The chemical bisphenol-A (BPA), commonly found in polycarbonate plastics and other household containers, is the subject of a new bill in California because of its potential adverse health effects. BPA hasbeen linked through animal testing to serious health problemsinvolving behavior, brain development, reproduction and heart function. Environmental advocacy groups such as the Environmental Working Group, have been campaigning for a banon the chemical's use in bottles in the U.S. California bill SB 797, co-sponsored by State Senator Fran Pavley, would ban BPA above trace concentrations in baby bottles and other bottles and cups designed for small children, a particularly controversial application of the chemical. (Here's a"fact sheet"from a coalition that supports the bill.)

Interestingly, as this bill is considered by the legislature in its end-of-term rush (the term ends on August 31), there is some breaking news about BPA in trendy Sigg metal bottles. These bottles, which were marketed as a safer alternative to bottles that leached BPA, contained BPA themselves until recently, despite the company's carefully-crafted marketing. To be sure, the Sigg bottles were tested and found not to leach the chemical in detectable amounts, but the company's ability to sidestep the question for several years, and even convince advocacy groups to remove claims that the product contained BPA, raises interesting questions about the right way to regulate chemicals in consumer products.

People have recognized increasingly over the past few years that refilling durable water bottles with tap water is both less expensive and better for the environment than continually purchasing, using, and throwing out disposable water bottles. As a result, durable bottles have surged in popularity. While the first generation of durable bottles to become popular in the U.S. was typified by polycarbonate bottles such as Nalgene, concern that these bottles contain BPA, and worry that the chemical's leaching into the bottle's liquid contents could have adverse health effects, motivated many consumers to switch to more expensive metal water bottles. Sigg, a Swiss company known for manufacturing high-quality metal canteens, dramatically increased its visibility and market share in the United States as a result.

In 2007, the Environmental Working Group suggested that Sigg bottles actually contained BPA in their liners, despite the consumer rush to purchase them as an alternative to polycarbonate bottles. Sigg's CEO issued a seemingly hard-hitting response that included the following:

> On March 9th, it was brought to my attention that a website sponsored by the Environmental Working Group (EWG) made mention that SIGG bottles contain plastic liners with bisphenol A (BPA).

> I can assure you that SIGG bottles are absolutely not made with a plastic liner and are in fact lined with a proprietary non-toxic, water-based resin which has been refined over decades of study and is extremely safe & stable.
>
> Based on the confidence we have in our product backed by numerous laboratory studies, we questioned the EWG and requested that they provide us with the testing they have conducted on SIGG – or alternatively to remove the "SIGG" mention from their website if they have not tested SIGG. Within 24 hours of this request, the EWG removed SIGG's name from their report.
>
> Unfortunately, in the meantime this message was picked up by a few other websites, one of those being The Organic Consumers Association (OCA) and their newsletter Organic Bytes. When we questioned the OCA on their mention of SIGG, this is the emailed response we received:
>
> "We made a mistake. Sigg bottles do not contain BPAs… it was read wrong and there was confusion. Apologies about this." – Member Services, OCA

This letter (which I couldn't – unsurprisingly – find on Sigg's website, but which I linked from one of several contemporaneous blogs that seem reliable to me) strongly implied, but was careful not to state, that Sigg bottles actually didn't contain BPAs. Sigg was careful to guard the formula for its liner as a "trade secret," ostensibly protecting the secret from rival manufacturers. But here's the latest from Sigg, as of August 2009, in another letter from Sigg's CEO:

> Within the scientific community, the safety of the packaging ingredient bisphenol A (BPA) remains the subject of considerable debate and controversy as evidenced by the FDA meetings on the topic this month. For decades, BPA has been the industry standard for protective coatings – approved by food and health regulators around the world. One year ago, Andrew von Eschenbach, the Commissioner of the FDA, announced that, "The science we have reviewed does not justify recommending that anyone discontinue using products containing BPA." At that time, SIGG Switzerland, the world leader in premium reusable bottles, had already made the transition into bottles that are BPA free.
>
> Within the reusable bottle water category, polycarbonate plastic bottles (#7) came under scrutiny in early 2008 because they were found to leach BPA. As a

> result, many consumers turned to metal bottles (aluminum and stainless steel) because these bottles had no issues with BPA migration. Prior to its transition, SIGG utilized a water-based epoxy liner which contained a trace amount of BPA. The bottles were thoroughly and regularly tested in both the USA and Switzerland and all tests revealed absolutely no migration or leaching of BPA or any other substance from the protective inner liner. These tests have been public information on the SIGG website for several years and remain there today.

The remainder of the letter, and other material on Sigg's website, make clear that Sigg changed its liner formula about a year ago to a new technology that doesn't use BPA. I think this postat zrecommends.com pretty much gets it right: there's no specific reason to doubt the prior testing that found no detectable leaching of BPA from the liner, but Sigg certainly hasn't been forthright enough to satisfy consumers' concerns:

> the real story here is how a company using BPA that would have been absolutely sidelined by consumers seeking BPA-free alternatives managed to make itself a central player by carefully controlling information about its products, challenging consumer advocacy organizations when they made statements that were unproven but that the company knew to be true, and "coming clean" only when it suited its own purposes.

This situation raises a host of important questions about chemical regulation. One could argue that where, as here, there's affirmative evidence that users of the product weren't exposed to the chemical in measurable amounts, information about the contents would do more harm than good by giving consumers a false sense of danger about the product. On the other hand, there's a strong tradition of providing information to consumers even where it's not clear whether the information will be helpful from a health standpoint, and in many cases information will create market demand for products that may have benefits (for example,rBST in milk). We tend to assume that it's generally good for consumers to have information about their products, and for good reason. It's also possible that the tests demonstrating a lack of potential for harm aren't sensitive enough to account for possible harm. And it's certainly the case that manufacturers have access to information that no one else has about their products. Legislators and regulators involved in nascent efforts to establish labeling protocols for nanomaterials will have to grapple with these issues.

These are all very difficult problems. But one thing the Sigg case makes clear is that we

can’t generally trust manufacturers to provide the information we want or need. Sigg didn’t provide the information that consumers wanted or needed, and appears to have worked actively to prevent others from providing that information. And other companies may find success using similar tactics, with a greater potential for harm. Of course, legislation such as SB 797 that would limit or prevent the use of BPA would solve this problem: labeling and disclosure of BPA contents are just irrelevant if there’s no BPA in the product. This type of legislation is the only sure-fire method of ensuring that consumers feel safe. Here, where there are clear alternatives to BPA available, other products would take its place. This should be an easy call, and Sigg’s switch to an alternative liner demonstrates that it’s possible for industry to choose other technology.