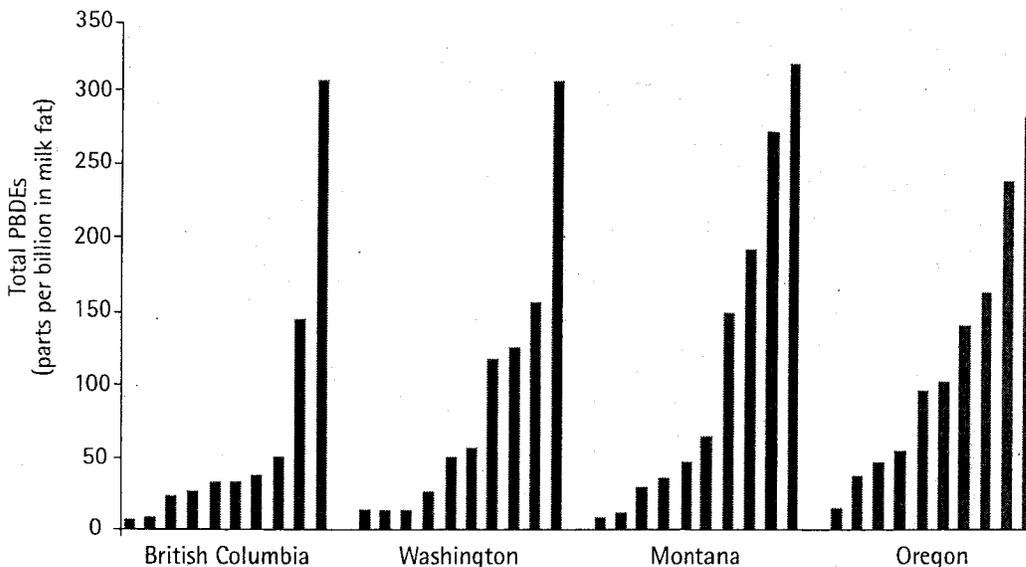


RESULTS: PBDE LEVELS 20 TO 40 TIMES HIGHER THAN LEVELS IN JAPAN AND SWEDEN

All 40 of the women had PBDEs in their breastmilk, with levels ranging from 6 to 321 parts per billion (expressed as the mass of PBDE per mass of milk fat). The median, or midpoint, concentration of PBDEs was 50 parts per billion. Fifteen of the 40 women had at least 100 parts per billion of PBDEs in their milk (see Figure 1).

Figure 1. All 40 Northwest mothers had PBDEs in their breastmilk, with levels ranging from 6 to 321 parts per billion as measured in milk fat.

