

Bisphenol-A: new regulations, new questions

Questions continue to pour in to our office and website about plastic water bottles, as people try to make sense of the federal government's recent announcement about polycarbonate bottles and bisphenol-A (BPA). They're also seeing new reusable water bottles coming on to the market.

The confusion isn't surprising. Some stores are still selling polycarbonate bottles that contain the chemical bisphenol-A, which the federal government recently declared a toxic chemical. In the past, people identified those bottles by looking for the number 7 in the recycling triangle on the bottom. But now major retailers are now selling a new plastic bottle labelled as BPA-free — and it's also marked with a number 7 in the recycling triangle.

Many are asking: why are polycarbonate bottles still being sold?

No regulation on products yet

On April 18, the federal government released the results of a screening assessment of bisphenol-A, conducted by scientists from Health and Environment Canada. The assessment declared BPA toxic because of the risk it poses to Canadians' health. But except for possible regulations to ban polycarbonate baby bottles — which haven't been introduced yet — the government has not taken any specific action to reduce Canadians' exposure to BPA.

Even before the government's announcement, many major retailers, including Mountain Equipment Co-op and the Bay had already taken their own action, removing polycarbonate bottles from their store shelves. Nalgene, the market leader in polycarbonate bottle manufacturing, announced it was "transitioning away from polycarbonate and into new materials" for its familiar coloured water bottles.

But without any formal regulation, stores can still sell polycarbonate bottles. And many stores are continuing to carry them, especially cheap offshore imports that are selling at discount prices.

In the last few months, Nalgene and two

Study shows BPA effect on adults

A new study has raised renewed concern about bisphenol-A, showing that adults with higher levels of BPA in their bodies face a increased risk of cardiovascular disease and type 2 diabetes.

The study, in the Sept. 16, 2008 edition of the Journal of the American Medical Association, is the first human study of BPA that looked at the association of disease with real-life exposures to BPA. Information was taken from 1400 people, based on biomonitoring carried out by the U.S. National Health and Nutrition Examination Survey in 2003-04.

The results were significant: the 25 per cent of people with the highest urinary concentrations of BPA were more than twice as likely to develop cardiovascular disease and/or type 2 diabetes compared to the 25 per cent of people with the lowest urinary BPA concentrations.

The study's authors called for further research. "Given the substantial negative effects on adult health that may be associated with increased BPA concentrations and also given the potential for reducing human exposure, our findings deserve scientific follow-up," they said.

BPA expert Frederick vom Saal said the study "throws out the idea that current exposure to BPA poses no risk to adults."

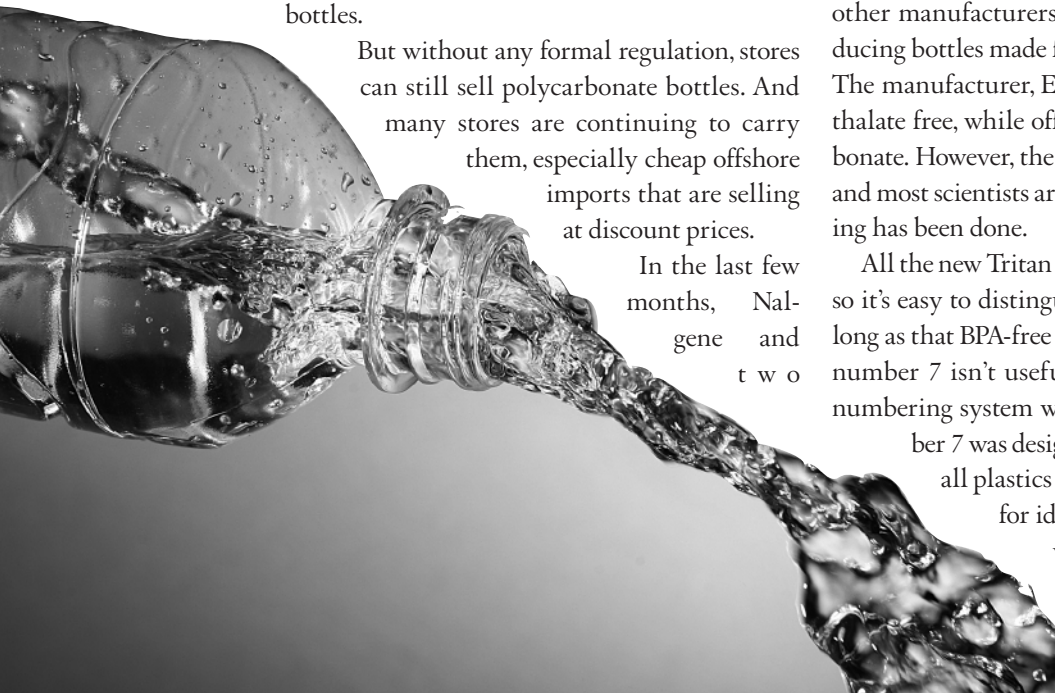
It has also prompted renewed demands for more government action to reduce BPA in food cans and packaging.

