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Drinking Water Health Advisories for PFOA and PFOS

[Source: U.S. Environmental Protection Agency, May 20, 2016](#)

EPA has established health advisories for PFOA and PFOS based on the agency's assessment of the latest peer-reviewed science to provide drinking water system operators, and state, tribal and local officials who have the primary responsibility for overseeing these systems, with information on the health risks of these chemicals, so they can take the appropriate actions to protect their residents. EPA is committed to supporting states and public water systems as they determine the appropriate steps to reduce exposure to PFOA and PFOS in drinking water. As science on health effects of these chemicals evolves, EPA will continue to evaluate new evidence.

To provide Americans, including the most sensitive populations, with a margin of protection from a lifetime of exposure to PFOA and PFOS from drinking water, EPA has established the health advisory levels at 70 parts per trillion.

[Read more...](#)

See this [August 2015 draft toxicological profile for Perfluoroalkyls](#) from the Agency for Toxic Substances and Disease Registry, and EPA's [draft health effects documents for PFOA and PFOS](#).

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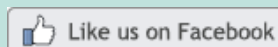
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[Source: *The Hill*, May 24, 2016](#)

Author: Timothy Cama

The House on Tuesday voted overwhelmingly to pass an overhaul to the nation's chemical safety standards for the first time in four decades.

The Frank R. Lautenberg Chemical Safety for the 21st Century Act aims to answer years of complaints that the Environmental Protection Agency (EPA) lacks the necessary authority to oversee and control the thousands of chemicals being produced and sold in the United States.

It also significantly clamps down on states' authorities in an effort to stop a nationwide patchwork of chemical laws that industry says is difficult to deal with.

[Read more...](#)

See from *The Seattle Times*, "[Environmental groups criticize revisions to toxics-control act](#)", and from *Bloomberg BNA*, "[Sen. Paul Blocks Unanimous Consent Vote on TSCA-Reform Bill](#)".

EPA Chemical Data Reporting Rule Brings Challenges, Opportunities

[Source: *Environmental Leader*, May 24, 2016](#)

Author: James G. Votaw

Every four years, companies that manufacture or import chemical substances in the U.S. in quantities greater than 25,000 lbs./year by site must submit detailed manufacturing, processing and use information on each of these chemicals to the Environmental Protection Agency (EPA). *40 CFR Part 711*. Information submitted under this Chemical Data Reporting (CDR) Rule is used by EPA both as a stepping off point for assessing compliance with the federal Toxic Substances Control Act (TSCA), and also to compile and maintain the agency's inventory of chemical substances in commerce in the U.S. (the TSCA Inventory). CDR reporting can be very burdensome because it requires a multidisciplinary effort within companies, and may require investigations and coordination with partners, as well as direct and indirect customers up and down product supply chains. The next CDR reports must be submitted electronically to EPA on or before September 30, 2016, covering chemical manufacture and import activities during the period 2012-2015.

[Read more...](#)

Also see fact sheets on the 2012 data from the U.S. EPA, [Basic Information](#) and a [Chemicals Snapshot](#).

A "top-down" *in silico* approach for designing ad hoc bio-based solvents: application to glycerol-derived solvents of nitrocellulose

[Source: *Green Chemistry*, March 9, 2016](#)

Authors: Laurianne Moity, Valérie Molinier, Adrien Benazzouz, Benjamin Joossen, Vincent Gerbaud and Jean-Marie Aubry

Potentially effective glycerol-based solvents for nitrocellulose have been designed using a top-down *in silico* procedure that combines Computer Assisted Organic Synthesis (CAOS) and Molecular Design (CAMD). Starting from a bio-based building block -- glycerol -- a large number of synthetically feasible chemical structures have been designed using the GRASS (GeneratoR of Agro-based Sustainable Solvents) program.

GRASS applies well-selected industrial chemical transformations to glycerol together with a limited number of relevant co-reactants. Then, the most promising structures are considered as lead compounds for further modification *in silico* thanks to the IBSS (InBioSynSolv) program, which generates derivatives with alkyl, cycloalkyl, alkene, cycloalkene or phenyl substituents. Finally, IBSS ranks all the candidates according to the value of their overall performance function to best fit the predefined specifications, i.e. (i) high solubilisation of nitrocellulose, (ii) slow evaporation and non-flammability, (iii) low toxicity and environmental impact. This general strategy enables the highlighting of the most relevant solvent candidate derived from any building block for a given application. To validate the approach, 15 commercially available solvents derived from glycerol were confronted with nitrocellulose and led to highlight diacetin as an effective and safe solvent.

[Read more...](#)

Chemical Footprint Project - Survey Results

[Source: The Chemical Footprint Project, 2016](#)

In the first initiative of its kind to publicly benchmark corporate chemicals management, the Chemical Footprint Project provides valuable insights into how leading companies manage chemicals in their products and supply chains, and how all companies might manage these issues in the future.

[Read more...](#)

See press release for report, "[Chemical Footprint Project Releases First Report on Corporate Progress Toward Safer Chemicals](#)". Access full report [here](#).

See article in *Environmental Leader* on the project, "[Why Levi's, J&J, Other Major Firms are Using Chemical Footprinting to Manage Risk](#)".

Inside the toxin-free hospital of the future

[Source: GreenBiz.com, May 31, 2016](#)

Author: Gary Cohen

Last week, hundreds of changemakers from hospitals, health systems and medical products or supplier companies gathered in Dallas to learn and compare notes at the 13th CleanMed Conference.

