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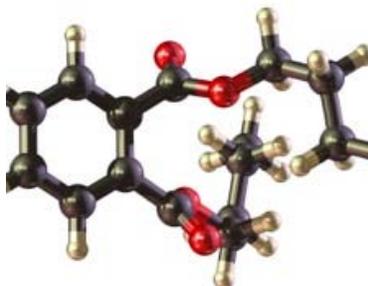
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What the EPA's "Chemicals of Concern" Plans Really Mean

The agency's environmental and health concerns about phthalates, PBDEs and two other chemical types marks a shift in federal policy and is sparking policy changes in advance of anticipated regulations

By Elizabeth Grossman

In an unusual exercise of its authority under the Toxic Substances Control Act (TSCA), the U.S. Environmental Protection Agency announced on December 30 the establishment of a "chemicals of concern" list and [action plans](#) that could prompt restrictions on four types of synthetic chemicals used widely in manufacturing and consumer products, including [phthalates](#) used to make flexible plastics, often for toys, household products and medical equipment.



MODEL CHEMICAL?: Phthalates, like the one modeled here, are among the chemicals the EPA has identified as "chemicals of concern."
Image: © iStockphoto.com / Martin McCarthy

Of the compounds covered in the action plans—which also include [polybrominated diphenyl ethers](#) (PBDEs), [long-chain perfluorinated chemicals](#) (PFCs) and [short-chain chlorinated paraffins](#) (SCCPs)—phthalates and PBDEs will be listed as "chemicals of concern." The PFCs and paraffins will be addressed under other TSCA provisions that could also result in restrictions.

These four types of chemicals, the EPA said, raise "serious environmental or health concerns" and in some cases "may present

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an unreasonable risk of injury to health and the environment."

This is a big deal because it is the first time since TSCA was passed in 1976 that the EPA has made such a move. To date, the agency has only successfully used TSCA to restrict or ban five of the 80,000-plus chemicals on its inventory of those used or produced in the U.S. Although this action will not immediately change the chemical landscape for consumers and manufacturers, the "chemical of concern" listings indicate EPA thinking that these chemicals are potentially dangerous and that further regulatory action is warranted. Listing also triggers export and production notifications under TSCA, requirements that may deter some users.

"The decision to list the chemicals further signals this administration's commitment to aggressively use the tools at its disposal under TSCA," EPA spokesperson Ernesta Jones said. This action, she said, also indicates the "EPA's strong belief that the 1976 law is both outdated and in need of reform."

Some of the chemicals subject to these action plans are already being phased-out voluntarily or restricted by state or other federal laws. But the EPA's action—particularly for substances listed as "chemicals of concern"—could go further than existing regulations. Although TSCA has proved a cumbersome instrument for regulating hazardous chemicals, it allows the Obama administration to achieve these goals without the challenge of lining up votes in Congress for new legislation.

The action plans, which vary by chemical, include placing these compounds on the [Toxics Release Inventory](#) that requires reporting of environmental releases, along with developing safe alternatives through the EPA's [Design for Environment](#) program and [green chemistry](#) initiative.

Chemicals covered by the plans are used as plasticizers, as flame retardants and to create nonstick surfacing as well as stain-, grease- and [water](#)-resistant coatings for cookware, textile and food packaging. They're used in personal care, household and cosmetic products as well as for numerous industrial applications. They have been found consistently in wildlife and in human blood samples during biomonitoring tests including those conducted by the [U.S. Centers for Disease Control](#). Numerous animal studies document their adverse impacts on developmental, metabolic, reproductive and other bodily systems. Many are environmentally persistent as well as bioaccumulative—meaning that they can build up in fat tissue. They also have been identified as [endocrine disruptors](#). Some PBDES may potentially cause [cancer](#).

Immediate response from the [American Chemistry Council](#) (ACC), the chemical manufacturers' trade association, criticized the EPA's choice of chemicals for the action plans. These chemicals, the ACC said, "seem to have been selected based on little more than their current 'high-profile' nature." ACC president Cal Dooley also faulted the action plans for a lack of transparency, saying the process "to date provides no evidence of a systematic, science-based approach to chemicals management."



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The chemical company BASF, a major phthalate manufacturer, said via e-mail that it "believes the actions proposed in the [EPA] plan are unwarranted," but that the company "is committed to working with the EPA and other government agencies to ensure the safe use of our products." Asked how the EPA's action might affect future plans, BASF replied that given its "strong focus on innovation," it would "continue to develop new products to meet the changing needs of the marketplace," while defending its existing "important and beneficial products against unwarranted regulations."