other manufacturers, Camelbak and Aladdin, have begun introducing bottles made from a new material called Tritan copolyester. The manufacturer, Eastman, claims the material is BPA- and phthalate free, while offering many of the same qualities as polycarbonate. However, the new material has not been tested for toxicity and most scientists are withholding full endorsement until the testing has been done.

All the new Tritan bottles we've seen have been labelled BPA-free, so it's easy to distinguish them from the polycarbonate bottles, as long as that BPA-free labelling continues. But it does mean that the number 7 isn't useful as an identifier any longer. The recycling numbering system was established by the industry and the number 7 was designated as a catch-all category used for labelling all plastics not otherwise identified. It's also not practical for identifying recyclable materials, since there are virtually no programs in Canada that accept polycarbonate or any other #7 plastics.

It's also not practical for identifying recyclable materials, since there are virtually no programs in Canada that accept polycarbonate or any other #7 plastics.

(continued on page 4)



Making furniture the non-toxic way

Looking for a new couch or an upholstered chair? It used to be that no one looked beyond the fabric or the design to see what the materials used in the product and retailer often didn't know themselves what was under the cover. But more savvy consumers want to know if toxic materials were used in manufacturing and whether greener alternatives are available.

The main component of most conventional upholstered furniture is flexible



polyurethane foam, which provides the padding in mattresses and upholstered furniture.

The basic manufacturing process for polyurethane foam involves reacting an ingredient called toluene diisocyanate (TDI) with a polyol. Polyols are alcohol-based substances that are created by chemical reaction with another ingredient known as methyloxirane (also called propylene oxide).

Toxic components

TDI and methyloxirane are both carcinogenic chemicals and workers are exposed to them in the manufacturing process. Both types of TDI used in foam manufacturing are classified as possible human carcinogens (Group 2B) by the International Agency for Research on Cancer. Methyloxirane is also a 2B carcinogen according to IARC, and the U.S. National Toxicology program says it is "reasonably anticipated to be a human carcinogen."

Sweden recently listed methyloxirane as a phaseout substance that can no longer be used in any new products.

In January, 2008, Health Canada assessed

methyloxirane under the Challenge batch of 200 high-priority chemicals and declared it a toxic chemical "that constitutes or may constitute a danger to human life or health."

It's not expected that consumers will be directly exposed to TDI or methyloxirane in polyurethane furniture or mattresses, although there is evidence that it could cause asthmatic reactions as it breaks down and becomes part of house dust. But because polyurethane poses a fire hazard, fire retardants are often added to meet fire codes, thus adding to the material's toxicity.

Studies conducted by the polyurethane industry have also shown that polyurethane does not break

down in landfills, adding to the long term waste problem.

Soy polyurethane

Recently, some manufacturers have introduced so-called soy-based polyurethane in an effort to address concerns about toxicity and uses of non-renewable petroleum-based polyols. Some retailers have even presented soy-based polyurethane as a "green alternative."

While it may be a slight improvement over conventional polyurethane, it isn't really an alternative. First, soybean oil can only replace a small percentage of the polyol — typically around 5-10 per cent — because higher soy concentrations give the product a strong, vegetable-oil odour, which doesn't help sell furniture. But even more important than that, carcinogenic TDI is still used to create the final product.

The best alternative to polyurethane in furniture and mattresses is natural latex, which is derived from the rubber tree plant and is a renewable resource. It holds its shape well and latex mattresses can last much longer than polyurethane-based products.

Although latex gloves and other direct-

contact materials can trigger allergic reactions in some people, there is nothing in the literature that we have seen to show that latex-padded furniture or mattresses pose any problem, in part because there is no direct contact with the fine latex dust that is typically found in latex gloves.

Synthetic latex is also widely used in products and while it is probably better than polyurethane, most is made from a styrene-butadiene polymer. That doesn't pose a risk to consumers, but workers are exposed to a carcinogen — styrene — in the production process.

For mattresses, wool is also used as a safe, environmentally-preferable alternative to foam. Wool mattresses are harder to come by, but they are becoming more available.

Some other things to look for in healthy, environmentally-preferable furniture and mattresses include:

- non-toxic adhesives,
- non-toxic fire retardants (if fire retardants are used)
- upholstery materials that are certified to be heavy-metal free
- woods that carry a Forest Stewardship Council certification for good forest management and sustainable practices.

