

BYOB – Bottles (Just the Facts)

Suggested Facts that might work for Bermuda (in Blue)

Reusing a single use plastic bottle – dangers

- it's never a good idea to reuse single-use plastic water bottles, as their design makes them difficult to clean and therefore prime breeding grounds for bacterial growth.
- the plastic used in both single-use and reusable bottles can pose more of a contamination threat than the water. A safe plastic if used only once, #1 polyethylene terephthalate (PET or PETE) is the most common resin used in disposable bottles. However, as #1 bottles are reused, which they commonly are, they can leach chemicals such as DEHA, a known carcinogen, and benzyl butyl phthalate (BBP), a potential hormone disrupter.
- According to the *January 2006 Journal of Environmental Monitoring*, some PET bottled-water containers were found to leach antimony, an elemental metal that is an eye, skin, and lung irritant at high doses. Also, because the plastic is porous you'll likely get a swill of harmful bacteria with each gulp if you reuse #1 plastic bottles.
- A March 1998 study in *Environmental Health Perspectives (EHP)* found that BPA simulates the action of estrogen when tested in human breast cancer cells.
- A more recent study published in EHP shows a significant decrease of testosterone in male rats exposed to low levels of BPA. The study concludes that the new data is significant enough to evaluate the risk of human exposure to BPA.
- manufacturing plastic resin creates more toxic emissions than manufacturing glass--producing a 16-oz. PET bottle generates more than 100 times the toxic emissions to air and water than making the same size bottle out of glass.
- The *Berkeley Plastics Task Force* stated in a 1996 report that the plastic industry contributed 14 percent of the most toxic industrial releases--including styrene, benzene and trichloroethane--into the air. Other major emissions from plastic production processes include sulfur oxides, nitrous oxides, methanol, ethylene oxide and volatile organic compounds (VOCs).

A refillable Bottle – is it any better for you:

- But some refillable bottles can also pose problems. Certain varieties of the popular, colorful water bottles are made from Lexan, a polycarbonate plastic (usually indicated by #7 in the recycling triangle) known to leach low levels of bisphenol A (BPA), a suspected hormone disruptor. Because BPA leaching can increase as your bottle ages, it's prudent to set some limits on reuse.
- Recent research has linked the chemical to a variety of disorders, including obesity and breast cancer, and one chilling 2007 study, published in the journal *PLoS Genetics*, found that BPA exposure can cross generations. Pregnant mice exposed to low levels of BPA led to chromosomal abnormalities, which possibly cause birth defects and miscarriages, in grandchildren.

- A 1999 study of polycarbonate baby bottles published in the *Japanese Journal of Health Sciences* found that new bottles, washed gently before using, leached 3.5 parts per billion (ppb) of BPA into water, while extremely worn and scratched bottles leached levels of BPA as high as 28 ppb.
- In another study, published in the March 2005 *Food Additives and Contaminants*, exposing bottles to high heat and storing ethanol and corn oil in them for 240 hours resulted in BPA migration of as high as 64 ppb.

Additional studies need to be done, but in the meantime, the presence of BPA in all our bodies may be one reason to guard against adding more. "Levels of 0.1 to 10 ppb of BPA, which are orders of magnitude above what can affect humans, are currently found in U.S. bodies," warns Frederick vom Saal lead author of one of the studies on BPA's acute and long-term effects.

Recommended Refillable Bottles:

- If you're partial to the brightly colored containers, there are other **plastic bottles** that are made from safer alternatives such as #2 high density polyethylene (HDPE).
- Avoid the perils of plastic altogether with a **metal water bottle** that can handle a variety of liquids, including acidic fruit juices, and won't leach chemicals into your beverage. Stainless steel bottle is lightweight, durable, and entirely chemical free. Avoid detergents that contain chlorine when cleaning since it can corrode stainless steel.
- Another attractive alternative to plastic is the **aluminum bottle** with a taste-inert, water-based epoxy lining. However, independent lab tests commissioned by a manufacturer found that the resin leached no detectable quantities of BPA, while other **unlined** aluminum and **polycarbonate** bottles subjected to the same conditions did

True Cost of Bottled Water:

- Last year Americans spent nearly \$11 billion on over 8 billion gallons of bottled water, and then tossed over 22 billion empty plastic bottles in the trash. In bottle production alone, the more than 70 million bottles of water consumed each day in the U.S. drain 1.5 million barrels of oil over the course of one year.
- Not only does bottled water contribute to excessive waste, but it costs us a thousand times more than water from our faucet at home, and it is, in fact, no safer or cleaner.
- Victoria Kaplan, senior organizer with *Food and Water Watch*, a nonprofit that recently launched a *Take Back the Tap* campaign to get consumers to ditch bottled water. "As much as 40 percent of bottled water started out as the same tap water that we get at home," she adds. A 1999 *Natural Resources Defense Council* study found that, with required quarterly testing, tap water may even be of a higher quality than bottled, which is only tested annually.

Actions taken by Major Cities in USA:

- San Francisco Mayor Gavin Newsom signed an executive order in June (2007) that bars city government from using city money to supply municipal workers with bottled water.

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- New York City launched an ad campaign this summer encouraging residents and tourists to forego the bottled beverage for the city's tap, long considered some of the best water in the country. "New York waste and pollution is on a massive scale," says Michael Saucier of the New York City Department of Environmental Protection. "Considering that the average New Yorker consumes nearly 28 gallons of bottled water each year, New York clearly hasn't been doing enough to encourage residents to drink tap."
- Even restaurateurs are doing their part to keep water bottles out of landfills. Upscale eateries in Boston, New York and San Francisco have taken bottled water off the menu, offering filtered tap instead. At the Italian restaurant Incanto in San Francisco, carafes used to serve filtered tap water are refilled 2,000 times on average before they're cracked and retired. Owner Mark Pastore explains that leaving bottled water off the menu is "a tiny thing that we can do to be a little more sustainable."