

Greenlist Bulletin

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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 jan@turi.org if you would like more information on any of the articles listed here, or if this email is not displaying properly.



EPA Releases Final Health Assessment for Tetrachloroethylene (Perc)

[Source: USEPA. February 10, 2012](#)

Today the U.S. Environmental Protection Agency (EPA) posted the final health assessment for tetrachloroethylene - also known as perchloroethylene, or perc - to EPA's Integrated Risk Information System (IRIS) database. Perc is a chemical solvent widely used in the dry cleaning industry. It is also used in the cleaning of metal machinery and to manufacture some consumer products and other chemicals. Confirming longstanding scientific understanding and research, the final assessment characterizes perc as a "likely human carcinogen." The assessment provides estimates for both cancer and non-cancer effects associated with exposure to perc over a lifetime.

EPA does not believe that wearing clothes dry cleaned with perc will result in exposures which pose a risk of concern. EPA has already taken several significant actions to reduce exposure to perc. EPA has clean air standards for dry cleaners that use perc, including requirements that will phase-out the use of perc by dry cleaners in residential buildings by December 21, 2020. EPA also set limits for the amount of perc allowed in drinking water and levels for cleaning up perc at Superfund sites throughout the country, which will be updated in light of the IRIS assessment.

"The perc health assessment released today will provide valuable information to help protect people and communities from exposure to perc in soil, water and air," said Paul Anastas, assistant administrator for EPA's Office of Research

and Development. "This assessment emphasizes the value of the IRIS database in providing strong science to support government officials as they make decisions to protect the health of the American people."

The toxicity values reported in the perc IRIS assessment will be considered in:

- * Establishing cleanup levels at the hundreds of Superfund sites where perc is a contaminant
- * Revising EPA's Maximum Contaminant Level for perc as part of the carcinogenic volatile organic compounds group in drinking water, as described in the agency's drinking water strategy
- * Evaluating whether to propose additional limits on the emissions of perc into the atmosphere, since perc is considered a hazardous air pollutant under the Clean Air Act

The assessment replaces the 1988 IRIS assessment for perc and for the first time includes a hazard characterization for cancer effects. This assessment has undergone several levels of rigorous, independent peer review including: agency review, interagency review, public comment, and external peer review by the National Research Council. All major review comments have been addressed.

Just out of REACH: how REACH is failing to regulate nanomaterials and how it can be fixed

[Source: The Center for International Law \(CIEL\). February 6, 2012](#)

Author: David Azoulay

REACH, the European Union's primary regulation on chemicals is failing to identify or control nanomaterials. That is the conclusion of "Just Out of REACH: How REACH is failing to regulate nanomaterials and how it can be fixed," a new report by the nonprofit Center for International Environmental Law (CIEL). Nanomaterials, tiny manmade particles with extraordinary properties, are a fast-growing component of cosmetics, clothing, consumer electronics, and other products.

According to CIEL's David Azoulay, author of the report, "Three years ago, the Commission declared that REACH theoretically covered nanomaterials; but they continue to enter the EU market with little or no information on their potential risks, violating REACH's 'no data, no market' principle. The problem is that the regulation contains legal gaps and shortcomings that render it completely ineffective for nanomaterials."

The study documents four key gaps for nanomaterials in the registration phase of REACH, an essential step that requires chemical manufacturers and importers to provide key health and safety information.

- REACH does not define nanomaterials, and contains no nano-specific provisions;
- Most nanomaterials evade registration until 2018, yet they can still enter the EU market;
- REACH's schedule for registration hinges on the number of tonnes of a chemical, essentially missing all nanomaterials, which are generally produced in far smaller quantities; and
- REACH test guidelines fail to consider the special properties of nanomaterials.

"Just Out of REACH" also explores possible remedies to close these loopholes. Some have suggested renegotiating REACH to add specific provisions on nanotechnology. But this is politically impossible and could invite further weakening of the current regulation. Others have

suggested changes to the technical guidance, but the study shows that these so-called solutions fall short of bridging the existing legal gaps.

Rather than re-opening REACH, the report proposes developing a stand-alone regulation, carefully aligned with the chemical rules, but specifically tailored to nanomaterials. According to Azoulay, "REACH could prove a useful instrument to better understand and regulate nanomaterials, provided it is coupled with a nano 'patch' that closes these inherent loopholes." Such a regulation would establish clear, legally binding provisions for nanomaterials and create a transparent and predictable legal environment for the safe production and use of nanomaterials in the EU.

This solution should be flexible and allow for future adjustments as nanomaterials are better understood, without requiring additional changes to REACH. "Flexibility must be a critical characteristic of any effort to regulate nanomaterials," says Azoulay. "Our understanding is still very limited; it will evolve, and our legal responses must be ready to do so as well. A "nano-patch" for REACH would provide that added flexibility."

[Download the report](#)

NIKE, Inc. announces strategic partnership to scale waterless dyeing technology

[Source: NIKE, Inc., February 7, 2012](#)

NIKE, Inc. announced today it has entered into a strategic partnership with DyeCoo Textile Systems B.V., a Netherlands-based company that has developed and built the first commercially available waterless textile dyeing machines. By using recycled carbon dioxide, DyeCoo's technology eliminates the use of water in the textile dyeing process. The name "DyeCoo" was inspired by the process of "dyeing" with "CO2." The partnership is illustrative of NIKE, Inc.'s long-term commitment to designing and developing the most superior athletic performance products for athletes and its overall sustainable business and innovation strategy.

