SB

27

<TARGET><BILL>SB 27</BILL><SUBJECT>SB
27</SUBJECT><COMM>SHSS27</COMM></TARGET>

CS for Senate Bill 27(HSS) – Hazardous Flame Retardants

The CS for Senate Bill 27(HSS) sponsored by Senator Wielechowski bans the manufacture, sale or import of products which contain certain toxic flame retardants.

These have been proven to be toxic not only to residents in homes but to Fire Firefighters in fighting fires.

ALASKA FIRE CHIEF'S ASSOCIATION

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March 4, 2011

Representative Lindsey Holmes
State Capitol Room 405
Juneau AK, 99801

Senator Bill Wielechowski
State Capitol Room 101
Juneau AK, 99801

Reference: HB 63 & SB 27

On behalf of the Alaska Fire Chiefs Association I am writing to give our support for HB 63 and SB 27; **TITLE:** "An Act relating to flame retardants and to the manufacture, sale, and distribution of products containing flame retardants; relating to bioaccumulative toxic chemicals; and providing for an effective date."

Polybrominated Fire Retardants (PBDEs) have been proven to be toxic chemicals and hazardous not only to residents in homes with PBDEs but to Fire Firefighters who may be called to fight fires in structures where these chemicals are present.

We support the passage of HB 63 and SB 27.

Sincerely,

Jeff Tucker, President
Alaska Fire Chiefs Association

adn.com
Anchorage Daily News

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Bill to ban PBDEs would protect Alaskans

COMPASS: *Other points of view*

By FRANK VON HIPPEL

(02/20/11 17:16:56)

The Alaska State Legislature is considering a bill backed by Sen. Bill Wielechowski and Rep. Lindsay Holmes that would ban the import of furniture and electronics containing a class of toxic flame retardants known as PBDEs (polybrominated diphenyl ethers).

PBDEs are man-made chemicals produced for the manufacture of fire-resistant products. As products break down or release PBDEs into the atmosphere, the PBDEs find their way into the environment. PBDEs are highly persistent; they may remain unchanged for many decades or break down into daughter compounds that are also toxic.

Unfortunately, they are fat soluble and bioaccumulate in the fatty tissues of exposed animals. As these animals are consumed by predators, the PBDEs biomagnify up the food web, resulting in the highest levels in the top carnivores. Many of these top carnivores, such as fish and marine mammals, are important subsistence foods in Alaska.

People are exposed to PBDEs in multiple ways, including through the ingestion of fatty foods as well as contact with household dust. PBDEs have been found in human breast milk and in the blood of mothers and their babies. A Centers for Disease Control and Prevention study found that over 93% of Americans had detectable levels of PBDEs in their bodies, some at levels that are associated with health problems in laboratory animals. PBDEs have been found to disrupt the hormone system of numerous animals and have widespread effects on neurodevelopment and reproductive development.

The laboratory animals chosen for these studies have proven to be excellent models for human medical research time and time again. The hormone system of other vertebrates is almost exactly the same as the hormone system of humans. Therefore, disruption of hormone pathways in laboratory animals indicates that PBDEs likely cause similar developmental and health effects in humans.

PBDEs interfere with thyroid hormone, which regulates many aspects of development, and male and female sex steroids, which regulate sexual development and behavior. For example, PBDE exposure may cause undescended testes in newborn boys and reduced testosterone and sperm counts in men. Some PBDEs may be carcinogens. Although we do not fully understand the mechanisms by which PBDEs disrupt multiple hormone pathways, the evidence is sufficient to take a prudent approach and ban their import to Alaska where feasible.

Washington became the first state to ban all forms of PBDEs in 2007, with key support coming from firefighter associations. Firefighters advocated against PBDEs because when products containing PBDEs burn, they release highly toxic dioxins and furans. Associations of nurses and doctors also supported the legislation.

Maine, Oregon, Vermont, Rhode Island, Illinois and Massachusetts also have banned some or all of the PBDEs, and similar legislation is under consideration in other states. Similar bans are in effect in Canada and most European nations.

The Washington law required that safer and technically feasible alternatives to PBDEs be identified before the ban would go into effect. These alternatives, which meet fire-safety standards, were identified by Washington state agencies in December 2008; the identification of alternative flame

retardants allowed restrictions on the use of PBDEs in electrical products and furniture to take effect Jan. 1, 2011.

Many companies have taken a proactive approach in phasing out PBDE use. For example, Intel, IBM and Ericsson no longer produce products with PBDEs, and Hewlett-Packard, Sony, Motorola, Panasonic, NEC, Samsung and Toshiba are all working to phase out PBDEs.

Alaskans experience unusual levels of PBDE exposure for three reasons: The Arctic is a global sink for persistent pollutants that settle out of the atmosphere in cold temperatures; Alaskans who rely on a subsistence diet eat fish and marine mammals that accumulate PBDEs because of their position at the top of the food web; and we spend most of the winter sealed in our homes, where we are exposed to household dust containing PBDEs.

Therefore, Alaska has extraordinary cause to ban the importation of products containing these chemicals. We cannot control the atmospheric deposition of PBDEs into the Arctic or their delivery by ocean currents, but we can control their importation in consumer products.

Frank von Hippel is a professor of biological sciences at the University of Alaska Anchorage.

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2/28/11

CS FOR SENATE BILL NO. 27(HSS)

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-SEVENTH LEGISLATURE - FIRST SESSION

~~**BY SENATOR WIELECHOWSKI**~~

~~Introduced~~**BY THE SENATE HEALTH AND SOCIAL SERVICES COMMITTEE**

Offered:
Referred:

Sponsor(s): SENATOR WIELECHOWSKI

A BILL

FOR AN ACT ENTITLED

"An Act relating to flame retardants and to the manufacture, sale, and distribution of products containing flame retardants; relating to ~~bioaccumulative toxic~~a multistate chemicals clearinghouse; and providing for an effective date."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* **Section 1.** AS 18.31 is amended by adding new sections to read:

Article 4. ~~Toxic~~ Chemicals in Products.

Sec. 18.31.600. Prohibitions. (a) A person may not manufacture, sell, or distribute a product ~~that~~if one or more components of the product contains more than 0.1 percent by mass of pentaBDE, octaBDE, or a combination of pentaBDE and octaBDE.

(b) A person may not manufacture, sell, or distribute a mattress, a mattress pad, or upholstered furniture if one or more components of the mattress, mattress pad, or upholstered furniture ~~has a textile component containing~~contains more than 0.1

percent by mass of decaBDE.

(c) A person may not manufacture, sell, or distribute an electronic product if the electronic product has a plastic housing or other external component that contains more than 0.1 percent by mass of decaBDE.

(d) A person may not manufacture, sell, or distribute a product that is prohibited by the department under AS 18.31.610.

Sec. 18.31.610. Prohibition by department. (a) The department may prohibit by regulation the manufacture, sale, and distribution of a product that contains a flame retardant that is not ~~a brominated flame retardant~~already prohibited under AS 18.31.600(a) - (c), if the department determines that

(1) the flame retardant is harmful to public health or the environment; and

(2) an alternative to the flame retardant exists, is safer for the public health or the environment, and is available on a nationwide basis.

(b) Before establishing a prohibition under (a) of this section, the department shall consult with the Department of Health and Social Services, and the state fire marshal shall determine that the flame retardant alternative identified in (a)(2) of this section satisfies applicable fire safety standards.

(c) In this section, "product" means

(1) a mattress, a mattress pad, or upholstered furniture if the mattress, mattress pad, or upholstered furniture contains plastic fibers that contain the flame retardant; or

(2) an electronic product that has a plastic housing that contains the flame retardant.

Sec. 18.31.620. Exemptions. The prohibitions in AS 18.31.600 do not apply if the product that is prohibited is part of

(1) a transportation vehicle or a product or part used in a transportation vehicle or transportation equipment;

(2) a product or equipment used in an industrial, mining, or manufacturing process;

(3) electronic wiring or cable used for power transmission;

(4) a used item that is resold; or

(5) a new item that is brought into the state before the effective date of ~~AS 18.31.600 - 18.31.790~~this section.

Sec. 18.31.630. Notification by manufacturer. A person who manufactures products whose sale and distribution are prohibited by AS 18.31.600 shall inform its retailers in the state of the prohibitions under AS 18.31.600 and the penalty under AS 18.31.~~660~~650.

~~**Sec. 18.31.640. Retailer assistance.** The department shall develop a program to assist retailers to identify products in their inventories that violate AS 18.31.600.~~

~~**Sec. 18.31.650.**~~**Sec. 18.31.640. Enforcement.** If the department determines that there are grounds to suspect that a retailer is selling a product in violation of AS 18.31.600, the department may request that, within 10 days, the manufacturer of the product

(1) provide the department with a sworn certificate indicating that the sale of the product does not violate AS 18.31.600; or

(2) notify each retailer who sells the product in the state that the sale of the product is prohibited by AS 18.31.600 and provide the department with a list of the names and addresses of the retailers notified.

Sec. 18.31.~~660~~650. Civil penalty. A person who violates AS 18.31.600 - 18.31.~~650~~640 is liable to the state for a civil penalty of up to $1,000 for each violation.

Sec. 18.31.~~670. Review by departments.~~ ~~The department, along with and the Department of Health and Social Services, shall review~~

~~(1) the hazards and risks of brominated flame retardants and possible alternatives to brominated flame retardants; and~~

~~(2) the findings and rulings by the United States Environmental Protection Agency that are related to brominated flame retardants and possible alternatives to brominated flame retardants.~~

~~**Sec. 18.31.680. List of toxic**~~**660. Multistate chemicals.** ~~(a) The department shall, in consultation with the Department of Health and Social Services, establish by regulation and update every three years on or before February 1 a list of persistent bioaccumulative toxic chemicals that occur or are used in products used by human~~

~~beings.~~

~~(b) When establishing the list required by (a) of this section, the department shall consider~~

~~(1) the persistent bioaccumulative toxins list prepared by the State of Washington;~~

~~(2) the chemical data developed by the United States Environmental Protection Agency under the high production volume challenge program; and~~

~~(3) other sources the department determines are relevant.~~

~~**Sec. 18.31.690. Interstate** **clearinghouse.** The department may~~shall participate in ~~the establishment and implementation of a regional~~a multistate chemicals clearinghouse to

~~(1) assist the department to carry out the department's duties under AS 18.31.600 - 18.31.790; and~~

~~(2) help coordinate education and outreach activities related to brominated flame retardants, including risk assessments and possible alternatives to brominated flame retardants.~~

(1) build governmental capacity to identify and promote safer chemicals and products;

(2) avoid duplication of state initiatives on chemicals and enhance the efficiency and effectiveness of state initiatives on chemicals through collaboration and coordination;

(3) ensure that state agencies, businesses, and the public have easy access to high quality and authoritative information on chemicals.

Sec. 18.31.~~700~~670. Regulations. In addition to the regulations allowed under AS 18.31.610, the department may adopt regulations to implement AS 18.31.600 - 18.31.~~790~~690. The department shall adopt the regulations for AS 18.31.600 - 18.31.~~790~~690 under AS 44.62 (Administrative Procedure Act).

Sec. 18.31.~~790~~690. Definitions for AS 18.31.600 - 18.31.~~790~~690. In AS 18.31.600 - 18.31.~~790~~690, unless the context indicates otherwise,

~~(1) "brominated flame retardant" means a flame retardant that contains pentaBDE, octaBDE, or decaBDE;~~

~~(2~~(1) "congener" means a specific polybromodiphenyl ether molecule;

(~~3~~2) "decaBDE" means decabromodiphenyl ether or a technical mixture in which decabromodiphenyl ether is the predominant congener;

(~~4~~3) "department" means the Department of Environmental Conservation;

(~~5~~4) "distribution" means distribution for sale or for a commercial purpose;

(~~6~~5) "electronic product" means a television, a computer, or another piece of electronic equipment;

(~~7~~6) "flame retardant" means a chemical that is added to plastic, foam, or a textile to inhibit flame formation;

(~~8~~7) "manufacture" means manufacture for sale;

(~~9~~8) "manufacturer" means a person who

(A) manufactures a product or whose brand name is affixed to the product; or

(B) imports or distributes a product in the United States if the person who manufactured or assembled the product or whose brand name is affixed to the product does not do business in the United States;

(~~10~~9) "octaBDE" means octabromodiphenyl ether or a technical mixture in which octabromodiphenyl ether is the predominant congener;

(~~11~~10) "pentaBDE" means pentabromodiphenyl ether or a technical mixture in which pentabromodiphenyl ether is the predominant congener;

~~(12) "persistent bioaccumulative toxic chemicals" includes carcinogens, mutagens, reproductive toxicants, developmental toxicants, neurotoxicants, endocrine disruptors, and other toxins; in this paragraph,~~

~~(A) "bioaccumulative" means increasing in concentration in living organisms as the living organisms take in contaminated air, water, soil, sediment, or food;~~

~~(B) "persistent" means remaining in the environment without transformation or breakdown into another chemical form;~~

(~~13~~11) "sell" includes an offer to sell;

(~~14~~12) "technical mixture" means a mixture that is named for the predominant congener and that is not exclusively composed of the predominant congener;

(~~15~~13) "transportation vehicle" means a mechanized vehicle that is used to transport goods or individuals, and includes an airplane, an automobile, a motorcycle, a truck, a bus, a train, and a ship.

*** Sec. 2.** The uncodified law of the State of Alaska is amended by adding a new section to read:

TRANSITION: REGULATIONS. The Department of Environmental Conservation may ~~proceed to~~ adopt regulations necessary to implement this Act. The regulations take effect under AS 44.62 (Administrative Procedure Act), but not before the effective date of the statutory changes.

*** Sec. 3.** The uncodified law of the State of Alaska is amended by adding a new section to read:

~~TRANSITION: FIRST LIST. On or before February 1, 2014, the Department of Environmental Conservation shall establish the first list required by AS 18.31.680, added by sec. 1 of this Act.~~

~~*** Sec. 4.** The uncodified law of the State of Alaska is amended by adding a new section to read:~~

REVISOR'S INSTRUCTION. Wherever "chapter" appears in AS 18.31.010 - 18.31.500, the revisor of statutes shall substitute "AS 18.31.010 - 18.31.500."

*** Sec.** ~~**5. Section**~~**4.** AS 18.31.660, enacted by sec. 1 of this Act, and sec. 2 of this Act ~~takes~~take effect immediately under AS 01.10.070(c).

*** Sec.** ~~**6**~~**5.** Except as provided in sec. ~~5~~4 of this Act, this Act takes effect January 1, 2013.

LEGAL SERVICES

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LEGISLATIVE AFFAIRS AGENCY
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MEMORANDUM February 9, 2011

SUBJECT: CSSB 27( ) relating to flame retardants and bioaccumulative toxic chemicals (Work Order No. 27-LS0300\M)

TO: Senator Bill Wielechowski
Attn: Karla Hart

FROM: Theresa Bannister
Legislative Counsel

You have requested a sectional summary of the above-described bill. As a preliminary matter, note that a sectional summary of a bill should not be considered an authoritative interpretation of the bill and the bill itself is the best statement of its contents.

Section 1. Adds a new article on toxic chemicals in products.

Sec. 18.31.600. Prohibits a person from manufacturing, selling, or distributing certain products that contain a specified percentage of the brominated flame retardants pentaBDE, octaBDE, or decaBDE. Prohibits a person from manufacturing, selling, or distributing a product that the Department of Environmental Conservation prohibits under sec. 18.31.610.

Sec. 18.31.610. Authorizes the department to prohibit the manufacture, sale, and distribution of certain products that contain a flame retardant that is not already prohibited under sec. 18.31.600(a) - (c) if the department makes certain determinations regarding public health, the environment, and alternatives to the flame retardant. Requires the department to consult with the Department of Health and Social Services (DHSS). Requires the state fire marshal to determine whether an alternative satisfies fire safety standards.

Sec. 18.31.620. Lists five exemptions from the prohibitions in sec. 18.31.600.

Sec. 18.31.630. Requires a person who manufactures products whose sale and distribution are prohibited by sec. 18.31.600 to inform its retailers in the state of the prohibition and the penalty.

Sec. 18.31.640. Directs the department to develop a program to assist retailers to identify products that violate sec. 18.31.600.

Sec. 18.31.650. Authorizes the department to request that the manufacturer of a product it suspects of being sold in violation of sec. 18.31.600 either (1) provide the department with a sworn certificate indicating the sale does not violate sec. 18.31.600, or (2) notify its retailers in the state that the sale is prohibited and provide the department with a list of the retailers notified.

Sec. 18.31.660. Establishes a civil penalty for violating secs. 18.31.600 - 18.31.650.

Sec. 18.31.670. Directs the department and DHSS to review the hazards, risks, and certain federal findings and rulings related to brominated flame retardants and their possible alternatives.

Sec. 18.31.680. Directs the department to establish and update every three years a list of persistent bioaccumulative toxic chemicals in products. Lists some sources of information for the department to consider.

Sec. 18.31.690. Authorizes the department to participate in the establishment and implementation of a regional multistate clearinghouse to help the department carry out its duties under these sections and to help coordinate educational and outreach activities related to brominated flame retardants.

Sec. 18.31.700. Authorizes the department to adopt regulations to implement the new sections.

Sec. 18.31.790. Defines terms for the new sections.

Section 2. Authorizes the department to begin adopting regulations for these provisions.

Section 3. Directs the department to establish by February 1, 2014, the first list of persistent bioaccumulative toxic chemicals used in products.

Section 4. Directs the Revisor of Statutes to make a conforming change to the existing statutes in AS 18.31.

Section 5. Gives bill sec. 2 an immediate effective date.

Section 6. Gives the Act (except sec. 2) an effective date of January 1, 2013.

If I may be of further assistance, please advise.

TLB:plm
11-061.plm

SB 27

An Act Relating to Flame Retardants

Changes from 27-LS0300\M to version _____

The first changes make enforcement easier by clarifying the limit of PBDE by mass applies to each individual component. Technology exists to quickly test components of products without damage to identify if any bromines are present at the stated 0.1 percent.

Page 1, line 8 clarifies that **no component of a product** may contain more than 0.1 percent by mass

line 12 changes "a textile component" to "any component"

line 14 changes to: "a plastic housing or other external component that contains..." to account for parts of an electronic product, not just the housing, that someone may come into contact with in the routine use of the product, such as handles and knobs.

Page 3, lines 5-6. Deletes **Sec. 18.31.640. Retailer Assistance.**

Lines 17-23. Deletes **Sec. 18.31.670. Review by departments.**

Lines 24-Page 4, line 4. Deletes **Sec. 18.31.680. List of Toxic Chemicals.**

Page 4, lines 5-11. **Sec. 18.31.690. Interstate clearinghouse.** Requires the department to participate in the interstate clearinghouse and provides reasons.

The department shall participate in a multi-state chemicals clearinghouse to:

- Avoid duplication and enhance efficiency and effectiveness of agency initiatives on chemicals through collaboration and coordination
- Build governmental capacity to identify and promote safer chemicals and products
- Ensure that agencies, businesses, and the public have ready access to high quality and authoritative chemicals data, information, and assessment methods

The new bill provides for an immediate effective date for participation in the Interstate Clearinghouse.

The new bill renumbers sections to account for changes.

Prepared by Karla Hart, Aide to Senator Wielechowski, 2/24/2011

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Preventing Human Exposure to Polybrominated diphenyl ether (PBDE) Flame Retardants to Protect Public Health

Policy Date: 11/9/2004
Policy Number: 2004-05

This policy, acknowledging that polybrominated diphenyl ether (PBDE) flame retardant compounds are widely used and chemically similar to PCBs, and noting more recent recognition that PBDEs are environmentally persistent, rapidly bioaccumulate in human tissue including breast milk and function as developmental neurotoxicants in animals, urges proactive steps to reduce human exposure citing especially APHA policy (#200011) encouraging "precautionary action to prevent potential harm to reproductive health, infants, and children, even if some cause and effect relationships have not been established with scientific certainty."1

More specifically, PBDEs are commonly used flame retardants found in foam products, textiles, electrical equipment, building materials and transportation. Penta-BDE, octa-BDE and deca-BDE are three of the most common commercial classes, with varying numbers of bromine atoms per molecule. Chemically, they look very much like PCBs, which were banned in 1976 due to their high toxicity and persistence and now conclusive evidence that they cause neurodevelopmental problems in children.2 Aside from their fire-retardant properties, PBDES are potent toxins that persist in the environment and bioaccumulate in the food chain and in human tissues.3 Like PCBs, PBDEs are lipophilic and have been found in fish, bird eggs and marine mammals as well as in human milk, fat and blood. While PCB levels in fish and breast milk have slowly declined since being banned, PBDE levels are increasing at an exponential rate. A 100-fold increase in total PBDEs was noted in Lake Ontario trout between 1978 and 1998.4 Body burdens of PBDEs in San Francisco Bay Harbor seals increased by a factor of 100 between 1989 and 1998.5 Total PBDE levels in human milk, blood and tissues have increased by a factor of 100 during the past 30 years, doubling about every five years.6 PBDE levels in U.S. women's breast milk are typically 10-100 times higher than levels in European women7,8 and are now approaching concentrations at which health effects have been observed in laboratory animals.9-17 Although human data on health effects are still lacking for PBDEs, ample data on toxicity are available from animal studies. These studies document that PBDEs are toxic to the brain, reproductive system and liver and disrupt thyroid function.18 Effects on thyroid function provide a plausible mechanism for PBDEs' possible adverse effects on child development. Human studies already document adverse effects on intelligence and psychomotor skills in children with disruptions in thyroid levels in the womb through the second year of life.19-22 One study found that workers exposed to PBDEs experienced higher prevalence of hypothyroidism.23 Concurrent exposure to both PBDEs and PCBs, as from consuming some fatty fish, may present an increased risk since some researchers have found additive or synergistic effects between the two chemicals.24

PBDEs have been detected in household dust,25 food, and in air drawn from a warm TV,26 but the major human exposure pathways have yet to be identified. PBDEs with fewer bromines, such as penta, have the highest potential for bioaccumulation and are typically the most common classes found in humans, fish and other wildlife. Scientists, however, have increasingly been finding deca-BDEs and other higher brominated congeners in biota.27-29 Moreover, it is clear that deca can debrominate and convert to the more bioavailable forms in the environment and potentially during metabolism as well, making them a greater health risk than originally thought.

