

The Case for Retiring “Bad Actor” Chemicals And Why We Need to Fundamentally Change the Way We Make and Regulate Chemicals

Bad Actor Chemicals

At no time in human history have we been exposed to so many chemicals. There are an estimated 85,000 chemicals in the stream of commerce, and very little is known about most of them. The health effects of almost half the major industrial chemicals have not been studied at all. Of those that have been studied, as many as 2,000 chemicals with known links to cancer, birth defects, reproductive impacts and other health problems are still used regularly today.

While there are many bad actor chemicals out there, we’re using this annual event to shine a spotlight on some of the worst offenders. Welcome to the “The Toxies,” the second annual red carpet awards for bad actor chemicals. This year, we’re highlighting 10 chemicals in widespread use in the United States to demonstrate why we need to retire bad actors immediately. It’s time for a fundamental change in the way we make and regulate these and other chemicals. Some of these actors are household names and some are less familiar. What they have in common is that they affect the health of those exposed to them – whether the exposures take place in the workplace, in the home, or in the general environment – and that we can make safer products without the use of these chemicals.

Chemical Week magazine defines “bad actor” chemicals as those that consistently behave or react poorly. Why “bad actor?” Well, a bad actor is one whose performance makes the viewer wince during a movie, who distracts from an ensemble scene, who fails to make a fictional character come to life. A “bad actor” chemical is similar, because its poor behavior and reactions overshadow its usefulness in a product.

The chemicals profiled here are Bisphenol-A, Dioxin, Formaldehyde, Halogenated Flame Retardant, Lead, Mercury, Methyl Iodide, Perchlorate, Perchloroethylene and Triclosan.

Bad actors share certain traits. Here are some of the ways we know the bad ones from the rest. They are:

- Toxic or poisonous;
- Cause cancer;
- Change genetic material;
- Interfere with normal reproduction;



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- Disrupt the endocrine system (synthetic hormones);
- Cause serious eye damage;
- Cause hyper-reaction in the airways;
- Cause skin rashes or irritations;
- Accumulate in the body;
- Affect fish and other aquatic organisms;
- Deplete the ozone layer



The Toxies

The Toxies take a tongue-in-cheek approach, but make no mistake about it – these chemicals can have serious and sometimes deadly health impacts on males and females of all ages, socioeconomic classes and ethnicities. Childhood cancers have increased 20% since 1975, and autism is so prevalent now that it is diagnosed in one out of every 110 children. These diseases, health conditions and many others (breast cancer, ADHD, infertility) have been linked to environmental causes, including some of the chemicals in the Toxies.

These Toxies Award categories suggest the variety of impacts these chemicals have on our health and our environment:

- Least Sexy Performance
- Worst Chemical Body Burden
- Worst Hair Raising Performance
- Worst and Longest Running Performance
- Lifetime Achievement in Harm
- Super Hot Mess
- Worst Special Effects
- Most Washed-up
- Worst Dressed

Phasing out toxic chemicals just makes sense; safer alternatives are increasingly available and, in some cases, these chemicals are not even necessary. We can buy water bottles made of BPA-free plastic, glass or stainless steel. No one wants to put strawberry farmers out of business, especially not with fresh smoothies and shortcake desserts coming into season, so we can choose organic strawberries, whose growers have found alternative to toxic soil fumigants such as methyl iodide. And while no one would advocate for decreasing fire safety, we know that tightly woven natural fabrics are just as fire-resistant as chemically-treated ones. In this age of awareness and innovation, we do not need to sacrifice public and environmental health in the production of consumer products and food on which we have come to depend.

