

Greenlist Bulletin

From the Toxics Use Reduction Institute
at the University of Massachusetts Lowell

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In This Issue

[Assessment of Safer Polysulfide and Polythioether Sealant Removers for Aerospace/Defense Industry Applications](#)

[A Framework to Guide Selection of Chemical Alternatives](#)

[New chemicals added to the SIN list](#)

[OSHA launches national dialogue on hazardous chemical exposures and permissible exposure limits in the workplace](#)

[EPA Updates Chemical Info Tool](#)

[2014 Greener Reaction Conditions Award](#)

[Yale Journal: How, When, and Why Industrial Ecology is Good for Business](#)

[EPA Finds Neonicotinoid Seed Treatments of Little or No Benefit to U.S. Soybean Production](#)

[A new approach to determine cancer risk of chemicals](#)

[Hazardous chemicals in your pizza box? Petition asks FDA to ban them.](#)

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Quick Links

[Greenlist Bulletin Archives](#)

[TURI Website](#)



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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.



Assessment of Safer Polysulfide and Polythioether Sealant Removers for Aerospace/Defense Industry Applications

[Source: Products Finishing, September 25, 2014](#)

Authors: Gregory Morose, Jason Marshall, Dayna Lamb, Chiagoziem Uzor

Polysulfide and polythioether based sealants are widely used in the aerospace/defense industry to seal and protect components of aircraft, missiles, and other products. Maintenance, repair, and overhaul (MRO) operations require the removal of sealant from coated surfaces, mostly with the aid of sealant removal chemicals. In the aerospace/defense industry, commonly used sealant removers include hazardous chemicals such as toluene, methylene chloride, and N-propyl bromide.

This assessment identifies and evaluates potentially safer alternatives for sealant removal applications. The sealant removal performance of the alternatives was evaluated using a designed experiment. The environmental, health, and safety impacts of the alternative removal products were evaluated using the Pharos Chemical and Material Library chemical hazard assessment tool and the Toxics Use Reduction Institute's Pollution Prevention Options Assessment System (P2OASys).

For the technical performance of the sealant removers, the PolyGone 310-AG product had the best results for all the sealant removers evaluated. The Diestone DLS, SkyKleen 1000, and Soy Safe Graffiti Remover products exhibited sealant removal performance comparable to that of toluene.

For environmental, health, and safety considerations, the SkyKleen 1000, PolyGone 310-AG, and Diestone DLS products had safer chemical profiles than toluene, nPB, and methylene chloride. The Soy Safe Graffiti Remover could not be fully evaluated because of limited information on the MSDS and the non-disclosure of the actual ingredients of the product.

[Read more...](#)

[Source: National Academy of Sciences, October 2014](#)

Authors: Committee on the Design and Evaluation of Safer Chemical Substitutions: A Framework to Inform Government and Industry Decision; Board on Chemical Sciences and Technology; Board on Environmental Studies and Toxicology; Division on Earth and Life Studies; National Research Council

Historically, regulations governing chemical use have often focused on widely used chemicals and acute human health effects of exposure to them, as well as their potential to cause cancer and other adverse health effects. As scientific knowledge has expanded, there has been an increased awareness of the mechanisms through which chemicals may exert harmful effects on human health, as well as their effects on other species and ecosystems. Identification of high-priority chemicals and other chemicals of concern has prompted a growing number of state and local governments, as well as major companies, to take steps beyond existing hazardous chemical federal legislation. Interest in approaches and policies that ensure that any new substances substituted for chemicals of concern are assessed as carefully and thoroughly as possible has also burgeoned. The overarching goal of these approaches is to avoid regrettable substitutions, which occur when a toxic chemical is replaced by another chemical that later proved unsuitable because of persistence, bioaccumulation, toxicity, or other concerns.

[Read more...](#)

Access the report in brief [here](#).

Also see link to a webinar based on the report, "[A Framework to Guide Selection of Chemical Alternatives](#)".

New chemicals added to the SIN list

[Source: EurActiv.com, October 9, 2014](#)

Author: Beatrice Denis

Green chemicals NGO Chemsec included nearly 30 new chemicals on a list of harmful substances that the EU should regulate in order to curb health risks and water contamination.

Wednesday, (8 October), green chemical NGO ChemSec updated its SIN List or 'Substitute It Now' List of substances it has identified as Substances of Very High Concern (SVHC) on the basis of criteria defined by EU chemicals regulation REACH.

