. The chemicals are DecaBDE, SCCPs, and HCBd. All three chemicals are persistent, highly toxic, travel long distances and build up in the food chain. Loopholes were granted for DecaBDE and SCCPs and recent IPEN studies found both substances in children's toys. A small group of countries rejected proposals to at least label new products containing the substances. Countries and consumers concerned about contaminated products will have no information about their content.

"This is the beginning of the end for DecaBDE, SCCPs, and HCBd," said Dr. Olga Speranskaya, IPEN Co-Chair. "We urge governments to move quickly to prohibit these substances and not prolong harm through the use of exemptions."

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See IPEN studies, "[POPs Recycling Contaminates Children's Toys With Toxic Flame Retardants](#)", and "[Toxic Industrial Chemical Recommended For Global Prohibition Contaminates Children's Toys](#)".

More clarity on hazard information of chemicals

[Source: European Chemicals Agency, May 12, 2017](#)

Helsinki, 12 May 2017 -- With an update to ECHA's Information on Chemicals portal, the

critical property for sensitisation has been split to indicate whether a substance is a respiratory or a skin sensitiser. In addition, the infocard and brief profile now show when a classification and the critical properties of a substance are affected by impurities or additives and to what extent the classification presented in the database is shared among the notifiers.

Other improvements to the database include:

- Grouping of uses by lifecycle: the use information on the substance is presented by phase, for example, use in the manufacturing site, consumer and professional uses.
- Search by nanoform: you can set nanoform as criteria in the Advanced search and get those substances where registrants have indicated a nanoform in their dossier.
- Search on uses with free text: you can search for a use in free text in addition to the predefined categories.
- Indication of last submission year per registrant: the registrants/suppliers list in the registered substances' dossiers shows which of the registrants have updated their dossier and when.

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Environmental Sustainability Resource Center

[Source: Environmental Sustainability Resource Center, 2017](#)

ESRC is a proud member of the Pollution Prevention Resource Exchange (P2Rx™), a national network of regional information centers: NEWMOA (Northeast), GLRPPR (Great Lakes), ZeroWasteNet (Southwest), P2RIC (Plains), Peaks to Prairies (Mountain), WSPPN (Pacific Southwest), PPRC (Northwest).

Objective

To provide technical environmental sustainability information and training to industrial service providers in EPA Regions 3 & 4.

Organizational Structure

The Environmental Sustainability Resource Center is located within the Kentucky Pollution Prevention Center. Funding for ESRC is provided by EPA.

Primary Service Area

EPA Region 3 includes Virginia, West Virginia, Pennsylvania, D.C., Delaware and Maryland. EPA Region 4 includes Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina and Tennessee.

Primary Clients

State, local and federal programs that provide environmental sustainability assistance to industry. Our resources and staff are available to users in industry, consulting and universities.

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Assessing the Risk of Engineered Nanomaterials in the Environment: Development and Application of the nanoFate Model

[Source: Environmental Science & Technology, April 26, 2017](#)

[Authors: Kendra L. Garner, Sangwon Suh, and Arturo A. Keller](#)

We developed a dynamic multimedia fate and transport model (nanoFate) to predict the time-dependent accumulation of metallic engineered nanomaterials (ENMs) across environmental media. nanoFate considers a wider range of processes and

environmental subcompartments than most previous models and considers ENM releases to compartments (e.g., urban, agriculture) in a manner that reflects their different patterns of use and disposal. As an example, we simulated ten years of release of nano CeO₂, CuO, TiO₂, and ZnO in the San Francisco Bay area. Results show that even soluble metal oxide ENMs may accumulate as nanoparticles in the environment in sufficient concentrations to exceed the minimum toxic threshold in freshwater and some soils, though this is more likely with high-production ENMs such as TiO₂ and ZnO. Fluctuations in weather and release scenario may lead to circumstances where predicted ENM concentrations approach acute toxic concentrations. The fate of these ENMs is to mostly remain either aggregated or dissolved in agricultural lands receiving biosolids and in freshwater or marine sediments. Comparison to previous studies indicates the importance of some key model aspects including climatic and temporal variations, how ENMs may be released into the environment, and the effect of compartment composition on predicted concentrations.

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Also see from *ES&T*, "[Silver Nanoparticles and Wheat Roots: A Complex Interplay](#)".

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