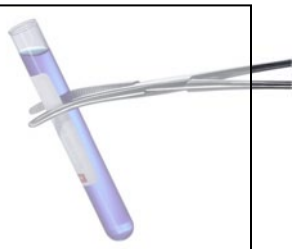
A Guide to Safer Plastics

Oregon Physicians for Social Responsibility



Studies are often done on the few plastics where there is already evidence of toxicity. There is little information available for many of the chemicals in plastics.

Plastics are everywhere. They appear in everyday consumer items such as toys, clothing, and food packaging, and also in our water pipes, carpeting, and home appliances. Most plastics have been created in the last 50 years, and only recently have we discovered the health concerns that we face when we surround ourselves with them. Of the more than 80,000 chemicals registered in the U.S., only a handful has been tested for toxicity.

In August of 2008, the first U.S. legislation on plastics additives was passed: a ban on phathalates in children's products.

It is important to use precaution with plastics because we are still studying them. When possible, use glass, paper, ceramic, or other alternatives.

Children and developing babies are especially vulnerable because of their delicate systems and behaviors that put them in closer contact with many plastics.

"Safer"

- 2 High Density Polyethylene (HDPE)
- 4 Low Density Polyethylene (LDPE)
- 5 Polypropylene (PP)

"Not So Safe"

- 1 Polyethylene Terephthalate (PETE): Recently found to leach phthalates (endocrine disruptors) and aldehydes (probable carcinogens, respiratory irritants) *in some studies*. Do not store for long periods of time, heat, or reuse these plastics with food or water.
- 3 Polyvinyl Chloride (PVC): Production releases dioxins (thought to cause reproductive, developmental, pulmonary, and immune damage), known to leach phthalates and vinyl chloride (a known carcinogen) in use.
- 6 Polystyrene (PS): Leaches ethylbenzene, toluene, and styrene, which primarily affect the brain, kidneys, liver, and lungs. Decomposition is extremely slow, and these chemicals persist for long periods of time in our waste and water systems.
- 7 Other (Including Polycarbonate, PC): PC contains Bisphenol A (BPA; a known endocrine disruptor).

(1) PET is found in

- Water bottles
- Microwave food trays
- Food packaging films
- Polyester & polar fleece

(2) HDPE is found in

- Opaque jugs e.g. for milk & detergents
- Pipes and tubing
- Plastic lumber
- Carry-out plastic bags

(3) PVC is found in

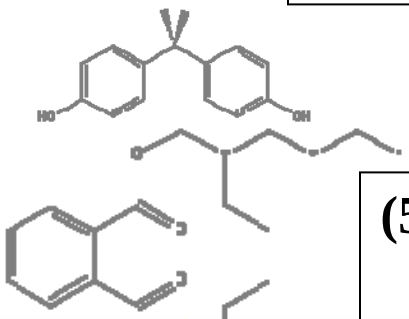
- Pipes & tubing (major source)
- Toys such as inflatable beach balls
- Medical equipment
- Shower curtains
- Synthetic leather & plastic clothing
- Window frames & siding

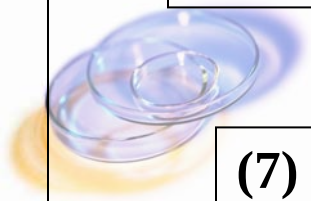
(4) LDPE is found in

- Plastic wraps
- Flexible plastic bottles
- Plastic baggies
- Plastic furniture
- Dental appliances
- Lab pipettes and tubing

(6) PS is found in

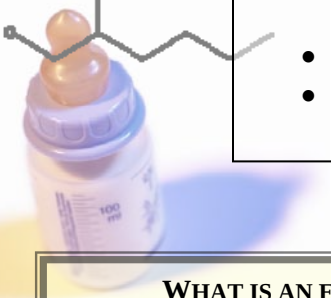
- Foam food containers & foam packaging material
- Insulation
- Some clear food containers
- Lab equipment such as Petri dishes





(5) PP is found in

- Food storage containers e.g. for yogurt or margarine
- Some baby bottles
- Some reusable water bottles



(7) PC* is found in

- Some baby bottles & sippy cups
- Reusable drink bottles
- Lining of food cans
- Plastic cutlery
- Water coolers
- Dental fillings & sealants
- CDs
- Eyeglass lenses

*(7) is a catch-all category. Not all plastics with this label are PC.

WHAT IS AN ENDOCRINE DISRUPTOR?

A chemical which **disrupts the processes of the endocrine system** (including the organs which make metabolism, brain development, growth, and reproduction happen) by binding to active sites meant for hormones. **Large effects have been observed in very small doses** because hormone receptors are most sensitive when only a small percentage is bound. Health concerns include **serious impacts on development, nervous system function, immune function, and reproduction**.

Molecules from Center for Evaluation of Risks to Human Reproduction. All other images from Microsoft Office 2003 Clipart; information from OPSR Plastics and Human Health Presentation, 2008