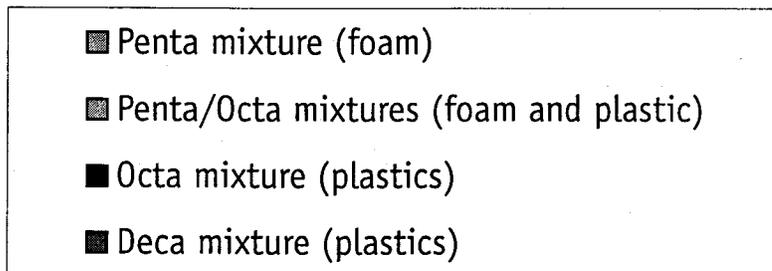
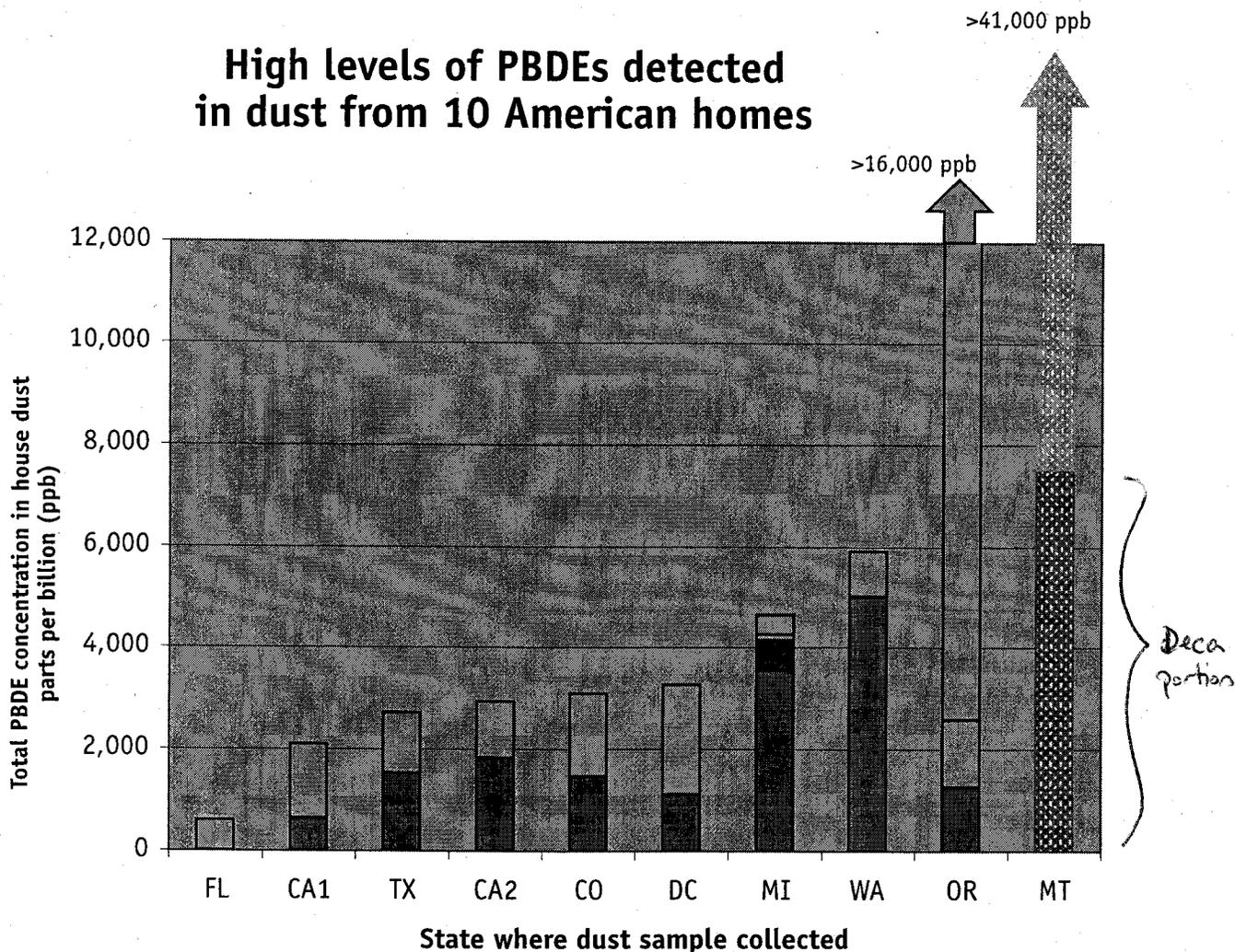


Several other studies have shown a rapid rise of PBDE contamination in North Americans.^{13,19-21} Median PBDE levels in North America appear to be 20 to 30 times higher today than they were in the late 1980s (see Figure 2).

The median PBDE levels among Pacific Northwest mothers were roughly on a par with levels detected in two other recent studies in North America. One study of 47 breastmilk samples from Texas women in 2002²⁵ found a median level of 34 parts per billion, somewhat lower than the median of 50 parts per billion found in this study. However, slightly lower numbers might have been expected because some breastmilk donors in the Texas study had been nursing for longer periods of time, and some may not have been first-time mothers, factors that can reduce levels of fat-soluble contaminants in a mother's body.⁵⁹

More directly comparable to this study was an analysis of 20 samples that the Environmental Working Group (EWG) collected from women across the United States. The EWG study collected breastmilk samples in 2002 and early 2003, finding a median PBDE concentration of 58 parts per billion. As with the Pacific Northwest mothers, all mothers in the EWG study were first-time, breastfeeding mothers, with infants between two and eight weeks of age.²⁶

High levels of PBDEs detected in dust from 10 American homes



*Sample considered separately because it contained residues from recent foam removal (carpet padding, foam mattress pad, uncovered cushion).

What You Should Know About the Bromine Companies Opposing the PBDE Bill

The Bromine Science and Environmental Forum (BSEF) is the major opposition to legislation that protects children's health and the environment by phasing out brominated flame retardants (PBDEs) in favor of safer alternatives.