Global PBDE production totaled 150 million pounds in 1999, over 50 percent of which was used in the Americas.30 Deca-BDE is the most widely used class of BDE at 80 percent of worldwide production.31 Like PCBs, PBDEs flame retardants are now ubiquitous in the environment. The European Chemicals Bureau estimates that 75 percent of penta-BDE emissions will end up in soil and 24.9 percent in surface water and sediment.32 Measured levels of PBDEs in U.S. sewage sludge are 40 times that of European sludge.33

Eliminating most uses of PBDE flame retardants is possible, and a prudent step to protect public health. Concerns about rising levels of PBDEs in the breast milk of Swedish women led to efforts by industrial users in both Sweden and Germany to phase out the use of these chemicals. These actions have led to a decline in PBDE levels in breast milk of Swedish women.34 The European Union has enacted a ban on penta and octa-BDEs and is considering a ban on deca-BDEs as well. The states of California, Hawaii, New York, and Maine have enacted phase-outs of penta and octa-BDEs. Minnesota, Massachusetts, Michigan, Washington and Maryland have proposed similar state-level phase-outs.

Alternatives to the use of PBDE flame retardants are available and cost effective. Alternatives include: product redesign to

eliminate the need for added chemicals; use of naturally flame retardant materials like wool and leather or plastics containing sulfur; and use of less toxic alternatives.35 The German Environmental Agency selected red phosphorus, ammonium polyphosphate and aluminum trihydroxide as alternatives with the least adverse environmental impact.36

Some computer and electronics manufacturers like Apple, Ericsson, IBM, Intel, Motorola, Panasonic, Phillips, and Sony are using alternatives. For example, Motorola now uses a halogen-free laminate that is cost effective, while meeting fire safety standards.37 Toshiba has replaced BFR-containing plastic casings in electronic parts with inherently flame-resistant polyphenylene sulfide. IKEA furniture, Crate and Barrel and Eddie Bauer are requesting PBDE-free polyurethane foam from their manufacturer Hickory Springs.

Although global manufacturers of these compounds continue to produce, as well as export, their products to the United States, one of the two U.S. manufacturers of PBDEs, Great Lakes Chemical, has already announced that they will phase out production of penta and octa-BDEs by 2005. The remaining U.S. manufacturer, Albemarle, continues to manufacture deca-BDE. By calling for a reasonable time frame for phase-out of deca-BDEs, impacts on businesses and workers could be minimized. Phasing out these compounds and substituting safer alternatives protects U.S. manufacturers of PBDEs and companies that use them in their products from potential liability and helps maintain a European market for products requiring flame retardant properties. Since exposure to PBDEs may include an inhalation route of exposure, phasing out the manufacture of these chemicals should better protect the health of workers in industries dealing with PBDEs.

A PBDE phase-out may result in job loss for existing production workers. APHA policy statement 9304 acknowledges potential worker impacts and calls for assistance to workers who are displaced by technological changes.38 New research further supports the need for Work Environment Impact Assessments prior to chemical phase-outs/bans in order to prevent the shifting of risks to workers within the affected industry.39 A PBDE phase-out also provides economic opportunities for workers in industries which make safer alternatives to PBDE flame retardants.40

In light of the aforementioned emerging science on the inherent toxicity and persistence of PBDEs, evidence of adverse health effects on animals and the prevalence and rising levels in fish, biota and human breast milk, immediate action is needed to prevent further environmental contamination and to protect public health.

Therefore, The American Public Health Association hereby:

1. Resolves: That APHA urge state and federal governments to require the use of PBDE flame retardants be phased out in all products manufactured and sold in the United States by a date certain; and

2. Resolves: That APHA urge state and federal governments, in enacting such phase-outs, to consider policies that alleviate short-term economic impacts on the PBDE production workforce, and to also consider economic benefits to workers in industries making safer alternatives; and

3. Resolves: That APHA urge state and federal governments to provide financial incentives for development and use of alternative flame retardants or preferably changes in product design to increase fire resistance without use of chemicals, to assure fire safety, while protecting the public from toxic exposures; that alternative flame retardants be adequately tested for toxicity; and that environmental and health safety must be assured prior to use; and

4. Resolves: That APHA urge state and federal governments to require labeling of chemical flame retardants used in products; and

5. Resolves: That APHA urge state, federal and local governments to regulate the safe disposal of products containing brominated flame retardants and to prohibit land application of sewage sludge until testing can assure that such material does not contain measurable levels of PBDEs; and

6. Resolves: That APHA urge the U.S. Centers for Disease Control and Prevention to expand the national biomonitoring program to include PBDEs and to increase the number of people studied; and

7. Resolves: That APHA urge Congress to increase funding for research on PBDE flame retardants, including monitoring levels of PBDEs in fish, sediments, human milk, blood and tissue, and additional research into exposure routes and human health effects from these exposures.

References

1. American Public Health Association Policy #200011, The Precautionary Principle and Children's Health.
2. Jacobson JL, Jacobson SW. Intellectual impairment in children exposed to PCBs in utero. N Engl J Med 1996;335:783-789.
3. McDonald T. A perspective on the potential health risks of PBDEs. Chemosphere 2002;46(5):745-755.
4. Luross, et al. Spatial and temporal distribution of polybrominated diphenyl ethers in lake trout from the Great Lakes. Organohalogen Compounds 2000;47:73-76.
5. She J, et al, PBDEs in the San Francisco Bay area: measurement in harbor seal blubber and human breast adipose tissue. Chemosphere 2002;46(5):697-707.
6. Hites RA. Polybrominated diphenyl ethers in the environment and in people: a meta-analysis of concentrations. Environ Sci Technol. To be published 2004.
7. Schecter A, et al. Polybrominated diphenyl ethers (PBDEs) in U.S. mother's milk. Environ Health Perspect 2003;111(14):1723-1729.
8. Mazdai A, et al. Polybrominated diphenyl ethers in maternal and fetal blood samples. Environ Health Perspect 2003;111(9):1249-1252.
9. Eriksson P, et al. Brominated flame retardants: a novel class of developmental neurotoxicants in our environment? Environ Health Perspect 2001;109(9):903-908.

10. Darnerud PO, et al. Polybrominated dephenyl ethers: occurrence, dietary exposure, and toxicology. Environ Health Perspect 2001;109(suppl 1):49-68.

11. Eriksson P, et al. A brominated flame-retardant, 2,2',4,4',5-pentabromodiphenyl ether: uptake, retention, and induction of neurobehavioral alterations in mice during a critical phase of neonatal brain development. Toxicol Sci 2002;67:98-103.
12. Viberg H, et al. Neonatal exposure to the brominated flame retardant 2,2',4,4',5-pentabromodiphenyl ether causes altered susceptibility in the cholinergic transmitter system in the adult mouse. Toxicol Sci 2002;67:104-107.
13. Viberg H, Jakobsson E. Developmental neurotoxic effects of 2,2',4,4',5-pentabromodiphenyl ether in the neonatal mouse. Toxicologist 2000;54:1360.
14. Viberg H, et al. Brominated flame retardant: Uptake retention, and developmental neurotoxic effects of decabromodiphenyl ether in the neonatal mouse. Toxicologist 2001;61:1034.
15. Branchi I, et al. Effects of perinatal exposure to a polybrominated diphenyl ether (PBDE 99) on mouse neurobehavioural development. Neurotoxicology 2002;23:375-384.
16. Lichtensteiger W, et al. Effect of polybrominated diphenylether and PCB on the development of the brain-gonadal axis and gene expression in rats. Organohalogen Compounds 2003;61:84-87.
17. Kuriyama S, Chahoud I. Maternal exposure to low dose 2,2', 4,4' 5pentabromo diphenyl ether (PBDE 99) impairs male reproductive performance in adult rat offspring, Organohalogen Compounds 2003;61:92-95.
18. See notes 9-17.
19. Pop VJ, et al. Low maternal free thyroxine concentrations during early pregnancy are associated with impaired psychomotor development in infancy. Clinical Endocrinology 1999;50:149-155.
20. Haddow JE, et al. Maternal thyroid deficiency during pregnancy and subsequent neuropsychologicql development of the child. N Engl J Med 1999;341:549-555.
21. Morreale G, et al. Is neuropsychological development related to maternal hypothyroidism or to maternal hypothyroxinemia? J Clin Endocrinology Metab 2000;85:3975-3987.
22. Howdeshell K. A model of the development of the brain as a construct of the thyroid hormone system. Environ Health Perspect 2002;110:337-348.
23. Bahn A, et al. Health assessment of occupational exposure to polybrominated biphenyl (PBB) and polybrominated biphenyl oxide (PBBO). ISS EPA 560/6-80-001: NTIS PB81-159675. Washington, DC: U.S. Environmental Protection Agency. 1980.
24. Eriksson P, et al. Co-exposure to a polybrominated diphenyl ether (PBDE 99) and an ortho-substituted PCB (PCB 52) enhances developmental neurotoxic effects, Organohalogen Compounds 2003;60-65: Dioxin 2003.
25. Rudel RA, et al. Phthalates, alkyphenols, pesticides, polybrominated diphenyl ethers, and other endocrine disrupting compounds in indoor air and dust. Environ Health Perspect 2003;37(20):4543-4553.
26. Ball M, et al. Further investigation on the formation of polybrominated dioxins and furans during thermal stress of flameproof plastics and textiles. Sub-project1. Research Report no 10403364/01. UBA-FB 91-082 (in German). Federal Office for the Environment. 1991.
27. Stapleton HM, et al. Debromination of the flame retardant decabromodiophenyl ether by juvenile carp (Cyprinus carpio) following dietary exposure. Environ Sci Technol 2004;38(1):112-119.
28. Tomy GT, et al. Bioaccumulation, biotransformation, and biochemical effects of brominated diphenyl ethers in juvenile lake trout (Salvelinus namacush). Environ Sci Technol To be published 2004.
29. Lunder S, Sharp R. Mother's Milk: record levels of flame retardants found in American mother's breast milk. Environmental Working Group, www.ewg.org, 2003:36.
30. Bromine Science and Environmental Forum, An Introduction to Flame retardants, October 19, 2000.
31. Birnbaum L, Staskal D. Brominated flame retardants: cause for concern? Environ Health Perspect 2004;112(1):9-17.
32. European Chemicals Bureau. European Union Risk Assessment Report: diphenyl ether, pentabromo derivative. August 2000.
33. Hale R, et al. Brominated diphenyl ethers in land-applied sewage sludges in the U.S. The second international workshop on brominated flame retardants, Stockholm May 14-16, 2001:149-52.
34. Guvenius DM, Noren K. Polybrominated diphenyl ethers in Swedish human milk: the follow-up study. In: Proceedings of the Second International Workshop on Brominated Flame retardants (Asplund et al, eds) Stockholm: Firmatryck, 2001:303-305.
35. Environment California Research and Policy Center. Growing Threats, Toxic Flame Retardants and Children's Health. 2003.
36. Umweltbundesamt (Germany's Federal Environment Agency), Substituting Environmentally Relevant Flame Retardants: Assessment Fundamentals. ISSN 0722-186X. March 2001.
37. Scheifers S, Motorola, Bromine Free Alternatives in Electronic Products. Presented at the EFC9 Brominated Flame Retardants and Electronics Conference and Roundtable, San Francisco, September 29, 2002.
38. American Public Health Association Policy #9304, Recognizing and Addressing the Environmental and Occupational Health Problems Posed.
39. Rosenberg BJ, et al. The work environment impact assessment: A methodologic framework for evaluating health-based interventions. Am J Industrial Med 2001;39(2):218-226.
40. Examples: Faribault Mills makes 100% wool blankets which are naturally flame resistant (http://www.faribowool.com/); RTP Company makes a non-halogenated, non-brominated flame retardant for use in plastics (http://www.rtpcompany.com/.

ALASKA STATE LEGISLATURE

Session

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Chair
State Affairs Committee

Co-chair
Joint Armed Services Committee

Vice Chair
Resources Committee
Judiciary Committee

Member
Administrative Regulation Review

SENATOR BILL WIELECHOWSKI

CS SB 27 (HSS)

Sectional Analysis

Section 1. Adds a new article on toxic chemicals in products.

Sec. 18.31.600. Prohibits a person from manufacturing, selling, or distributing certain products that contain a specified percentage of the brominated flame retardants pentaBDE, octaBDE, or decaBDE. Prohibits a person from manufacturing, selling, or distributing a product that the Department of Environmental Conservation prohibits under sec. 18.31.610.

Sec. 18.31.610. Authorizes the department to prohibit the manufacture, sale, and distribution of certain products that contain a flame retardant that is not already prohibited under sec. 18.31.600(a) - (c) if the department makes certain determinations regarding public health, the environment, and alternatives to the flame retardant. Requires the department to consult with the Department of Health and Social Services (DHSS). Requires the state fire marshal to determine whether an alternative satisfies fire safety standards.

Sec. 18.31.620. Lists five exemptions from the prohibitions in sec. 18.31.600.

Sec. 18.31.630. Requires a person who manufactures products whose sale and distribution are prohibited by sec. 18.31.600 to inform its retailers in the state of the prohibition and the penalty.

Sec. 18.31.640. Authorizes the department to request that the manufacturer of a product it suspects of being sold in violation of sec. 18.31.600 either (1) provide the department with a sworn certificate indicating the sale does not violate sec. 18.31.600, or (2) notify its retailers in the state that the sale is prohibited and provide the department with a list of the retailers notified.

Sec. 18.31.650. Establishes a civil penalty for violating sees. 18.31.600 - 18.31.640.

Sec. 18.31.660. Requires the department to participate in a multistate chemicals clearinghouse to build capacity to identify and promote safer chemicals and products; avoid duplication and enhance efficiency and effectiveness; and ensure access to high quality and authoritative information on chemicals.

Sec. 18.31.670. Authorizes the department to adopt regulations to implement the new sections.

Sec. 18.31.690. Defines terms for the new sections.

Section 2. Authorizes the department to begin adopting regulations for these provisions.

Section 3. Directs the Revisor of Statutes to make a conforming change to the existing statutes in AS 18.31.

Section 4. Gives participation in the chemicals clearinghouse and bill sec. 2 an immediate effective date.

Section 5. Gives the Act (except chemical clearinghouse participation and and sec. 2) an effective date of January 1,2013.

Prepared by Karla Hart, 2/28/11

ALASKA STATE LEGISLATURE

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Member
Administrative Regulation Review

SENATOR BILL WIELECHOWSKI

SB 27
SPONSOR STATEMENT

> "Still one thing more, fellow-citizens -- a wise and frugal Government, which shall restrain men from injuring one another, shall leave them otherwise free to regulate their own pursuits of industry and improvement, and shall not take from the mouth of labor the bread it has earned. This is the sum of good government, and this is necessary to close the circle of our felicities."
>
> Thomas Jefferson, First Inaugural Address, March 4, 1801[1]

SB 27 will support Safer Homes and Healthier Families by banning the use of polybrominated fire retardants (PBDEs) in mattresses, upholstered furniture and the plastic housing of electronics. In addition, it will give the Department of Environmental Conservation the authority to prohibit the use of other toxic flame retardants when safer alternatives exist. It will also move Alaska a step forward in protecting people from a variety of toxins by allowing the Department to participate with other states in learning about and sharing information on toxins.

PBDEs are persistent toxins that are included in furniture and electronics found in households to enhance flame retardancy. These toxins bio-accumulate, becoming more concentrated in humans and animals high in the food chain. Fetuses and infants are at particular risk as accumulated toxins are transferred from mother to child in utero and through breast milk. Pre-natal exposure may have lifelong health impacts that are not manifested until decades later.

Alaskans are particularly vulnerable for three reasons: 1) we spend a lot of time indoors with little ventilation, increasing our exposure to and ingestion of the microscopic particles of toxins found in household dust that are released from our furniture and electronics; 2) we eat subsistence foods that may concentrate toxins; and 3) through a process known as global distillation, toxins such as PBDEs are carried in the atmosphere for great distances from points of manufacture and concentrate in cold climates.

The impact and legacy of 30 years of producing and using these chemicals is yet to be fully realized and revealed. Alaska should join the 12 other states that have stepped forward to protect their citizens without delay in the face of federal inaction.

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[1] http://avalon.law.yale.edu/19th_century/jefinau1.asp, emphasis added.

27-LS0300\M
Bannister
2/8/11

CS FOR SENATE BILL NO. 27( )

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-SEVENTH LEGISLATURE - FIRST SESSION

BY

Offered:
Referred:

Sponsor(s): SENATOR WIELECHOWSKI

A BILL

FOR AN ACT ENTITLED

"An Act relating to flame retardants and to the manufacture, sale, and distribution of products containing flame retardants; relating to bioaccumulative toxic chemicals; and providing for an effective date."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* **Section 1.** AS 18.31 is amended by adding new sections to read:

Article 4. Toxic Chemicals in Products.

Sec. 18.31.600. Prohibitions. (a) A person may not manufacture, sell, or distribute a product that contains more than 0.1 percent by mass of pentaBDE, octaBDE, or a combination of pentaBDE and octaBDE.

(b) A person may not manufacture, sell, or distribute a mattress, a mattress pad, or upholstered furniture if the mattress, mattress pad, or upholstered furniture has a textile component containing more than 0.1 percent by mass of decaBDE.

(c) A person may not manufacture, sell, or distribute an electronic product if the electronic product has a plastic housing that contains more than 0.1 percent by

mass of decaBDE.

(d) A person may not manufacture, sell, or distribute a product that is prohibited by the department under AS 18.31.610.

Sec. 18.31.610. Prohibition by department. (a) The department may prohibit by regulation the manufacture, sale, and distribution of a product that contains a flame retardant that is not already prohibited under AS 18.31.600(a) - (c), if the department determines that

(1) the flame retardant is harmful to public health or the environment; and

(2) an alternative to the flame retardant exists, is safer for the public health or the environment, and is available on a nationwide basis.

(b) Before establishing a prohibition under (a) of this section, the department shall consult with the Department of Health and Social Services, and the state fire marshal shall determine that the flame retardant alternative identified in (a)(2) of this section satisfies applicable fire safety standards.

(c) In this section, "product" means

(1) a mattress, a mattress pad, or upholstered furniture if the mattress, mattress pad, or upholstered furniture contains plastic fibers that contain the flame retardant; or

(2) an electronic product that has a plastic housing that contains the flame retardant.

Sec. 18.31.620. Exemptions. The prohibitions in AS 18.31.600 do not apply if the product that is prohibited is part of

(1) a transportation vehicle or a product or part used in a transportation vehicle or transportation equipment;

(2) a product or equipment used in an industrial, mining, or manufacturing process;

(3) electronic wiring or cable used for power transmission;

(4) a used item that is resold; or

(5) a new item that is brought into the state before the effective date of AS 18.31.600 - 18.31.790.

Sec. 18.31.630. Notification by manufacturer. A person who manufactures products whose sale and distribution are prohibited by AS 18.31.600 shall inform its retailers in the state of the prohibitions under AS 18.31.600 and the penalty under AS 18.31.660.

Sec. 18.31.640. Retailer assistance. The department shall develop a program to assist retailers to identify products in their inventories that violate AS 18.31.600.

Sec. 18.31.650. Enforcement. If the department determines that there are grounds to suspect that a retailer is selling a product in violation of AS 18.31.600, the department may request that, within 10 days, the manufacturer of the product

(1) provide the department with a sworn certificate indicating that the sale of the product does not violate AS 18.31.600; or

(2) notify each retailer who sells the product in the state that the sale of the product is prohibited by AS 18.31.600 and provide the department with a list of the names and addresses of the retailers notified.

Sec. 18.31.660. Civil penalty. A person who violates AS 18.31.600 - 18.31.650 is liable to the state for a civil penalty of up to $1,000 for each violation.

Sec. 18.31.670. Review by departments. The department, along with and the Department of Health and Social Services, shall review

(1) the hazards and risks of brominated flame retardants and possible alternatives to brominated flame retardants; and

(2) the findings and rulings by the United States Environmental Protection Agency that are related to brominated flame retardants and possible alternatives to brominated flame retardants.