Sources of polyurethane-free furniture and mattresses:

Furniture:

GreenRooms, Oakville ON
www.greenrooms.ca
Upholstery Arts, Vancouver
www.upholsteryarts.ca

Mattresses:

Good Planet Company, Victoria
www.goodplanet.com
Aviva Natural Health, Winnipeg
www.aviva.ca
Mattress and Sleep Gallery, Edmonton
www.tmasc
McLeary's Mattress and Furniture, Kelowna
<http://www.mclearysfurniture.com>
Sleeptek, Ottawa www.sleeptek.ca
Soma Beds and Sleep Products, Toronto
www.somasleep.ca

New study shows phthalates' effect on babies

One of the first ever studies of phthalates in children has revealed that the use of baby lotions, shampoos and powders increases infants' body burden of several phthalates used in the products.

Phthalates are endocrine-disrupting chemicals that can affect development of the male fetus and are also associated with early puberty in girls. They're not identified on cosmetic labels but may be included under the catch-all term "fragrance" or "parfum."

The study, published in the February, 2008 edition of *Pediatrics*, found that the concentration of phthalates in the babies' urine increased with the number of products used. Most affected were infants under the age of eight months, the group considered most vulnerable to the adverse health effects of phthalate exposure.

Use of lotions, shampoos and baby powder was most likely to result in exposure to phthalates, the study reported.

The study's authors also noted that the lack of ingredient information about phthalate content makes it difficult for parents to choose safer products. "In the United States (and in Canada), there is no requirement that products be labelled as to their phthalate content," they wrote. "Parents may not be able to make informed choices until manufacturers are required to list phthalate content of products. Until additional information is available on infant care product phthalate content, providers may want to educate and counsel families regarding phthalate exposure via products and potential ways to reduce exposure to these chemicals."

Although phthalate-free baby products aren't easy to find, some are available on retail shelves in Canada, including products from Avalon Organics, Burt's Bees and Quebec manufacturer Druide.



Among those available at retail outlets are::

Shampoos and soaps: Aubrey Organics Natural Baby and Kids Shampoo, Natural Baby and Kids Bath Soap; Avalon Organics Baby Gentle Tear-Free Shampoo, Baby Bath Soap; Burt's Bees Baby Bee Shampoo and Wash, Baby Bee Shampoo Bar, Baby Bee Buttermilk Soap, Baby Bee Buttermilk Bath; Druide Baby Shampoo, Baby Calming Bath, Baby Cleansing Gel.

Lotions: Aubrey Organics Natural Baby and Kids Body Lotion; Avalon Organics Weightless Nourishing Baby Lotion, Soothing Zinc Diaper Balm; Burt's Bees Baby Bee Skin Crème; Baby Bee All-Better Balm, Babe Bee Diaper Ointment; Druide Baby Soothing Lotion, Baby Protecting Balm.

Powders: Avalon Organics Silky Cornstarch Baby Powder; Burt's Bees Baby Bee Dusting Powder.

DEHP to go on Cosmetics Hotlist

More than three years after the European Union took action against phthalates in cosmetics, Health Canada has now proposed to add diethylhexyl phthalate (DEHP) to the Cosmetics Hotlist, which prohibits or restricts the use of toxic ingredients in cosmetics. The federal agency announced the proposed change Sept. 5, just days before Parliament was dissolved for the Oct. 14 federal election.

If the regulatory change is adopted following the 60-day consultation period, manufacturers will be prohibited from using the toxic ingredient in personal care products sold in Canada.

DEHP is listed as a reproductive toxin under California's Proposition 65 and has been declared toxic to human health under the provisions of the Canadian Environmental Protection Act (CEPA).

The change is a welcome one. But even if the measure is adopted, Canada will still be behind Europe in regulating phthalates in cosmetics. The EU also bans dibutyl phthalate (DBP), another reproductive toxin, for use in cosmetics, but Health Canada has not proposed similar action. Dibutyl phthalate is not on the current Hotlist and the latest consultation document does not propose to add it.

New resources on toxic-free toys

Parents looking for ways to find toxic-free toys this holiday season will have a new resource this year, thanks to the U.S. Ecology Center, which has set up the Consumer Action Guide to Toxic Chemicals in Toys, in collaboration with the Washington Toxics Coalition.

The Action Guide is available at www.healthytoys.org. The latest results from toy testing in 2008 will be available on the site Dec. 3.