FIGURE 1. GROWTH IN CHEMICAL PRODUCTION

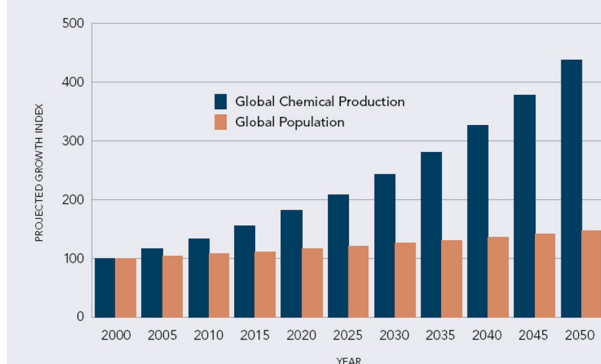


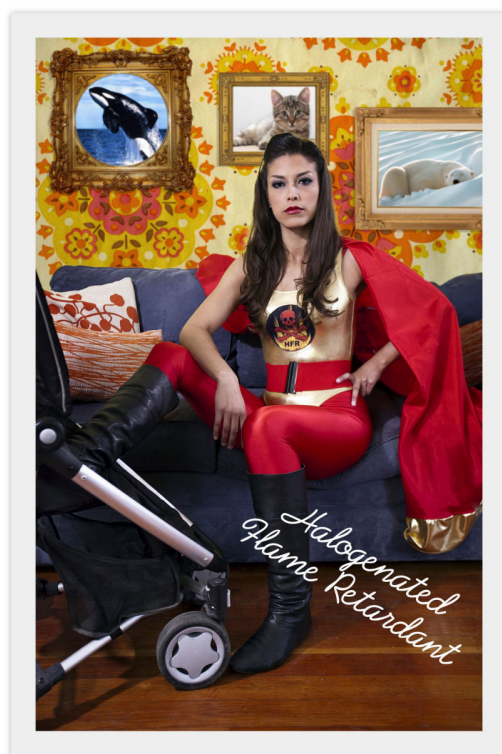
Figure from Green Chemistry: Cornerstone to a Sustainable California 2008. UC Berkley.
http://coeh.berkeley.edu/docs/news/green_chem_brief.pdf

Flame Retardants: A Toxic Shell Game

The use of toxic chemicals to “protect” families from house fires is a decades-long story that helps explain why comprehensive chemical policy reform is needed at the state and federal levels. In the 1970s, the federal Consumer Product Safety Commission (CPSC) responded to a rash of children’s deaths in house fires by increasing flammability standards in children’s pajamas. This well-meaning regulation, unfortunately enacted without consideration of how manufacturers would meet the standard, forced the makers of these items to use *halogenated flame retardants* to comply with the stricter rules.

Halogenated flame retardants are chemical compounds containing chlorine or bromine bonded to carbon. Many are persistent, bio-accumulative and toxic; of the 21 chemicals banned under the Stockholm Convention on Persistent Organic Pollutants (POPs), all are halogenated.

Within five years of the CPSC decree regarding flammability standards, scientific evidence concluded that the most commonly used flame retardant, brominated tris [tris (2,3-dibromopropyl) phosphate], was a mutagen, carcinogen and was being absorbed into children’s bodies from their PJs. So, in 1977, the CPSC banned this chemical from children’s sleepwear. Its most common replacement, chlorinated tris [tris (1,3-dichloro-2-propyl) phosphate] was identified as a carcinogen the very next year and thus was removed from sleepwear – but not from children’s items such as nursing pillows, high chairs or baby carriers, nor from household furniture that entire families are exposed to. Thirty-three years later, chlorinated tris is still used today in upholstered products, from which it migrates into household dust, which in turn is ingested and inhaled by family members who live in proximity to the furniture.



This is what people who work in public health policy call a “regrettable substitution” – when one “bad actor” is deemed too dangerous, but the replacement, or “understudy” chemical is just as bad. Sometimes the substitute chemical is an improvement in one area but worse in another area – for example, the replacement chemical might not be a carcinogen but, unlike its predecessor, it bio-accumulates in our bodies and the environment. Because there is no effective chemical regulation on the state or federal level, manufacturers tend to replace one chemical with the most expedient alternative – one that does not require an overhaul of the manufacturing process – and then just wait for the scientific jury to pass judgment. They get a few more years out of the new recipe and increase their substitute’s mileage by manufacturing doubt about research that describes the dangers

of individual ingredients, or a combination of components. In fact, taking a page from the tobacco industry's playbook, the chemical industry repeatedly casts doubt on legitimate, independent peer-reviewed research that finds harm from exposure to even very small amounts of toxic chemicals. For decades, chemical industry lobbyists have pressured elected officials and public agencies to allow toxic chemicals on to the market because the burden of proof -- that is, proof beyond the shadow of a doubt -- is so high.

How Does Chemical Regulation in the U.S. Work Now?

While there are safety requirements for chemicals in food or drugs, there are no safety requirements for the thousands of chemicals that comprise the vast majority of the products we use every day. Thus, when concerns arise that a chemical is causing cancer or birth defects, we have to struggle to get it out of the market. When it comes to the health of families and our environment, a protective approach -- "better safe than sorry" -- is essential in protecting our children, our workers, our water and our air.