Chemicals considered harmful to health, and which are already restricted under EU rules, are increasingly being replaced by other products that exhibit similarly hazardous properties.

The review of newly available data is also showing that some currently unregulated chemical products deserve scrutiny and possible restrictions in order to avoid negative health impacts, adds the NGO.

[Read more...](#)

See from *Environmental Leader*, "[SIN List Updated, Substitution Tool Launched](#)".

Also see from the European Trade Union Institute, "[RISCTOX: a comprehensive database on toxic and hazardous substances](#)" and from the International Trade Union Confederation, "[European Agency's OSHwiki goes live](#)".

OSHA launches national dialogue on hazardous chemical exposures and permissible exposure limits in the workplace

[Source: U.S. Occupational Safety and Health Administration, October 9, 2014](#)

WASHINGTON -- The U.S. Department of Labor's Occupational Safety and Health Administration today announced it is launching a national dialogue with stakeholders on ways to prevent work-related illness caused by exposure to hazardous substances. The first stage of this dialogue is a request for information on the management of hazardous chemical exposures in the workplace and strategies for updating permissible exposure limits.

OSHA's PELs, which are regulatory limits on the amount or concentration of a substance in the air, are intended to protect workers against the adverse health effects of exposure to hazardous

substances. Ninety-five percent of OSHA's current PELs, which cover fewer than 500 chemicals, have not been updated since their adoption in 1971. The agency's current PELs cover only a small fraction of the tens of thousands of chemicals used in commerce, many of which are suspected of being harmful. Substantial resources are required to issue new exposure limits or update existing workplace exposure limits, as courts have required complex analyses for each proposed PEL.

"Many of our chemical exposure standards are dangerously out of date and do not adequately protect workers," said Assistant Secretary of Labor for Occupational Safety and Health Dr. David Michaels. "While we will continue to work on updating our workplace exposure limits, we are asking public health experts, chemical manufacturers, employers, unions and others committed to preventing workplace illnesses to help us identify new approaches to address chemical hazards."

[Read more...](#)

Also see OSHA's page on '[Preventing occupational illnesses through safer chemical management](#)'.

EPA Updates Chemical Info Tool

[Source: Environmental Leader, October 9, 2014](#)

The EPA has posted additional data and added new functions to ChemView, the agency's publicly accessible, one-stop online tool to find information for chemicals regulated under the Toxic Substances Control Act.

The EPA is moving forward to make chemical information more readily available in the absence of TSCA reform, says James Jones, assistant administrator for the Office of Chemical Safety and Pollution Prevention.

The enhanced data functions include: improving the display and content for the Chemical Data Reporting information, adding a new link that displays the pollution prevention information generated as part of the Toxics Release Inventory program, and launching an administrative tool that will save EPA resources by streamlining the loading of future information.

[Read more...](#)

2014 Greener Reaction Conditions Award

[Source: U.S. Environmental Protection Agency, October 16, 2014](#)

QD Vision, Inc. -- [Lexington, MA -- Receives Presidential Green Chemistry Challenge Award for] *Greener Quantum Dot Synthesis for Energy Efficient Display and Lighting Products*

Innovation and Benefits: QD Vision makes higher-quality quantum dots-nanoscale LEDs-using an innovative greener process. These quantum dots make possible cost-effective full-spectrum color in flat-screen displays and solid-state lighting. Historically, making quantum dots involved hazardous chemicals and low yields. QD Vision's process has increased efficiency, uses less hazardous building blocks, and eliminates nearly 40,000 gallons of highly toxic solvent each year.

Summary of Technology: Most white light sources include a primary light source and a "downshifting" phosphor which converts some or all of the primary light into the desired white light spectrum. In a typical fluorescent bulb, electrified mercury gas produces the primary light in the ultraviolet (UV) range, and phosphors (the whitish powder on the inside of the bulb) convert that UV light into white light. Similarly, today's light emitting diodes (LEDs) produce a blue primary light, and phosphors convert some of that light to make it appear whiter to the human eye. However, these LED phosphors emit light in a broad band and result in a tradeoff between color quality and efficiency. As a result, display manufacturers must either make displays that cannot show the full range of colors found in nature, or greatly reduce the product's efficiency. Lower efficiency means that more LEDs are required to achieve the same brightness, and hence cost more to make and need more energy to run.

[Read more...](#)

See full press release from U.S. EPA, "[EPA Honors the Winners of the 19th Annual Presidential Green Chemistry Challenge Awards...](#)".

