

Greenlist Bulletin

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

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Highlighted Resource

2013 Additives Reference Guide
from *Paint & Coatings Industry*

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



EPA Evaluates Flame Retardants Including a Safer Substitute for HBCD

[Source: U.S. Environmental Protection Agency, September 24, 2013](#)

WASHINGTON -- As part of its ongoing efforts to promote the design and use of safer chemicals, today, the U.S. Environmental Protection Agency (EPA) has released a draft report on alternatives to a flame retardant chemical, hexabromocyclododecane (HBCD), which has persistent, bioaccumulative and toxic characteristics. The findings in the report can help manufacturers identify safer alternatives to the use of HBCD in polystyrene building insulation. . . .

The Design for the Environment (DfE) Alternatives Assessment draft report, developed with stakeholder and public participation, describes the uses of HBCD with an overview of life cycle and exposure information. The report identifies two viable chemical alternatives for use in polystyrene building insulation, in addition to a list of substances that are not currently expected to be viable. One of the alternatives, a butadiene styrene brominated copolymer, is anticipated to be safer than HBCD and is currently in commercial production in the U.S. Alternative materials are also identified in the report.

[Read more...](#)

Access the September 2013 draft report available for public comment, "[Flame Retardant Alternatives for Hexabromocyclododecane \(HBCD\).](#)"

Also see [feature on HBCD](#) in the September 6, 2013 issue of *Greenlist*.

Chromate Conversion Alternatives

[Source: DoD Advanced Surface Engineering Technologies for Sustainable \(ASETS\) Defense, 2013](#)

Chromate conversion coatings and chromated sealers are used to create a self-healing conversion

coating on Al and Mg alloys that is resistant to corrosion. They are also used for sealing electroplated and anodized coatings. These treatments are typically used prior to painting and finishing, since they generally improve adhesion of paints and sealants.

[Read more...](#)

Access the DoD ASETSDefense [Surface Engineering Database](#). By searching for "Chromate conversion alternatives," you can access the ["ASETSDefense Summary of Cd and Cr6+ Alternatives: Authorizations, Implementations, RDT&E programs."](#)

TURI's Note: [Dr. William G. Fahrenholtz](#) was a speaker at the recent TURI Aerospace & Defense supply chain workshop. One topic he spoke about was cerium-based conversion coatings and primers. See link to an article he co-authored in the *Journal of The Electrochemical Society*, ["Characterization of Cerium-Based Conversion Coatings on Al 7075-T6 Deposited from Chloride and Nitrate Salt Solutions."](#)

EPA Green Power Purchaser Awards: Sustained Excellence in Green Power - MA-based Company, Staples

[Source: U.S. Environmental Protection Agency, September 22, 2013](#)

Staples is the world's largest office products company and second largest Internet retailer. Staples' vision is to generate business and environmental benefits for the company, its customers, and the community by leading the way in sustainable business practices. The company's commitment to green power has grown steadily and significantly since 2002, when it joined the Green Power Partnership. In early 2013, Staples increased its company-wide green power use from 80 percent to just over 100 percent through a combination of green power purchases and on-site generation. Staples is using more than 635 million kilowatt-hours (kWh) annually, an increase of approximately 119 kWh from 2012.

One of Staples' core sustainability pillars is to maximize energy efficiency and use renewable energy, which the company helps to fulfill by purchasing Green-e certified renewable energy certificates (RECs) and utility green power products. Currently, Staples has 34 solar arrays in the U.S., with nearly 11 megawatts of installed solar capacity generating more than 50 million kWh of renewable energy since 2007. Staples uses more than 518,000 kWh of solar power from these facilities annually by retaining the RECs. In addition, the company reduces its carbon footprint by deploying innovative technologies throughout its more than 1,800 stores, distribution centers, and warehouses nationwide.

[Read more...](#)

Read more at the company's website about [Staples' sustainability goals and green vision](#).

From 'Omics to Otoliths: Responses of an Estuarine Fish to Endocrine Disrupting Compounds across Biological Scales

[Source: PLOS One, September 25, 2013](#)

Authors: Susanne M. Brander, Richard E. Connon, Guochun He, James A. Hobbs, Kelly L. Smalling, Swee J. Teh, J. Wilson White, Inge Werner, Michael S. Denison, Gary N. Cherr

Endocrine disrupting chemicals (EDCs) cause physiological abnormalities and population decline in fishes. However, few studies have linked environmental EDC exposures with responses at multiple tiers of the biological hierarchy, including population-level effects. To this end, we undertook a four-tiered investigation in the impacted San Francisco Bay estuary with the Mississippi silverside (*Menidia audens*), a small pelagic fish. This approach demonstrated links between different EDC sources and fish responses at different levels of biological organization. First we determined that water from a study site primarily impacted by ranch run-off had only estrogenic activity *in vitro*, while water sampled from a site receiving a combination of urban, limited ranch run-off, and treated wastewater effluent had both estrogenic and androgenic activity. Secondly, at the molecular level we found that fish had higher mRNA levels for estrogen-responsive genes at the site where only estrogenic activity was detected but relatively lower expression levels where both estrogenic and androgenic EDCs were detected. Thirdly, at the organism level, males at the site exposed to both estrogens and androgens had significantly lower mean gonadal somatic indices, significantly higher incidence of severe testicular necrosis and altered somatic growth relative to the site where only estrogens were detected. Finally, at the population level, the sex ratio was significantly skewed towards males at the site with measured androgenic and estrogenic activity. Our results suggest that mixtures of androgenic and estrogenic EDCs have antagonistic and potentially additive effects depending on the biological scale being assessed, and that mixtures containing androgens and

estrogens may produce unexpected effects. In summary, evaluating EDC response at multiple tiers is necessary to determine the source of disruption (lowest scale, i.e. cell line) and what the ecological impact will be (largest scale, i.e. sex ratio).

