

Non-Toxic Times, the newsletter produced by Seventh Generation
http://www.seventhgeneration.com/about_us/company.php

Plastic Bottles

Further to the earlier e-mail from Waubanewquay on water contamination. Most (maybe all) plastics have a mark, usually on the bottom of the container, sometimes on the side, that indicates what kind of plastic was used to form it, the symbol is usually a number inside of a triangle (the universal recycling symbol). The plastics to avoid are noted below.

Safe Products

Safe, cost-effective alternatives to PVC are readily available for virtually every use. From safe plastics, to bio-based materials, there is a growing market replacing hazardous PVC products. You can help build consumer demand for safer, healthier products by avoiding the purchase of PVC. One way to be sure if the packaging of a product is made from PVC is to look for the number "3" inside or the letter "V" underneath the universal recycling symbol. In addition, soft flexible plastic products that are made with PVC often have a distinct odor, such as vinyl shower curtains. If you suspect that a product is made of PVC, contact the product manufacturer and ask them directly about the materials used in the product or packaging and your concerns about PVC.

<http://www.besafenet.com/pvc/safe.htm>

The risk from PVCs isn't the only risk, the plastic used to make baby bottles and some other food containers contains other chemicals such as bisphenol-A (BPA)

Water Bottle Toxins

On the Trail of Water Bottle Toxins. Are Hikers and Others Quenching Outdoor Thirsts with H₂-U_H-OH?

For years, hikers, bikers, campers, and other outdoor recreationalists have favored wide-mouthed water bottles made from Lexan® polycarbonate plastic, like those sold under the brand name Nalgene®. Lexan's advantages have been as clear as the water that flows from containers made from it. It's tough, lightweight, absorbs no flavors, and imparts no unpleasant tastes to liquids stored inside. According to new research, it may, however, be imparting unhealthy doses of a chemical called bisphenol-A.

According to several recent studies, polycarbonate plastic readily leaches a chemical called bisphenol-A (BPA) into foods and liquids that are stored in containers made from it. BPA has been identified as an endocrine disrupting chemical, or a chemical that easily mimics hormones when absorbed by the human body. In the case of BPA, the hormone being mimicked is estrogen. Exposure to this compound at the wrong time can cause a cell division problem called aneuploidy in which chromosomes do not evenly split as a cell divides, leaving the two resulting cells with more or fewer chromosomes than normal. This uneven distribution of genetic material can in turn lead to cancer, miscarriage, and birth defects that include Downs Syndrome.

Low levels of BPA, including those well below the current regulatory safety threshold, have also been shown to affect prostate development, promote prostate tumors, affect breast tissue development and sperm counts, and even possibly create and enlarge fat cells.

The problem with BPA contamination from polycarbonate water containers first came to light in 1998 during research at Case Western Reserve University. Scientists conducting a study on aneuploidy in mice noticed a sudden inexplicable 8-fold increase in the condition in their test subjects. An investigation found that a lab worker had washed out their water bottles with a particularly harsh detergent that had caused large amounts of BPA to be released from the plastic into the animals, drinking water. The researchers found that the BPA levels the mice were exposed were similar to the levels experienced by people under normal conditions and that chromosomes in cells affected by BPA appeared to have been "shot with a shotgun." To verify their unexpected conclusions, the scientists duplicated the detergent accident and achieved the same results. To verify that BPA was, in fact, the culprit of this genetic damage, they then gave mice a daily dose of pure BPA and found that results of this intentional exposure were the same.

As a result, for several years now, experts have warned against washing polycarbonate bottles with harsh detergents and/or using older bottles for food or beverage storage, especially those with scratches, discolorations, or other readily apparent signs of age. The belief was that BPA generally only leached from well-used bottles or those that had come into contact with the strong chemicals found in many commercial dishwashing detergent formulas.

Additionally, a University of Missouri study, as reported in the July 2003 issue of *Environmental Health Perspectives*, found that the BPA leaching problem isn't restricted to older polycarbonate bottles. Instead, researchers found detectable levels of BPA leaching out of brand new bottles at room temperature. This new finding calls into question the safety of any kind of polycarbonate plastic container, new or used, for food or beverage use.

Unfortunately, polycarbonate plastic bottles and containers are identified by the plastic recycling symbol #7, which is used for a wide variety of plastics and plastic mixtures that fall into the "Other" category. Unless this #7 symbol is accompanied by the letters "PC", there is no sure way to tell if the container in question is made from polycarbonate or some other kind. To be safe, environmental advocates suggest simply avoiding #7 plastics altogether and opting for safer choices for food and beverage storage. These better options include polypropylene (#5 PP), high density polyethylene (#2 HDPE), and low density polyethylene (#4 LDPE). No evidence has been found to suggest that these plastics leach toxic materials. Scientists advise against the repeated use of plastic water bottles made from plastic type #1 PETE as there is evidence to suggest that such bottles leach a compound known as DEHA, which is classified by the EPA as a possible human carcinogen, as well as acetaldehyde, which has received the same designation from the International Agency for Research on Cancer.

In addition to outdoor water bottles, it should be noted that polycarbonate plastic has also been used in the past for many baby bottles. Although environmental experts note that manufacturers have quietly substituted other, safer plastics for their baby bottle products since the BPA leaching issue first emerged in 1998, these products have not

been banned and may still be found in some stores. Parents and other child care professionals are advised to check new and existing bottles for the #7 code and dispose of them. Safer substitutes (see above) are easy to find.

Babies aside, consumers unwilling to part with their polycarbonate water containers should wash any they own only with very mild soap and water and throw away any that have interior scratches, discolored areas, or other signs of aging. Stainless steel and glass containers, though heavier, are healthier. Nalgene also manufactures a model of their classic water bottle made from safe HDPE plastic.

Common Chemical, Bisphenol A (BPA), in Plastic Bottles Threatens Public Health Grist Magazine www.grist.org April 15, 2005

A chemical widely used in the making of clear plastic products, including baby bottles, food storage containers, and even dental fillings, is the subject of debate between those who say it is safe, namely plastic-industry flacks, and those who say it's not, namely most everyone else. Many scientists have found evidence that bisphenol A, or BPA, is harmful, even in the small doses leached from plastic during heating or exposure to acidic foods or strong detergents, because it can mimic sex hormones. A new paper in the journal *Environmental Health Perspectives* surveys 115 studies on BPA and reports that 94 of them show harmful effects. In a wacky coincidence, researchers Frederick vom Saal and Claude Hughes found that all 11 industry-funded studies conclude BPA is nothing to worry about, while 90 percent of the 104 government- or university-funded studies conclude otherwise. California's legislature is considering a ban on BPA in children's products; if successful, it would be the first ban on the chemical in the world. straight to the source: Los Angeles Times, Marla Cone, 13 Apr 2005 straight to the source: USA Today, Elizabeth Weise, 14 Apr 2005