Sec. 18.31.680. List of toxic chemicals. (a) The department shall, in consultation with the Department of Health and Social Services, establish by regulation and update every three years on or before February 1 a list of persistent bioaccumulative toxic chemicals that occur or are used in products used by human beings.

(b) When establishing the list required by (a) of this section, the department shall consider

(1) the persistent bioaccumulative toxins list prepared by the State of

Washington;

(2) the chemical data developed by the United States Environmental Protection Agency; and

(3) other sources the department determines are relevant.

Sec. 18.31.690. Interstate clearinghouse. The department may participate in the establishment and implementation of a regional multistate clearinghouse to

(1) assist the department to carry out the department's duties under AS 18.31.600 - 18.31.790; and

(2) help coordinate education and outreach activities related to brominated flame retardants, including risk assessments and possible alternatives to brominated flame retardants.

Sec. 18.31.700. Regulations. In addition to the regulations allowed under AS 18.31.610, the department may adopt regulations to implement AS 18.31.600 - 18.31.790. The department shall adopt the regulations for AS 18.31.600 - 18.31.790 under AS 44.62 (Administrative Procedure Act).

Sec. 18.31.790. Definitions for AS 18.31.600 - 18.31.790. In AS 18.31.600 - 18.31.790, unless the context indicates otherwise,

(1) "brominated flame retardant" means a flame retardant that contains pentaBDE, octaBDE, or decaBDE;

(2) "congener" means a specific polybromodiphenyl ether molecule;

(3) "decaBDE" means decabromodiphenyl ether or a technical mixture in which decabromodiphenyl ether is the predominant congener;

(4) "department" means the Department of Environmental Conservation;

(5) "distribution" means distribution for sale or for a commercial purpose;

(6) "electronic product" means a television, a computer, or another piece of electronic equipment;

(7) "flame retardant" means a chemical that is added to plastic, foam, or a textile to inhibit flame formation;

(8) "manufacture" means manufacture for sale;

(9) "manufacturer" means a person who

(A) manufactures a product or whose brand name is affixed to the product; or

(B) imports or distributes a product in the United States if the person who manufactured or assembled the product or whose brand name is affixed to the product does not do business in the United States;

(10) "octaBDE" means octabromodiphenyl ether or a technical mixture in which octabromodiphenyl ether is the predominant congener;

(11) "pentaBDE" means pentabromodiphenyl ether or a technical mixture in which pentabromodiphenyl ether is the predominant congener;

(12) "persistent bioaccumulative toxic chemicals" includes carcinogens, mutagens, reproductive toxicants, developmental toxicants, neurotoxicants, endocrine disruptors, and other toxins; in this paragraph,

(A) "bioaccumulative" means increasing in concentration in a living organism to a concentration greater than the concentration of the toxic chemical in the environment in which the organism lives;

(B) "persistent" means remaining in the environment in a toxic form;

(13) "sell" includes an offer to sell;

(14) "technical mixture" means a mixture that is named for the predominant congener and that is not exclusively composed of the predominant congener;

(15) "transportation vehicle" means a mechanized vehicle that is used to transport goods or individuals, and includes an airplane, an automobile, a motorcycle, a truck, a bus, a train, and a ship.

* **Sec. 2.** The uncodified law of the State of Alaska is amended by adding a new section to read:

TRANSITION: REGULATIONS. The Department of Environmental Conservation may adopt regulations necessary to implement this Act. The regulations take effect under AS 44.62 (Administrative Procedure Act), but not before the effective date of the statutory changes.

*** Sec. 3.** The uncodified law of the State of Alaska is amended by adding a new section to read:

TRANSITION: FIRST LIST. On or before February 1, 2014, the Department of Environmental Conservation shall establish the first list required by AS 18.31.680, added by sec. 1 of this Act.

*** Sec. 4.** The uncodified law of the State of Alaska is amended by adding a new section to read:

REVISOR'S INSTRUCTION. Wherever "chapter" appears in AS 18.31.010 - 18.31.500, the revisor of statutes shall substitute "AS 18.31.010 - 18.31.500."

*** Sec. 5.** Section 2 of this Act takes effect immediately under AS 01.10.070(c).

*** Sec. 6.** Except as provided in sec. 5 of this Act, this Act takes effect January 1, 2013.

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Anchorage Daily News

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Bill to ban PBDEs would protect Alaskans

COMPASS: ***Other points of view***

By FRANK VON HIPPEL

(02/20/11 17:16:56)

The Alaska State Legislature is considering a bill backed by Sen. Bill Wielechowski and Rep. Lindsay Holmes that would ban the import of furniture and electronics containing a class of toxic flame retardants known as PBDEs (polybrominated diphenyl ethers).

PBDEs are man-made chemicals produced for the manufacture of fire-resistant products. As products break down or release PBDEs into the atmosphere, the PBDEs find their way into the environment. PBDEs are highly persistent; they may remain unchanged for many decades or break down into daughter compounds that are also toxic.

Unfortunately, they are fat soluble and bioaccumulate in the fatty tissues of exposed animals. As these animals are consumed by predators, the PBDEs biomagnify up the food web, resulting in the highest levels in the top carnivores. Many of these top carnivores, such as fish and marine mammals, are important subsistence foods in Alaska.

People are exposed to PBDEs in multiple ways, including through the ingestion of fatty foods as well as contact with household dust. PBDEs have been found in human breast milk and in the blood of mothers and their babies. A Centers for Disease Control and Prevention study found that over 93% of Americans had detectable levels of PBDEs in their bodies, some at levels that are associated with health problems in laboratory animals. PBDEs have been found to disrupt the hormone system of numerous animals and have widespread effects on neurodevelopment and reproductive development.

The laboratory animals chosen for these studies have proven to be excellent models for human medical research time and time again. The hormone system of other vertebrates is almost exactly the same as the hormone system of humans. Therefore, disruption of hormone pathways in laboratory animals indicates that PBDEs likely cause similar developmental and health effects in humans.

PBDEs interfere with thyroid hormone, which regulates many aspects of development, and male and female sex steroids, which regulate sexual development and behavior. For example, PBDE exposure may cause undescended testes in newborn boys and reduced testosterone and sperm counts in men. Some PBDEs may be carcinogens. Although we do not fully understand the mechanisms by which PBDEs disrupt multiple hormone pathways, the evidence is sufficient to take a prudent approach and ban their import to Alaska where feasible.

Washington became the first state to ban all forms of PBDEs in 2007, with key support coming from firefighter associations. Firefighters advocated against PBDEs because when products containing PBDEs burn, they release highly toxic dioxins and furans. Associations of nurses and doctors also supported the legislation.

Maine, Oregon, Vermont, Rhode Island, Illinois and Massachusetts also have banned some or all of the PBDEs, and similar legislation is under consideration in other states. Similar bans are in effect in Canada and most European nations.

The Washington law required that safer and technically feasible alternatives to PBDEs be identified before the ban would go into effect. These alternatives, which meet fire-safety standards, were identified by Washington state agencies in December 2008; the identification of alternative flame

retardants allowed restrictions on the use of PBDEs in electrical products and furniture to take effect Jan. 1, 2011.

Many companies have taken a proactive approach in phasing out PBDE use. For example, Intel, IBM and Ericsson no longer produce products with PBDEs, and Hewlett-Packard, Sony, Motorola, Panasonic, NEC, Samsung and Toshiba are all working to phase out PBDEs.

Alaskans experience unusual levels of PBDE exposure for three reasons: The Arctic is a global sink for persistent pollutants that settle out of the atmosphere in cold temperatures; Alaskans who rely on a subsistence diet eat fish and marine mammals that accumulate PBDEs because of their position at the top of the food web; and we spend most of the winter sealed in our homes, where we are exposed to household dust containing PBDEs.

Therefore, Alaska has extraordinary cause to ban the importation of products containing these chemicals. We cannot control the atmospheric deposition of PBDEs into the Arctic or their delivery by ocean currents, but we can control their importation in consumer products.

Frank von Hippel is a professor of biological sciences at the University of Alaska Anchorage.

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SB 27, FLAME RETARDANTS AND TOXIC CHEMICALS

Packet to support testimony before the Senate Health & Social Service Committee on February 21, 2011 includes:

- Wal-Mart announcement banning PBDEs in products
- DfE Partnership that evaluated alternatives to penta PDE
  See: http://www.epa.gov/dfe/pubs/projects/flameret/index.htm
- DfE Partnership about alternatives to decaBDE.
  See: http://www.epa.gov/dfe/pubs/projects/decaBDE/index.htm
- Greening Consumer Electronics Executive Summary. Full report
  at: http://www.cleanproduction.org/library/GreeningConsumerElectronics.pdf
- Report about evaluating alternatives to decaBDE in television casings (executive summary). Full report
  at: http://www.cleanproduction.org/library/Green_Screen_Report.pdf

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Product Safety and Regulatory Notice

Certain Polybrominated Diphenyl Ethers (PBDEs) Banned

URGENT

BANNED! Certain Chemical Flame Retardants Banned
Pentabrominated diphenyl ether (pentaBDE); Octabrominated diphenyl ether (octaBDE); Decabrominated diphenyl ether (decaBDE)

ATTENTION:

- **Merchants and Suppliers of hardware, infant/toddler, electronics, cameras, toys, pet toys and pet supplies, sporting goods, cosmetics and skincare products, electrical appliances, furniture, luggage, outdoor living, home furnishings, impulse merchandise, wireless products, curtains and drapes, and bedding for Walmart, Walmart.com, Sam's Club and Samsclub.com**
- **Global Sourcing**

December 28, 2010

ACTION NEEDED:

Merchants and Global Sourcing – Please forward this notice to any suppliers of the applicable products. In addition, you will need to review this notice and ensure that all requirements are met for all new and replenishable inventories of the applicable products.

Suppliers – Review this notice and ensure that all requirements are met for all new and replenishable inventories of the applicable products.

BACKGROUND:

All consumer products must comply with applicable federal, state, and industry fire safety regulations of the specific product. Several states (including California, Hawaii, Maine, Maryland, Oregon, Vermont, and Washington) have established restrictions on the use of specific chemical flame retardants (polybrominated diphenyl ethers or PBDEs) in all consumer products, and many other states have introduced similar legislation.

GENERAL REQUIREMENTS:

Beginning **June 1, 2011**, Walmart will enhance its testing of the use of polybrominated diphenyl ethers in all consumer products.

ALTERNATIVE SUBSTANCES:

Halogenated flame retardants, other than the above-mentioned PBDEs, are involved in legislative debate and suppliers should evaluate alternatives for halogenated flame retardants (other than PBDEs, which are already prohibited). Halogenated flame retardants, other than the above-specified PBDEs, are not currently banned from use, and this Notice will be updated if the status changes in the future.

PRODUCT TESTING REQUIREMENT:

Testing should be performed to verify that Pentabrominated diphenyl ether (pentaBDE), Octabrominated diphenyl ether (octaBDE), and Decabrominated diphenyl ether (decaBDE) are not detected in consumer products.

AUTHORITY:

Various federal, state, and industry fire safety regulations.

QUESTIONS OR COMMENTS:

Suppliers may submit questions or comments by emailing them to gmcomply@wal-mart.com.

http://www.epa.gov/dfe/pubs/projects/flameret/index.htm

EPA United States Environmental Protection Agency

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Furniture Flame Retardancy Partnership

About This Project | Milestones | Publications | Partners

The Furniture Flame Retardancy Partnership is a joint venture between the Furniture Industry, Chemical Manufacturers, Environmental Groups and the Environmental Protection Agency to better understand fire safety options for the furniture industry.

Publications

The report, "Environmental Profiles of Chemical Flame-Retardant Alternatives for Low-Density Polyurethane Foam," is now available. This report contains a summary of the environmental and human health attributes of selected flame retardants as alternatives to pentabromodiphenyl ether (pentaBDE).

The primary flame retardant historically used in low-density flexible polyurethane foam (pentabromodiphenyl ether - pentaBDE) was voluntarily phased out of production by the sole U.S. manufacturer on December 31, 2004. PentaBDE, with its ability to delay ignition of materials, has saved lives, but there are concerns over its use. Studies worldwide have found pentaBDE to be widespread in the environment and in human tissue and breast milk. More information is available on the polybrominated diphenyl ethers (PBDEs) webpage.

The Consumer Product Safety Commission is also considering more stringent fire safety standards for residential furniture. These new standards could result in more flame retardants being used in furniture foam and fabric in the future.

The decisions the industry must make now on flame retardant alternatives offer a real opportunity to protect public health and the environment. Through the Furniture Flame Retardancy Partnership, EPA and its partners are working to identify and move toward environmentally safer approaches to meeting fire safety standards. The partnership's first objective has been to provide up-to-date toxicological and environmental information on flame retardants used in furniture foam so that furniture manufacturers and suppliers can make informed decisions about which chemicals to use. This work is captured in the partnership's report: "Environmental Profiles of Chemical Flame-Retardant Alternatives for Low-Density Polyurethane Foam," which focuses on flame retardants in furniture foam as alternatives to pentaBDE.

Next, the partnership plans to develop and implement a process to identify additional toxicological data needed for adequately assessing the flame-retardant alternatives reviewed in this report. In the future, the partnership intends to evaluate additional chemical flame retardants and other materials that may be necessary to meet planned national fire safety standards.

Find out more from our pamphlet, Environmentally Preferable Approaches for Achieving Furniture Fire Safety Standards.[2 p., 210 Kb PDF] For more information about the Furniture Flame Retardancy Partnership, contact DfE

Top DfE Questions

- What does the DfE label mean?
- Where can I find a list of products with the DfE label?
- How do I apply to get the DfE label on my products?

Design for the Environment U.S. EPA

Look for the label!

Last updated on Wednesday, January 06, 2010

Flame-Retardant Alternatives for DecaBDE Partnership

About This Project | Milestones | Participants

DfE has convened a multi-stakeholder partnership to explore the human health and environmental profiles of functional and viable alternatives to decabromodiphenyl ether (decaBDE), a chemical of potential concern. Participation of all interest groups is aimed at ensuring that the full range of views are considered from the start of the project and that they are incorporated appropriately into the project objective and methodology. The goal is for the resulting information to help inform the process of substituting to safer alternatives, with reduced health and environmental concerns, for decaBDE.

DecaBDE is a flame retardant used widely in a number of materials to meet flammability standards. Uses of DecaBDE include electronics, wire and cable, building materials, automotive and aviation parts, shipping pallets, and textile coatings.

Why is DfE conducting an alternatives assessment?

EPA is concerned that certain polybrominated diphenyl ethers (PBDEs), are persistent, bioaccumulative, and toxic to both humans and the environment. This concern extends to decaBDE, which breaks down into other PBDE congeners. Various PBDEs have been studied for ecotoxicity in mammals, birds, fish, and invertebrates. In some cases, current levels of PBDE exposure for wildlife may be at or near adverse effect levels. Human exposure to decaBDE can occur through the diet, at the workplace, and in the home. In December 2009, the largest commercial producers and suppliers of decaBDE in the United States agreed to phase out use of the chemical by 2012.

How do I get more information?

If you are interested in participating in this partnership, or if you would like more information, please contact Emma Lavoie of DfE at 202-564-0951 or Lavoie.Emma@epa.gov.

Top Labeling Questions

- What does the DfE label mean?
- Where can I find a list of products with the DfE label?
- How do I apply to get the DfE label on my products?

Look for the label!

Last updated on Thursday, February 17, 2011

Report on Greening Consumer Electronics with case studies on electronic manufacturers who eliminate the use of halogenated flame retardants including PBDEs. Apple eliminated the use of halogenated chemicals completely. Full report is online at: http://www.cleanproduction.org/library/GreeningConsumerElectronics.pdf

PREFACE

Electronics manufacturers, standards bodies, and legislators have begun to take notice of the human health and environmental concerns associated with the use of brominated and chlorinated compounds in electronic products. An array of conflicting definitions and policies have emerged to address these concerns at various levels. This report is intended to show the feasibility of re-engineering consumer electronic products to avoid the use of these compounds and recommends a definition to address human health and environmental concerns that is implementable by industry.

CPA and ChemSec have compiled case studies that provide examples of seven companies that have removed most forms of bromine and chlorine from their product lines. The purpose of this report is to allow parties outside the industry to see the level of conformance that can be met today, as well as provide a tool for engineers designing the next generation of greener electronic devices.

September, 2009

Nardono Nimpuno, ChemSec, and Alexandra McPherson, CPA

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Report about evaluating alternatives to decaBDE in television casings. Executive summary from: http://www.cleanproduction.org/library/Green_Screen_Report.pdf

Executive Summary

The Green Screen for Safer Chemicals defines a path to chemicals that are safer for humans and the environment. It is a rigorous, hazard-based screening method that is designed to inform decision making by businesses, governments, and individuals concerned with the risks posed by chemicals and to advance the development of green chemistry. The Green Screen defines four benchmarks on the path to safer chemicals, with each benchmark defining a progressively safer chemical:

- Benchmark 1:
  Avoid—Chemical of high concern
- Benchmark 2:
  Use but search for safer substitutes
- Benchmark 3:
  Use but still opportunity for improvement
- Benchmark 4:
  Prefer—Safer chemical

Each benchmark includes a set of criteria that a chemical, along with its known and predicted breakdown products and metabolites, must pass. To progress from Benchmark 1 to Benchmark 2, a chemical (and its breakdown products and metabolites) must pass all the criteria specified under Benchmark 1. For example, a chemical (along with its breakdown products and metabolites) that is persistent, bioaccumulative and toxic would not pass beyond Benchmark 1. Similarly, to progress from Benchmark 2 to Benchmark 3 and from Benchmark 3 to Benchmark 4, the chemical (along with its breakdown products and metabolites) must pass all criteria specified under each respective benchmark. The criteria become increasingly more demanding for environmental and human health and safety for each benchmark, with the hazard criteria of Benchmark 4 representing the safest chemical. All of the hazard and benchmark criteria developed for the Green Screen are presented in this report, along with information on government and other precedents for classification that were used to help establish the thresholds.

In order to test the Green Screen, three flame retardants that currently meet performance criteria for use in the external plastic housing of televisions (TVs) were evaluated. With the European Union restricting decabromodiphenyl ether (decaBDE) in electronics and with similar legislative initiatives under consideration at the state level in the United States, a recurring question emerges: are the alternative flame retardants safer than decaBDE from the perspective of human and environmental health and safety? Flame retardant use in TVs is of particular interest

because TVs represent the largest end use for decaBDE.

We use the Green Screen to evaluate three flame retardants: decaBDE and two phosphorous-based alternatives, resorcinol bis (diphenylphosphate) (RDP), and bisphenol A diphosphate (BAPP or BPADP). Of the three flame retardants, RDP was the only flame retardant to pass all criteria under Benchmark 1 of the Green Screen. An integral element of the Green Screen is taking into account potential degradation products and metabolites. This is important given that chemicals in the environment are not static, they integrate into human and natural environments. Both decaBDE and BPADP scored lower on the Green Screen because of their degradation products. While RDP is not a "green chemical" per se, based on assessment via the Green Screen for Safer Chemicals, it achieves a higher level of human and environmental health and safety than the alternatives. Thus RDP (and its breakdown products), based upon a Green Screen assessment, is a safer chemical.

Version 1 of the Green Screen is intended for public use and dissemination. We hope that as the Green Screen is applied, further refinements and improvements will be made. The Green Screen for Safer Chemicals represents a needed building block on the path to sustainable material flows in our economic and ecological systems. It is our goal that companies, government agencies, academia, and nonprofits will use the Green Screen to select inherently safer chemicals, thereby reducing the risks of exposure to toxic chemicals and increasing the availability of safer, healthier products.

ALASKA INTER-TRIBAL COUNCIL
Advocating for Tribal Governments Across Alaska

445 East 5th Avenue
Anchorage, AK 99501

907.563.9334
907.563.9337 *fax*
www.aitc.org

February 17, 2011

Senator Bill Wielechowski
State Capitol
Juneau, AK 99801

Dear Senator Bill Wielechowski:

The Alaska Inter-Tribal Council is writing in support of SB 27, a bill that would prohibit the manufacture and sale of toxic flame retardants in common consumer products. The Alaska Inter-Tribal Council is a tribally-governed organization advocating on behalf of 232 Federally Recognized tribal governments throughout Alaska. We recognize increasing evidence that flame retardants, such as polybrominated diphenyl ethers (PBDEs) named in SB 27, are being found in the Arctic. We are concerned about PBDEs leaving a lasting toxic legacy in people and the environment.

PBDEs are potent toxins that persist in the environment and bioaccumulate in the food chain and in human tissues. They can travel long distances and move readily between the water, soil and air. PBDEs are associated with a variety of negative toxic effects including memory impairment, learning and behavioral problems, the disruption of thyroid hormone balance and reproductive health issues. In Alaska, PBDEs have been detected in seabird eggs, marine mammals, otters, and polar bears. The presence of such chemicals in wildlife is cause of concern, not only for the survival and well-being of wildlife, but for the human consequences of bioaccumulative exposure through the food we eat.

