

# Minimizing Exposure to Toxic Flame-Retardants

Studies show that toddlers and preschoolers have higher amounts of fire retardant chemicals in their blood – typically 3 times higher than their mothers. Two recent studies also confirm that California’s children, compared to other parts of the world, including Europe and Mexico, have remarkably higher levels of toxic chemicals called Polybrominated Diphenyl Ethers (PBDEs). A growing body of research suggests that exposure to these flame-retardants is dangerous. These chemicals disrupt hormones and are potentially harmful, especially to the brains of young children.

## What are flame-retardants?

Flame-retardants are chemicals added to consumer products, especially in highly flammable synthetic materials, to meet the government’s flammability standards. They are used in household, office, and baby products such as textiles, furniture, strollers, nursing pillows, construction materials and electronic equipment to prevent and limit burning.

PBDEs are used in foam furniture and the plastic of TVs and computer monitors. Only two forms of PBDEs used in foam furniture were withdrawn from the U.S. market in 2005, after high levels of PBDEs were reported in the blood, milk and body tissues. However, a third form of PBDE is still used in electronics and is required by California fire code regulation to be used in baby products, and upholstered furniture and mattresses in California.

## Where are flame-retardants found?

Flame-retardant chemicals are almost everywhere – in our homes, child care, schools, offices and products we use every day. Since 2005, newer foam items may not have PBDEs. However, foam items such as mattress pads, couches, easy chairs, foam pillows (including breastfeeding pillows), and carpet padding purchased before 2005, are likely to have them. They were also used in vehicle seating, car seats, and office furniture.

## Why minimize exposures?

Laboratory tests conducted for the Environmental Working Group found flame-retardants in 19 out of 20 U.S. families.

In total, 11 different flame-retardants were found in these children, and 86 percent of the time the chemicals were present at higher levels in the children than their mothers. The Consumer Product Safety Commission is strongly discouraging the use of fire retardant in home furniture, including baby products. Many of these chemicals are considered harmful, and have been linked to a range of adverse health effects including thyroid disorders, learning disabilities, hyperactivity, behavioral changes, problems with hearing and memory, reproductive problems, birth defects and, possibly cancer. Most people are unaware of these flame retardants, or they do not know that companies are not required to prove that their chemicals are safe for human health.

## How to reduce exposure to fire retardant chemicals

The Green Science Policy Institute is suggesting the following simple steps:

- Wash your hands frequently. Fire-retardant chemicals are found on hands, and hand to mouth contact is believed to be a major path for exposure.
- Use a vacuum fitted with a HEPA filter and wet mop to reduce dust.
- Avoid PBDEs in foam. Furniture with foam that is labeled meeting California TB 117, is likely to contain toxic fire retardants.
- Consider buying wooden furniture or furniture filled with polyester, down, wool, or cotton, as they are unlikely to contain added fire retardant chemicals.
- Consider buying upholstered furniture with the foam thickly covered or wrapped inside the cushion so the chemicals in it are less likely to escape.
- Use a minimum of carpeting and draperies. These can be treated with fire retardant chemicals. Mattresses should not pose a health hazard because they use a barrier technology rather than adding chemicals to foam.
- Avoid PBDEs in electronics. Prevent young children from touching and mouthing items with fire-retardant especially your cell phone or remote control.

## References and Resources


Environmental Working Group at [www.ewg.org](http://www.ewg.org)

Environmental Health News by the Environmental Health Sciences at [www.EnvironmentalHealthNews.org](http://www.EnvironmentalHealthNews.org)

Toxicological fact sheet for PBDEs by the Agency for Toxic Substances and Disease Registry at [www.atsdr.cdc.gov/tfacts68-pbde.html](http://www.atsdr.cdc.gov/tfacts68-pbde.html)

Green Science Policy Institute at [www.greensciencepolicy.org](http://www.greensciencepolicy.org)

by A. Rahman Zamani, MD, MPH



**Provided by California Childcare Health Program**  
**For more information, please contact:**  
**Healthline 1-800-333-3212**

---

**Distributed by:**