

**TESTIMONY of Michael P. Wilson, Ph.D, MPH**

Berkeley Center for Green Chemistry  
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*before*

The Assembly Committee on Environmental Safety and Toxic Materials

Honorable Pedro Nava, Chair

*and*

The Assembly Committee on Health

Honorable William Monning, Chair

*and*

The Assembly Committee on Natural Resources

Honorable Wesley Chesbro, Chair

Oversight Hearing on the Safer Consumer Product Alternatives

Draft Regulations

AB 1879

**Green Chemistry: Cornerstone to a Sustainable California**

Tuesday, August 3, 2010, 2:00 PM

California State Capitol, Room 4202

Mr. Nava, Mr. Monning, Mr. Chesbro, members of the Committees, thank you very much for inviting me to today's oversight hearing on the Safer Consumer Product Alternatives draft regulations promulgated by the Department of Toxic Substances Control in response to AB 1879. The nearly 600 pages of public comment received by DTSC in response to the draft regulations hints at the importance of this hearing and the matter we are discussing today. In my view, the outcome of this process could have enormous implications for California and the U.S., and perhaps the world, well into the future. As global chemical production doubles over the next 24 years, much is at stake, and we have a unique opportunity and responsibility to do the very best we can.

As you know, I am a research scientist at the Center for Occupational and Environmental Health at UC Berkeley, and I serve as Associate Director of the Berkeley Center for Green Chemistry, which we launched last year. The Center for Green Chemistry is the nation's first *interdisciplinary* academic effort at a major university to conduct research, teaching and service for the purpose of advancing green chemistry; that is, the *design* of chemicals and products that are safer for health and the environment. It is now a collaboration of faculty, students, and researchers from the School of Public Health, College of Chemistry, College of Natural Resources and Haas School of Business.

We are recruiting faculty and students across the campus to participate in the Center because the more we have learned about this topic, the more we have found how extraordinarily complicated it can be. I mention this because I want you to know,

essentially, that I appreciate the complexity of the challenges you and your colleagues are facing as we work together to craft a modern chemicals policy.

I also appreciate that we will not solve all of our problems with chemical pollution and exposures with a single initiative or single set of regulations; that we are talking about nothing short of a transformation in the chemical sciences, in chemicals policy, and in the chemicals market.

At the same time, of course, the best time to start is now. The more we delay, the more costs we incur and the more we risk losing the first-mover advantage.

It is in the spirit of crafting solutions, not simply calling attention to problems, that I offer my remarks today. I speak, of course, as an individual and as a UC scientist. My views do not necessarily reflect those of COEH, the Berkeley Center for Green Chemistry, or the University of California.

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The apparent simplicity of green chemistry—the design of safer chemicals and products—belies its enormous implications. For the economy and future of California, it is akin to the implications of clean energy technologies. It is a cornerstone of environmental and societal sustainability.

The problem green chemistry is trying to *solve*, and the problem AB 1879 responds to, is that chemicals and chemical products are designed to optimize their *function, price, and performance*, not to optimize their *safety* for people and the environment.

As a consequence, many price-competitive products contain hazardous chemicals, and many *more* contain chemicals for which there is little to no publicly available health or environmental information.

This is the legacy of vast weaknesses in the federal Toxic Substances Control Act of 1976, which we described in our 2006 report to this body and in our 2008 report to California EPA.

This market failure is an important problem when you consider that in California, 164 million pounds of chemical products are sold each day, as estimated by the Air Resources Board in 1997, the last year they collected comprehensive data. That's the equivalent of about 4.5 pounds per person, per day in California, the great majority, of course, which are purchased and used by businesses.

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The free circulation of hazardous and un-studied chemicals in products on the market has real implications for your constituents and the vitality of the California economy. These include the following:

**First, for businesses.** The largest consumers of chemical products are businesses. These businesses carry the risks (and costs) associated with hazardous or poorly studied chemicals in products in the form of product liability, worker exposures, hazardous waste, environmental discharge permitting, and potential brand identification damage.

**Second, for small businesses.** Under the existing market structure, it is very difficult for small, entrepreneurial businesses that design safer products to enter the market and become commercially viable. If the Legislature is concerned about stimulating job growth in start-up companies, chemicals policies (such as embodied in AB 1879) can reflect this objective and can help enormously in enabling small businesses that design safer products to enter the market.