We need to enact legislation to phase out PBDEs from consumer products. Fortunately, fire safety can be achieved without the use of toxic chemicals because there are safe, economical, and effective alternatives to PBDEs currently in widespread use.

Eliminating most uses of PBDE flame retardants is possible and an important step to protecting public health.

Thank you for sponsoring this bill,

David Harrison

David Harrison
Executive Director
Alaska Inter-Tribal Council

the Arc of anchorage
2211 Arca Drive • Anchorage, Alaska 99508
(907) 277-6677
Fax (907) 272-2161
TTY (907) 258-2232
E-mail: info@arc-anchorage.org
www.arc-anchorage.org

February 16, 2011

Senator Bill Wielechowski
State Capitol
Juneau, AK 99801

Dear Senator Wielechowski:

The Arc of Anchorage would like to thank you for introducing SB 27, *"An Act relating to flame retardants and to the manufacture, sale, and distribution of products containing flame retardants; relating to bioaccumulative toxic chemicals; and providing for an effective date."* The Arc of Anchorage is a private not-for-profit organization that serves people with developmental disabilities and mental health issues so they can lead rich and productive lives. The Arc looks forward to a day when it is no longer needed because all preventable disabilities have been prevented, but we need legislative help to address prevention.

Learning and developmental disabilities influence the quality of life for affected children and their families, and also impose a heavy financial burden on the state through required Special Education, increased health care costs, lost work time for parents, and a lifelong loss of work productivity for severely affected children. Scientific evidence has demonstrated that some chemicals, including decaBDE, can cause learning and developmental disorders. We must not expose our children to toxicants that we know or suspect can harm their developing brains and bodies. We know safe alternatives can replace the need for these toxic chemicals without compromising fire safety.

Developing children are more susceptible to toxic exposures than adults. When certain exposures occur at certain times, sometimes even at very low doses, the development of children's brains, other organs, and reproductive, hormonal, and immune systems can be permanently altered. Recent evidence has shown children who had higher cord blood concentrations of polybrominated diphenyl ethers (PBDEs) scored lower on tests of mental and motor development at 1–4 and 6 years of age. This work was initiated based on a large body of research indicating that prenatal PBDE exposure has the potential to disrupt neurodevelopment.

PBDE residues, particularly highly brominated PBDEs such as deca-BDE, have been found consistently in tissue samples of both new mothers and their newborn infants, as well as in mothers' breast milk. Ingestion of contaminated milk is one of the two major routes of PBDE exposure in children, and there are concerns about the high concentrations ingested, given the

susceptibility of newborns. This trend has been found to occur around the globe. Yupik women from the Yukon Kuskokwim Delta of Alaska have the highest known concentrations of PBDEs in human populations in the Arctic.

Children rely on adults to keep them safe from harm. Therefore, it is up to us to do everything we can to keep them safe and to minimize their exposures to toxics. SB 27 is important legislation that will help protect children from needless exposures to this persistent, toxic chemical.

Thank you,

Patti J. Saunders

Patti Saunders
Director of Development
The Arc of Anchorage

Alaska Nurses Association (AaNA)
2010 Resolution #7
Resolution on Polybrominated Diphenylethers (PBDEs)
10/17/2010

Whereas, PBDEs are toxic, endocrine-disrupting flame retardant chemicals added to plastics, foam products and textiles; and

Whereas, prenatal exposures to PBDEs at levels commonly found in households have been shown in studies to be associated with adverse neurodevelopmental effects in young children; and

Whereas, people living in North America have levels of PDBEs that are 10-40 times higher than individuals living in Europe or Japan and people living in northern regions are particularly vulnerable to PBDE exposure; and

Whereas, safer and economically viable alternatives are available and are already being used by some manufacturers of computers and other products; and

Whereas, the American Public Health Association and International Association of Fire Fighters have urged the phase-out of PDBEs and other harmful chemicals when safe alternatives are readily available;

Therefore be it resolved, that the Alaska Nurses Association supports the passage of SB295.

____X___approved _____rejected

Alaska Conservation Alliance

"A Strong Economy and Healthy Environment Go Hand in Hand"

2/17/11

Senator Bill Wielechowski
State Capitol, Rm. 101
Juneau, AK 99801-1182

Dear Sen. Wielechowski:

The Alaska Conservation Alliance supports SB 27, which phases out the sale and manufacture of a dangerous class of chemicals in Alaska, and selected the issue as one of three legislative priorities for the 2011 Legislative Session. The Conservation Alliance is an umbrella group for approximately 40 member organizations with a combined membership of over 38,000 Alaskans. We serve as a powerful voice to advance conservation with decision-makers in Alaska. The Conservation Alliance believes that a healthy environment and a strong economy go hand in hand.

Alaskans deserve safe homes for their families. Unfortunately, many common household items including mattresses, textiles, and plastic casings for electronics (primarily in TVs and computers) contain a dangerous class of chemicals known as PBDEs. PBDEs are used as flame retardants but cause cancer and developmental disabilities in our children. Other flames retardants are safer and cost effective. In fact, a number of manufacturers already use these safer flame retardants voluntarily.

The risk posed to Alaskans by PBDEs is higher than people in other parts of the country. Studies show that Alaskans have the highest concentrations of PBDEs in their bodies of any state population due, in part, to us spending more time indoors during our long winters. SB 27 is a smart first step to solving this problem.

SB 27 is a well-balanced approached to make our homes safer and allowing businesses to smoothly transition from selling harmful products to safer ones. Thank you for bringing this legislation forward.

Sincerely,

Caitlin Higgins

Caitlin Higgins
Executive Director
Alaska Conservation Alliance

810 N Street, Suite 203 | Anchorage, AK 99501 | 907-258-6171 | F: 907-258-6177
www.akvoice.org | www.twitter.com/ACAAlliance
www.facebook.com/AlaskaConservationAlliance

Representative Lindsey Holmes
State Capitol
Juneau, AK 99801

February 18, 2011

Dear Representative Holmes:

I am writing to you in support of HB 63, which would ban polybrominated fire retardants in consumer products, while giving the Department of Environmental Conservation additional powers and encouraging cooperation with other states in such activities. Rather than elaborating on the rationale for this legislation, which is effectively presented in your sponsor statement, I'll describe the issue of PBDE toxicity as it relates to the burn injury community. This is in order because the brominated flame retardant (BFR) chemical industry often seeks our support when their products are challenged by such legislation

I support HB 63 in my role as a founding director (in 1985) and emeritus Board member of the Federation of Burn Foundations (FBF), and as a former major committee chair, honoree (twice) and member of the Board of Trustees of the American Burn Association (ABA).

It is understandable that anyone who treats severely burned patients or works closely with both care providers and survivors, as I have for 35 years, would be inclined to support any action which might save a life or prevent such an injury. That was my own position until four years ago, when I first became aware of the increasing public health and environmental threat posed by the accumulating presence of toxic frame retardant chemicals in the environment and human tissue, --along with the lack of any data supporting their effectiveness. Many of us in the ABA share such concerns,

I have also felt a special responsibility to monitor fire and burn injury statistics, as the ABA member trusted with updating the Association's annual burn incidence fact sheet. In tracking the steady decline in fire and burn death and injury over the past 30 years, I have noted the many reasons for those trends. These include numerous safety efforts, such as smoke alarms, more public education, stronger building codes and safer designs of cigarettes, cigarette lighters and candles. Unlike PBDEs, none of these influences on fire casualties have negative side effects, and they have had a far greater positive impact than any that can be claimed for these chemicals.

Other recent changes in society which are not motivated by fire safety have also helped reduce fire casualties. These include the major decline in smoking, the transition in cooking from the stove to the microwave and our growing reliance on restaurants and fast food outlets.

For these reasons, I strongly encourage support for HB 63 in this session of your legislature.

Sincerely,

Peter A. Brigham

Peter A. Brigham, MSW
346 Trevor Lane
Bala Cynwyd, PA 19004

From: Marc! <marcslinger@yahoo.com>
Date: February 19, 2011 12:57:20 PM AKST
To: "Sen. Bill Wielechowski" <Senator_Bill_Wielechowski@legis.state.ak.us>
Subject: SB 27

Dear Representative Wielechowski,

Thank you for your support in the prevention of toxic exposures! As a member of the Anchorage Fire Department, I proudly protect and serve our community without hesitation. Thank you for doing your part and protecting not only us as public servants, but everyone in our state, current and future.

Support SB 27.

With much gratitude,
Marc Esslinger
Firefighter/Paramedic

Karla Hart

From: Briana Sullivan [brianasull@gmail.com]
Sent: Friday, February 18, 2011 9:15 PM
To: Sen. Bill Wielechowski
Subject: SB 27

Follow Up Flag: Follow Up
Flag Status: Flagged

Dear Senator,
Please make a healthy change to Alaska and its future; support Preventing Toxic Exposures.

Thank you for making a difference.
Peace,
Briana Sullivan

Karla Hart

From: Justine Bishop [jerica.b1967@gmail.com]
Sent: Saturday, February 19, 2011 3:54 PM
To: Sen. Dennis Egan
Cc: Sen. Bill Wielechowski; Rep. Cathy Munoz; Rep. Beth Kerttula
Subject: SB 27...

Hello, Senator Egan.

I am writing to ask you to support SB 27 to reduce our exposure to household toxins. These toxic fire-retardants are "kissing cousins" to PCBs and has been used in large quantities, up to 5-7% by weight, in foams in upholstered furniture. It flakes off in microscopic particles which are then ingested. Kids are at particular risk of exposure and ingestion because many of them eat close to the floor... the one second rule isn't fast enough to avoid picking up the toxins when eating food off the floor or with greasy fingers that touched the sofa.

Thank you for your consideration.

Justine Bishop
Lifelong Juneau Resident

NATIVE VILLAGE OF SAVOONGA • P.O. BOX 120, SAVOONGA, AK 99769 • PHONE 984-6414 • FAX 984-6027

March 11, 2010

To: Honorable Senators and Representatives of the Alaska Legislature

From: Native Village of Savoonga

Regarding: Support of HB 385 and SB 295

Dear Legislator:

The Native Village of Savoonga is submitting this letter in support of HB 385 and SB 295, legislation to phase out the manufacturing, sale, and distribution of products that contain polybrominated biphenyl ethers (PBDEs). We believe that action on this class of persistent toxic chemicals is necessary to protect the health and well-being of our people and future generations. We must do everything we can to protect the health of our children who are especially vulnerable because exposure to these chemicals can harm their developing brain and their ability to learn. We know that there is also increasing evidence that links exposure to PBDEs with other serious health problems such as permanent developmental disorders, reproductive harm, thyroid disease, and certain types of cancer.

We are aware that PBDEs are transported on wind and ocean currents into our region and are accumulating in the north/Artic at an alarming rate. PBDEs are now found in our traditional foods, including fish, seabird eggs, and marine mammals. Our people are also at risk because of the presence of PBDEs in products that we use in our homes and that we may be experiencing higher exposures because our homes are closed in for a greater part of the year than in lower latitudes. We are concerned that in a recent study of the Arctic Monitoring and Assessment Program, Yupik women from the Yukon-Kuskokwim Delta had the highest levels of PBDEs of any human population of the circumpolar Arctic. It is necessary to take action to prevent exposures to PBDEs and other persistent, bioaccumulative and toxic chemicals.

We urge you to take this opportunity to pass this important piece of legislation in order to protect our health and the health of all Alaskans. Thank you for your attention to our

concerns.

Sincerely, Verna Emmingham Vice President

For Kenneth Kingeekuk

President, IRA Council, Native Village of Savoonga

From: Roxanne Chan [mailto:chan.rox@gmail.com]
Sent: Wednesday, March 17, 2010 12:46 AM
To: chan.rox@gmail.com
Subject: support for SB 295

Senator Bettye Davis and Members of the Committee
Senate Health and Social Services Committee
State Capitol
Juneau, AK 99801-1182

March 16, 2010

Dear Chair Davis and Members of the Senate Health and Social Services Committee:

Thank you for taking the opportunity to hear testimony on SB 295, an important bill to phase out octa-, penta-, and decaBDE from certain uses, for which safer, effective alternatives are in widespread, successful use. I am unable to attend the hearing scheduled on Wednesday, March 17, 2010 but appreciate the opportunity to submit written support of this bill. I urge that the Committee support this bill.

My name is Roxanne Chan and I am a Registered Nurse and Licensed Acupuncturist currently residing in Anchorage. Since moving to Alaska in 2005, I have had the opportunity to practice nursing in communities such as Barrow, Nome,Â and Anchorage. I also recently had the opportunity to participate in a biomonitoring study where my blood was tested for PBDEs.

In October of 2009, the report *Hazardous Chemicals in Health Care: A Snapshot of Chemicals in Doctors and Nurses* (

http://www.psr-la.org/files/hazardous-chemicals-in-health-care.pdf), was released documenting the levels of different chemicals of twelve doctors and eight nurses from around the country including myself and a physician from Alaska. My results showed that I have at least 19 different PBDEs in my body including the ones this bill aims to phase out.

As someone who is generally aware of chemical exposure from consumer products, I was alarmed to see my results showing that these chemicals were found in my blood. PBDEs have been linked to a wide range of health problems and it made me wonder if my exposure to chronic low levels due to consumer products could result in adverse health in the future.

As I am sure you are aware, a central tenant of health care isâ€"put simplyâ€"first, do not harm. Allowing chemicals on the market which are correlated to adverse health effects is contrary to this principal. Reducing chemical exposures, through policy measures such as SB 295, is an important primary prevention measure to help improve the health of our state overall.

I hope that you will join me and others in supporting SB 295, an important step in reducing Alaskans exposure to toxic chemicals and creating an environment where people can be healthier.

Sincerely,

ã€€

Roxanne Chan, RN, LAc

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Roxanne Chan, Licensed Acupuncturist
Spring Wind Acupuncture
610 W. 2nd Ave, Suite 100
Anchorage, AK 99501
tel: (907) 440-8660
fax: 1-866-747-3256
www.springwindacupuncture.com

From: Karen McLane [mailto:gusskimo@yahoo.com]
Sent: Saturday, March 20, 2010 9:17 AM
To: Senator_Bettye_Davis@legis.state.ak.us; Senator_Joe_Paskvan@legis.state.ak.us; Senator_Fred_Dyson@legis.state.ak.us; Senator_Johnny_Ellis@legis.state.ak.us; Senator_Joe_Thomas@legis.state.ak.us; Senator_Bill_Wielechowski@legis.state.ak.us
Subject: Senate Bill 295 support

Dear Senators,

I am writing regarding this important piece of legislation that Sen Wielechowski has submitted for approval. I live in Nome and have for most of my life. My family moved here when I was 4 years old and I graduated from Nome Beltz High School in 1984. I continued my education to the Masters level in Nursing Science and am now back in Nome teaching Community Health Aides so we can have medical services in our remotest villages. As health care providers we are acutely aware of the health hazards that toxins have in our environment and how they get there.

We have the highest rates of cancers in Alaska. I have seen many, many thyroid cancers and gastrointestinal types of cancers as well. It is my belief that toxins in our Native people's environment play a part in these high rates as does tobacco use.

SB 295 would require the phase out of polybrominated diphenyl ethers (PBDEs). PBDEs are toxic flame retardant chemicals added to plastics, foam products, and textiles to make them difficult to burn. The EPA is concerned that certain PBDEs are persistent, bioaccumulative, and toxic to both humans and the environment. The American Public Health Association and International Association of Fire Fighters have urged the phase out of PBDEs. Safer and economically viable alternatives are available and are already being used by some manufacturers of computers and other products.

Please think about the affects this particular toxin has on the health of our people and vote to phase it out of use.

Thank you for your help,

Karen McLane FNP-BC
P.O. Box 1169
Nome, AK 99762
(907) 304-3768
gusskimo@yahoo.com

From: Simon, Clover [mailto:Clover.Simon@ppgnw.org]
Sent: Friday, March 19, 2010 5:46 PM
To: Senator_Bettye_Davis@legis.state.ak.us; Senator_Joe_Paskvan@legis.state.ak.us; Senator_Fred_Dyson@legis.state.ak.us; Senator_Johnny_Ellis@legis.state.ak.us; Senator_Joe_Thomas@legis.state.ak.us
Subject: Senate Bill 295

Senators:

On behalf of Planned Parenthood of the Great Northwest, our thousands of supporters in Alaska and the more than 9,000 women and men we provide services to I am writing to urge you to support and pass SB 295. Providing Alaskans with a safe environment in which to raise their children is paramount to our mission and will help ensure that when families do plan to have children they will be the healthiest possible. With safe alternatives that still provide excellent fire protection there is no reason not to pass this important legislation. PPGNW is a proud member of the Healthy Families Alliance with many other agencies across Alaska, formed to promote fundamental reform to current chemical laws to protect children, workers, communities and the environment. As PPGNW 'goes green' in our health centers we hope that we can help promote cleaner, toxic free environments for everyone in the State. This bill is the first step.

PBDEs are toxic, endocrine-disrupting flame retardant chemicals added to plastics, foam products, and textiles. They leach from household products and we are exposed through foods, indoor air, and household dust.

A brand new study conducted by researchers at Columbia University showed that prenatal exposure to PBDEs at levels commonly found in households is associated with adverse neurodevelopmental effects in young children. The researchers found that "children with higher concentrations of PBDEs in their umbilical cord blood at birth scored lower on tests of mental and physical development between the ages of one and six. Developmental effects were particularly evident at four years of age, when verbal and full IQ scores were reduced 5.5 to 8.0 points for those with the highest prenatal exposures. "

Thank you for hearing this important legislation and please do not hesitate to contact me directly if you would like further information on our position.

Clover

Clover Simon, MSW
Planned Parenthood of the Great Northwest
VP of Alaska
4050 Lake Otis Pkwy Suite 205
Anchorage AK 99508
907.770.9705 (office)
907.240.7449 (cell)

Please note the Anchorage administrative offices have moved, find our new address above*

CSPA®
Representing Household & Institutional Products
Aerosol - Air Care - Cleaners - Polishes
Automotive Care - Antimicrobial - Pest Management

February 18, 2011

The Honorable Bettye Davis, Chair
Senate Health and Social Services Committee
State Capitol
Juneau, AK 99801-1182

Re: SB 27 - Development of PBT Chemicals List – OPPOSE

The Consumer Specialty Products Association must respectfully oppose SB 27 (Wielechowski), which would, among other things, direct the Department of Health and Social Services to establish, and update every three years a list of "persistent bioaccumulative toxic chemicals (PBTs)" that occur or are used in products used by human beings.

The Consumer Specialty Products Association (CSPA) is the premier trade association representing the interests of some 250 companies engaged in the manufacture, formulation, distribution and sale of $80 billion annually in the U.S. of hundreds of familiar consumer products that help household and institutional customers create cleaner and healthier environments. Our products include disinfectants that kill germs in homes, hospitals and restaurants; candles, and fragrances and air fresheners that eliminate odors; pest management products for home, garden and pets; cleaning products and polishes for use throughout the home and institutions; products used to protect and improve the performance and appearance of automobiles; aerosol products and a host of other products used every day.

CSPA members are committed to manufacturing and marketing safe products that are protective of human health and the environment while providing essential benefits to consumers. CSPA has adopted its members' commitment into the CSPA Principles for Chemicals Management Policy, available online at http://www.cspa.org/infocenter/our-issues/principles-for-chemicals-management-policy/.

CSPA supports programs that are risk based and use sound science. Programs should be governed by an advisory panel in which all stakeholders have a voice. CSPA supports programs that encourage resource pooling and build on existing statutory and regulatory structures, voluntary initiatives and data development efforts.

We are unclear why a PBT list is being drafted and how the list will be used in the future. SB 27 should include specific language that clearly describes the intent and future plans for creating and utilizing a state-specific PBT list.

To provide consistency with other regulatory structures, the PBT screening criteria used by the United States Environmental Protection Agency (USEPA) should be adopted. As currently drafted, Section 18.31.680 does not contain a clear set of definitions for the characteristics of P or B or T that is consistent with generally accepted PBT screening criteria. Though the bill does ask the Department to consider other sources of PBT information (e.g. Washington State PBT program, USEPA high production volume challenge program), CSPA believes that the bill should establish a clear definition to help ensure a focus on priority substances.

In addition, CSPA believes the bill should include language that directs the Department to develop and implement a stakeholder process through which interested parties can participate and provide input into the development and potential use of any PBT lists or potential alternative chemicals. A formal stakeholder process will help ensure that the overall process is informed by the best available scientific information.

SB 27 could be appreciably improved with the addition of language that provides transparent and objective parameters for selecting the best available scientific information. An example is the European Chemicals Agency's (ECHA)'s guidance document titled "Guidance on Information Requirements for Chemical Safety Assessment." The ECHA's guidance provides four specific parameters for selecting the best available scientific information based on relevance, reliability, and adequacy. The fundamental importance of having screening parameters is embodied in a quote by the ECHA, which stated "[t]he knowledge of how a study was carried out and consequently its relevance and reliability, is a prerequisite for the subsequent evaluation [and use] of [the] information."