The BSEF, which appears to be run by the public relations firm Burson-Marsteller, represents just four bromine manufacturers: Albemarle Corporation, ICL Industrial Products (Dead Sea Bromine), Chemtura (Great Lakes Chemical), and Tosoh Corporation.

From lead in gasoline to banned pesticides and PBDEs, the strategy of these companies has been to deny scientific evidence and delay regulatory change, no matter the potential cost to human health and the environment.

BSEF's Connection to Leaded Gasoline

BSEF includes companies that have their roots in leaded gasoline. For example:

- Albemarle bought Ethyl Corporation, which was formed in the 1920's to produce tetraethyl lead (TEL), the gasoline additive. TEL was the primary product of Ethyl Corporation for more than 40 years.
- Great Lakes Chemical owned Associated Octel, one of the world's largest TEL suppliers.

As far back as the 1920's, public health experts warned that spreading lead into the air was a potential disaster, but lost the battle to an aggressive legal, lobbying and public relations campaign by the lead additive manufacturers. It took more than 60 years from the initial evidence of harm for lead to be phased out of gasoline—many decades after its use had wreaked havoc on children's health and the global environment.

BSEF's Connection to Banned Pesticides

Most methyl bromide—the powerful ozone depleting pesticide—is manufactured by Great Lakes Chemical, Albemarle, and ICL Industrial Products. The Methyl

Bromide Working Group, whose membership is almost the same as the BSEF, has resisted provisions of the Montreal Protocol—the treaty requiring the phase out of ozone-depleting chemicals. In 2006, Montreal Protocol countries gave the U.S. permission to manufacture more than 5,000 tons of methyl bromide, despite stockpiles of the banned substance far exceeding that amount.

BSEF's Connection to PBDEs

- All four BSEF companies produce the most widely-used form of PBDEs, known as deca.
- Great Lakes Chemical was the sole producer of the banned PBDE, penta, from 1970 until 2004, when it phased out production.

The bromine industry continues to deny that deca is a problem for human health or the environment, but studies reveal that deca is neurotoxic and found in food, wildlife, and umbilical cord blood. Numerous studies have found that deca breaks down into the banned forms of PBDEs found in penta and octa.

BSEF Takes a Page from Big Tobacco's Playbook

Burson-Marsteller, which appears to run BSEF's operations, was behind the strategy of tobacco companies seeking to block legislation requiring cigarettes to self-extinguish to prevent fires. According to a 1998 *Los Angeles Times* story and other reports, Big Tobacco's strategy to kill these bills was:

- "A...two-pronged strategy that has included bankrolling in-house scientists and outside consultants to debunk the technical feasibility of safer smokes."

- To establish working relationships within the fire-fighting community and direct millions of dollars in grants, services, and gifts to their organizations.
- Shift the burden of house fires away from cigarettes and onto mattresses, furniture, and other household goods, which the tobacco interests claim lack sufficient amounts of flame retardants to prevent fires.

BSEF has been following the same strategy of allying with certain members of the fire fighting community to gain credibility and to distract policy makers from the potential health and environmental problems posed by their products.

Deny and Delay

With leaded gasoline, methyl bromide, and tobacco, the strategy has been the same: Deny the problem, delay regulation, provide one-sided research, and use public relations firms to form objective sounding front groups that lobby against solutions. The bromine-dependent companies that form BSEF are continuing that strategy in resisting the phase-out of deca, even though safer alternatives exist and are manufactured by BSEF companies. Market forces have already moved leading electronics companies to search for new sources of fire retardants: Dell, HP, and Sony have all committed to adopt alternatives to brominated flame retardants.

There is universal agreement that preventing fires is an important goal. However, fire prevention can be accomplished with greater protections for human health and the environment by retarding fire without using brominated flame retardants.

