## Daily Journal www.dailyjournal.com

TUESDAY, MARCH 20, 2012

## It's not easy being green: The winding path of California's Green Chemistry Law

By Olivier F. Theard

hile the brave new world of "green chemistry" regulation may not yet have arrived, the winds of change are blowing. In 2008, California passed AB 1879, requiring that the Department of Toxic Substances Control develop rules to ensure that consumer products were safer. After four years, dozens of meetings and thousands of pages of public comments, the department still has yet to adopt enforceable standards. To be fair, the department has admirably developed multiple draft regulations, but each draft has been met with intense criticism from both manufacturers and environmental groups. For example, there was a backlash when a prior draft of the regulations focused only on the safety of children's products, personal care products (shampoo etc.) and household cleaning products, prohibiting regulation of any other products until 2016.

With heat from all sides, the secretary of California's Environmental Protection Agency instructed the department to "take additional time" to respond to concerns and revisit the proposed regulations. In October 2011, the department released an informal draft. Public comments to the informal draft reflect a sense of progress. So to does the department's recent signing of a memorandum of understanding with the U.S. Environmental Protection Agency, whereby it and the EPA will cooperate to develop programs to reduce chemical exposure, share data and encourage manufacturers to develop safer products. While the practical effect of the MOU is unclear, its signing appears to provide momentum to a previously languishing green chemistry regulatory regime.

As a concept, "green chemistry" signals a paradigm shift whereby the old model of chemical regulation — a wait and see approach in which chemical risks are assessed after someone gets hurt — is replaced with a new model in which chemical risks are analyzed in advance of exposure. The purpose is to encourage manufacturers to make safer products from the beginning, rather than wait for lawsuits or recalls to pile up. An added bonus is the potential reduction of chemical-by-chemical bans that occur as we learn that chemical A causes cancer B. For instance, until recently, phthalates were widely used to soften plastic children's products such as bottles. When studies began establishing that phthalates caused birth defects, California essentially banned their use (California Health and Safety Code Sections 108935-108939). Theoretically, under a broad "green chemistry" program, the risks of phthalates would have already been known and the chemicals would never have touched a baby bottle in the first place.

Whether the theory of green chemistry will ever match its practice is an open question. However they turn out, state regulations will not be nearly as expansive as the European REACH law, which requires manufacturers to maintain and submit a wealth of data and register chemicals with the government, completely shifting the burden of testing and risk evaluation from regulators to the regulated. Still, the regulations may cause manufacturers to change their safety analysis before their products reach the market.

The department expects to release a new version of the draft regulations in the coming months, and regulations may be finalized this year. The next release will likely maintain some version of the four-step regulatory process set forth in the current informal draft. In the first step, the department is to identify chemicals of concern based on work already done by other organizations. This list essentially borrows the entire 3,000 plus chemicals that are known to cause cancer or reproductive harm under Proposition 65, and provides a mechanism to add additional chemicals. In step two, it is to evaluate and prioritize products based on their potential for adverse health and/or environmental impacts, taking into account manufacture, use and even disposal of the product. Though this draft eliminates the explicit focus

on personal care products, the department will still pay particular attention to products "intended to be applied directly to the body." Upon completion of its analysis, the department is to publish a list of priority products.

The third step is the potential game changer. Once priority products are identified, manufacturers must notify the department if their products are on the list. The manufacturer must then perform an "alternatives assessment." While there is nothing really new about creating lists of chemicals and ranking them in some way (Proposition 65 does that to some extent already, establishing no significant risk levels for various chemicals), it is groundbreaking to require manufacturers to justify why their products are made the way they are, and consider whether safer feasible alternatives exist. The alternatives assessment for products would function a bit like the CEQA environmental impact analysis required for land use projects.

The alternatives assessment is intended to be robust and consider the following factors:

Multimedia life cycle impacts, including chemical hazards, negative health or environmental impacts, resource consumption impacts and disposal impacts.

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Product function and performance, including assessment of the technological and economic feasibility of alternatives.

Economic impacts, including costs of the product and its alternatives to consumers, business and the government, and,

An assessment of the potential amount and routes of chemical exposure.

Based on its assessment, the manufacturer can choose to either replace or modify its products or keep the product the same. However, as the regulations are currently drafted, the department retains the right to essentially override any decision the manufacturer makes. It can impose use or disposal restrictions on the product, require the release of information about the product or even ban the product outright.

Given the lengthy alternatives assessment process, it will be years before the department takes regulatory action on any particular product. Still, the green chemistry law may reflect a general trend towards green consciousness, and business practices may be shifting as the law catches up. For instance, a movement called Campaign for Safe Cosmetics has encouraged hundreds of companies to reduce toxic chemicals in beauty products (recognizing certain companies as "champions"). The primary driver for most companies is growing consumer demand for safer alternatives. Ultimately, companies follow the money, and economic incentives may drive change faster than the law ever will.



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