[Read more...](#)

Read press release on article in *Central Valley Business Times*, ["Urban fish 'masculinized' by chemicals, says study."](#)

Pharmaceuticals, perfluorosurfactants, and other organic wastewater compounds in public drinking water wells in a shallow sand and gravel aquifer

[Source: *Science of The Total Environment*, January 2014 \(Epub ahead of print\)](#)

Authors: Laurel A. Schaider, Ruthann A. Rudel, Janet M. Ackerman, Sarah C. Dunagan, Julia Green Brody

Approximately 40% of U.S. residents rely on groundwater as a source of drinking water. Groundwater, especially unconfined sand and gravel aquifers, is vulnerable to contamination from septic systems and infiltration of wastewater treatment plant effluent. In this study, we characterized concentrations of pharmaceuticals, perfluorosurfactants, and other organic wastewater compounds (OWCs) in the unconfined sand and gravel aquifer of Cape Cod, Massachusetts, USA, where septic systems are prevalent. Raw water samples from 20 public drinking water supply wells on Cape Cod were tested for 92 OWCs, as well as surrogates of wastewater impact. Fifteen of 20 wells contained at least one OWC; the two most frequently-detected chemicals were sulfamethoxazole (antibiotic) and perfluorooctane sulfonate (perfluorosurfactant). Maximum concentrations of sulfamethoxazole (113 ng/L) and the anticonvulsant phenytoin (66 ng/L) matched or exceeded maximum reported concentrations in other U.S. public drinking water sources. The sum of pharmaceutical concentrations and the number of detected chemicals were both significantly correlated with nitrate, boron, and extent of unsewered residential and commercial development within 500 m, indicating that wastewater surrogates can be useful for identifying wells most likely to contain OWCs. Septic systems appear to be the primary source of OWCs in Cape Cod groundwater, although wastewater treatment plants and other sources were potential contributors to several wells. These results show that drinking water supplies in unconfined aquifers where septic systems are prevalent may be among the most vulnerable to OWCs. The presence of mixtures of OWCs in drinking water raises human health concerns; a full evaluation of potential risks is limited by a lack of health-based guidelines and toxicity assessments.

[Read more...](#)

Also read from the Silent Spring Institute, September 2013, ["Contaminants of Emerging Concern and Septic Systems: A Synthesis of Scientific Literature and Application to Groundwater Quality on Cape Cod."](#)

Also read article in *USA Today*, ["Chemicals in Lake Michigan rise to worrisome levels."](#)

[California] Safer Consumer Products Regulations Effective October 1, 2013

[Source: California Department of Toxic Substances Control, August 28, 2013](#)

The Safer Consumer Products regulations were approved by the Office of Administrative Law (OAL) on August 28, 2013 (OAL File No. 2013-0718-03 S) and have been filed with the Secretary of State. The regulations will take effect on October 1, 2013. They require manufacturers or other responsible entities to seek safer alternatives to harmful chemical ingredients in widely used products, offering California the opportunity to lead the way in producing safer versions of goods already in demand around the world.

Read [text of final Safer Consumer Products regulations](#).

[Read more and also access the Safer Consumer Products \(SCP\) web portal.](#)

Also read article in the *Los Angeles Times*, [California to review toxic substances in consumer products](#).

[South Carolina] Emergency regs out on chemical levels

[Source: *Aiken Standard*, September 25, 2013](#)

Author: Meg Kinnard

COLUMBIA (AP) – South Carolina health and environmental officials announced on Wednesday measures they hope will help stop the spread of toxic chemicals to water treatment systems across the state.


Department of Health and Environmental Control director Catherine Templeton told the Associated Press that she was issuing an emergency regulation that would prevent landfills or farmers from using sludge that contains any level of PCBs.

PCBs, or polychlorinated biphenyls, are man-made organic chemicals that were used for decades in a variety of industrial applications, including plastics and hydraulic equipment. Banned in 1979 after tests showed they could cause ailments including cancer, PCBs are found when decades-old facilities are cleaned out or demolished.

Current regulations govern how materials containing the toxic chemicals are supposed to be disposed of. Federal law says that any material with more than 50 parts per million of PCBs is supposed to go to a special out-of-state facility, while material containing lower amounts can be stored in local landfills.

[Read more...](#)

Also see from CarolinaLive.com, "[Chemicals required to make pool safe can also be dangerous.](#)"



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.

Greenlist Bulletin is compiled by:

Mary Butow
Research and Reference Specialist
Toxics Use Reduction Institute
University of Massachusetts Lowell
600 Suffolk St., Woburn Millis
Lowell MA 01854
978-934-4365
978-934-3050 (fax)
mary@turi.org