CleanMed is the nation's largest conference focusing on health care sustainability. Every year, we connect the health care leaders working to accelerate our sector's commitment to environmental sustainability and to spur a movement in regenerative health. These are people who have moved beyond protecting the environment and human health, to improving them. ...

Many products used in health care settings may contain or release carcinogens, reproductive toxins or other hazardous materials. In addition, chemicals used in these everyday products -- including beds, chairs and mattresses -- have not been tested for toxicity.

We continue to see the sector shift away from chemicals of concern, especially when present in health care interiors. These include: flame retardants; stain- and water-resistant perfluorinated compounds; antimicrobials; PVC or polyvinyl chloride plastic; and formaldehyde.

[Read more...](#)

UK Nanosafety Group publishes 2nd edition of guidance to support safe working with nanomaterials

[Source: SafeNano, May 25, 2016](#)

The UK Nanosafety Group (UKNSG) has updated and published a 2nd edition of guidance to support safe and responsible working practices with nanomaterials in research and development laboratories.

The document aims to provide guidance on factors relating to establishing a safe workplace and good safety practice when working with particulate nanomaterials. It is applicable to a wide range of nanomaterials, including particles, fibres, powders, tubes and wires as well as aggregates and agglomerates, and recognises previous and current uncertainty in developing effective risk management when dealing with nanomaterials and advocates a precautionary strategy to minimise potential exposure.

The 2nd edition of the guidance provides updates to account for changes in legislation, recent studies in the literature, and best practice since 2012. In particular, specific sections have been revised to account for the full implementation of Global Harmonised System (GHS) which came into force on 1 June 2015 through the CLP regulations. The document explains the approaches that are presently being used to select effective control measures for the management of nanomaterials, more specifically control banding tools presently in use. Significant changes can be found in the following sections: 'Hazard Banding', 'Exposure Control', 'Toxicology', and 'Monitoring'.

[Read more...](#)

Download the updated May 2016 guide, "[Working Safely with Nanomaterials in Research & Development](#)".

Also see recent NIOSH findings, "[Research Explores Workplace Exposure to Carbon Nanotubes](#)".

Public health impact of chemicals: knowns and unknowns

[Source: World Health Organization, International Programme on Chemical Safety, May 2016](#)

This 2016 report estimates that 1.3 million lives and 43 million disability-adjusted life-years were lost in 2012 due to exposures to selected chemicals.

However, data are only available for a small number of chemical exposures and people are exposed to many more chemicals every day.

Unintentional poisonings are estimated to cause 193,000 deaths annually, with the major part being from preventable chemical exposures, however only 47% of countries have a poisons centre.

Addressing lead exposure would prevent 9.8% of intellectual disability, 4% of ischaemic heart disease and 4.6% of stroke in the population, yet many countries do not regulate lead paint.

This report provides examples of effective interventions to prevent death and disease caused by chemicals, and the economic benefits to be gained.

[Read more...](#)

Access full report, "[The Public Health Impact of Chemicals: Knowns and Unknowns](#)".

Impeded Immunity? Reduced Tuberculosis Vaccine Response with Exposure to Environmental Chemicals

Source: [Environmental Health Perspectives, June 2016](#)

Author: Lindsey Konkel

There is some evidence that early-life exposures to polychlorinated biphenyls (PCBs) and other persistent environmental chemicals can alter the developing immune system and may be associated with diminished effectiveness for certain vaccines. This could have serious implications for parts of the world where diseases that are preventable with vaccines remain a major public health threat. In this issue of *EHP*, researchers present new evidence that two persistent organic pollutants are associated with a lower antibody response to the tuberculosis vaccine, which could potentially lower resistance to infection.

"Our findings show that environmental chemicals may be playing a role in immune disruption—in this case the suppression of immune response to a vaccine," says lead author Todd Jusko, an epidemiologist at the University of Rochester in New York.

[Read more...](#)

Also see related *EHP* article, "[A Birth Cohort Study of Maternal and Infant Serum PCB-153 and DDE Concentrations and Responses to Infant Tuberculosis Vaccination](#)".

Exposure to chemicals in plastic and fungicides may irreversibly weaken children's teeth

Source: [ScienceDaily, May 30, 2016](#)

Endocrine disruptors are chemicals that interfere with mammalian hormones. Bisphenol A (BPA) is one of the most prevalent, found in every-day items including refillable drink bottles and food storage containers. Vinclozolin is another endocrine disruptor that was commonly used as a fungicide in vineyards, golf courses and orchards.

Molar incisor hypermineralisation (MIH) is a pathology affecting up to 18% of children aged 6-9, in which the permanent first molars and incisors teeth that erupt have sensitive spots that become painful and are prone to cavities. These spots are found on dental enamel, the tough outer covering of teeth that protects it from physical and chemical damage. Unlike bone, enamel does not regrow and so any damage is irreversible. Previous rat studies have shown that MIH may result from exposure to BPA after finding similar damage to the enamel of rats that received a daily dose of BPA equivalent to normal human BPA exposure, though the exact mechanism of action remains unclear.

[Read more...](#)

See original study in *Endocrine Abstracts*, "[Systemic enamel pathologies may be due to anti-androgenic effects of some endocrine disruptors](#)".

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