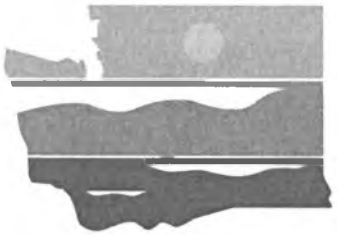
For the reasons expressed above, we must oppose SB 27. Please contact me at (916) 838-3587 or kpower@cspa.org if you have questions regarding CSPA's concerns.

Sincerely,

Kristin Power

Kristin Power
Director, State Affairs – West Region

cc: Senator Wielechowski
Members, Senate Health and Social Services Committee
CSPA State Government Affairs Advisory Committee



Alternatives to Deca-BDE in Televisions and Computers and Residential Upholstered Furniture

Implementation of RCW 70.76: Identifying safer and technically feasible alternatives to the flame retardant called Deca-BDE used in the electronic enclosures of televisions and computers and in residential upholstered furniture

Final Report

December 29, 2008

Department of Ecology Publication No. 09-07-041
Department of Health Publication No. 334-181

Executive Summary

This report fulfills the requirements of RCW 70.76, signed into law by Governor Gregoire in 2007. This law restricts the manufacture, sale and distribution of products containing a type of chemical flame retardant called PBDEs (polybrominated diphenyl ethers). The three types of PBDEs used in consumer products are Penta-BDE, Octa-BDE and Deca-BDE. The prohibition became effective for all products containing Penta-BDE and Octa-BDE, and for mattresses containing Deca-BDE in January, 2008. At the time the law was passed, safer alternatives for Deca-BDE had not been identified for other products, specifically, residential upholstered furniture, and electronic enclosures used in televisions and computers. RCW 70.76 lays out a process for identifying the availability of safer, technically feasible alternatives to Deca-BDE that meet fire safety standards for these applications. When safer alternatives are identified, the manufacture, sale or distribution of upholstery and electronic enclosures containing Deca-BDE will be prohibited two years from the date of identification.

As required by RCW 70.76, the Departments of Ecology (Ecology) and Health (DOH) reviewed risk assessments, scientific studies, and other relevant findings regarding alternatives to the use of Deca-BDE in residential upholstered furniture, televisions, and computers.

The agencies identified a safer, technically feasible alternative chemical flame retardant for TVs and computers. Non-chemical alternatives were identified for upholstered furniture. These alternatives were presented to a committee of fire safety experts appointed by the governor to determine if they can provide appropriate fire retardant capacity. The Fire Safety Committee met on November 7, 2008 and found that the identified alternatives meet applicable fire safety standards. The Fire Safety Committee reported its findings to the Office of the State Fire Marshal who, on November 18, 2008, determined that the identified alternatives meet applicable fire safety standards.

Ecology posted the draft report on its web page and notified the public and stakeholders about its availability. Public comment was accepted from November 20 until December 17, 2008. A notice was placed in the State Register on December 3, 2008 as well. A response to these comments in included in Appendix 6.

Alternatives Assessment Approach

RCW 70.76 requires that Ecology and DOH review risk assessments, scientific studies and other relevant findings to determine if a safer and technically feasible alternative to Deca-BDE is available. The statute requires that the agencies assure that at least one safer alternative is available. The agencies interpret "safer and technically feasible" as including:

- A chemical alternative to Deca-BDE that is less toxic, less persistent or less bioaccumulative than Deca-BDE, and that is currently being used in products, or

- A technology, material or other design strategy, currently in use and reasonably available, that provides fire safety for televisions, computers or upholstered furniture without the addition of chemical flame retardants. For example, while some electronic enclosures achieve fire protection through the use of metal instead of plastic, Ecology believes that requiring redesign to this extent may go beyond the definition of "feasibility" in the statute.

The agencies did not evaluate every option and therefore this report makes no assertion as to the relative safety of flame retardants or technologies we did not evaluate. Ecology and DOH do not have the regulatory authority to dictate what method furniture manufacturers select to maintain fire safety.

The statute does not require that the identified safer alternative be a direct substitute for Deca-BDE but does require that the alternative be "technically feasible". Ecology determined that a good indicator of technical feasibility is the presence and reasonable availability of the product on the market using the alternative. For example, if Ecology demonstrates that currently available computers are employing the identified alternative to Deca-BDE, then that alternative is considered technically feasible.

Electronic Enclosures for TVs and Computers

There are many available chemical flame retardants that can be used to provide fire safety for televisions and computers. In evaluating alternatives to the use of Deca-BDE in electronic enclosures, Ecology and DOH focused on non-halogenated flame retardants which are less likely to persist in the environment and to bioaccumulate in organisms. Non-halogenated alternatives also have the added benefit of being much more easily degraded than their halogen equivalents, thereby reducing their potential long-term impact on human health and the environment.

Technical feasibility was evaluated using indirect information because manufacturers do not generally reveal which chemicals are actually being used to provide fire safety in their electronic products. Ecology looked first to Europe, where Deca-BDE has been banned in electronic products since July, 2008. Ecology assumed that if these products can be made cost effectively and sold in Europe they can be made cost effectively and sold in the U.S. as well. Several European studies demonstrate that resorcinol bis(diphenyl phosphate) (RDP) has been used in electronic enclosures for televisions and computers sold in Europe. Also, the computer industry has largely moved away from use of halogenated flame retardants. Ecology and DOH did not identify technically feasible design options for televisions and computers that do not require the use of added flame retardants so these alternatives were not considered feasible.

After reviewing recent studies, reports and other information, most of which became available after the PBDE Chemical Action Plan was completed, Ecology and DOH identified two possible phosphate-based flame retardants: resorcinol bis diphenyl phosphate (RDP) and triphenyl phosphate (TPP), as technically feasible alternatives.

The agencies then conducted a review of information available on these two flame retardants to determine if both could be recommended as safer alternatives to Deca-BDE. This review included a comparison of toxic effects levels observed in animal studies and an evaluation of aquatic toxicity information.
Based upon this evaluation, the agencies found that RDP is a safer and technically feasible alternative to Deca-BDE. TPP was eliminated due to concerns related to its aquatic toxicity.

Plastics used in electronic products are rated for their flame retardation capacity using a voluntary standard identified by the National Fire Protection Association (NFPA) in conjunction with the Underwriters Laboratory (UL), which defines the specific method. The agencies presented information to the Fire Safety Committee on the performance of RDP compared with Deca-BDE when used in electronic enclosures. RDP performs as well as Deca-BDE, although a different type of plastic has to be used. As required by RCW 70.76, the Fire Safety Committee voted on whether or not RDP provides appropriate fire protection. The committee unanimously found that RDP meets applicable fire safety standards.

FINDING
A safer, technically feasible alternative to Deca-BDE, which meets applicable fire safety standards, is available for use in televisions and computers.

Residential Upholstered Furniture

For residential upholstered furniture, Ecology and DOH relied on information from the Consumer Product Safety Commission (CPSC) about the current use of Deca-BDE in furniture sold in the U.S. and the availability of furniture design options that do not require the addition of chemical flame retardants. Ecology and DOH decided to focus on design alternatives that use inherently flame resistant materials, rather than evaluate options that use added chemical flame retardants. Since there are currently available design options that can be used to achieve fire safety, the agencies focused on these instead of evaluating the safety of other chemical flame retardants that could be used to comply with the proposed standards.

The CPSC recently published a proposed flammability standard for residential upholstered furniture. Under the CPSC's proposed standard, fire safety in upholstered furniture can be achieved through the use of compliant cover materials (fabrics) or internal barrier layers. The proposed standard does not rely on the addition of chemical flame retardants, such as Deca-BDE, for compliance although flame retardants could be used. If the proposed standard is finalized as such, furniture manufacturers will have the option to meet fire safety requirements through several currently available design options that use inherently flame resistant cover fabrics or internal barriers. For example, many existing cover materials, especially those made from synthetic fibers, can meet the proposed standard without the addition of chemical flame retardants.

Furniture manufacturers could also comply with the CPSC proposed standard by using internal barrier materials, some of which may require the addition of chemical flame retardants. Inherently flame retardant barrier technologies that do not require the addition of chemical flame

retardants are available similar to those currently being used to achieve fire safety in mattresses. The CPSC estimates that the use of barrier materials in general as a method to comply with these standards is not a popular choice among manufacturers and would likely be used in only about 5 percent of upholstered furniture. Chemical flame retardants are most likely to be used in internal barriers under the CPSC proposed standard, but they are not expected to be widely used because many cover fabrics will comply. Although the CPSC flammability standard for residential furniture has not been finalized, it is expected that design options will be available to meet any additional requirements in a final standard.

California is the only state that currently has a flammability standard for residential upholstered furniture and Deca-BDE has not been used to meet this standard. According to CPSC staff, Deca-BDE is currently not being used by furniture manufacturers to comply with the California standards nor would it be used to comply with the proposed CPSC standards. Therefore, any ban on the use of Deca-BDE for this purpose in Washington would not impose new costs or require manufacturers to retool their processes or redesign their products in order to comply with this prohibition.

Based on furniture design options that are already available, the agencies concluded that the safer, technically feasible alternative to Deca-BDE in residential furniture is non-chemical design options. The Fire Safety Committee voted on whether or not these non-chemical design changes can provide appropriate flame retardation. The committee unanimously found that non-chemical alternatives meet the proposed federal CPSC fire safety standards for residential upholstered furniture.

FINDING

Safer, technically feasible alternatives to the use of Deca-BDE, which meet the current and proposed applicable fire safety standards, are available for use in residential upholstered furniture.

CONCLUSIONS

Safer, technically feasible alternatives to the use of Deca-BDE in TVs, computers and residential upholstered furniture are available and meet applicable fire safety standards. The restrictions on the use of Deca-BDE in these products as defined by RCW 70.76 will take effect on January 1, 2011.

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State Regulation of PBDEs

Updated February 2011

Polybrominated diphenylethers (PBDEs) are used widely as flame retardants in a number of consumer products, including mattresses, furniture foam, consumer electronics, wire insulation, draperies and upholstery. However, there is concern about the potential environmental and human health effects of PBDEs. Studies have shown that PBDEs accumulate in the environment and living organisms. These compounds have also been associated with liver toxicity, thyroid toxicity, and neurodevelopmental toxicity in humans.

State legislative activity has focused on three types of PBDEs: pentaBDE, octaBDE and decaBDE. Twelve states regulate pentaBDE and octaBDE in certain consumer products. Of these, eight states also regulate decaBDE or have authorized studies into its environmental or human health effects. Illinois, Indiana, Minnesota, New York and Rhode Island require manufacturers of certain electronic products to notify the state if their products exceed the European Union's maximum concentration values for PBDEs. Minnesota also requires that PBDE-free equipment, supplies and products be made available for purchase and use by state agencies.

For state legislation addressing PBDEs, visit NCSL's Environmental Health Legislation Database.

Featured Items

- State Statutes Regulating PBDEs
- Other State Statutes Addressing PBDEs

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State Statutes Regulating PBDEs

State	Citation	Summary
California	West's Ann.Cal.Health & Safety Code § 108920 to 108923	Prohibits a person from manufacturing, processing or distributing a product, or a flame- retarded part of a product, containing more than one-tenth of 1 percent of pentaBDE or octaBDE, except for products containing small quantities of PBDEs that are produced or used for scientific research on the health or environmental effects of PBDEs.
Hawaii	HRS § 332D-1 to 332D-3	Prohibits a person from manufacturing, processing or distributing a product, or a flame-retarded part of a product, containing more than one-tenth of one per cent, by mass, of pentaBDE, octaBDE, or any other chemical formulation that is part of these classifications. This prohibition does not apply to the processing of metallic recyclables containing pentaBDE or octaBDE.
Illinois	410 ILCS 48/1 to 48/99	Prohibits a person from manufacturing, processing or distributing a product, or a flame- retarded part of a product, containing more than one-tenth of 1 percent of pentaBDE or octaBDE. Exempts used products and the processing of recyclable material containing pentaBDE or octaBDE. Authorizes a study of the health and environmental effects of decaBDE.

Maine	38 M.R.S.A. § 1609	Prohibits a person from selling or distributing a product containing more than 0.1% of the "penta" or "octa" mixtures of polybrominated diphenyl ethers. Prohibits a person from manufacturing, selling or distributing certain products containing the "deca" mixture of polybrominated diphenyl ethers. These products include mattresses, mattress pads, upholstered furniture, shipping pallets, televisions, and computers. Exempts transportation vehicles and parts, parts and equipment used in industrial manufacturing, and electronic cable and wiring used in power transmission. Requires manufacturers of products containing PBDE to notify retailers of prohibitions.
Maryland	MD Code, Environment, § 6-1201 to -1205	Prohibits a person from manufacturing, processing or distributing a product, or a flame- retarded part of a product, containing more than one-tenth of 1 percent of pentaBDE or octaBDE. Prohibits the manufacture, lease, sale or distribution of certain products containing decaBDE. Makes certain exemptions.
Michigan	M.C.L.A. 324.14721 to .14725	Prohibits the manufacturing, processing or distribution of products or materials containing than 1/10 of 1% of penta-BDE or octa-BDE. Authorizes PBDE advisory committee to study human health and environmental risks of PBDEs.
Minnesota	M.S.A. § 325E.385 and .386	Prohibits a person from manufacturing, processing or distributing a product or flame-retardant part of a product containing more than one-tenth of one percent of pentabromodiphenyl ether or octabromodiphenyl ether by mass. Makes certain exemptions.
	M.S.A. § 325E.387	Requires state to review the commercial use and health and environmental risks of decaBDE.
New York	McKinney's ECL § 37-0111	Prohibits a person from manufacturing, processing or distributing a product, or a flame-retardant part of a product, containing more than one-tenth of one per centum of pentabrominated diphenyl ether or octabrominated diphenyl ether, by mass. Makes certain exemptions.
Oregon	O.R.S. § 453.005	Lists pentaBDE, octaBDE and decaBDE as hazardous substances and therefore subject to labeling and product restrictions under O.R.S. §§ 453.005 to 435.185.
Rhode Island	Gen.Laws 1956, § 23-13.4-1	Codifies legislative finding that the state should develop a precautionary approach regarding the production, use, storage, and disposal of products containing brominated fire retardants. Prohibits a person from manufacturing, processing or distributing a

		product or a flame-retardant part of a product containing more than one-tenth (1/10 %) of one percent (1%) of pentaBDE or octaBDE. Makes certain exemptions. Authorizes a study of the health and environmental effects of decaBDE.
Vermont	9 V.S.A. § 2971	Prohibits a person from manufacturing, processing or distributing a product, or a flame- retarded part of a product, containing greater than 0.1 percent of pentaBDE or octaBDE by weight. Prohibits a person from manufacturing, selling or distributing certain products containing the deca BDE. These products include mattresses, mattress pads, upholstered furniture, televisions, and computers. Exempts motor vehicles and parts, and the sale or resale of used products. Requires manufacturers of products containing decaBDE to notify retailers of prohibitions. Requires decaBDE be replaced with safer alternatives.
Washington	West's RCWA 70.76.005 to .110	Prohibits a person from manufacturing, selling or distributing noncombustible products containing pentaBDE and octaBDE. Makes certain exemptions. Prohibits a person from manufacturing, selling or distributing mattresses containing the deca BDE. This prohibition extends to upholstered furniture, televisions, and computers if the state, in consultation with a fire safety committee, finds that a safer and technically feasible alternative to decaBDE is available. Requires manufacturers of products containing PBDEs to notify retailers of the prohibitions.

Other State Statutes Addressing PBDEs

State	Citation	Summary
Illinois	415 ILCS 150/30	Requires certain electronic manufacturers to submit registration to the state that discloses whether any covered electronic device exceeds the maximum concentration values established for lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBBs), and polybrominated diphenyl ethers (PBDEEs) under the European Union standards.
Indiana	IC 13-20.5-1-1	Requires video display device manufacturers to submit registration to the state that discloses whether any covered video display device exceeds the maximum concentration values established for lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBBs), and polybrominated diphenyl ethers (PBDEEs) under the European Union standards.
Minnesota	M.S.A. § 115A.1312	Requires video display device manufacturers to submit registration to the state that discloses whether any covered

		video display device exceeds the maximum concentration values established for lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBBs), and polybrominated diphenyl ethers (PBDEEs) under the European Union standards.
	M.S.A. § 325E.387	Requires that the commissioner of administration make available for purchase and use by all state agencies equipment, supplies, and other products that do not contain polybrominated diphenyl ethers.
New York	McKinney's ECL § 27-2605	Requires certain electronic manufacturers to submit registration to the state that discloses whether any covered electronic device exceeds the maximum concentration values established for lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBBs), and polybrominated diphenyl ethers (PBDEEs) under the European Union standards.
Rhode Island	Gen.Laws 1956, § 23-24.10-9	Requires video display device manufacturers to submit registration to the state that discloses whether any covered video display device exceeds the maximum concentration values established for lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBBs), and polybrominated diphenyl ethers (PBDEEs) under the European Union standards.

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http://www.epa.gov/oppt/existingchemicals/pubs/actionplans/pbde.html
Last updated on Wednesday, May 26, 2010

Existing Chemicals

Polybrominated Diphenyl Ethers (PBDEs) Action Plan Summary

- What chemicals are addressed in the Action Plan?
- Why is EPA concerned about these chemicals?
- What action is EPA taking?
- Previous Actions
- Current Actions

Download the complete Polybrominated Diphenyl Ethers (PBDEs) Action Plan (PDF), (16 pp., 170KB, About PDF)

Access the public comment docket for the Polybrominated Diphenyl Ethers (PBDEs) Action Plan (Docket ID EPA-HQ-OPPT-2010-0146) on Regulations.gov.

What chemicals are addressed in the action plan?

Polybrominated diphenyl ethers (PBDEs) include the commercial versions of pentabromodiphenyl ether (c-pentaBDE), octabromodiphenyl ether (c-octaBDE), and decabromodiphenyl ether (c-decaBDE). Each of these commercial products is a mixture composed of several PBDE congeners. PBDEs are used as flame retardants in a number of applications, including textiles, plastics, wire insulation, and automobiles.

Why is EPA concerned about these chemicals?

EPA is concerned that certain PBDE congeners are persistent, bioaccumulative, and toxic to both humans and the environment. The critical endpoint of concern for human health is neurobehavioral effects. Various PBDEs have also been studied for ecotoxicity in mammals, birds, fish, and invertebrates. In some cases, current levels of exposure for wildlife may be at or near adverse effect levels.

PBDEs are not chemically bound to plastics, foam, fabrics, or other products in which they are used, making them more likely to leach out of these products. Despite the United States having phased out the manufacture and import of penta- and octaBDE in 2004, their component congeners are being detected in humans and the environment. Some reports indicate that levels are increasing. One potential source is imported articles to which these compounds have been added. Another is the possible breakdown of decaBDE in the environment to more toxic and bioaccumulative PBDE congeners.

EPA has concerns with decaBDE's hazards as well as its potential to be transformed to other PBDE congeners. DecaBDE was included in EPA's Voluntary Children's Chemical Evaluation Program (VCCEP), which identified a number of tests needed to better understand decaBDE's potential for transformation.

What action is EPA taking?

On the basis of existing information, the Agency believes that the following actions would be

warranted:

EPA intends to initiate rulemaking in autumn 2010 to add these commercial PDBE mixtures and/or the congeners they contain to the Concern List under TSCA section 5(b)(4) as chemicals that present or may present an unreasonable risk of injury to health or the environment.

EPA intends to initiate rulemaking to propose a TSCA section 5(a)(2) significant new use rule (SNUR) requiring notice to the Agency prior to the manufacture or import of articles to which c-pentaBDE or c-octaBDE have been added. A notice of proposed rulemaking is intended to publish in 2010.

EPA also intends to support and encourage the voluntary phase-out of manufacture and import of c-decaBDE. EPA has received commitments from the principal manufacturers and importers of c-decaBDE to initiate reductions in the manufacture, import and sales of c-decaBDE starting in 2010, with all sales to cease by December 31, 2013. EPA intends to encourage other importers of c-decaBDE to join this initiative. As part of this encouragement, EPA intends to develop Design for the Environment and Green Chemistry alternatives analysis for c-decaBDE to aid users in selecting suitable alternatives. The alternatives analysis is intended to begin in spring 2010

EPA also intends to initiate rulemaking to propose a simultaneous SNUR and the previously announced test rule for c-decaBDE. The significant new use would be manufacture, (including import) of c-decaBDE or articles to which c-decaBDE has been added. The TSCA section 4 test rule would require development of information necessary to determine the effects of manufacturing, use or other activities involving c-decaBDE on human health or the environment. If the Agency determines that manufacture (including import) of c-decaBDE or of articles to which c-decaBDE has been added has not ceased, EPA intends to promulgate the test rule. Notices of proposed rulemaking for the SNUR and the test rule are intended to publish in 2010.

Previous Actions:

Read about the previous phase-out and existing significant new use rule on penta- and octaBDE.

Read about commercial decaBDE in VCCEP.

Current Actions:

Download the complete Polybrominated Diphenyl Ethers (PBDEs) Action Plan (PDF), (16 pp., 170KB, About PDF)

Access the public comment docket for the Polybrominated Diphenyl Ethers (PBDEs) Action Plan (Docket ID EPA-HQ-OPPT-2010-0146) on Regulations.gov.

