



FAQs: BPA & Phthalates

BPA

What is bisphenol A (BPA)?

BPA is chemical additive used to make polycarbonate plastic (hard clear plastic) and epoxy resins. Thus, BPA can be found in baby bottles, sippy cups, water bottles, and in the linings of canned foods. Human exposure occurs primarily through ingestion (both from diet and from sucking/mouthing plastic items), and through dermal contact. BPA mimics certain human hormones and can thus disrupt the endocrine system, resulting in adverse health effects such as prostate cancer, breast cancer, miscarriages, birth defects, early puberty, low sperm count, hyperactivity and aggressiveness. Traces of BPA can be found in more than 90% of the U.S. population.

How can I reduce children's exposure to BPA?

- When possible, avoid hard, clear plastic items, especially for children's food and drinks. These can often be identified by the recycling code #7 or "PC" (stands for polycarbonate).
 - ◆ Even hard, clear bottles or sippy cups that are labeled "BPA-Free" may contain similar compounds, such as BPS or BPF, which may also be harmful.
- Use glass bottles, covered with a silicon sleeve (to protect from breaking), when possible.
 - ◆ Use clear silicone nipples. Avoid latex rubber nipples, as they can cause allergic reactions and can contain impurities linked to cancer.
- Avoid plastic bottle liners, as the soft plastic liners may leach chemicals into formula and breast milk, especially when heated.

- Avoid using plastics that aren't identified on the packaging.
- If using infant formula, purchase powdered formula instead of liquid formula sold in metal cans. BPA can leach from the epoxy resin of the metal can lining into the liquid formula. Canadian tests show no BPA leaching into powdered formula. The same brands are sold in the U.S., making powdered formula a low-risk for BPA contamination.
- Never heat or microwave food or drink in any plastic containers, regardless of the type of plastic.

Phthalates

What are phthalates?

Phthalates (pronounced THAL-ates) are a class of chemicals used to soften plastics, such as PVC (polyvinyl chloride), to bind fragrances in products, and to act as solvents and fixatives. Human exposure occurs through:

Inhalation- breathing in fragrances or fumes from solvents and fixatives

Ingestion - eating foods that were wrapped in plastic wrap and heated in the microwave or chewing on a toy made with PVC

Skin Contact- absorbing phthalates from lotion, perfumes, deodorants, and other scented personal care products

Adverse health effects include hormone disruption, developmental and reproductive problems, asthma, preterm birth, low sperm count, undescended testes, premature puberty, and development of some cancers.

PVC

What is polyvinyl chloride (PVC)?

PVC plastic, commonly referred to as “vinyl”, is dangerous to human health and the environment throughout its entire life cycle--during the manufacturing and disposal processes, as well as while PVC products are in use. Humans are exposed to the chemicals released during the PVC lifecycle, such as mercury, dioxins, and phthalates, which may contribute to irreversible life-long illness or disability.

What makes the new car or shower curtain smell?

PVC is useless without the addition of many toxic additives, which can make the PVC product itself harmful to consumers. These chemicals can evaporate or leach out of PVC (off-gassing), posing health risks to children and adults. The new car smell or new plastic shower curtain smell that we are all familiar with is that of chemicals off-gassing from the PVC. One U.S. Environmental Protection Agency (EPA) study found that PVC shower curtains can cause elevated levels of dangerous air toxicants, which can persist for more than a month.

What is an example of toxic additives to PVC?

One of the most common toxic additives is Di(2-ethylhexyl) phthalate (DEHP), a phthalate that is a suspected carcinogen and reproductive toxicant readily found in numerous PVC products. Children can be exposed to phthalates by chewing on vinyl toys. Three phthalates, including DEHP, have been permanently banned from some children’s toys and articles, at levels greater than 0.1%, in the U.S. as of February 2009. Three other phthalates have been banned only from those children’s toys and articles that can fit into a child’s mouth.

Can PVC containing materials be recycled?

These products cannot be effectively recycled due to the many different toxic additives used to soften or stabilize PVC, which can contaminate the recycling batch. A recycling code of #3 --PVC indicates that the plastic is made of PVC. Recycling just one #3--PVC bottle can contaminate a recycling load of 100,000 Polyethylene terephthalate (PET) bottles, rendering them useless.

What are some consumer products with alternatives to PVC and phthalates?

Safer, cost-effective, alternatives, such as bio-based materials or safer plastics, are readily available for virtually every use. You can help build consumer demand for safer, healthier products by avoiding the purchase of PVC or phthalate-containing products.

- If you must use plastic, purchase toys, bottles, sippy cups, chew toys, and other children’s items that are labeled “phthalate-free” or “PVC-free”. Sometimes items containing PVC can be identified by the recycling code #3--PVC or V. Those items should be avoided.
- Make sure to also avoid plastic items (especially baby bottles and sippy cups) made with BPA or similar compounds such as BPS and BPF. BPA is found in hard, clear plastic bottles or cups marked with the recycling code #7--PC. If there is no recycling code, just remember to avoid hard (not flexible when squeezed with a human hand), clear plastics.
- Choose plastic products made from polypropylene or polyethylene, which are safer alternatives to PVC. If the product is a baby bottle, make sure that it has clear silicone nipples.
- Even though PVC is commonly referred to as “vinyl”, there is a range of vinyl compounds, some of which are safer alternatives to PVC. They include EVA (ethylene vinyl acetate) and PEVA (polyethylene vinyl acetate).

- When microwaving food or drink never cover food with any plastic, including plastic wrap. Instead, cover food or drinks with a paper towel to avoid splattering.
 - ◆ Use PVC-free plastic wrap (buy plastic wrap and bags made with polyethylene).
- Purchase phthalate-free personal care or beauty products.
 - ◆ Purchase products with no added fragrances, including personal care products, cleaning products, art supplies, candles, etc. Avoid air fresheners and essential oils.
- Beware of soft flexible plastic products that have a strong, distinct odor. Often these signal the presence of PVC.

Additional Resources:

[BPA](#)

[Plastic Containers](#)

[ATSDR: Phthalates](#)

[ATSDR: Toxicological profile for vinyl chloride](#)