

# **Plastics, Can't Live With 'Em, Can't Live Without 'Em**

Plastic containers and packaging are ubiquitous for food, beverages, and household products. Although convenient, an increasing number of studies have shown that plastics pose potential health risks. People often believe that plastic doesn't break down easily, even after hundreds of years in a landfill. New evidence has shown that plastic does, in fact, break down over time — sometimes after only one use. Many different chemicals go into the production of plastics, and these chemicals can be released back into your home environment through use, re-use, and improper disposal.

## **Chemicals found in plastics**

Phthalates are found in #3 PVC cling wraps and #1 PETE containers. This chemical can leach out when plastic comes in contact with foods, especially hot, fatty foods.

Dioxins are found in #3 PVC plastics and are highly toxic even at low doses. Dioxins are produced when #3 PVC plastics are manufactured, heated (even mild exposure to the heat of the sun) or incinerated.

Bisphenol A (BPA) is used to make #7 polycarbonate bottles including baby bottles, microwave dishes, eating utensils and plastic coatings for metal cans.

Antimony is a heavy metal that leaches out of #1 PETE plastic water bottles.

These chemicals can disrupt hormone levels, damage the immune system, and may affect reproduction and childhood development. Some are suspected of being human carcinogens. Others may be linked to cancers of the reproductive system, or can cause vomiting and diarrhea and instances of heart disease and diabetes.

Be careful and become educated about plastics! See below for more information.

## **Plastics and heat**

All plastics can leach chemicals when heated, such as in the microwave, dishwasher or in direct sunlight. "Microwave-safe" and "microwavable" mean a container won't melt in the microwave, not that it won't leach chemicals into your food. Heavily worn or scratched containers can release chemicals at even higher concentrations than new containers. Plastics release toxic chemicals when burned, including dioxin, benzo(a)pyrene, and polyaromatic hydrocarbons which are known cancer-causing agents. Burning plastic releases these hazardous substances into the air, which then allows them to spread far and wide and

deposit into waterways and soil.

## **Safest plastics for you and the environment**

- PETE (#1) containers are recyclable and generally considered the safest single-use plastic bottle choice. But they are best not reused because of phthalate and antimony leaching.
- High-density polyethylene (HDPE) (#2) is durable; however very few reusable #2 containers are available.
- Low-density polyethylene (LDPE) (#4) is a food-safe plastic but should not be heated.
- Polypropylene (PP) (#5) has not been shown to leach harmful chemicals and is available in reusable containers.

## **Plastics to use with EXTREME caution**

- Polycarbonates, which are #7 plastics used in the popular Nalgene Lexan sports bottles and some baby bottles, contain BPA. More research on BPA is needed before definitive health risks are known. FDA reviews are inconclusive but Canada has proposed to ban BPA use. In the meantime, do not expose bottles to heat or use when visibly worn.

## **Plastics to AVOID**

- Polyvinyl chloride (PVC) (#3) releases carcinogenic dioxins into the environment when manufactured or incinerated and can leach phthalates.
- Polystyrene (PS) (#6) can leach styrene, a possible human carcinogen.

## **Other things you can do**

- Don't cook or reheat leftovers in plastic containers or covered with plastic wrap.
- Opt for glass, metal or oven-proof ceramics. Always avoid heating any styrofoam cups or containers in the microwave.
- Don't re-use water or other beverage bottles. Instead of buying plastic bottles of water, refill a stainless steel or glass travel bottle.
- Minimize purchases of plastic items or products packaged with excessive amounts of plastic. Write to your favorite companies and ask them to use more eco- and health-friendly packaging.
- Check out the related book review on the next page. And the web sites given below.
- Don't ever burn your plastic trash; always recycle everything you can.:

**BY THE NUMBERS** (or what the numbers on the bottom of plastic containers

mean)

#1-- PETE (or PET) - Polyethylene Teraphthalate. Clear plastic beverage bottles used for soda, juice and bottled water. [Safer than others, but best not to reuse these bottles.]

#2-- HDPE - High Density Polyethylene. Opaque milk jugs and colored containers such as detergent bottles or plastic buckets. [Safer than others and durable.]

#3-- PVC (or V) - Polyvinyl Chloride. Holds up better against oils and alcohols than PETE or HDPE. Frequently used for salad dressing bottles and mouthwash, as well as cling wraps. [Best to avoid.]

#4-- LDPE - Low Density Polyethylene. Lightweight version of HDPE frequently used for plastic shopping and garbage bags. Also used in cling wraps and food storage bags. [Safer than others, but do not reheat food using this plastic.]

#5-- PP - Polypropylene. Rigid and opaque plastic commonly used for baby bottles and food containers such as yogurt cups and margarine tubs. Some plastic cups and bowls are made of PP. [Safer than others.]

#6-- PS - Polystyrene. Also known as "Styrofoam." Used for packing peanuts, take-out containers, egg cartons, and disposable dishes. In its rigid form it is used to make plastic silverware and clear take-out containers. [Best to avoid.]

#7-- OTHER - The #7 ID refers to anything that's not #1-6. #7s may be made from a plastic that is not listed above, the container may contain more than one kind of plastic, or it may be made from plastic mixed with some other material. [Use with extreme caution.]

#### **For more information**

- On current science and the debate over plastic safety, go to [www.washingtonpost.com](http://www.washingtonpost.com) and search "Plastics Special Report"
- On plastics and what you can do at home, visit National Geographic's Green Guide website, [www.thegreenguide.com](http://www.thegreenguide.com) and search "Plastic"
- For more on the dangers of burning plastic trash, particularly agricultural plastic, go to [www.dnr.state.wi.us/environment/protect/ob/agplasticseffects.html](http://www.dnr.state.wi.us/environment/protect/ob/agplasticseffects.html)