Read about the commitments to phase-out commercial decaBDE.

Read the EPA report, An Exposure Assessment of Polybrominated Diphenyl Ethers (Final Report), released May 24, 2010.

San Antonio Statement on Brominated and Chlorinated Flame Retardants

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The authors declare they have no actual or potential competing financial interests.

The statement is signed by the individual scientists and other professionals listed separately below. Please note that the views expressed are those of the authors and signatories; institutional affiliations are provided for identification purposes only. Abbreviations and an Annotated Statement are available as Supplemental Material (doi:10.1289/ehp.1003089).

We, scientists from a variety of disciplines, declare the following:

1. Parties to the Stockholm Convention have taken action on three brominated flame retardants that have been listed in the treaty for global elimination. These substances include components of commercial pentabromodiphenyl ether and commercial octabromodiphenyl ether, along with hexabromobiphenyl. Another brominated flame retardant, hexabromocyclododecane, is under evaluation.
2. Many commonly used brominated and chlorinated flame retardants can undergo long-range environmental transport.
3. Many brominated and chlorinated flame retardants appear to be persistent and bioaccumulative, resulting in food chain contamination, including human milk.
4. Many brominated and chlorinated flame retardants lack adequate toxicity information, but the available data raise concerns.
5. Many different types of brominated and chlorinated flame retardants have been incorporated into products even though comprehensive toxicological information is lacking.
6. Brominated and chlorinated flame retardants present in a variety of products are released to the indoor and outdoor environments.
7. Near-end-of-life and end-of-life electrical and electronic products are a growing concern as a result of dumping in developing countries, which results in the illegal transboundary movement of their hazardous constituents. These include brominated and chlorinated flame retardants.
8. There is a lack of capacity to handle electronic waste in an environmentally sound manner in almost all developing countries and countries with economies in transition, leading to the release of hazardous substances that cause harm to human health and the environment. These substances include brominated and chlorinated flame retardants.
9. Brominated and chlorinated flame retardants can increase fire toxicity, but their overall benefit in improving fire safety has not been proven.
10. When brominated and chlorinated flame retardants burn, highly toxic dioxins and furans are formed.

Therefore, these data support the following:

11. Brominated and chlorinated flame retardants as classes of substances are a concern for persistence, bioaccumulation, long-range transport, and toxicity.
12. There is a need to improve the availability of and access to information on brominated and chlorinated flame retardants and other chemicals in products in the supply chain and throughout each product's life cycle.
13. Consumers can play a role in the adoption of alternatives to harmful flame retardants if they are made aware of the presence of the substances, for example, through product labeling.
14. The process of identifying alternatives to flame retardants should include not only alternative chemicals but also innovative changes in the design of products, industrial processes, and other practices that do not require the use of any flame retardant.
15. Efforts should be made to ensure that current and alternative chemical flame retardants do not have hazardous properties, such as mutagenicity and carcinogenicity, or adverse effects on the reproductive, developmental, endocrine, immune, or nervous systems.
16. When seeking exemptions for certain applications of flame retardants, the party requesting the exemption should supply some information indicating why the exemption is technically or scientifically necessary and why potential alternatives are not technically or scientifically viable; a description of potential alternative processes, products, materials, or systems that eliminate the need for the chemical; and a list of sources researched.
17. Wastes containing flame retardants with persistent organic pollutant (POP) characteristics, including products and articles, should be disposed of in such a way that the POP content is destroyed or irreversibly transformed so that they do not exhibit the characteristics of POPs.
18. Flame retardants with POP characteristics should not be permitted to be subjected to disposal operations that may lead to recovery, recycling, reclamation, direct reuse, or alternative uses of the substances.
19. Wastes containing flame retardants with POP properties should not be transported across international boundaries unless it is for disposal in such a way that the POP content is destroyed or irreversibly transformed.
20. It is important to consider product stewardship and extended producer responsibility aspects in the life-cycle management of products containing flame retardants with POP properties, including electronic and electrical products.

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San Antonio Statement on Brominated and Chlorinated Flame Retardants

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ERRATUM

NOTE: The competing financial interest declaration was not included in this editorial published in the December issue of *Environmental Health Perspectives*; the statements is provided below.

J. DiGangi, A. Blum, A. Bergman, C. deWit, D. Lucas, D. Mortimer, A. Schecter, M. Scheringer, S Shaw, and T Webster, authors of the "San Antonio Statement on Brominated and Chlorinated Flame Retardants" [Environ Health Perspect 118:A516 (2010)], declare they have no actual or potential competing financial interests.

This omission has been corrected in the PDF version of this article.

Prenatal exposure to flame-retardant compounds affects neurodevelopment of young children

January 19th, 2010 in Medicine & Health / Health

Prenatal exposure to ambient levels of flame retardant compounds called polybrominated diphenyl ethers (PBDEs) is associated with adverse neurodevelopmental effects in young children, according to researchers at the Columbia Center for Children's Environmental Health (CCCEH) at Columbia University's Mailman School of Public Health.

The study is online in *Environmental Health Perspectives* and will be released in the April 2010 print issue.

PBDEs are endocrine-disrupting chemicals and widely used flame-retardant compounds that are applied to a broad array of textiles and consumer products, including mattresses, upholstery, building materials, and electronic equipment. Because the compounds are additives rather than chemically bound to consumer products, they can be released into the environment. Human exposure may occur through dietary ingestion or through inhalation of dust containing PBDEs.

The researchers found that children with higher concentrations of PBDEs in their umbilical cord blood at birth scored lower on tests of mental and physical development between the ages of one and six. Developmental effects were particularly evident at four years of age, when verbal and full IQ scores were reduced 5.5 to 8.0 points for those with the highest prenatal exposures.

"The neurodevelopmental effects of prenatal exposure to PBDEs have not previously been studied among children in North America, where levels are typically higher than in Europe or Asia," said Julie Herbstman, PhD, first author on the paper and a research scientist in Environmental Health Sciences at the Mailman School of Public Health. "The findings are consistent with effects observed in animal studies and, if replicated in other North American populations, they could have important public health implications."

Frederica Perera, DrPh, professor of Environmental Health Sciences at the Mailman School, CCCEH Director, and coauthor added, "These findings are of potential concern, because IQ is a predictor of future educational performance; and the observed reductions in IQ scores are in the range seen with low level lead exposure." This research underscores the need for preventive policies to reduce toxic exposures occurring in utero."

The investigators controlled for factors that have previously been linked to neurodevelopment in other studies, including ethnicity, mother's IQ, child's sex, gestational age at birth, maternal age, prenatal exposure to environmental tobacco smoke, maternal education, material hardship, and breast feeding.

The study is part of a broader project examining the effects of chemicals released by the World Trade Center's destruction on pregnant women and their children. However, residential proximity to the World Trade Center site did not affect levels of PBDE exposure.

Provided by The Earth Institute at Columbia University

"Prenatal exposure to flame-retardant compounds affects neurodevelopment of young children." January 19th, 2010. http://www.physorg.com/news183127197.html

Study links reduced fertility to flame retardant exposure

January 26th, 2010 in Medicine & Health / Health

Women with higher blood levels of PBDEs, a type of flame retardant commonly found in household consumer products, took longer to become pregnant compared with women who have lower PBDE levels, according to a new study by researchers at the University of California, Berkeley.

The study, to be published Jan. 26 in the journal *Environmental Health Perspectives*, found that each 10-fold increase in the blood concentration of four PBDE chemicals was linked to a 30 percent decrease in the odds of becoming pregnant each month.

"There have been numerous animal studies that have found a range of health effects from exposure to PBDEs, but very little research has been done in humans. This latest paper is the first to address the impact on human fertility, and the results are surprisingly strong," said the study's lead author, Kim Harley, adjunct assistant professor of maternal and child health and associate director of the Center for Children's Environmental Health Research at UC Berkeley's School of Public Health. "These findings need to be replicated, but they have important implications for regulators."

PBDEs, or polybrominated diphenyl ethers, are a class of organobromine compounds that became commonplace after the 1970s when new fire safety standards were implemented in the United States. The flame retardants are used in foam furniture, electronics, fabrics, carpets, plastics and other common items in the home.

Studies have found widespread contamination of house dust by PBDEs, which are known to leach out into the environment and accumulate in human fat cells. Studies also suggest that 97 percent of U.S. residents have detectable levels of PBDEs in their blood, and that the levels in Americans are 20 times higher than in their European counterparts. According to the researchers, residents in California are among those experiencing the highest exposures, most likely due to the state's relatively stringent flammability laws.

The researchers measured PBDE levels in blood samples from 223 pregnant women enrolled in a longitudinal study at the Center for the Health Assessment of Mothers and Children of Salinas (CHAMACOS) that examines environmental exposures and reproductive health.

The median concentrations of the four PBDE chemicals in the analysis were slightly lower in this study population than in the general U.S. population, possibly because many of the participants had grown up in Mexico where PBDE exposures are limited, said the authors of the study. The median number of months it took to get pregnant was three, with 15 percent of the participants taking longer than 12 months to conceive.

When the analysis was limited to women who were actively trying to become pregnant, the researchers found that they were half as likely to conceive in any given month if they had high levels of PBDE in their blood. "We aren't looking at infertility, just subfertility, because all the women in our study eventually became pregnant," said Harley. "Had we included infertile couples in our study, it is possible that we would have seen an even stronger effect from PBDE exposure."

It is not entirely clear how PBDEs might impact fertility. A number of animal studies have found that PBDEs can impair neurodevelopment, reduce thyroid hormones, and alter levels of sex hormones. Both high and low thyroid hormone levels can disrupt normal menstrual patterns in humans, but this study did not find a link between PBDE exposure and irregular menstrual cycles.

Because the participants were mostly young, Mexican immigrant women who lived in an agricultural community, the researchers controlled for exposure to pesticides in their analysis. The researchers also controlled for other variables known to impact fertility, such as irregularity of menstrual cycles, frequency of intercourse, pre-pregnancy body mass index, use of birth control pills in the year before conception, smoking, and alcohol and caffeine consumption.

There are some 209 different possible formulations of PBDEs, but only three mixtures - pentaBDE, octaBDE and decaBDE - have been developed for commercial use as flame retardants. The mixtures are distinguished by the average number of bromine atoms attached to each molecule. Like many other studies, the most prevalent PBDEs in the blood of women participating in the UC Berkeley study were four components of the pentaBDE mixture.

Penta- and octaBDE have both been banned for use in several U.S. states, including California, but they are still present in products made before 2004. Last month, the U.S. Environmental Protection Agency (EPA) announced an agreement with three major manufacturers of decaBDE to phase out its production by 2013.

"Although several types of PBDEs are being phased out in the United States, our exposure to the flame retardants is likely to continue for many years," said the study's principal investigator, Brenda Eskenazi, UC Berkeley professor of epidemiology and of maternal and child health at the School of Public Health. "PBDEs are present in many consumer products, and we know they leach out into our homes. In our research, we have found that low-income children in California are exposed to very high levels of PBDEs, and this has us concerned about the next generation of Californians."

Keeping up with the ever-expanding range of chemicals in our environment is challenging, the researchers noted. As PBDEs are being phased out, they are being replaced with other brominated compounds. "We know even less about the newer flame retardant chemicals that are coming out," said Harley. "We just don't have the human studies yet to show that they are safe."

A 2007 state assembly bill that would have banned all brominated and chlorinated chemical flame retardants from household furniture and bedding sold in California failed to pass.

Provided by University of California - Berkeley

"Study links reduced fertility to flame retardant exposure." January 26th, 2010. http://www.physorg.com/news183731384.html

Flame retardant linked to altered thyroid hormone levels during pregnancy

June 21st, 2010 in Medicine & Health / Health

Pregnant women with higher blood levels of a common flame retardant had altered thyroid hormone levels, a result that could have implications for fetal health, according to a new study led by researchers at the University of California, Berkeley.

"This is the first study with a sufficient sample size to evaluate the association between PBDE flame retardants and thyroid function in pregnant women," said the study's lead author, Jonathan Chevrier, a UC Berkeley researcher in epidemiology and in environmental health sciences. "Normal maternal thyroid hormone levels are essential for normal fetal growth and brain development, so our findings could have significant public health implications. These results suggest that a closer examination between PBDEs and these outcomes is needed."

PBDEs, or polybrominated diphenyl ethers, are a class of organobromine compounds found in common household items such as carpets, textiles, foam furnishings, electronics and plastics. U.S. fire safety standards implemented in the 1970s led to increased use of PBDEs, which can leach out into the environment and accumulate in human fat cells.

Studies suggest that PBDEs can be found in the blood of up to 97 percent of U.S. residents, and at levels 20 times higher than those of people in Europe. Because of California's flammability laws, residents in this state have some of the highest exposures to PBDEs in the world.

"Despite the prevalence of these flame retardants, there are few studies that have examined their impact on human health," said the study's principal investigator, Brenda Eskenazi, UC Berkeley professor of epidemiology and of maternal and child health. "Our results suggest that exposure to PBDE flame retardants may have unanticipated human health risks."

The new study, to be published June 21 in the journal *Environmental Health Perspectives*, is the second study to come out this year from Eskenazi's research group linking PBDEs to human health effects. Eskenazi was the principal investigator on the earlier study that found that women with higher exposures to flame retardants took longer to get pregnant.

In the new study, the researchers analyzed blood samples from 270 women taken around the end of their second trimester of pregnancy. The women in the study were part of a larger longitudinal study from the Center for the Health Assessment of Mothers and Children of Salinas (CHAMACOS) that examines environmental exposures and reproductive health.

The researchers measured concentrations of 10 PBDE chemicals, two types of thyroxine (T4) and thyroid-stimulating hormone (TSH). They controlled for such factors as maternal smoking, alcohol

and drug use, and exposure to lead and pesticides.

Analysis focused on the five PBDE chemicals that were detected most frequently and are components of a mixture called pentaBDE. The researchers found that a 10-fold increase in each of the PBDE chemicals was associated with decreases in TSH ranging from 10.9 percent to 18.7 percent. When the five PBDEs were analyzed together, a tenfold increase was linked to a 16.8 percent decrease in TSH.

The study did not find a statistically significant effect of PBDE concentrations on levels of T4. With one exception, all the women in the study with low TSH levels had normal free T4 levels, which corresponds to the definition of subclinical hyperthyroidism. The study found that odds of subclinical hyperthyroidism were increased 1.9 times for each tenfold increase in PBDE concentrations.

"Low TSH and normal T4 levels are an indication of subclinical hyperthyroidism, which is often the first step leading toward clinical hyperthyroidism," said Chevrier. "Though the health effect of subclinical hyperthyroidism during pregnancy is not well understood, maternal clinical hyperthyroidism is linked to altered fetal neurodevelopment, increased risk of miscarriage, premature birth and intrauterine growth retardation."

Exactly how flame retardants influence TSH levels is unclear, the researchers said, but animal studies have shown that certain PBDEs can mimic thyroid hormones.

In addition to the commercial mixture pentaBDE, octaBDE and decaBDE have been developed for use as commercial flame retardants. PentaBDE and octaBDE have both been banned for use by the Stockholm Convention on Persistent Organic Pollutants, the European Union and eight U.S. states, including California, but they are still present in products made before 2004.

The production of decaBDE by major manufacturers is scheduled to be phased out in the United States by 2013. However, pentaBDE and decaBDE are being replaced by new brominated and chlorinated compounds whose impact on human health is not yet clear, the researchers noted.

More information: The study is available for free online: http://ehponline.o … /ehp.1001905

Provided by University of California - Berkeley

print

Alaska lawmakers target toxin used to fireproof electronics, furniture

by Christopher Eshleman / ceshleman@newsminer.com
02.12.11 - 12:15 am

JUNEAU — Four Alaska legislators last month joined policymakers around the world in trying to eliminate a toxic chemical compound used to fireproof household electronics and furniture.

Scientists link the fire retardant to cancer and other health problems. People and animals can ingest it while eating food or breathing household dust. Environmental groups in Alaska have unanimously asked lawmakers this year to ban companies from selling electronics and furniture that contain more than trace amounts of the chemical.

Industry and governmental leaders around the world have already targeted the chemical, polybrominated diphenyl ether, for elimination. Roughly a dozen U.S. states have already banned PBDEs, which are used in bromine-based flame retardants.

Four Democrats last month sponsored measures in the state House and Senate. Rep. Scott Kawasaki, D-Fairbanks and one of the sponsors, cited scientific study that strongly suggests the compounds can cause neurological harm, cancer and hormone and endocrine disruption. He said legislators are still digging into the science behind the issue but suggested the scientific community's call for caution merits action.

"It boils down to community health ... I think it's a step in the right direction," he said of the bill.

The measures would also direct the state Departments of Environmental Conservation and Health and Social Services to draft and update a larger list of chemicals considered toxic by other state and federal agencies. It does not call for regulation beyond PBDEs, only that the list be updated every three years.

Scientists have studied the health implications of the fire retardant since at least the 1990s. The chemical is stored and carried in body fat and moves upward through the food chain, with concentrations compounding with each step and cresting in seals and other animals near the peak. That puts subsistence hunters and fishermen at greater risk than other people, said Frank von Hippel, a University of Alaska Anchorage biologist.

Von Hippel said PBDEs are shed by electronics and household products to become part of common dust, something the measures' proponents say is particularly relevant in Alaska given the need to keep doors and windows shut for much of the year.

The bills list three specific subtypes of the chemical. Companies in the United

States have generally stopped making two, but the third, called deca-PBDE, is still commonly manufactured, von Hippel said. He said they're generally banned in Europe as well.

The chemicals carry great significance for arctic communities. Von Hippel said atmospheric currents carry PBDEs and other persistent organic pollutants toward the poles and into arctic regions through a natural atmospheric process known as the "grasshopper effect." Cold weather then force the chemicals from their gaseous state and leave them to settle into the environment.

Greater concentrations here mean greater exposure to northern species of animals and to Alaskans, and von Hippel said it leaves Alaska on the front line in ongoing international discussion of how to regulate or eliminate the use of persistent organic pollutants, or POPs.

Von Hippel said mothers pass accumulated chemicals such as PBDEs to children during pregnancy and breast feeding. Pam Miller, with the Alaska Community Action on Toxics, cited a recent study that suggests women in the Yukon-Kuskokwim Delta had the highest PBDE levels of any population in the arctic.

Critics of full PBDE bans say the science behind the policy discussion falls short of justifying total prohibition, at least until substitutes are easily available. One critic is Dr. David Heimbach, a Seattle burn doctor who said he regularly saw Alaska patients over a three-decade career. He said policymakers in California voted to ban the chemical without collecting enough input from doctors first.

Heimbach said by phone Friday he'd prefer that governments phase out PBDEs instead of banning them, as Alaska's bills would do. He said the chemical's safety value should not be discounted.

"There's no question they work as fire retardants," he said.

Late last year, 145 scientists from around the world agreed to the "San Antonio Statement" outlining health hazards from exposure to bromine- and chlorine-based flame retardants. Some are already addressed in international environmental laws such as the Stockholm Convention on Persistent Organic Pollutants, but Congress is one of a handful of national legislatures or parliaments that have yet to ratify that convention. Even if Congress did adopt the treaty, it would still fall to federal and state government agencies to implement a ban.

The Alaska bills are House Bill 63 and Senate Bill 27, proposed by lead sponsors Sen. Bill Wielechowski and Rep. Lindsey Holmes, both Anchorage Democrats. They await hearings in committees focused, respectively, on commerce and health.

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www.ktuu.com/business/2onyourside/ktuu-state-lawmakers-propose-pbde-ban-012711,0,7924168.story

ktuu.com

State lawmakers propose ban on PBDE flame retardants

by Maria Downey

Channel 2 News

12:21 PM AKST, January 27, 2011

ANCHORAGE, Alaska

While there's no question among safety advocates that flame retardants save lives, renewed health concerns about some retardants are causing Alaska to join states across the nation in trying to ban PBDE chemicals.

PBDEs are invisible but they're used in the manufacturing of countless everyday objects like furniture , electronics and appliances.

Two state Legislature bills introduced late last session to ban PBDEs by 2012 -- House Bill 63 and Senate Bill 27 -- are now in committee.

"I don't think that most people realize that when they put a child to bed at night, they probably put them on a bed that is full of dangerous toxins," said Sen. Bill Wielechowski. "I don't think most people realize when they're using their microwave, their cell phone, TV, their toaster -- even walking across their carpet -- they're being exposed to, they're exposing their family to very dangerous toxins."

The Environmental Protection Agency's website reports that traces of PBDEs have been found in breast milk, along with fish and other wildlife.

Health issues linked to the chemicals include thyroid problems, learning and memory disabilities, behavioral changes, delayed puberty and other reproductive issues.

"Another thing about these toxins are, they are getting into our food chain," said Rep. Lindsey Holmes, co-sponsor of House Bill 63. "They have been shown to have particularly high rates in the Yukon-Kuskokwim region of the state in Western Alaska, because they're getting into our salmon, they're getting into out other animals."

Holmes and other state lawmakers are trying to do what 12 other states have already done and get PBDEs out of people's homes.