[Source: Yale School of Forestry & Environmental Studies, October 15, 2014](#)

Industrial ecology, a rapidly growing field focused on sustainable production and consumption, has contributed numerous important tools to modern environmental management - life cycle assessment; "industrial symbiosis," or the by-product exchange between neighboring facilities; "design for environment"; and the use of material flow analysis to track resource use in supply chains, companies, and economies.

A new special feature of Yale's *Journal of Industrial Ecology*, titled "Industrial Ecology as a Source of Competitive Advantage," presents new research on how, when, and why the use of industrial ecology by business can lead to cost savings, higher profits, and other, more intangible, business benefits.

[Read more...](#)

EPA Finds Neonicotinoid Seed Treatments of Little or No Benefit to U.S. Soybean Production

[Source: U.S. Environmental Protection Agency, October 16, 2014](#)

Washington -- Today, the U.S. Environmental Protection Agency (EPA) released an analysis of the benefits of neonicotinoid seed treatments for insect control in soybeans. Neonicotinoid pesticides are a class of insecticides widely used on U.S. crops that EPA is reviewing with particular emphasis for their impact on pollinators. The analysis concluded that there is little or no increase in soybean yields using most neonicotinoid seed treatments when compared to using no pest control at all. A Federal Register notice inviting the public to comment on the analysis will publish in the near future.

"We have made the review of neonicotinoid pesticides a high priority," said Jim Jones, assistant administrator for EPA's Office of Chemical Safety and Pollution Prevention. "In our analysis of the economic benefits of this use we concluded that, on a national scale, U.S. soybean farmers see little or no benefit from neonicotinoid seed treatments."

During the review of the neonicotinoids, EPA found that many scientific publications claim that treating soybean seeds has little value. Part of our assessment examined the effectiveness of these seed treatments for pest control and estimated the impacts on crop yields and quality, as well as financial losses and gains. The law requires EPA to consider the benefits of using pesticides as well as the risks.

[Read more...](#)

A new approach to determine cancer risk of chemicals

[Source: U.S. National Institute of Environmental Health Sciences, September 2014](#)

Author: Sara Mishamandani

A new study by NIEHS-funded researchers at Boston University (BU) and the NIEHS National Toxicology Program (NTP) has shown that computational models of short-term exposure to a chemical can predict long-term cancer risk. The study, led by computational biologist Stefano Monti, Ph.D., an associate professor at BU, is a step toward simpler and cheaper tests to screen chemicals for cancer risk.

The current gold standard for testing chemicals for cancer risk is a 2-year rodent bioassay, which can cost \$2 million to \$4 million per chemical to complete. As a result, less than 2 percent of the approximately 84,000 chemicals in commercial use have gone through standard carcinogenicity testing.

"Not enough attention is given to understanding chemicals before they are used by industry and released into the environment," said Monti. "This work has confirmed that it is possible to predict the long-term cancer risk by measuring the short-term effects."

[Read more...](#)

See the study in *PLoS ONE*, "[Genomic models of short-term exposure accurately predict long-term chemical carcinogenicity and identify putative mechanisms of action](#)".

Also see article in *The Boston Globe*, "[Researchers will study relation of environment to breast cancer](#)".

Find many other interesting stories in the [October 2014 Update](#) from the National Toxicology Program.

Hazardous chemicals in your pizza box? Petition asks FDA to ban them.

Source: [The Washington Post, October 16, 2014](#)

Author: Kimberly Kindy

U.S. manufacturers stopped using a hazardous chemical in pizza boxes and other food wrappers three years ago - but it may still be seeping into your takeout food.

That's because foreign companies can still use perchlorate and perfluorocarboxylates (PFCs) -- which can cause permanent brain damage in infants -- in paper products that are imported into the United States.

On Thursday, a group of consumer and health groups filed a food additive petition with the Food and Drug Administration, asking that the agency pass regulations that would close this loophole and clearly ban the chemicals in food production. Perchlorate helps to reduce static and PFCs keep grease from soaking into food containers.

[Read more...](#)

Also see from the Food Packaging Forum, "[Hazardous substances in food contact](#)".

Please send a message to mary@turi.org if you would like more information on any of these resources. Also, please tell us what topics you are particularly interested in monitoring, and who else should see Greenlist. An online search of the TURI Library catalog can be done at <http://library.turi.org> for greater topic coverage.

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