**Third, for the public.** Some chemicals are known to contribute directly to both acute and chronic health problems. Many others are suspected to play a role, but the potential health and environmental effects for the great majority are unknown. The *known* effects carry a high cost to individuals and to insurers and the health care system. The journal *Pediatrics* this month reported that nearly 12,000 children end up in emergency rooms each year in the U.S. due to injuries from household cleaning products alone. The most at risk are children under 5 years of age. Every one of these is preventable: imagine if cleaning products were non-toxic.

These acute injuries do not capture the costs of chronic effects, including various cancers, reproductive health effects, neurotoxic effects, and hormone disruption effects, nor do they capture the disproportionate health costs of exposures that occur among lower income people who live or work in the most highly polluted communities and workplaces in California.

The great majority of these costs to businesses and the public are truly avoidable.

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The fact that hazardous and un-studied chemicals are used throughout commerce has resulted in the Legislature facing multiple bills each year that are focused on controlling individual chemicals.

This is because California, like all other states, does not have a mechanism to systematically identify, prioritize and take action on the tens of thousands of chemicals in commercial use. The chemicals market is akin to an 80,000 piece jigsaw puzzle—the number of chemicals in the TSCA inventory—that is in the box with the lid on, and each year a few pieces fall out that come to the attention of the Legislature. This process has

not enabled the state to place the risks associated with those pieces in the context of the whole puzzle.

AB 1879 is intended to correct this problem, to take the lid off of the box, lay the pieces out and start making sense of the whole puzzle.

1879 is intended to create some amount of transparency and accountability in the market, through new regulations that would (1) establish a systematic process by which chemicals and products could be identified and prioritized on the basis of their health and environmental effects, and (2) specify actions DTSC could take to reduce the level of hazard caused by chemicals or products, especially to sensitive subpopulations, including infants and children.

In this way, California would begin to change the picture on the puzzle; we would gradually create a market that would value health and environmental *safety* on an equal footing with chemical *function, price, and performance*. This would steadily motivate investment in a new green chemistry sector, much as our state has done in cleaner emissions technologies, energy efficiency, and solar photovoltaics.

That is the overarching objective of 1879. The question today is: how effectively do the draft regulations translate the concepts of AB 1879 into actual practice.

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First, it is clear that the draft is the result of an extraordinary amount of work on the part of DTSC staff, and they are to be commended for this. The draft also represents an uncharted approach to chemicals management; no other state has attempted a regulatory strategy as ambitious or potentially far reaching as this. It is therefore expected that the draft would take us only so far, and that further work would be needed.

Not surprisingly, the present draft takes important steps in meeting the concepts in AB 1879, but it is difficult at this point to see how it would be successful in practice.

In fact, if implemented today, the regulations run the risk of creating a burden on businesses without necessarily producing the desired outcome of increasing the safety of products on the market. As currently written, the regulations are likely to generate numerous requests by businesses for exemptions, to which DTSC will be forced to respond with its already limited staff and resources.

At the same time, I think that with sufficient revisions, the regulations could effectively meet the objectives of AB 1879 and, more broadly, could provide the foundation for business investment in safer products and for healthier workplaces and communities in California.

I would like to address a subset of five key points about the draft that I believe are needed to make it both effective and consistent with the intent of AB 1879.

**First, the use of a 0.1% (1000 ppm) *de minimus* concentration of a chemical in a product as the trigger point for the regulations should be removed for several reasons:**

- Scientifically, it ignores the importance of *potency*, which can vary over nine or more orders of magnitude among substances. For example: The LD<sub>50</sub> is 0.00001 mg/kg for Botulinum toxin and 10,000 mg/kg for ethyl alcohol.
- It allows the *deliberate* use of chemicals of concern in products as well as in safer alternatives. This is inconsistent with AB 1879, which seeks to *remove* hazardous chemicals from products, not simply allow them to be diluted.
- The regulations permit the use of products (and alternatives) to be formulated with *multiple* chemicals of concern so long as the individual chemicals in the product fall below 0.1%. This is far outside the intent of AB 1879.
- Ultimately, allowing companies to use 0.1% chemicals of concern in their formulations will encourage them to dilute their products and then seek an *exemption* from the regulations; it will not stimulate investment in safer alternatives at the pace and scale needed.

