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A CALL FOR BETTER Toxics Policy Reform

by Janet Wilson and Oladele A. Ogunseitan



Cosmetics contain many potential hazardous substances.

After 40 years of lackadaisical regulation of toxic chemicals in the United States, on June 22, 2016, President Obama signed into law an update of the loophole-riddled Toxic Substances Control Act of 1976 (15 U.S.C. §2601 et seq.),¹ frequently characterized as one of the nation's weakest environmental laws.² The new Frank R. Lautenberg Chemical Safety for the 21st Century Act³ of-

fers marginal improvements, yet has an extraordinary array of supporters. Perhaps that's because there's something for every constituency that has been aching for change. More likely, after decades of fighting for meaningful reform, some advocates took what they could get in the waning days of a sympathetic Obama administration.

Time will tell whether and to what extent public health and environmental quality will continue to be compromised

by toxic commercial products. Myriad consumer products, from shampoos to lawn fertilizers to clothing, contain ingredients that have been determined to promote cancers, disrupt hormones, interfere with breathing, and carry other serious health risks or lead to ecosystem perturbation. Unfortunately, toxicity characteristics remain near the bottom of priorities for many product designers and manufacturers, for which economic costs and functionality are relatively



istock/skyhobo

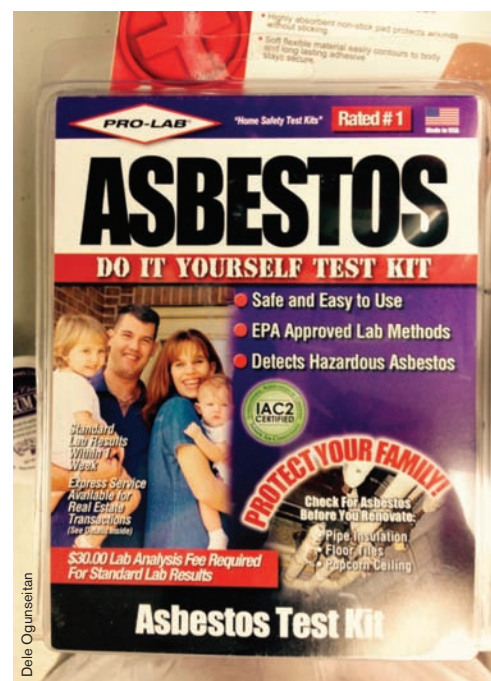
The William Jefferson Clinton Federal Building in Washington, DC is the headquarters of the U.S. EPA, responsible for implementing the new Frank R. Lautenberg Chemical Safety for the 21st Century Act.

weighted heavily.⁴ The situation is further complicated by the lack of full transparency in the process of selecting “safer” alternatives to toxic chemicals that are under scrutiny because they have notoriously caused harm to human health or the environment. For example, it is possible to purchase “Bisphenol A (BPA)-free” plastic water bottles at the grocery store, but there will be no consumer information on the chemical used to replace BPA in such bottles.⁵

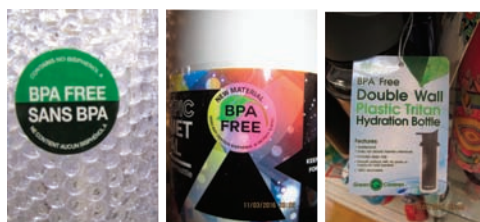
And for thousands of chemicals in consumer products, there is simply not sufficient research on toxicity profiles and risks to humans and sensitive ecosystem components. Ideally, the high-throughput Tox21 project or Toxicity Testing in the 21st Century should align perfectly with the “Chemical Safety for the 21st Century Act”, but there is no such high-level integration beyond an attempt in the new law to encourage alternative toxicity testing methods that are not based on vertebrate animals. Unlike Tox21, which is a collaboration among several federal agencies,

including the U.S. Environmental Protection Agency, the National Institutes of Health (NIH) National Center for Advancing Translational Sciences, the National Toxicology Program at the National Institute of Environmental Health Sciences, and the Food and Drug Administration, the burden of implementing the Chemical Safety for the 21st Century Act will likely fall heavily on the U.S. Environmental Protection Agency (EPA). Since the passage of the Toxic Substances Control Act in 1976, the EPA has completed testing on about 2% of 85,348 chemicals in its inventory and has restricted or banned just five. Even highly researched and litigated materials such as asbestos have not been outlawed at the national level.

For far too long, controversies and frequent legal challenges by industry groups derailed efforts to strengthen the original Toxic Substances Control Act. The recently successful reform is not perfect, but it has notable good points: It requires—for the first time in the United States—that a new chemical be



The difficulty of enacting federal regulations to fully ban toxic materials, such as asbestos, in commerce places a burden on consumers to conduct chemical testing and to interpret results in terms of potential impacts on personal health.