"Because currently, there are some safe alternatives out there and no reason to be using these," Holmes said. "And the problem with these types of toxins, they're in our homes, which means our children are exposed to

them -- it also means if there's a fire, firefighters are exposed to the toxic chemicals."

"Chemicals that can cause cancer, chemicals that can cause developmental disabilities -- and I think as lawmakers we have an obligation to stand up and say, 'This is not something we want brought into our state,'" Wielechowski said.

"We want to do everything we can to protect families, protect the kids, protect the food chain," Holmes said. "And we want to make sure it's out there and protect everyone to the best of our ability."

According to lawmakers, firefighters across the country are supporting PBDE bans.

While some manufacturers are lobbying against the ban, some furniture companies like IKEA have already discontinued the use of PBDEs in their products.

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The Dutch Harbor Fisherman

Legislation would minimize impact of dangerous chemicals

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By MARGARET BAUMAN

Two bills introduced in the current Alaska Legislature session would phase out certain toxic flame retardant chemicals known to cause health problems which are found in consumer products such as furniture and electronics.

House Bill 63, introduced by Rep. Lindsey Holmes, D-Anchorage, and Senate Bill 27, introduced by Sen. Bill Wielechowski, D-Anchorage, target polybrominated diphenyl ethers, also known as PBDEs, which disrupt thyroid function and affect learning, memory and behavior.

The legislation would apply to mattresses, mattress pads and upholstered furniture containing plastic fibers that contain flame retardants and electronic products with plastic housing that contains flame retardants. It would not apply to transportation vehicles or products used in such equipment, nor products used in an industrial, mining or manufacturing process.

The legislation also calls for the state to develop a program to assist retailers in identifying products in their inventories that violate the chemical restrictions.

Children are particularly vulnerable to these flame retardant chemicals and safer and economical alternatives are available to replace the unnecessary use of hazardous flame retardants, according to Safer Chemicals Healthy Families and Safer States Coalitions, of which Alaska Community Action on Toxics is a member.

Similar legislation was introduced three years ago by former Alaska legislator Andrea doll of Juneau, but never made it out of committee, said Pam Miller of Alaska Community Action on Toxics.

"We think this legislation is extremely important, especially in Alaska, because people are exposed to these chemicals through atmospheric transport," Miller said.

In addition to toxic chemicals which may be contained in the manufacture of furniture and electronics, Alaskans are already being exposed to higher levels of toxic chemicals because of prevailing atmospheric and oceanic conditions, which transport such toxics through the air and water to polar points of the planet, said Bob Shavelson, executive director of Cook Inletkeeper. It has to do with the Coriolis effect, caused by the rotation of the earth, which can carry toxic particles produced thousands of miles away into Alaska's atmosphere.

"We think that wildlife and people living in the north are getting a double whammy," said Miller, in part because of the atmospheric conditions that draw toxics to the Arctic, and in part because homes in Alaska are closed in for a great proportion of the year, and well insulated. Many studies show that people are exposed through indoor air and dust to flame retardant chemicals leaching out into the atmosphere and found in household air and dust, she said.

Miller also pointed to a 2009 study done by the Arctic Monitoring Assessment Program, which showed that women of childbearing age in Alaska's Yukon-Kuskokwim Delta had the highest levels of toxics in the circumpolar Arctic, Miller said.

The study, online at http://epa.gov/osp/tribes/pres/webinar091210 shows how high levels of toxins are introduced into traditional subsistence foods.

Another study in the Gulf of Alaska found that orca whales have some of the highest concentrations of these toxic chemicals in the world, she said. Several studies have shown that the main environmental toxins of concern for populations of marine mammals are primarily persistent organic pollutants such as polychlorinated biphenyls, or PCBs, polybrominated diphenyl ethers, or PBDEs and dioxins and furans, closely related chemicals that are produced when organic material is burned in the presence of chlorine. One common source of dioxins and furans is from coal fired utilities.

30 state consider legislation

Similar legislation to rid furniture and electronics of toxic chemicals being considered in a total of 30 states includes bans on BPA and hazardous flame retardants in consumer products, requirements that children's product manufacturers use only the safest chemicals, and resolutions urging Congress to overhaul the 1976 Toxic Substances Control Act, the federal law that allows dangerous and untested chemicals to be used in everyday products and materials.

BPA is an abbreviation for Bisphenol A, an organic compound used to make polycarbonate plastic and epoxy resins. For more than two years now, several government reports have questioned its safety, particularly when fetuses, infants and young children are exposed to products containing BPA.

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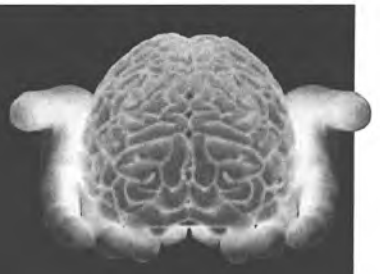
MIND, DISRUPTED

How toxic chemicals change how we think and who we are



Polybrominated Diphenyl Ethers (PBDEs)

What Are PBDEs?

Polybrominated diphenyl ethers, or PBDEs, are a class of flame retardant chemicals added to many consumer products found in the home, office, automobiles, and airplanes.[1] Three mixtures used widely—penta-BDE, octa-BDE, and deca-BDE—made up 14%, 6%, and 80% of the 1999 worldwide production of PBDEs, respectively.[2] Usually found in electronics, such as TVs, and used in some furniture foams, fabrics, and kitchen appliances, the industry voluntarily ended production in the United States of the formulations of penta and octa in 2004 after high levels were found in breast milk. However, North America made up a large percentage of global demand for these PBDEs, 97.5 % for penta and 35.9% for octa, and there is still a large reservoir of products containing these PBDEs in the US.[3] The deca formulation is currently produced and used primarily in plastic electronics such as televisions and computer casings. It is also used in the upholstery covers of items such as furniture and car seats.[4,5]

PBDEs are part of a larger chemical class called polyhalogenated aromatic hydrocarbons (PHAHs) which include other highly toxic chemicals such as polychlorinated biphenyls (PCBs) and dioxins.[2] PHAHs are intrinsically hazardous because of their chemical make-up: (1) they are stable, meaning they persist in the environment and do not break down easily; (2) they are lipophilic, meaning they build up in fatty tissues of living organisms; and (3) they have toxic properties, including the potential to act as endocrine disruptors.[6] Their persistence and fat solubility allow them to both biomagnify and bioaccumulate, meaning they build up in the bodies of animals and humans as they move through the food chain. While not all PBDEs meet these criteria, a significant portion have been found to exhibit these characteristics. Although the main component in deca-BDE, BDE-209, has a relatively short half-life in people,[1] animal studies show that the liver breaks down BDE-209 into the more persistent and bioaccumulative forms of hepta-BDE, octa-BDE, and nona-BDE.[7,8] There are relatively few data available concerning the extent to which this occurs in humans.

How Are We Exposed?

There are many ways that humans are exposed to PBDEs, including ingestion of contaminated foods and incidental intake of PBDE-contaminated dust.[8] PBDEs are not permanently bound to the products in which they are used. Some PBDEs are semi-volatile and may be released from PBDE containing products. Other PBDEs are released from furniture, electronics and other products as they physically degrade. It is not entirely clear how deca is released from products, though some think it might be released from physical abrasion or deterioration of the product. Deca-BDE breaks down into more toxic by-products and may volatize when exposed to ultraviolet (UV) light.[9] Although penta-BDE and octa-BDE are no longer produced in the United States, exposure continues from old computers, furniture, fabrics, and other consumer sources that were made before the discontinuation.[10]

Occupational exposure may also occur for workers in electronics recycling, computer repair, and rubber manufacturing facilities.[11] PBDEs are found in sewage sludge used as agricultural fertilizers and may be a source of exposure for workers applying contaminated fertilizers.[11]

Ingestion of PBDEs in fatty foods such as meat and dairy products is thought to be a major route of exposure,[12] as PBDEs are fat-seeking and build up in the food web. Indoor exposures to dust and contaminated air are also thought to be major routes, as well as direct absorption through the skin from dust or products.[13] Relatively little is known about the routes of deca-BDE exposure. It is estimated that the highest intake of deca-BDE results from household dust.[13,14,15]

People may also be exposed through consumption of fish and other marine animals, because these organisms have been found to contain high levels of deca-BDE.[16] The high levels in marine environments may be due to atmospheric deposition (when contaminants from the air come down to the earth's surface through rain, snow, falling particles, and the absorption of gas) of deca-BDE as well as sewage discharge into the oceans.[16]

For infants, breast milk is a major source of PBDEs. The PBDEs that have accumulated in women may be passed to children through breastfeeding.[17] It is important to note that breastfeeding is still considered best for a baby's health.

PBDEs in Our Bodies

Due to their widespread use, persistence and bioaccumulative properties, PBDEs have been found in humans at high levels. A recent study by scientists from the U.S. Centers for Disease Control and Prevention (CDC) found PBDEs in nearly all 2,040 participants in a sample representative of the 2003–2004 U.S. population.[18] In this study, 3 congeners were found in over 90% of the participants: 97% had levels of BDE-47 (2,2′,4,4′-hexabromodiphenyl ether), 93% had levels of BDE-100 (2,2′,4,4′,6-pentabromodiphenyl ether), and 93% had levels of BDE-153 (2,2′,4,4′,5,5′-hexabromodiphenyl ether) above the limit of detection.[18] Another study showed that 5 percent of American women have levels of PBDEs that are close to the levels linked to reproductive problems in animals.[1] PBDEs have been found in mothers' breast milk and in the blood of mothers and their babies.[19,20] People of the Arctic may experience an even higher risk of exposure due to their traditional subsistence diet rich in fat from marine mammals.[21,] Concentrations of PBDEs have grown over the years in marine mammals due to atmospheric transport of chemicals into the north (transported long distances from areas of production and use via air and ocean currents) and bioaccumulation.[2]

What Does Exposure to PBDEs Mean for Our Health?

The presence of environmental chemicals in the human body does not necessarily imply that they are causing adverse health effects; however, environmental chemical exposures can and do affect human health. It is important to note that both the dosage and the timing of exposure have significant effects on any potential health outcome.

The following information is intended to inform the reader about the current state of knowledge on the health effects of PBDEs, including both human and animals studies.

Relatively little is known about the health effects of PBDEs. Overall there are few studies on health effects in the general population; however, health effects have been detected in rigorous animal based studies. Nevertheless, research has found associations between PBDEs and many adverse health effects, including:

Neurodevelopmental Effects

There are few published human studies on the health effects of environmental exposure to PDBEs. One study on Dutch children found that prenatal PBDE exposure affected childhood development. Exposed children had worse fine motor skills and

Reducing Your Exposure

You can minimize your exposure to PBDEs by taking the following steps:

PBDE-free Furniture

- Before purchasing furniture, find out which companies offer PBDE-free products. The following websites can help:
  - Clean Production Action: *www.cleanproduction.org/Flame.Alternatives.php*
  - Pollution in People: *www.pollutioninpeople.org/safer/products*
- Contact the company directly if you cannot figure out if the manufacturer uses PBDEs.
- Choose furniture made with less flammable fabrics like leather, wool and cotton.

PBDEs in Foam Padding

- Foam items purchased before 2005 can potentially contain PBDEs. Completely covering these items in fabric can limit potential exposure.
- Avoid reupholstering foam furniture.
- Be very careful when removing old carpet. Try to keep your work area separated from the rest of the house and thoroughly clean up the area.

Reduce Your Dust Exposure

- Wash your hands often to remove dust particles that your hands pick up throughout the day on everything you touch.
- Use a wet rag or cloth while dusting to avoid kicking up the dust in the air.
- If possible, use a vacuum fitted with a HEPA filter. These vacuums can trap smaller particles of dust and will be more likely to remove contaminants from your home.
- Vehicles have been exempt from recent PBDE laws and high levels have been found inside cars.[5] Removing dust with a wet cloth and keeping car seat cushions in good repair will help to reduce your exposure.

PBDE-free Electronics

- Many companies are beginning to make electronics with alternatives to PBDEs. Certain PBDE-free products are available from Canon, Dell, HP, Intel, Erickson, Apple, Acer, Nokia, Motorola, LG Electronics, and Sony.

Consider Eating Less Fat:

- Consider choosing leaner meat and poultry cuts.
- Consider removing fat that you see on meat and fish whenever possible.
- Choose cooking methods that remove excess fat such as broiling, grilling, and roasting.

attention, but better coordination, visual perception and behavior. The mothers in this study had serum PBDE concentrations in the low ppb range.[22] Another study of children prenatally exposed to PDBEs showed decreases in mental and physical development. PBDEs 47, 99 and 100 were correlated with lower developmental scores, while PBDE 153 was not. The most highly exposed children had significantly lower developmental scores than the less exposed children.[23]

A recent peer-reviewed scientific consensus statement by the Collaborative on Health and the Environment's Learning and Developmental Disabilities Initiative states, "Recent studies have left little doubt that PBDEs are developmental neurotoxicants in animals and lead to changes in motor activity and reduced performance on learning and memory tests."[24,25,26] Numerous studies on rodents suggest that neonatal exposure to PBDEs permanently affects learning and memory functions, impairs motor activity, and is linked to aberrations in spontaneous motor behavior and hyperactivity.[27,28,29,30,31,32,33]

Researchers have also found that some of the developmental effects of exposure become worse over time. In a study of PBDE exposure in mice, spontaneous behavior and habituation capability (both indicators of the ability of individuals and the species to survive in the wild) were permanently damaged by neonatal exposure to PBDEs and worsened with age.[27] Exposure to hexa-BDE has been linked to other developmental neurotoxic effects in mice, including changes in spontaneous behavior and impairments in learning and memory, which also appear to worsen with age.[34] A recent study in adult mice found consistent results which show that deca-BDE can be just as toxic to neurodevelopment as other PBDEs. In this study, exposure to deca-BDE was linked to hyperactivity and reduced or lack of habituation, also worsening with age.[35]

Thyroid Problems

Some PBDE congeners are structurally similar to thyroid hormone and have been shown to disrupt (by decreasing, increasing, or mimicking) the biological action of thyroid hormone.[36] In a study of newborn babies, high PBDE levels in cord blood were associated with decreased levels of thyroid hormones. PBDE concentrations ranged from below 10 ppb to several hundred ppb in the blood.[37] In a recent study of adult men who consume sport fish, researchers found that exposure to PBDEs at levels similar to those found in the general US population were associated with increased thyroid hormone T_4 (thyroxine).[38] Men in this study with the highest body burdens of PBDEs also showed increased thyroid antibodies, a risk factor for thyroid diseases such as chronic autoimmune thyroiditis and Graves' disease.[38] PBDE exposure has also been linked to hypothyroidism in adults. In an occupational exposure study at a deca-BDE and decabromobiphenyl manufacturing plant, 4 out of 35 exposed workers showed clinical hypothyroidism, while none of the 89 unexposed workers exhibited thyroid dysfunction.[39]

Corresponding animal studies have also shown that PBDE exposure is linked to decreased circulating concentrations of thyroid hormone[14,40] and decreased thyroid weight in adult rodent offspring.[12] Exposure to deca-BDE has been linked to thyroid hyperplasia in rodent studies. In a 2-year study by the National Toxicology Program, deca-BDE was found to increase the incidence of follicular cell hyperplasia (proliferation of follicular cells, which are responsible for making thyroid hormones) in the thyroid gland in male and female mice.[41]

Reproductive Effects

PBDEs can be both mildly estrogenic[42] and anti-androgenic compounds.[43,44] They have been correlated to cryptorchidism (undescended testes), in newborn boys exposed through breast milk with a median concentration of 4.16 ppb(lw) vs. 3.16 ppb(lw) for controls.[45] PBDEs have been shown to permanently impair sperm development in rodent studies.[14] Exposure to BDE-153, has been associated with a decrease in testicle size and the sperm concentration in humans.[46] Exposure to PBDEs in household dust at levels commonly encountered in the US has been linked with lower levels of androgens (male hormones) in adult men.[47] PBDEs have also been associated with delay of puberty in both male and female rodents and changes in sexual development and gender-specific sexual behavior.[48] Exposure to PBDEs has been linked to low birth weight, birth defects, reduced weight gain during pregnancy, changes in ovary cells and reduced sperm count.[49,50] The breakdown products of PBDEs may inhibit human aromatase, an enzyme important in the formation of androgens and estrogens (male and female hormones), and in skeletal development. However, these results were found at concentrations above current human exposure levels. [51]

Cancer

One study suggests that *in utero* exposure to PBDE concentrations is associated with an increased risk of testicular cancer in men, although the study has limitations and further studies would help to shed light on this association.[52] The Agency for Toxic Substances and Disease Registry (ATSDR) lists deca-BDE as a possible human carcinogen based on the development of liver tumors in rats.[8]

Regulation of PBDEs

There have been many steps forward in the regulation of PBDEs in recent years, but much more is needed to ensure the safety of public health. Internationally, Sweden was the first to initiate a phase-out of PBDEs in the late 1990s, followed by the European Union—first phasing out penta-BDE and octa-BDE in 2003 and then deca-BDE in 2006.[53] In 2008, Norway banned the use of deca-BDE in new consumer products.[54] Although no production occurred there, Canada prohibited the future manufacture of all PBDEs and placed resrictions on the import of certain PBDEs.[55]

The Stockholm Convention on Persistent Organic Pollutants, a United Nations treaty on persistent bioaccumulative substances, placed tetra-, penta-, hexa- and hepta-PBDEs under provisions

of the Convention for global phase-out after determining they posed a risk to environmental and human health.

In the United States, industry voluntarily ended production of penta-BDE and octa-BDE in 2004, but deca-BDE is still permitted for use in consumer products.[20] In December, 2009 two U.S. producers of deca-BDE and the largest U.S. importer announced commitments to end production, importation, and sales of deca-BDE for most uses by December, 2012.[56] Washington, Maine, Oregon, and Vermont are currently discontinuing the use and manufacture of deca-BDE,[57,58] and 12 states have banned penta- and octa-BDE, with other states across the nation aiming for similar legislation.

Endnotes

1 McDonald TA. 2005. Polybrominated diphenylether levels among United States residents: Daily intake and risk of harm to the developing brain and reproductive organs." *Integrated Environmental Assessment and Management* 1(4):343-354.

2 Ikonomou MG, Rayne S, Addision RF. 2002. Exponential increases of the brominated flame retardants, polybrominated diphenyl ethers, in the Canadian Arctic from 1981 to 2000. *Environmental Science & Technology* 36(6):1886-1892.

3 Hale RC, Alaee M, Manchester-Neesvig JB, Stapleton HM, Ikonomou MG. 2003. Polybrominated diphenyl ether flame retardant in the North American environment. *Environmental International* 29:771-779.

4 Toxic-Free Legacy Coalition Report. 2006. Pollution in People. Available: *www.toxicfreelegacy.org.*

Lagalante AF, Oswald TD, Calvosa FC. 2008. Polybrominated diphenyl ether (PBDE) levels in dust from previously owned automobiles at United States dealerships. *Environment International* 35(3):539-44.

6 Hooper K, McDonald TA. 2000. The PBDEs: An emerging environmental challenge and another reason for breast-milk monitoring programs. *Environmental Health Perspectives* 108(5):387-392.

7 Stapleton HM, Brazil B, Holbrook RD, Michelmore CL, Benedict R, Konstantinov A, Potter D. 2006. In vivo and in vitro debromination of decabomodiphenyl ether (BDE 209) by juvenile rainbow trout and common carp. *Environmental Science and Technology* 40(15): 4653-4658.

8 Van der ven LT, van de Kuil T, Leonards PE, Slob W, Canton RF, Germer S, Visser TJ, Litens S, Hakansson H, Schrenk D, van der Berg M, Piersma AH, Vos JG, Opperhuizen A. 2008. A 28-day oral dose toxicity study in Wistar rats enhanced to detect endocrine effects of decabromodipenyl ether (decaBDE). *Toxicology Letters* 179(1): 6-14.

9 Washington State Department of Health and Washington State Department of Ecology. 2006. Washington State Polybrominated Diphenyl Ether (PBDE) Chemical Action Plan: Final Plan. Available: *www.ecy.wa.gov/pubs/0507048.pdf*

10 Northwest Watch. 2004. Flame retardants in the bodies of pacific northwest residents: A study of toxic body burdens. Available: *www.sightline.org/*

11 Sjödin A, Patterson Jr DG, Bergman Å. 2003. A review on human exposure to brominated flame retardants—particularly polybrominated diphenyl ethers. *Environment International* 29(6): 829-40.

12 Agency for Toxic Substances and Disease Registry (ATSDR). 2004. Toxicological Profile for Polybrominated Biphenyls and Polybrominated Diphenyl Ethers. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry. Available: www.atsdr.cdc.gov/toxprofiles/tp68.html.

13 Frederiksen M, Vorkamp K, Thomsen M, Knudsen LE. 2009. Human internal and external exposure to PBDEs – a review of levels and sources. *International Journal of Hygeine and Environmental Health* 212(2): 109-134.