For more information, contact:
kbruno@EnvironmentalHealthFund.org

**INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS®**

HAROLD A. SCHAITBERGER
General President

VINCENT J. BOLLON
General Secretary-Treasurer

January 26, 2007

Kelly Fox, President
Washington State Council of Fire Fighters
1069 Adams Street, SE
Olympia, Washington 98501-1443

Dear Brother Fox:

The International Association of Fire Fighters, headquartered in Washington, DC, represents more than 280,000 full-time professional fire fighters and paramedics who protect 85 percent of the nation's population. More than 3,100 affiliates and their members protect communities in every state in the United States and in Canada. There are 6,500 IAFF members in the State of Washington. Our union is concerned about health and safety of our members as well as the health and safety of all our citizens. Accordingly, the IAFF believes that the passage of legislation banning brominated flame retardants (Polybrominated diphenylethers (PBDEs) including Penta-, Octa-, and Deca-BDEs) is a step in the right direction for improving the health and safety of our fire fighters and the citizens who are exposed to these

One of the primary applications of PBDE's is as a flame retardant applied onto or in many common household goods (furniture foam; plastic cabinets; computers and small appliance; consumer electronics; wire insulation; and back coatings for draperies and upholstery) to reduce and retard the amount of flame spread. While these chemicals inhibit the formation and spread of flames, they do not completely prevent fires. Unlike other flame retardants, when PBDE's burn they release dense fumes and black smoke that reduce visibility and a highly corrosive gas known as hydrogen bromide. In addition, PBDE's produce highly toxic byproducts of incomplete combustion. Although use of flame retardants saves lives and property, there have been unintended consequences. There is evidence that PBDEs persist in the environment and accumulate in living organisms, as well as toxicological testing that indicates these chemicals may cause liver toxicity, thyroid toxicity, and neurodevelopmental toxicity. Many studies involving fire fighters exposed to these and other toxic gases during active fire fighting, overhaul, and long term exposure from these chemicals penetrating protective gear, have found that fire fighters have a much greater risk of contracting cancer, heart and lung disease, and other debilitating diseases. While we support the concept of flame retardant chemicals, there are alternatives that do not contain bromine or chlorine and our much safer for fire fighters than PBDE's.



Kelly Fox
January 26, 2007
Page 2 of 2

The IAFF salutes those companies that have stopped using brominated flame retardants (such as Dell, Hewlett-Packard and Ikea) and are now using safer alternative fire retardants. These companies demonstrate that alternative flame-retardant technologies for achieving fire safety standards do exist and are readily available for other manufactured products.

Fraternally

Richard M. Duffy
Assistant the General President
Occupational Health, Safety, and Medicine

Cc: Ricky Walsh, IAFF District Vice President
Keven Rojecki, WSCFF



Washington State Council of Fire Fighters

February 9, 2007

To: Honorable Senators and Representatives of the Washington Legislature
RE: Washington State Council of Fire Fighters' Position on PBDE's

Dear Legislator:

The Washington State Council of Fire Fighters (WSCFF) is submitting this letter in support of SHB 1024 / SSB 5034 and urges passage of this important public health and environmental measure. We believe passage of this measure is step in the right direction for improving the health and safety of our firefighters.

Our organization represents 138 affiliated local fire fighter unions and more than 7200 affiliated members of the International Association of Fire Fighters (IAFF) within the state. We are concerned with providing the safest working environment for firefighters, and the need to maintain the highest safety standards; a big step toward achieving these goals can be made by banning the use of polybrominated diphenyl ethers (PBDE's).

The elimination of PBDE's is not about compromising fire standards. A fire safety committee comprised of fire professionals will review alternatives identified by the Department of Ecology and Department of Health as "safer," ensuring that any alternative will meet the same fire standards. This bill is about protecting firefighters and others exposed to these chemicals from the potentially dangerous health impacts. Unlike other flame retardants, when PBDE's burn they release dense fumes and black smoke that reduce visibility and a highly corrosive gas known as hydrogen bromide. In addition, PBDE's produce highly toxic byproducts of incomplete combustion. Many studies involving firefighters exposed to these and other toxic gases during active firefighting, overhaul, and long-term exposure from these chemicals penetrating protective gear have found that fire fighters have a much greater risk of contracting cancer, heart and lung disease, and other debilitating diseases. While we clearly support the use of flame retardant chemicals, there are alternatives already in use that do not contain bromine or chlorine and are much safer for firefighters than PBDE's.

Major companies like Dell, Hewlett-Packard, and Ikea have already moved away from the use of PBDE's in their products. These industry leaders are demonstrating that alternative flame retardant technologies for achieving fire safety standards do exist and are readily available for other manufactured products.

The WSCFF joins the Washington State Fire Marshal, the Washington State Association of Fire Chiefs, and the Washington State Firefighters Association, and numerous health and environmental groups in supporting this important piece of legislation.

Sincerely,

Keven E. Rojecki
Legislative Liaison