

This is the 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.

## **Sustainable Production of Fine Chemicals and Materials using Non-Toxic Renewable Sources**

*Source: [Toxicological Sciences, October 16, 2017](#)*

*Authors: Anne Kokel and Bela Torok*

Due to declining hydrocarbon resources and strengthening environmental regulations, significant attention is directed toward sustainable and non-toxic supplies for the development of green technologies in a variety of industries. This account provides an overview on the sources and recent applications of such materials surveying the most common non-toxic and renewable resources that can be obtained from biological sources. Developing a broad array of technologies based on these materials would establish a truly sustainable green chemical industry. The study thematically discusses various compound groups, e.g. carbohydrates, proteins, and triglycerides (oils). Since often the monomers or building blocks of these biopolymers are of significant importance and produced in large amounts, the applications of these compounds are also reviewed.

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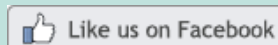
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## **A business prescription for reducing toxic chemical use**

*Source: [GreenBiz.com, October 18, 2017](#)*

*Author: Rachel Massey*

Amidst the conversation about the need for reduced use of toxic chemicals and greater investment in "greener" chemistries for products, industrial processes and supply chains, a core question is "What's the business case?" or sometimes simply, "What's in it for

me?"

A new compilation of case studies by the Massachusetts Toxics Use Reduction Institute (TURI) at UMass Lowell and the Massachusetts Office of Technical Assistance (OTA) offers some answers.

As proponents of green chemistry and pollution prevention often point out, reducing the use of toxic chemicals can produce business benefits including lower costs for waste disposal, raw materials, worker protection or liability coverage; increased production efficiency; reduced sick days and more. The decision also could come with marketing advantages. Of course, like other forms of company improvements, toxic chemicals use reduction sometimes requires an upfront investment.

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*TURI's Note:* See our recent report, "[Toxics Use Reduction and Resource Conservation: Competitiveness Impacts for Massachusetts Businesses](#)".

## **A Method for Assessing Greener Alternatives between Chemical Products Following the 12 Principles of Green Chemistry**

*Source: [ACS Sustainable Chemistry & Engineering, March 13, 2017](#)*

Ashley DeVierno Kreuder, Tamara House-Knight, Jeffrey Whitford, Ettigounder Ponnusamy, Patrick Miller, Nick Jesse, Ryan Rodenborn, Shlomo Sayag, Malka Gebel, Inbal Aped, Israel Sharfstein, Efrat Manaster, Itzhak Ergaz, Angela Harris, and Lisa Nelowet Grice

**ABSTRACT:** Companies are interested in improving chemicals to reduce environmental impacts, also known as green chemistry. The 12 principles of green chemistry outline a framework for identifying a greener chemical or process, spanning aspects in health hazard, ecological risk, and resource efficiency across a product lifecycle. However, that framework does not detail how to measure performance. Furthermore, collecting the data required, beyond simple health hazard ratings, is resource intensive. This paper describes an approach for establishing green chemistry metrics (GCM), to evaluate chemicals and chemical processes against the 12 principles, using readily available data, such as the data compiled in compliance with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). Using the GCM, chemicals or processes can be ranked by a hierarchy of metrics: (1) scores for each of the 12 principles, (2) three category rankings between new and improved chemicals/processes (improved resource use, increased energy efficiency, and reduced human and environmental hazards), and (3) a summary comparison ranking. The GCM approach is unique in that it is robust and flexible enough to encompass a diverse product portfolio, inexpensive to implement with on-hand data, based on generally accepted industry practices, and allows meaningful communications about chemical sustainability options.

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Also see information from Sigma-Aldrich, "[Greener Alternatives Evaluation Matrix](#)".

## **US agency releases six draft toxicological profiles**

*Source: [Chemical Watch, October 16, 2017](#)*

The US Agency for Toxic Substances and Disease Registry (ATSDR) has released draft toxicological and adverse health profiles for six biocidal substances.

They are:

- 1-bromopropane (1-BP);
- DEET (N,N-diethyl-meta-toluamide);

- glutaraldehyde;
- nitrate and nitrite; and
- toluene.

The peer-reviewed profiles include public health statements on the chemicals, as well as health and toxicologic information on their potential for human exposure, and relevant analytical methods, regulations, advisories and guidelines.

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See ATSDR [Toxicological Profile for 1-Bromopropane](#).

*TURI's Note:* 1-Bromopropane (n-Propyl Bromide, nPB) is designated as a TURA Higher Hazard Substance. See our [chemical fact sheet for nPB](#).

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## **CA Governor Signs Historic Law Requiring Companies to Disclose Ingredients in Cleaning Products**

[Source: Women's Voices For The Earth, October 15, 2017](#)

SACRAMENTO, Calif. -- In a major victory for consumer and worker right to know, Governor Brown has signed into law a bill that requires manufacturers of a wide array of cleaning products to disclose their ingredients.

The Cleaning Product Right to Know Act of 2017 (Senate Bill 258, authored by Senator Ricardo Lara, D-Bell Gardens) requires the ingredients in cleaning products -- particularly chemicals whose ability to harm human health or the environment has been recognized by established scientific authoritative bodies -- to be listed on both product labels and online.

[Read more...](#)

See text of CA legislation, [SB-258 Cleaning Product Right to Know Act of 2017](#).

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