

# Greenlist Bulletin

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

July 24, 2015

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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](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.



## Conventional Wisdom Overlooks Links between Chemical Mixtures and Cancer

[Source: Environmental Working Group, July 16, 2015](#)

Author: Shannon Van Hoesen

WASHINGTON -- Conventional thinking about cancer prevention may overlook growing evidence that the combined effects of chemicals that are not carcinogenic on their own may be a significant cause of cancer, according to a new EWG analysis of a series of papers published on June 22 in the scientific journal *Carcinogenesis*.

The analysis, "Rethinking Carcinogens," takes a close look at new research on chemical exposures and cancer conducted by The Halifax Project of the Canadian non-profit organization Getting to Know Cancer. In an easily digestible way, EWG's report connects the dots between the Project's findings and what we know about how people develop cancer at the cellular level.

"It's becoming clear that the way we think about toxic chemicals and cancer should change," said Curt DellaValle, Ph.D., EWG senior scientist. "This new research builds on the knowledge that cancer develops in many steps and not all at once. It suggests that exposures to certain combinations of chemicals, ones that are not individually carcinogenic, may cause cancer by disrupting multiple cancer-related pathways in the body. This is different from conventional wisdom and should be cause for concern and intensified research attention, given the multitude of chemicals we encounter in our daily lives."

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See issue of *Carcinogenesis* featuring articles on this topic, "[Assessing the Carcinogenic Potential of Low-Dose Exposures to Chemical Mixtures in the Environment: The Challenge Ahead](#)".

## 2015 Presidential Green Chemistry Challenge Awards

[Source: Chemical & Engineering News, July 13, 2015](#)

Author: Stephen K. Ritter

Chemical plants are often vilified for pumping out toxic pollutants from their smokestacks and discharging tainted water from pipes. Environmental laws have gone a long way to curb those problems, but as an added incentive, the Environmental Protection Agency in collaboration with the White House began the Presidential Green Chemistry Challenge Awards in 1996. ...

As the name suggests, the awards program challenges chemical companies to do better and recognizes their successes for developing innovative technologies with demonstrable human health and environmental benefits. These benefits include reducing toxicity of chemical products, reducing the use or generation of hazardous substances, introducing a renewable feedstock, saving water or energy, and reducing waste even if it's not hazardous. ...

Hybrid Coating Technologies and Nanotech Industries received the Designing Greener Chemicals Award for creating polyurethane coatings and foam insulation made with cyclic carbonates and amines instead of isocyanates and polyols. Isocyanates are useful chemicals but have long raised safety and health concerns because they are irritants and potential carcinogens.

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Also see article in *PaintSquare*, "[Green Polyurethanes Capture Blue Ribbon](#)".

### High formaldehyde exposure linked with ALS

[Source: Harvard T. H. Chan School of Public Health, July 2015](#)

Men exposed to high levels of formaldehyde on the job -- mostly funeral directors -- may have triple the death risk from amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's disease, as men with lower levels of exposure, according to a new study from Harvard T.H. Chan School of Public Health.

The study was published in the July issue of the *Journal of Neurology, Neurosurgery & Psychiatry*. Researchers looked at a national dataset of 1.5 million U.S. adults that included job information, along with criteria that estimates formaldehyde exposure for various occupations. They then matched that information with ALS-related deaths from 1979-2011.

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See related article in the *Journal of Neurology, Neurosurgery & Psychiatry*, "[Job-related formaldehyde exposure and ALS mortality in the USA](#)".