Reform of the 35-year-old Toxic Substances Control Act (TSCA), the federal system for overseeing chemical safety, is now on the national agenda. This is welcome news because TSCA has failed to protect public health and the environment from toxic chemicals. TSCA's failures also pose a threat to American companies operating in a global market that increasingly demands safer products. Since the enactment of TSCA, the Environmental Protection Agency (EPA) has required testing of only 200 chemicals (out of an estimated 85,000) and it has regulated only five. Meanwhile, a number of states and other countries -- notably the European Union and Canada -- have moved ahead, enacting new policies to identify and control problem chemicals. Several states have passed legislation to protect the public from exposure to individual chemicals such as the hormone-disrupting bisphenol-A (BPA) in certain products. At the same time,

some major manufacturers and retailers have crafted their own policies in response to rising consumer demand for less toxic products, such as baby bottles free of bisphenol-A (BPA).

In some cases, states have been leading the nation and laid the groundwork for comprehensive chemical policy reform. Over 30 states have efforts to protect environmental health from toxic chemicals, examples include:

- 2011 - The Maine legislature passed the Kid Safe Products Act, a bill that outlines the state's process to identify dangerous chemicals in consumer products, as well as passing legislation to phase out BPA in baby products. Maine banned deca, a halogenated flame retardant, in 2007, well before the U.S. EPA called for a voluntary phase out from manufacturers.
- 2010 - The state of Washington passed a bill that would phase out BPA in children's drinking cups and baby bottles. Washington also passed the first ever bill to phase out PBDE flame retardants in 2007.
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- 2009 - Minnesota passed the Toxic Free Kids Act, which created a framework for evaluating chemicals based on their inherent hazards to human health.
- 2008 - California launched the Green Chemistry Initiative, a comprehensive strategy designed to produce information on the hazards posed by chemicals, reduce exposure to dangerous substances, encourage cleaner and less polluting industrial processes, and encourage manufacturers to take greater responsibility for the products they produce. While still under development, an effective Green Chemistry program in California could phase out toxic chemicals such as the ones highlighted here and replace them with substances or processes that are safer, while just as effective and cost-neutral. Proposition 65, to let consumers know when they are exposed to carcinogens in public places was enacted in 1986.

Aside from the federal Environmental Protection Agency, many other agencies struggle with protecting the public from toxic chemicals, including the Consumer Product Safety Commission (CPSC), which is under attack for its ban on phthalates, the Occupational Safety and Health Administration (OSHA), which issued a warning about formaldehyde in hair straighten products, and the Federal Food and Drug Administration (FDA), the agency in charge of regulating personal care products and cosmetics, currently lacks the authority to require chemical or product safety assessments. The FDA does not even have the power to authorize a recall of unsafe cosmetics. These major loopholes in U.S. federal law allow the \$50 billion cosmetics industry to put unlimited amounts of chemicals into personal care products with no required testing, no monitoring of health effects and inadequate labeling requirements. In fact, cosmetics are among the least-regulated products on the market. In addition to TSCA reform, we need to pass the Safe Cosmetics Act, which will finally empower the FDA to regulate the personal care products that we all use on our bodies every day, and will get the bad actors Formaldehyde and Triclosan out of their starring roles in cosmetics.

Retire Those Bad Actors – Train the Next Generation of Actors the Right Way!

The ten chemicals being recognized at the 2011 Toxies have been determined hazardous in numerous peer-reviewed research studies. Some of these chemicals have been examined in *hundreds* of studies -- going back decades -- and some have been linked to serious health effects even at very low doses. They have been linked to cancer, birth defects, chronic and acute diseases; they have polluted our air and water and threatened our wildlife; and they have contributed to global warming. That they have continued to inflict harm for so long despite so much evidence of their hazards is an indictment of our current regulatory scheme. Clearly, the time has come to get these bad actors -- and others -- off the market. The good news is that we can do it!

Take a look at the bad actor resumes here and visit www.toxies.com to learn more and take action to retire these bad actors!

Thanks to lead author Pam Palitz from Environment California. Toxies Host Committee: Black Women for Wellness, Californians for Pesticide Reform, Campaign for Safe Cosmetics, Californians for a Healthy and Green Economy, Cancer Schmancer, Center for Environmental Health, Clean Water Action, Center for Health, Environment & Justice, Clean New York, Environment California, Environmental Health Fund, Environmental Justice and Health Alliance for Chemical Policy Reform, Green Science Policy Institute, Healthy Legacy, Plastic Pollution Coalition, Physicians for Social Responsibility – Los Angeles, SaferStates, Workgroup for Safe Markets, Worksafe