Dele Ogunseitan

A bewildering array of selections of drinking fluid containers confront consumers who may or may not understand the significance of the BPA-Free or Phthalate-Free chemicals information, with no information on safer alternatives.

proven safe before it is used in a product. Currently, when harmful compounds like BPA or perfluorocarbons are finally removed from baby bottles or frying pans, replacement products contain chemicals with unknown risks. Timelines are established for required testing and regulation. Companies mostly are no longer shielded from revealing internal testing data. Chemicals that accumulate in human bodies over time—potentially leading to tumors, neurodegenerative diseases, and other serious illnesses—will receive priority. Vulnerable populations—cancer cluster areas, for instance—are to be evaluated too. The EPA already has a working list of 90 substances. Under the new law, residents of “fenceline” communities in



Dele Ogunseitan

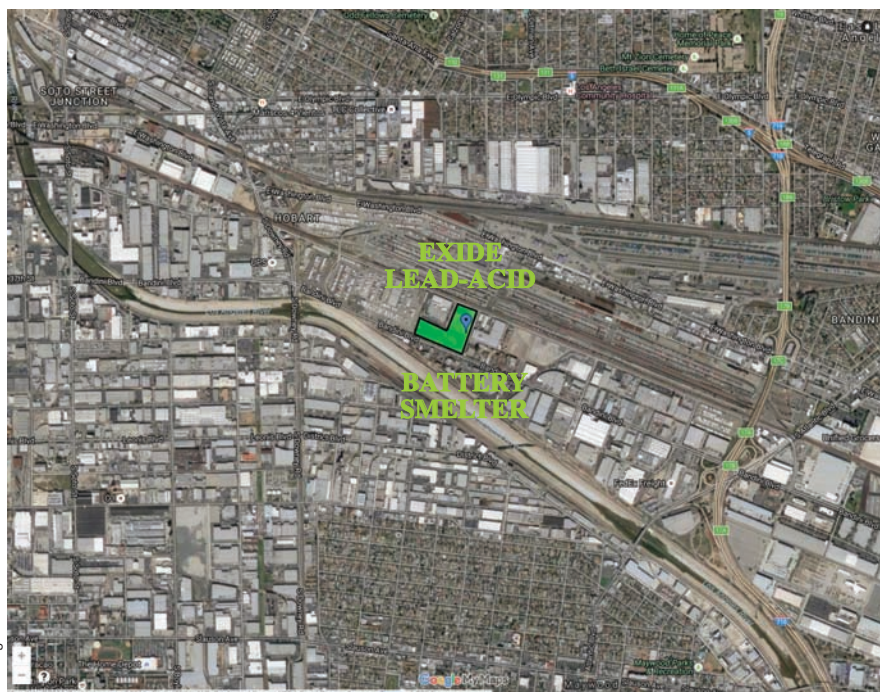
Perfluorooctanoic acid (PFOA) used in non-stick cookware is a notorious environmental pollutant that has been detected in human tissues worldwide.

the shadow of industry and freight must also receive priority. Our work and others⁶ have shown that people in these neighborhoods are disproportionately poor and nonwhite, and have higher than average levels of toxic contaminants in their bodies.

But here’s the bad news: The new law requires that EPA evaluate, within four years of its enactment, only 20 high-priority chemicals selected from just 90 chemicals in the TSCA Work Plan for Chemical Assessments. Developing actual regulations could take decades. Any unsympathetic new U.S. president could further reduce EPA funding, causing even more administrative delays. Also potentially damaging are economic exemptions and preemption of tougher state programs. Many safety regulations have been held hostage by economic advisors to Republican and Democratic presidents. The Chemical Safety for the 21st Century Act does eliminate a

requirement that fiscal impacts be balanced with health risks when evaluating a substance. However, fuzzy language leaves room for worry that profits could still trump public safety.

The new law grandfathers existing state regulations of chemicals that the federal government has not acted on. California has been a world leader in pollution controls, with the United States and other nations following its lead. Dry cleaning chemicals, formaldehyde, and others have been regulated in Sacramento and other state capitals. Lately, serious failings in California’s Department of Toxic Substances Control have also been exposed: It allowed the Exide lead battery recycling plant to operate without a final permit for decades, exposing area residents to lead and arsenic. But California’s Safer Consumer Products law and programs in Massachusetts, Washington state, and elsewhere have made strides, albeit



The Exide facility that recycled lead-acid batteries in southeast Los Angeles was responsible for contaminating low-income communities with toxic chemicals, highlighting the risks associated with well-characterized but poorly regulated commercial chemicals.

unevenly, in protecting public health. Now, state regulators may be required to wait at least 3 years before implementing new controls. Three years matter—studies consistently show that chemical exposure is particularly damaging to infants and toddlers’ developing brains.

