Brominated Flame Retardants

Foam insulation expanded polystyrene (ESP) and extruded polystyrene (XPS) are both treated with HBCD (hexabromocyclododecane), a halogenated flame retardant using bromine. XPS typically contains 2.5% HBCD, while EPS has .5-.7%

How can this chemical affect my health?

Chronic (Long Term) Effects

- **PBT (Persistent Bioaccumulative Toxicant)** – Does not break down readily from natural processes, accumulates in organisms concentrating as it moves up the food chain, and is harmful in small quantities.
- **Endocrine Disruption** – Can interfere with hormone communication between cells which controls metabolism, development, growth, reproduction and behavior (the endocrine system).

What are safer alternatives?

- **GOOD** – Only use EPS and XPS for below grade applications, which virtually eliminates exposure to off-gassing.
- **BETTER** – Support efforts to change building codes to eliminate the need for flame retardants in EPS and XPS behind thermal barriers, as the chemicals do little to improve fire safety but can have serious health impacts.
- **BEST** – Consider other forms of insulation, such as rigid mineral wool, cellular glass or cementitious foam.

Note: The Environmental Protection Agency’s Design for the Environment division has identified butadiene styrene brominated copolymer as a potentially less toxic substitute for HBCD. Currently production is limited to a single manufacturer so it is not widely available. Health and safety groups remain concerned about the chemical as it is still a type of brominated flame retardant.

Effects detailed above can occur at various stages of the product’s lifetime, not just during usage. All have been included to provide a complete picture of the chemical’s danger.