**Second, the regulations should require companies to provide a minimum data set for chemicals or products.**

- AB 1879 requires DTSC to develop a process for identifying and prioritizing chemicals of concern using information on the volume of a chemical in commerce, exposure potential, and effects on sensitive subpopulations, including infants and children.
- That information does not presently exist, and the regulations do not require companies to provide it.
- DTSC can gather this information by requiring companies to take greater responsibility for providing a minimum data set on their products. More information should be required for those chemicals and products that pose the largest exposure potential in the state.
- A minimum data set will ultimately benefit the great majority of businesses in California and is essential for DTSC's priority-setting process.

**Third, the regulations should expand the definition of chemicals of concern beyond those already listed under the requirements of Proposition 65.**

- AB 1879 specifically directs DTSC to evaluate information from an array of authoritative bodies at the state, federal and international level.
- AB 1879 also requires DTSC to consider the volume in commerce, exposure potential, and effects on sensitive subpopulations in prioritizing chemicals of concern.

- By simply relying on the set of chemicals already listed under Prop 65, the regulations seem to sidestep these criteria delineated in the statute.
- More broadly, relying on Prop 65 as the universe of chemicals of concern means the regulations will focus exclusively on data-rich chemicals for which there is already some amount of regulatory activity occurring in California.
- This runs counter to the intent of AB 1879, which is to *systematically* assess and prioritize a broader *universe* of chemicals in commerce.

**Fourth, it is important that the regulations include a greater number of opportunities for public oversight.**

- At present, there are no provisions in the regulations for public input beyond the process determining chemicals and products of concern. For example, there is no role for public input in the alternative assessment process, in DTSC’s decisions regarding regulatory responses, or in the granting of exemptions.
- Without greater transparency and public participation, the department runs the risk of becoming captured by industry, which could also take advantage of the regulatory language to appeal DTSC decisions, seek exemptions, and otherwise delay the process and, ultimately, resist investing in safer alternatives.

**Fifth, the alternative assessment strategy should be clarified, simplified, and tiered, and should be aligned with best practices established in the field.**

- Rather than motivating companies to invest in safer alternatives, the Alternative Assessment process as defined by the current draft is so difficult to understand and implement that it is likely it will create an enormous incentive for companies to simply declare in their Alternative Assessment Report that “no safer alternative is available,” while will place the onus back on DTSC to prove otherwise.
- The Alternative Assessment applies to both chemicals of concern as well as to safer alternatives, which would discourage companies from investing in the search for safer alternatives.
- Surprisingly, the regulations allow for the use of *known* chemicals of concern in the “safer alternative” so long as the concentration is less than 0.1% of the final product. This could result in a “safer product” containing a greater total quantity of chemicals of concern than the original product.
- At present, while the Alternative Assessment section as presently written sets out to avoid regrettable substitutions, it is unlikely that it will meet the overarching objective of AB 1879: that is, to motivate investment in safer alternatives and, over time, improve the safety of products on the market.

There are certainly other concerns with the language and process of the draft regulations that have been raised in the written public comments. In general, it seems

to me that the text is too convoluted for a company to clearly determine its obligations (or those of DTSC's) under the regulations.

Of course, the most likely outcome of weak regulations is that businesses will hold back on investing in safer alternatives; they will wait to see what happens. Although the Green Chemistry Initiative and AB 1879 were intended to replace the Legislature's process of addressing chemical hazards one at a time, the fact that these regulations could prove ineffectual means that the Legislature could be left with no effective means of controlling chemicals of concern; that is, the Legislature will have deferred its responsibilities to an overly weak regulatory process.

As California's population grows by 50% over the next 40 years, during which time global chemical production will grow nearly four-fold, it is safe to say that we are running out of time.

In the interest of all stakeholders—and acknowledging competing interests—you can be confident, I think, that California will benefit from regulations put in place today that efficiently and robustly implement the intent of AB 1879.

We have a unique opportunity and responsibility to do so. We will do a great service to California and its future generations if we can come together and craft smart regulations that steadily improve the safety of chemicals and products on the market.

Thank you very much for your attention. I would be happy to take any questions you might have.

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