Despite the exemptions, several environmental and consumer groups supported the new toxics policy. Retiring U.S. Sen. Barbara Boxer (D-CA) and Senate Environment and Public Works chair James Inhofe (R-OK), usually bitter foes, jointly praised it. The American Chemistry Council, whose members have been stung by consumer and retailer boycotts, also supported it. Apparently, there is something for everyone, even if it is precious little in some cases. Obama and Boxer burnished their legacies, and the California Senator and others finished the herculean task begun by her long-time colleague, now deceased Senator Lautenberg. Antiregulatory conservatives like Inhofe and chemical companies won an important

precedent—federal preemption of possibly stronger state laws. Big box chains like Walmart and Target can say they are minding the store on customers’ health.

But it’s critical to remember that the task of testing and regulating high-risk chemicals properly has only finally just begun. And a new era is emerging for research in environmental science and technology to reduce adverse impacts of toxic chemicals.

Janet Wilson is Director of Special Projects for Strategic Communications at the University of California, Irvine. As an Annenberg Senior Fellow and National Health Reporting Fellow at the University of Southern California, she investigated the impacts of industrial toxics on impoverished Los Angeles neighborhoods. **Oladele (Dele) Ogunseitan** is a professor of public health and founding chair of the Department of Population Health and Disease Prevention at the University of California, Irvine. He is also a professor of social ecology. He is currently a Jefferson Science Fellow of the U.S. National Academies of Sciences, Engineering and Medicine.

NOTES

1. President Gerald Ford signed the Toxic Substances Control Act into law on October 11, 1976, in re-

sponse to popular and congressional concerns about preventable risks that toxic chemicals posed to people and the environment. Yet adoption and implementation of the law faced major resistance and challenges by the chemicals industry and public health advocates. Although the text of the law stipulates broad authority, gaps in data on chemical toxicity, exposure assessment, and the extraordinarily large number of chemicals in commerce proved daunting. See: U.S. Environmental Protection Agency, “Summary of the Toxic Substances Control Act.” <https://www.epa.gov/laws-regulations/summary-toxic-substances-control-act> (accessed 23 June 2016).

2. The Toxic Substances Control Act (TSCA) was the major policy instrument with which the U.S. EPA was expected to regulate more than 80,000 chemicals. Several investigators have described TSCA’s severe limitation by noting that in nearly 40 years of existence, it was invoked to regulate only five chemicals. For a concise assessment of TSCA’s inadequacies, see: M. Schwarzman and M. Wilson, “New Science for Chemicals Policy,” *Science* 326 (2009): 1065–66.

3. Senator Tom Udall, principal sponsor (joined by 60 co-sponsors), introduced the Frank R. Lautenberg Chemical Safety for the 21st Century Act as a bill to amend the Toxic Substances Control Act to reauthorize and modernize that act, and for other purposes, to the Senate Committee on Environment and Public Works on March 10, 2015. The legislation survived a series of jostles, including Senator Barbara Boxer’s sponsorship of the related Alan Reinstein and Trevor Schaefer Toxic Chemical Protection Act on March 12, 2015. For the final text of the Frank R. Lautenberg law, see: U.S. Environmental Protection Agency, <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/frank-r-lautenberg-chemical-safety-21st-century-act> (accessed June 23, 2016).

4. The relatively new introduction of “green chemistry” approaches and comprehensive metrics for sustainability into environmental policies is encouraging manufacturers and product designers to broaden the scope of materials selection beyond economic considerations and functionality to include projections of toxic effects on people and the environment. However, further research is needed to develop consistent methods of analysis across chemicals and among legislative jurisdictions. For a review of the limitations of existing methods and opportunities for research, see: O. A. Ogunseitan and J. M. Schoenung, “Human Health and Ecotoxicological Considerations in Materials Selection for Sustainable Product Development,” *Materials Research Society Bulletin* 37 (2012): 356–63.

5. The requirement for “alternatives analysis” in new chemical regulation policies such as California’s Safer Consumer Products Regulations of 2013 aims to avoid the regrettable substitutions debacle, whereby hasty replacement of a toxic chemical by an even more toxic alternative occurs because of paucity of data on potential alternatives. A recent example is the phasing out of stratospheric-ozone-depleting chlorofluorocarbon compounds (CFCs), which were replaced with hydrofluorocarbon compounds that are potent climate-change-inducing chemicals, now subject to international restriction. Methods for decision making in the context of data imbalance and scientific uncertainty are under development. For a discussion and application of these methods, see: S. J. Park, O. A. Ogunseitan, and R. P. Lejano, “Dempster-Shafer Theory Applied to Regulatory Decision-Making for Safer Alternatives to Toxic Chemicals in Consumer Products,” *Integrated Environmental Assessment and Management* 10, no. 1 (2013): 12–21. doi:10.1002/ieam.1460.

6. For example, a recent study found widespread exposure to environmental toxic chemicals in pregnant Latina women and their fetuses in a low-income neighborhood of San Francisco, California. See R. Morello-Frosch et al., “Environmental Chemicals in an Urban Population of Pregnant Women and Their Newborns from San Francisco,” *Environmental Science and Technology*, (October 4, 2016) DOI: 10.1021/acs.est.6b03492.