Conventional textile dyeing requires substantial amounts of water. On average, an estimated 100-150 liters of water is needed to process one kg of textile materials today. Industry analysts estimate that more than 39 million tonnes of polyester will be dyed annually by 2015. Nike says it expects DyeCoo's supercritical fluid carbon dioxide, or "SCF" CO2 dyeing technology, to have a particularly positive impact in Asia, where much of the world's textile dyeing occurs. As this technology is brought to scale, large amounts of water used in conventional textile dyeing will no longer be needed, nor will the commensurate use of fossil fuel-generated energy be required to heat such large sums of water. The removal of water from the textile dyeing process also eliminates the risk of effluent discharge, a known environmental hazard. The CO2 used in DyeCoo's dyeing process is also reclaimed and reused.

DyeCoo is believed to be the first company to successfully apply the SCF CO2 process to the commercial dyeing of polyester fabric, and research is already underway to apply the technology to other natural and synthetic fabrics. SCF CO2 technology is safely utilized at scale in other industries such as the decaffeination of coffee and the extraction of natural flavors and fragrances.

Integrated weed management best response to herbicide resistance

[Source: Penn State University, February 9, 2012](#)

Over-reliance on glyphosate-type herbicides for weed control on U.S. farms has created a dramatic increase in the number of genetically-resistant weeds, according to a team of agricultural researchers, who say the solution lies in an integrated weed management program.

"I'm deeply concerned when I see figures that herbicide use could double in the next decade," said David Mortensen, professor of weed ecology at Penn State.

Since the mid-1990s, agricultural seed companies developed and marketed seeds that were genetically modified to resist herbicides such as Roundup – glyphosate – as a more flexible way to manage weeds, Mortensen said. About 95 percent of the current soybean crop is modified by inserting herbicide-resistant genes into the plants.

"We do understand why farmers would use the glyphosate and glyphosate-resistant crop package," Mortensen said. "It is simple and relatively cheap, but we have to think about the

longterm consequences."

The researchers said that increased use of herbicides is leading to more species of weeds that also are resistant to the chemicals.

They report their findings in the current issue of *BioScience*, noting that 21 different weed species have evolved resistance to several glyphosate herbicides, 75 percent of which have been documented since 2005, despite company-sponsored research that the resistance would not occur.

"Several species have developed amazing biochemical ways to resist the effects of the herbicide," said J. Franklin Egan, doctoral student in ecology, Penn State. "If weed problems are addressed just with herbicides, evolution will win."

One way the weeds develop resistance is to make an enzyme that is insensitive to the herbicide, but still maintains cellular function, Egan said. Weeds have also developed ways for the plant to move the herbicide away from targeted enzymes.

"For instance, glyphosate-resistant strains of *Conyza canadensis* – horseweed – sequester glyphosate in leaf tissues that are exposed to an herbicide spray so that the glyphosate can be slowly translocated throughout the plant at nontoxic concentrations," Egan said. "To the horseweed, this controlled translocation process means the difference between taking many shots of whiskey on an empty stomach versus sipping wine with a meal."

In response to the increasing number of weeds resistant to current applications, companies are developing new generations of seeds genetically modified to resist multiple herbicides. This continual insertion of more genes into crops is not a sustainable solution to herbicide resistance, according to the researchers. They add that companies are creating a genetic modification treadmill similar to the pesticide treadmill experienced in the mid-20th century, when companies produced increasingly more toxic substances to manage pests resistant to pesticides.

[Read more](#)

CEC Secretariat Launches Independent Study on the Environmental Hazards of Transborder Lead Battery Recycling

[Source: Commission for Environmental Cooperation \(CEC\), February 8, 2012](#)

The Secretariat of the Commission for Environmental Cooperation (CEC) has begun an independent examination into the environmental and public health issues associated with the transboundary movement of spent lead-acid batteries across North America.

This study will include examination of the recent increase in transboundary shipments of spent lead-acid batteries within North America for the purposes of recovery and recycling of lead for remanufacture. Factors to be examined include the concern that, in addition to global market forces, differing costs of compliance with environmental and health regulations may be affecting decisions on where to locate certain recycling activity within our three countries.

Lead is a persistent, bioaccumulative, toxic substance that can cause developmental harm, especially in children. Even in small doses, exposure to lead dust and vapors in lead-contaminated air, water, or soil has been associated with nervous system impairment in fetuses and young children, resulting in learning deficits and lowered IQ.

The Secretariat's examination will assemble the most recent information on the flow of spent auto and industrial batteries and examine trade- and compliance-related issues in preparing a comprehensive report to the CEC Council—the cabinet-level environmental officials in each of Canada, Mexico and the United States. The independent report will conclude with recommendations concerning steps to improve the environmental management of spent lead-acid batteries and to diminish the pollution and environmental health effects impacting vulnerable populations adjacent to certain recycling operations, particularly in Mexico.

You are welcome to send a message to jan@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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