### Replacement of Hazardous Chemicals Used in Engineering Plastics with Safe and Renewable Hydrogen-Bond Donor and Acceptor Solvent-Pair Mixtures

[Source: ACS Sustainable Chemistry & Engineering, July 8, 2015](#)

Authors: Alif Duereh, Yoshiyuki Sato, Richard Lee Smith, Jr., and Hiroshi Inomata

Mixtures of safe and renewable solvents can replace hazardous solvents presently being used in the manufacture of engineering plastics. In this work, a methodology is proposed for identifying solvent-pair mixtures for preparing polymer precursors, with poly(amic acid) (PAA) being studied as an example. The methodology uses a chemical safety index, Hansen solubility parameters and Kamlet-Taft solvatochromic parameters of the pure and solvent-pair mixtures to identify hydrogen bond acceptor (HBA)-hydrogen bond donor (HBD) solvent-pair combinations. Ten replacement solvent-pairs for PAA syntheses identified were cyclohexanone-methanol, cyclohexanone-ethanol, cyclopentanone-methanol, cyclopentanone-ethanol,  $\gamma$ -butyrolactone-methanol,  $\gamma$ -butyrolactone-ethanol,  $\gamma$ -butyrolactone-water,  $\gamma$ -valerolactone-methanol,  $\gamma$ -valerolactone-ethanol, and  $\gamma$ -valerolactone-water. Homogeneous PAA solutions could be obtained from HBA-HBD solvent-pair mixtures when their solubility parameters were within 21-29 MPa<sup>0.5</sup> and their Kamlet-Taft solvatochromic parameters were  $\pi^*$  (>0.67) and  $\beta$  (>0.67) for nonaqueous solutions and  $\pi^*$  (>0.68) and  $\beta$  (>0.59) for aqueous solutions. Replacement solvent-pairs,  $\gamma$ -valerolactone-ethanol,  $\gamma$ -valerolactone-water, and  $\gamma$ -butyrolactone-water gave homogeneous precursor solutions that were comparable with commercial solutions prepared with N-methyl-2-pyrrolidone. The proposed methodology and reported solvatochromic parameters make it possible to identify other solvent-pair mixtures and new solvent-pairs for preparing polymer precursor solutions used in engineering plastics.

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[Source: TriplePundit, July 14, 2015](#)

Author: Jonas Allen

Have you ever seen one of those signs in your office encouraging you to recycle electronics? It exists for good reason: In 2014 alone, 41.8 million metric tons of e-waste was shipped to developing countries, posing an immense risk to environmental and human health. Electronics are evolving at a blistering pace, and device lifespans are shortening. Combine those with an exponential increase in global demand, and it can seem impossible to reverse the trend.

Fortunately, experts from around the world are already thinking holistically about these issues, and working to develop innovative solutions. Those experts will gather in September at the Emerging Green Conference to discuss ways to ensure that electronics are key contributors to the circular economy, rather than prime examples of how not to design a product ecosystem. ...

Recovering precious metals and critical minerals ensures those resources will be there for future generations. Reducing water use during manufacturing can alleviate the strain on drought-ravaged regions. Designing for energy efficiency saves end-users money, and reducing greenhouse gas emissions improves overall air quality and can help stave off global warming impacts. The greening of electronics touches every point in the supply chain, and it involves every entity that plays a role in the lifecycle of an electronic device.

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## TSCA Reform Nears Enactment with Easy Passage in the House

[Source: JDSUPRA Business Advisor, June 29, 2015](#)

Author: Mark Duvall

The House of Representatives passed the TSCA Modernization Act of 2015 (H.R. 2576) on June 23, 2015 by a vote of 398 to 1, indicating that the long-awaited overhaul to the federal chemicals management law may be just around the corner. Among other updates to the Toxic Substances Control Act (TSCA), the House bill would require EPA to initiate risk evaluations of chemicals in commerce and adopt regulations if a chemical presents an unreasonable risk to human health or the environment under the intended conditions of use. In addition, the bill would expand EPA's authority to require testing by manufacturers, adjust provisions protecting confidential business information, create the TSCA Service Fee Fund in the U.S. Treasury, and preempt state law where EPA issues a new rule or makes an "unreasonable risk" determination. ...

