

Protecting Kids' Health by Eliminating Toxic Flame Retardants (PBDEs)

A T O X I C - F R E E L E G A C Y C O A L I T I O N F A C T S H E E T · January 2006

Toxic Flame Retardants: An Overview

Over thirty years ago, the government acted to ban PCBs—brain damaging poisons that were being found in the environment and food supply. Today, scientists are finding PCBs-like chemical—the toxic flame retardants PBDEs—everywhere they look. Polybrominated diphenyl ethers (PBDEs) are widely used as flame retardants in many products such as mattresses, furniture, electronics, automobiles, and computers. PBDEs are not used in children's pajamas. These toxic flame retardants persist in the environment, build up in the food chain and in our bodies, and are toxic at low levels.

- ❖ PBDEs are likely found in the breast milk of all women. Levels found in the breast milk of women in Washington state were 20 to 40 times higher than levels found in Europe and Japan.
- ❖ Studies in wildlife have shown that PBDE levels are rising at alarming rates, doubling every one to five years. In the Columbia River system, levels in fish doubled in a mere 1.6 years. High levels have also been documented in studies of orca whales, salmon, peregrine falcons, terns, osprey, and other wildlife.
- ❖ PBDEs contaminate everyday foods bought at the supermarket, including certain meat, dairy, and fish products. Levels found in U.S. foods are higher than levels found in Spain and Japan.
- ❖ PBDEs are also found widely in house dust and indoor air.



Health Impacts

PBDEs impair memory, learning, and behavior in laboratory animals at very low levels. They also affect thyroid hormones and other bodily functions. Those at highest risk include developing fetuses, infants, and young children.

Banning Deca: Top Priority for Action

United States chemical makers have ceased the production of two forms of PBDEs, but have not stopped making the most heavily used form — deca-BDE (deca) — used primarily in TV and computer casings. The Washington State Departments of Ecology and Health are calling for a ban on deca in products provided safer alternatives are available. Some of the reasons include:

- ❖ Deca is used in massive quantities. An estimated 49 million pounds were used in the U.S. in 2001 and this use is expected to grow by 2% a year.
- ❖ Numerous studies show deca breaks down into other more toxic, bioaccumulative forms of PBDEs. Two new studies from 2006 show that deca breaks down in fish and can be broken down by bacteria.
- ❖ A recent study shows that deca has the ability to negatively impact the developing brains of mice.
- ❖ Deca builds up in breast milk, people, and wildlife. In a breast milk study of 40 Northwest women, 24 had deca contamination.

Safer Alternatives Are Widely Available

Market leaders such as Ikea, Dell, HP and Sony have abandoned PBDEs, including deca, due to concerns over the potential impacts to public health and the environment.

These and other companies are making design changes, using materials that are inherently more flame resistant, and, choosing safer chemicals to meet stringent fire safety standards.

The Departments of Ecology and Health conducted a recent analysis on deca alternatives and found least one phosphate based chemical was a promising safer alternative to deca because it was not a persistent, bioaccumulative, toxic chemical. This chemical, RDP, is in widespread use in the electronics industry. Also, safer materials such as bio-based plastics are currently available and several companies are moving in this direction.

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