Hundreds of toys were tested, using x-ray fluorescence to determine the presence of various toxic chemicals, including lead, arsenic and mercury. In some cases, toy materials were actually dissolved in an acid solution to analyze the contents. Each of the toys has been given an overall rating as well as separate ratings, based on the presence of lead, chromium, chlorine/PVC, mercury and arsenic. The site also produces a list of best toys and a worst-toy listing.

Parents can search by toy name, type of toy and brand name. Although the products listed are based on availability in U.S. markets, many are also available in Canada.

Water bottle alternatives

(continued from page 1)

What's really needed is right-to-know labelling that would identify any product that contains the toxic chemical bisphenol-A. In the meantime, consumers will still have to check plastics closely and look for the alternatives.

Stainless steel

Considered one of the safest and most durable options. Kleen Kanteen is one of the most familiar brand names, but many different makers offer stainless bottles, including Guyot Designs. Mountain Equipment Co-op has one made for its stores that is relatively inexpensive.

Aluminum

Widely available, but they're not all created alike. Most aluminum bottles are lined with a flexible material, which typically is made from an epoxy phenolic resin that contains BPA. The only aluminum bottles we know of that have been shown not to leach BPA are those made by SIGG and Laken.

Safer plastics

The safest reusable plastic bottles are those made from HDPE, LDPE or PP. HDPE (high-density polyethylene) is identified by the number 2 in the recycling triangle symbol on the bottom. LDPE (low-density polyethylene) carries the number 4, and PP (polypropylene) number 5. Nalgene, which announced that it would be moving away from polycarbonate bottles, makes bottles from UVPE (#2), a form of high-density polyethylene that resists deterioration from UV rays.

PET-bottled water: not just the carbon footprint, but also the toxic price tag

The intense public interest over BPA and polycarbonate plastic has also focussed new attention on the single-use water bottles made of polyethylene terephthalate (PET). PET plastic can leach phthalates into the liquids inside the bottle. An equally important issue is the enormous environmental footprint created as million of bottles are turned out by plastic manufacturing plants and trucked around the country. Then, for hundreds of thousands of them, the final destination is the landfill where they can take centuries to degrade.

A new study published last year in the journal *Food Technology and Biotechnology* found that small amounts of toxic phthalates routinely migrate from the PET plastic bottles into the drinks they contain. The levels were highest in soft drinks, but researchers also found the bottled waters were contaminated with phthalates that had leached out of the plastic.

Among phthalates they found were diethyl hexyl phthalate (DEHP) and dibutyl phthalate (DBP). DEHP and DBP are listed as reproductive toxins on California's Proposition 65 list.

That's good reason alone for individual consumers and communities to look for ways to reduce the number of PET bottles they buy, especially bottled water. The environmental reasons are just as compelling because of bottled water's contribution to global warming.

According to a 2007 study commissioned by the plastics industry, manufacturing the PET plastic used in single-use water bottles generates almost five times the bottle's weight in greenhouse gases (CO₂ equivalents).

Across Canada, more than 1.4 billion bottles of water in single-use bottles were sold in 2007 — and the number has been rising every year as PET plastic replaces glass and other plastics. Producing those bottles generated 138,592,253 kg of greenhouse gases. It also used up 865,300 barrels of crude oil — the amount that would be consumed by 63,731 Ford Explorer SUVs driving from Vancouver to St. John's.

Recycling offsets that impact only slightly.



Even in those province's where recycling programs are most effective — B.C., Quebec and Nova Scotia — the recycling rate is just over 70 per cent. In B.C. alone, according to recycling company Encorp Pacific, 128 million plastic beverage bottles ended up in landfills in 2007. More than 50 million of those were single-use water bottles.

Reducing consumption of single-use water bottles by even 20 per cent would save 173,060 barrels of crude oil and eliminate 27,718,451 kg in greenhouse gas emissions (CO₂ equivalents) on an annual basis.

We're now Toxic Free Canada!

Toxic Free Canada is the new voice of the Labour Environmental Alliance Society (LEAS), the organization that launched the CancerSmart Consumer Guide four years ago. In August, we received registration of the name change from LEAS to Toxic Free Canada.

Hundreds of CancerSmart readers helped choose the new name as part of a national survey conducted in 2007. We asked Canadians for ideas on a name that would tell the story of the work we were doing on toxics reduction — and the choice was clear.

Our mission remains the same: "working to create alliances and initiatives that promote healthy workplaces, healthy homes and communities and a healthy environment."

CancerSmart UPDATE is published by:
Toxic Free Canada
1203-207 West Hastings St.
Vancouver, BC V6B 1H7
Tel: 604-669-1921
Fax: 604-696-9627
E-mail: office@leas.ca
www.toxicfreecanada.ca