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See from the Congressional Research Service, "[Preemption in Proposed Amendments to the Toxic Substances Control Act \(TSCA\): Side-by-Side Analysis of S. 697 and H.R. 2576](#)" and "[Proposed Amendments to the Toxic Substances Control Act \(TSCA\) in the 114th Congress: S. 697, S. 725, and H.R. 2576](#)".

## House dust chemicals activate receptor linked to obesity

[Source: Chemical Watch, July 23, 2015](#)

Author: Emma Davies

Chemicals found in house dust can activate an important human receptor linked to obesity, according to a US study.

The "master" receptor, peroxisome proliferator-activated nuclear receptor gamma (PPARgamma), regulates lipid metabolism, cell proliferation and cell death (CW 5 December 2013). There is growing evidence that PPARgamma activation may be a "key factor for obesity", say the researchers, led by Heather Stapleton from Duke University.

In the past few years, a number of common environmental contaminants, including tributyltin and a metabolite of the phthalate DEHP, have been shown to activate the receptor. Dr Stapleton's team has recently found a wide range of chemicals, including organophosphates and polybrominated diphenyl ether (PBDE) metabolites, to bind to PPARgamma.

[Read more...](#)

See original article in *Environmental Science & Technology*, "[Activation of Human Peroxisome Proliferator-Activated Nuclear Receptors \(PPAR\[gamma\]1\) by Semi-Volatile Compounds \(SVOCs\) and Chemical Mixtures in Indoor Dust](#)".

Also see from *Environmental Health News*, "[What's in your soda? An oil dispersant that might make you fat](#)".

### Chemicals may alter placenta genes, threaten fetuses

[Source: Environmental Health News, July 1, 2015](#)

Author: Brian Bienkowski

Women exposed to widely used chemicals while pregnant are more likely to have altered gene function in their placentas, according to a new study.

It is the first study to show that exposure to phenols and phthalates may alter how genes are expressed in the placenta of pregnant women and suggests that such exposures may hamper fetuses' proper development and growth.

"Altered expression of a gene is of concern because we will have more or less of a protein," said senior author of the study, Karin Michels, a professor and epidemiologist at the Harvard Medical School and Brigham and Women's Hospital in Boston, in an emailed response. "Proteins have essential function, for example, as hormones in the body."

[Read more...](#)

See original study in *Environmental Health Perspectives*, "[First-Trimester Urine Concentrations of Phthalate Metabolites and Phenols and Placenta miRNA Expression in a Cohort of U.S. Women](#)".

### Biobased chemicals from DuPont and BioAmber used to produce artificial leather

[Source: IHS Chemical Week, June 23, 2015](#)

Author: Rebecca Coons

BioAmber (Minneapolis) announced today that the Flokser Group, a global leader in leather and suede fabrics, has successfully developed an artificial leather fabric using biobased materials supplied by DuPont Tate & Lyle Bio Products, a joint venture between DuPont and Tate & Lyle, and BioAmber. The fabric comprises a polyester polyol made from BioAmber's biobased succinic acid and DuPont Tate & Lyle Bio Products' biobased 1,3-propanediol (PDO).

[Read more...](#)

See related article from *Ecotextile News*, "[Flokser launches bio-based leather fabric](#)".

Also see from *Grist*, "[These biodegradable computer chips are made from wood](#)".

### Sustainable Products Fatten Corporate Coffers

[Source: CFO, July 8, 2015](#)

Author: David McCann

Many large companies are deriving a growing portion of their revenues from portfolios of products and services designed to enhance sustainability, according to new research by The Conference Board.

Among a sample of 12 S&P Global 100 companies, aggregate revenues from such products and services grew 91% from 2010 to 2013, while overall sales climbed by just 15%. Kimberly-Clark made a big splash in 2014 with its new Scott Naturals tubeless toilet paper.

Manifestations of the trend were startlingly extreme at some of the companies. For example, at Kimberly-Clark, while overall company revenue increased a modest 7.6% from 2010 to 2013, the topline tally from sustainable products ballooned by 296%. Over that period the company's share of revenue driven by such products shot from 10% all the way to 37%.

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