Among the chemicals included in the action plans, PBDEs and long-chain PFCs are already subject to voluntary phaseouts being worked on in cooperation between industry and the EPA. This, explains DuPont chemical company spokesperson Janet Smith, has led to a 98 percent reduction of PFC emissions at DuPont's manufacturing sites. The new EPA action, however, could lead to formal regulation. And, notes Richard Denison, senior scientist at [Environmental Defense Fund](#), many other PFC compounds not covered by the EPA actions or voluntary phaseouts are currently used—including in [food packaging](#)—that raise similar environmental health concerns.

Meanwhile, major retailers, including Costco, Target and Wal-Mart are following these developments closely. Costco noted that its product offerings follow state as well as federal law. If a particular material is restricted in one state or even a local jurisdiction, the company will typically follow that lead nationally.

Some companies, particularly those—with their own product lines, such as Target and Wal-Mart—have already begun to modify materials, in some cases acting in advance of regulations. "We're very proactive," Target spokesperson Amy Reilly said.

Similarly, Wal-Mart spokesperson Melissa O'Brien said that its goal "is to ensure we have compliant product in stores on the effective date of any new regulation." Wal-Mart, for example, is not waiting for the regulatory process to progress but has already extended its restrictions on phthalates beyond existing federal requirements to include plastic components in children's clothing and footwear.

"The American people are understandably concerned about the chemicals making their way into our products, our environment and our bodies," said EPA Administrator Lisa Jackson, announcing the action plans. "Chemical safety is an issue of utmost importance, especially for children, and this will remain a top priority for me and our agency, going forward."

The action plans involve rulemaking that will begin later this year, including public comment and stakeholder input, on timelines that could extend beyond 2012. But as it has before, the consumer market may act sooner. [Additional action plans](#) are slated, including for another high-profile substance, bisphenol A (BPA), the chemical building block of polycarbonate plastics used in countless consumer products and to make many resins that line food and beverage cans. It, too, has been detected in numerous human biomonitoring studies. BPA has been identified as an endocrine disruptor and has been linked in numerous animal studies to adverse health effects, including in reproductive and metabolic systems, which have prompted public

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concern. The BPA action plan is bound to attract wide attention.

Elizabeth Grossman writes about environmental and science issues from Portland, Ore. She is the author most recently of Chasing Molecules: Poisonous Products, Human Health and the Promise of Green Chemistry.

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1. Sisko
01:09 PM 1/11/10

The idea of modifying the world economy due to a belief that humans are raising the temperature of earth due to the amount carbon we release seems misguided.

Please look up what is called the "Exxon Sea Level curve...or look up information on the Hallam curve if you fear Exxon is faking data". It is the most respected data I have found showing what our ocean levels have been over the last 500 million years. What this data shows is that we currently are at, or near to; the lowest ocean levels ever over that period.

Given this as a fact.....isn't it reasonable to think that, regardless of human activity; ocean levels will undoubtedly raise in the future??? Isn't the idea of maintaining the current ocean levels very similar to a child building a moat around their sand castle at the beach, and thinking it will protect it from the high tide???

The world is warming.....the world will change.....humanities best attribute is it's ability to adapt. Accept and embrace the changes and worry more about real problems like controlling the number of people on the planet. That is a real problem we should do something about.

CO2 levels are not that big of a real concern in my opinion. Climate change will force people to move over a 10 to 50 year timeframe....so what??? Climate change will adjust the productivity of various farmlands, some becoming more productive, while others become less so.....so what?? On the whole, a warmer planet is simply different and not worse. Climate alarmists stupidly say that "millions or even billions will be killed due to climate change".....how is that going to happen exactly????

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2. OrgChemRules
01:24 PM 1/11/10

The phthalate molecule pictured appears incorrect. The "ethyl" group has six bonds to carbon.

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3. OrgChemRules
01:26 PM 1/11/10

The phthalate molecule pictured seems incorrect. The "ethyl" group has six bonds to carbon.

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4. Spoonman
01:29 PM 1/11/10

"The idea of modifying the world economy due to a belief that humans are raising the temperature of earth due to the amount carbon we release seems misguided."

And yet, it's only one of many reasons to modify the economies. The primary reason you allude to later in your comment: the growing population of the planet. Within 40 years, there will be over 10 billion people on the planet, almost a 50% increase. We need to modify how we feed and "power" those people. Using fossil fuels will not cut it, they'll most likely be gone before then. Even the oil companies are now admitting they're desperate to find more oil.

"Given this as a fact.....isn't it reasonable to think that, regardless of human activity; ocean levels will undoubtedly raise in the future??? Isn't the idea of maintaining the current ocean levels very similar to a child building a moat around their sand castle at the beach, and thinking it will protect it from the high tide???"

It isn't all about rising tides. It's about global drought which will lead to crop failures. Rising sea levels is an issue, but mostly for coastal dwellers. Micronesia's feeling the pain already.

"Accept and embrace the changes and worry more about real problems like controlling the number of people on the planet. That is a real problem we should do something about. "

Why? Because you say so? Because you deny the science of the last 40 years and therefore only see eugenics or genocide as a viable option? It's entirely possible for us to continue population growth AND not destroy the planet in the process. But, we need to start NOW. It's not just about climate change, but economics and governments need to change to adapt and respond to a growing, ever more connected, global population. Your solution is "stay the course and kill people (or prevent breeding)", ours is "fix the problems".

"CO2 levels are not that big of a real concern in my opinion."

That's nice. Fortunately, your opinion is of no consequence whatsoever.

"On the whole, a warmer planet is simply different and not worse."

A warmer planet is different, a HOT planet is worse.

"Climate alarmists stupidly say that "millions or even billions will be killed due to climate change"how is that going to happen exactly????"

Haven't heard anyone say that, so I have to assume for the moment it's a lie Glenn Beck is spreading in an attempt to destroy the world. That being said, if crops fail on a global scale, people are going to go hungry. Not sure if the science behind it's valid or not, but i've heard some alarmists say that without food people die.

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5. Spoonman
01:31 PM 1/11/10

"seem to have been selected based on little more than their current 'high-profile' nature."

And, the fact that they're high-profile because the science has been showing that they're also dangerous. Let's not forget the important piece.

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6. leisurelyviking
01:58 PM 1/11/10

Umm... this article is about chemicals that pose health risks to humans for reasons completely separate from global climate change. Sisko's comment is completely unrelated.

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7. rdenison
02:08 PM 1/11/10

These action plans represent a new era at EPA and provide indication of EPA's intention to do what it can under its limited authorities, even as EPA and others advocate for Congress to provide broader authority by amending the 33-year-old Toxic Substances Control Act.

See my receng blog post at www.edf.org/chemandnano for more information on the action plans.

See the website of the Safer Chemicals Healthy Families campaign (www.saferchemicals.org) for more information on priorities for TSCA reform.

Richard Denison, PhD
Senior Scientist
Environmental Defense Fund

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8. Sisko

03:31 PM 1/11/10

Spoonman- Thank you for the feed back. Most of what you wrote was reasonable for a discussion....with the exception of the comments: "Fortunately, your opinion is of no consequence whatsoever....and Why? Because you say so? Because you deny the science of the last 40 years and therefore only see eugenics or genocide as a viable option? It's entirely possible for us to continue population growth AND not destroy the planet in the process. Your solution is "stay the course and kill people (or prevent breeding)", ours is "fix the problems".

I have certainly not ignored the science, but have looked at the long term data and not just selectively looked at information the supported a pre conceived position.

If I understand your concern, it is that the planet will be warmer/hotter and you believe that will lead to it also being drier, and you believe that will lead to lower farm productivity.

If ocean levels raise (which the data suggest will happen) world wide rainfall will actually increase not decrease. There will absolutely be changes in which farmlands are more or less productive. Why would there be any world wide food shortage??? That simply is chicken little like communication to appeal to the poorly informed.

Don't you believe that controlling the world's population is ultimately essential?

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9. Sisko

03:42 PM 1/11/10

Spoonman- you start with some reasonable comment and then unfortunately degrade into the stupid comments of trying to be insulting on a personal level...that's a shame.

I by no means am ignoring the science. I am looking at 500 million years of data and asking questions. I am not looking at much shorter term data as you seem to be doing and then insulting anyone who does not reach the same conclusions.

If ocean levels rise (which seems highly likely) global rainfall will increase and not decrease. Yes, environment changes will mean that some farmland will become less productive while other areas become more productive. This would not happen over a period of months, but over decades.

Why would this lead to starvation??? It will not, but if you want to get attention, you can claim that will happen.

I have not offered a "solution" here. I have merely stated the I do not think AGW is the degree of an issue that you seem to believe.

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10. Sisko

03:53 PM 1/11/10

leisure's comment regarding my comment is a fair one.

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