14 Wilford BH, Shoeib M, Harner T, Zhu J, Jones KC. 2005. Polybrominated diphenyl ethers in indoor dust in Ottawa, Canada: implications for sources and exposure. *Environmental Science and Technology* 39(18): 7027-7035.

15 Huwe JK, Hakk H, Smith DJ, Diliberto JJ, Richardson V, Stapleton HM, Birnbaum LS. 2008. Comparative absorption and bioaccumulation of polybrominated diphenyl ethers following ingestion via dust and oil in male rats. *Environmental Science and Technology* 42(7): 2694-2700.

16 Ross PS, Couillard CM, Ikononmou MG, Johannessen SC, Lebeuf M, Macdonald RW, Tomy GT. 2009. Large and growing environmental reservoirs of Deca-BDE present an emerging health risk for fish and marine mammals. *Marine Pollution Bulletin* 58(1): 7-10.

17 Frederiksen M, Vorkamp K Thomsen M, Knudsen LE. 2009. Human internal and external exposure to PBDEs-A review of levels and sources. *Int J Hyg Environ Health 212:109-134*

18 Sjödin A, Wong L-Y, Jones RS, Park A, Zhang Y, Hodge C, Dipietro E, McClure C, Turner W, Needham LL, Patterson Jr. DG. 2008. Serum Concentrations of Polybrominated Diphenyl Ethers (PBDEs) and Polybrominated Biphenyl (PBB) in the United States Population: 2003–2004. *Environ Sci Technol* 42(4): 1377-84.

19 Schecter A, Pavuk M, Papke O, Ryan JJ, Birnbaum L, Rosen R. 2003. Polybrominated diphenyl ether (PBDEs) in U.S. mother's milk. *Environmental Health Perspectives* 111(14):1723-1729.

20 Mazadai A, Dodder NG, Abernathy MP, Hites RA, Bigsby RM. 2003. Polybrominated diphenyl ethers in maternal and fetal blood samples. *Environmental Health Perspectives* 111(9):1249-1252.

21 Letcher RJ, Bustnes JO, Dietz R, Jenssen BM, Jorgensen EH, Sonne C, Verreault J, Vijayan MM, Gabrielsen GW. 2009. Exposure and effects assessment of persistent organohalogen contaminants in arctic wildlife and fish. *Science of the Total Environment* doi:10.1016/j.scitotenv.2009.10.038

22 Roze E, Meijer L, Bakker A, Van Braeckel KNJA, Sauer PJJ, Bos AF. 2009. Prenatal exposure to organohalogens, including brominated flame retardants, influences motor, cognitive, and behavioral performance at school age. *Environmental Health perspectives* doi:10.1289/ehp.0901015.

23 Herbstman JB, Sjödin A, Jones R, Kurzon M, Lederman SA, Rauh VA, Needham LL, Wang R, Perera FP. 2008. Prenatal Exposure to PBDEs and Neurodevelopment. *Environmental Health Perspectives* doi:10.1289/ehp.0901340

24 Collaborative on Health & the Environment, Learning and Developmental Disabilities Initiative. 2008, February 20. *Scientific Consensus Statement on Environmental Agents Associated with Neurodevelopmental Disorders.* Available: www.iceh.org/pdfs/LDDI/LDDIStatement.pdf

25 Costa LG, Giordano G. 2007. Developmental neurotoxicity of polybrominated diphenyl ether (PBDE) flame retardants. *Neurotoxicology*.28 (6):1047-1067

26 Rice DC, Reeve EA, Herlihy A, Zoeller RT, Thompson WD, Markowski VP. 2007. Developmental delays and locomotor activity in the C57BL6/J mouse following neonatal exposure to the fullybrominated PBDE, decabromodiphenyl ether. *Neurotoxicol Teratol* 29(4):511-20.

27 Eriksson P, Jakobsson E, Fredriksson A. 2001. Brominated flame retardants: A novel class of developmental neurotoxicants in our environment? *Environmental Health Perspectives* 109(9):903-908.

28 Kuriyama SN, Talsness CE, Grote K, Chahoud I. 2005. Developmental exposure to low-dose PBDE-99: Effects on male fertility and neurobehavior in rat offspring. *Environmental Health Perspectives* 13(2):149-154.

29 Johansson N, Viberg H, Fredricksson A, Eriksson P. 2008. Neonatal exposure to deca-brominated diphenyl ether (PBDE 209) causes dose-response changes in spontaneous behavior and cholinergic susceptibility in adult mice. *Neurotoxicology* 29(6): 911-919.

30 US EPA. 2008a. Reference Dose for PBDE-47. 2,2',4,4'-Tetrabromodiphenyl ether (BDE-47) Quickview (CASRN 5436-43-1). Integrated Risk Information System. Available: *http://cfpub.epa.gov/ncea/iris/index.cfm?fuseaction=iris.showQuickView&substance_nmbr=1010 [NEED COPY]*

31 US EPA. 2008b. Reference Dose for PBDE-99. 2,2',4,4',5-Pentabromodiphenyl ether (BDE-99) Quickview (CASRN 60348-60-9). Integrated Risk Information System. Available: *http://cfpub.epa.gov/ncea/iris/index.cfm?fuseaction=iris.showQuickView&substance_nmbr=1008 [NEED COPY]*

32 Us EPA. 2008c. Reference Dose for PBDE-153. 2,2',4,4',5,5'-Hexabromodiphenyl ether (BDE-153) Quickview (CASRN 68631-49-2). Integrated Risk Information System. Available: *http://cfpub.epa.gov/ncea/iris/index.cfm?fuseaction=iris.showQuickView&&substance_nmbr=1009 [NEED COPY]*

33 US EPA. 2008d. Reference Dose for PBDE-209. 2,2',3,3',4,4',5,5',6,6'-Decabromodiphenyl ether (BDE-209) Quickview (CASRN 1163-19-5). Integrated Risk Information System. Available: http://cfpub.epa.gov/ncea/iris/index.cfm?fuseaction=iris.showQuickView&substance_nmbr=0035 [NEED COPY]

34 Viberg H, Fredriksson A, Eriksson P. 2003. Neonatal exposure to polybrominated diphenyl ether (PBDE 153) disrupts spontaneous behaviour, impairs learning and memory, and decreases hippocampal cholinergic receptors in adult mice. *Toxicol Appl Pharmacol* 192(2): 95-106. [NEED COPY]

35 Viberg H, Fredriksson A, Eriksson P. 2007. Changes in spontaneous behaviour and altered response to nicotine in the adult rat, after neonatal exposure to the brominated flame retardant, decabrominated diphenyl ether (PBDE 209). *Neurotoxicology* 28(1): 136-42. [NEED COPY]

36 Siddiqi MA, Laessig RH, Reed KD. 2003. Polybrominated diphenyl ethers (PBDEs): New pollutants-old diseases. *Clinical Medicine & Research* 1(4): 281-90.

37 Herbstman JB, Sjodin A, Apelberg BJ, Witter FR, Halden RU, Patterson DG, Panny SR, Needham LL, Goldman LR. 2008. Birth delivery mode modifies the associations between prenatal polychlorinated biphenyl (PCB) and polybrominated diphenyl ether (PBDE) and neonatal thyroid hormone levels. *Environmental Health Perspectives* 116(10): 1376-1382.

38 Turyk ME, Persky VW, Imm P, Knobeloch L, Chatterton R, Anderson HA. 2008. Hormone disruption by PBDEs in adult male sport fish consumers. *Environmental Health Perspectives* 116(12). Available: *www.ehponline.org/members/2008/11707/11707.html*

39 Bahn AK, Mills JL, Synder PJ, Gann PH, Houten L, Bialik O, Hollmann L, Utiger RD. 1980. Hypothyroidism in workers exposed to polybrominated biphenyls. *N Engl J Med* 302:31-33. [NEED COPY]

40 Tseng LH, Li MH, Tsai SS, Lee CW, Pan MH, Yao WJ, Hsu PC. 2008. Developmental exposure to decabromodiphenyl ether (PBDE 209): Effects on thyroid hormone and hepatic enzyme activity in male mouse offspring. *Chemosphere* 70(4): 640-647.

41 National Toxicology Program (NTP). 1986. Toxicology and carcinogenesis studies of decabromodiphenyl oxide (Case No. 1163-19-5) in F344/N rats and B6C3F1 mice (feed studies). Technical Report 309. Research Triangle Park, NC: National Toxicology Program. Available: *http://ntp.niehs.nih.gov/ntp/htdocs/LT_rpts/tr309.pdf.p. 47*

42 Mercado-Feliciano M, Bigsby RM. 2008. The polybrominated diphenyl ether mixture DE-71 is mildly estrogenic. *Environmental Health Perspectives* 116(5): 605-611.

43 Yang W, Mu Y, Giesy JP, Zhang A, Yu H. 2009. Anti-androgen activity of polybrominated diphenyl ethers determined by comparative molecular similarity indices and molecular docking. *Chemosphere.* 75:1159-1164

44 Stoker TE, Cooper RL, Lambright CS, Wilson VS, Furr J, Gray LE. 2005. In vivo and in vitro anti-androgenic effects of DE-71, a commercial polybrominated diphenyl ether (PBDE) mixture. *Toxicology and Applied Pharmacology.* 207:78-88

45 Main KM, Kivirant H, Virtanen HE, Sundqvist E, Tuomisto J, Vartiainen T, Skakkebaek NE, Toppari J. 2007. Flame retardants in placenta and breast milk and cryptorchidism in newborn boys. *Environmental Health Perspectives* 115(10): 1519-26.

46 Akutsu K, Takatori S, Nozawa S, Yoshiike M, Nakazawa H, Hayakawa K, Makino T, Iwamoto T. 2008. Polybrominated diphenyl ethers in human serum and sperm quality. *Bull Environ Contam Toxicol* 80:345-350

47 Meeker JD, Johnson PI, Camann D, Hauser R. 2009. Polybrominated diphenyl ether (PBDE) concentration in household dust are related to hormone levels in men. *Science of the Total Environment* doi: 10.1016/j.scitotenv2009.01.030.

48 Lilienthal H, Hack A, Roth-Harer A, Grande SW, Talsnesse CE. 2006. Effects of developmental exposure to 2,2',4,4',5-pentabromodiphenyl ether (PBDE-99) on sex steroids, sexual development, and sexually dimorphic behavior in rats. *Environmental Health Perspectives* 114(2):194-201.

49 Schreder E. 2006. Pollution in People: A Study of Toxic Chemicals in Washingtonians. Available: www.pollutioninpeople.org.

50 Chao HR, Wang SL, Lee WJ, Wang YF, Papke O. 2007. Levels of polybrominated diphenyl ethers (PBDEs) in breast milk from central Taiwan and their relation to infant birth outcome and maternal menstruation effects. *Environment International* 33(2): 239-245.

51 Canton RF, Scholten DE, Marsh G, de Jong PC, van den Berg M. 2008. Inhibition of human placental aromatase activity by hydroxylated ploybrominated diphenyl ethers (OH-PDBEs). *Toxicology and Applied Pharmacology* 227(1): 68-75.

52 Hardell L, van Bavel B, Lindström G, Eriksson M, Carlberg M. 2006. In utero exposure to persistent organic pollutants in relation to testicular cancer risk. *International Journal of Andrology* 29:228-234.

53 Northwest Watch. 2004. Flame retardants in the bodies of Pacific Northwest residents: A study of toxic body burdens. Available: *www.sightline.org.*

54 Norwegian Pollution Control Authority. 2008. Ban on Deca-BDE. Available: *http://www.sft.no/publikasjoner/2401/ta2401.pdf*

55 Government of Canada. 2008. Polybrominated diphenyl ether regulations. *Canada Gazette Part II* 142(14): 1663-1682.

56 US EPA. 2009. DecaBDE Phase-Out Initative. Available: *www.epa.gov/oppt/existingchemicals/pubs/actionplans/deccadbe.html. [NEED COPY]*

57 State of Maine. 2007. Title 38, Chapter 16, Section 1609: Restrictions on sale and distribution of brominated flame retardants. Available: *www.mainelegislature.org/legis/statutes/38/title38sec1609.html*

58 State of Washington. 2008. Revised Code of Washington, chapter 70.76: Polybrominated diphenyl ethers –flame retardants. Available: *http://apps.leg.wa.gov/RCW/default.aspx?cite=70.76*

ACAT Alaska Community Action on Toxics

COMMONWEAL

Fact sheets on toxic chemicals for the *Mind, Disrupted* Biomonitoring Project provided by the Alaska Community Action on Toxics (www.akaction.net) and Commonweal (www.commonweal.org). For more information, please visit the *Mind, Disrupted* website at www.minddisrupted.org, or contact Pam Miller at pkmiller@akaction.net or Sharyle Patton at spatton@igc.org.

www.minddisrupted.org

Fire Fighter Organizations across the U.S. Support Banning or Restricting Toxic Flame-Retardant Deca-BDE

Michigan Network for CHILDREN'S Environmental HEALTH

Fire Fighters and their professional organizations across the country have expressed their support for restricting the use of deca-BDE (deca-brominated diphenyl ether), a flame retardant commonly used in consumer products. HB 4699 would ban the sale in Michigan of any product containing deca-BDE by 2014. Fire fighters have expressed concerns about their occupational exposures when deca burns, particularly given the widespread use of cost-effective alternatives that can help prevent fires. Eleven states, including Michigan, have banned or restricted the only other polybrominated diphenyl ethers (PBDEs) that were in commercial use, penta- and octa-BDE, and these compounds have now been withdrawn by industry throughout the U.S. Four states have already banned or restricted deca-BDE.

INTERNATIONAL

International Assocation of Fire Fighters (IAFF)

- "Our union is concerned about the health and safety of our members as well as the health and safety of all of our citizens. Accordingly, the IAFF believes that the passage of legislation banning brominated flame retardants (Polybrominated diphenyl ethers (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 chemicals."

  Source: Letter from Richard M. Duffy, Assistant to the General President, Occupational Health, Safety, and Medicine, IAFF, to Matthew Vinci, President, Professional Fire Fighters of Vermont, March 23, 2009.

- "Unlike other flame retardants, when PBDEs burn, they release dense fumes and black smoke that reduce visibility and a highly corrosive gas known as hydrogen bromide. In addition, PBDEs 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 are much safer for fire fighters than PBDEs."

  Source: Letter from Richard M. Duffy, Assistant to the General President, Occupational Health, Safety, and Medicine, IAFF, to Kelly Fox, President, Washington State Council of Fire Fighters, January 26, 2007.

MICHIGAN

Michigan Association of Fire Chiefs

- "The Executive Board of the Michigan Association of Fire Chiefs has passed a resolution supporting House Bill 4699, a bill banning DECA-BDE."
- "Deca-BDE and its family of flame retardant chemicals known as polybrominated diphenyl ether (PBDE) have been identified as having adverse physiological and developmental impact on humans."
- "When PBDE compounds are exposed to fire they burn and release dense fumes and a highly corrosive gas known as hydrogen bromide which exposes firefighters to additional chemical hazards."

  Source: Letter from David Peterson, President, Michigan Association of Fire Chiefs, to Michigan State Representative Deborah Kennedy, May 29, 2009.

ILLINOIS

Associated Fire Fighters of Illinois
Illinois Fire Fighters Association

- "Our organizations are concerned with ensuring public health and safety, preventing fires by maintaining high fire safety standards, and protecting our firefighters from harm in their working environments. We support the phase-out [of] PBDEs—including penta-, octa-, and deca-BDEs—because it will help accomplish all of these goals."
- "The elimination of deca-BDE will not compromise fire safety, but we believe it will be a step in the right direction for improving the health and safety of our firefighters."

Source: Memorandum from Eddy Crews, Associated Fire Fighters of Illinois, and Margaret Vaughn, Illinois Fire Fighters Association, to the Members of the Illinois Legislature, March 20, 2007.

MAINE

Professional Firefighters of Maine

- "If passed, the law would see these bromide based chemicals, commonly referred to as DECA, phased out and replaced with phosphorus-based retardants that provide fire prevention capabilities comparable to bromides but have none of the negative health dangers associated with DECA."

Source: Press release issued by the Professional Firefighters of Maine, April 10, 2007.

Portland Fire Fighter, Bobby Reynolds
Professional Fire Fighters of Maine

- "Maine's firefighting community stands with one voice in support of [restricting deca-BDE]. With safer alternatives readily available that meet the same fire safety standards, phasing out deca should be a no-brainer."

Source: Bobby Reynolds in phone communication with Matt Prindiville, Natural Resources Council of Maine, April 3, 2007.

MARYLAND

Baltimore Fire Chief James Clack

- "There are plenty of alternative nontoxic flame retardants available today, and some manufacturers have voluntarily switched to using them. Firefighters face risks every day, even without the added health threats posed by the use of unnecessary toxic chemicals in products we all use in our homes."

Source: Letter from James Clack, Baltimore Fire Chief, printed in the Baltimore Sun, April 9, 2009.

MINNESOTA

Minnesota Professional Fire Fighters

- "While flame retardants in general save lives and property, the continued use of deca is unnecessary, as safer alternatives that don't persist and accumulate in the environment and in the human body are available. As professional fire fighters we support effective fire safety standards and are convinced that phasing out the use of deca will not compromise fire safety in any way."

Source: Memorandum from Tom Thornberg, President, Minnesota Professional Fire Fighters, to the Members of the Minnesota State Legislature, January 2008.

NEW YORK

Firemen's Association of the State of New York (FASNY)

- "We are concerned with providing the safest working environment for these [first] responders 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 (PBDEs)."

Source: Memorandum from the Firemen's Association of the State of New York in Support of A7977 and S5244 to restrict the use of deca-BDE, June 20, 2007.

WASHINGTON

Washington State Council of Fire Fighters
Washington Fire Chiefs
Washington State Fire Fighters' Association

- "Providing the safest working environment for firefighters, and the need to maintain the highest safety standards are of the utmost concern; it is clear that we can achieve both of these goals by banning the use of PBDEs."

Source: Letter from Keven E. Rojecki, Legislative Liaison, Washington State Council of Fire Fighters; Mike Brown, Executive Director, Washington Fire Chiefs; and T.J. Nedrow, Washington State Fire Fighters' Association, March 27, 2007.

Washington State Council of Fire Fighters

- "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 PBDEs."

Source: Memorandum from Keven E. Rojecki, Legislative Liaison, Washington State Council of Fire Fighters, to the Members of the Washington Legislature, February 9, 2007.

VERMONT

Professional Fire Fighters of Vermont

- "Banning Deca will not affect fire safety."
- "Vermont needs fire safety without toxic chemicals."

Source: Burlington Free Press, February 18, 2009, quoting Matt Vinci, President, Professional Fire Fighters of Vermont.

MICHIGAN LEGISLATORS CAN PROTECT CHILDREN, FIRE FIGHTERS AND OUR GREAT LAKES FROM DECA-BDE!

Support HB 4699 to ban deca-BDE in all products sold in Michigan by 2014

Network Members:

American Academy of Pediatrics (Michigan Chapter) • Arab Community Center for Economic and Social Services (ACCESS) • Association for Children's Mental Health • Autism Society of Michigan • Citizens for Alternatives to Chemical Contamination • Clean Water Fund • Clinton County Family Resource Center • Detroiters Working for Environmental Justice • East Michigan Environmental Action Council • Ecology Center • Healthy Homes Coalition of West Michigan • Learning Disabilities Association (LDA) of Michigan • LocalMotionGreen • Michigan Chapter of the National Association of Pediatric Nurse Practitioners • Michigan Coalition for Children and Families • Michigan Environmental Council • Michigan League of Conservation Voters Education Fund • Michigan Nurses Association • Science and Environmental Health Network • Sierra Club Michigan Chapter • Voices for Earth Justice.

The Michigan Network for Children's Environmental Health is a coalition of health professionals, health-affected groups, environmental organizations, and others dedicated to a safe and less toxic world for Michigan's children. Through education, outreach, and advocacy, we seek to protect Michigan's children from adverse impacts caused by exposure to widespread hazardous chemicals.

For more information, contact Rebecca Meuninck, Environmental Health Campaign Director, at 734-761-3186 ext. 119 or Mike Shriberg, Ph.D., Policy Director, at 734-761-3186 ext. 108.

Citizens for Fire Safety

EXPOSED

A Chemical Industry Front Group for Manufacturers of Toxic Flame Retardants (PBDEs)

Front group \ FRUHNT groop \ *n* **:** An organization that purports to be independent voluntary association or charitable organization, but actually serves the interest of the sponsoring party whose identity is often hidden. Certain front groups are seemingly grassroots-based coalitions that are actually funded by an industry trade association or public relations firm.

PBDEs are polybrominated diphenyl ethers, toxic flame retardants added to products such as televisions, computers, textiles, building materials, infant car seats and strollers. Laboratory studies show that PBDEs may harm the developing brain, impair sperm development, and impair thyroid function.[1,2,3] Washington State and Maine have banned three of the most widely used PBDEs and many states are considering following suit, based upon evidence that these chemicals are persistent, bioaccumulative and toxic.[4] Chemical manufacturers of PBDEs have a direct financial interest in preventing limits on the use of their product. They have organized themselves to oppose policies to require non-toxic fire safety through PBDE restrictions that are advancing across the U.S.

The Industry Players

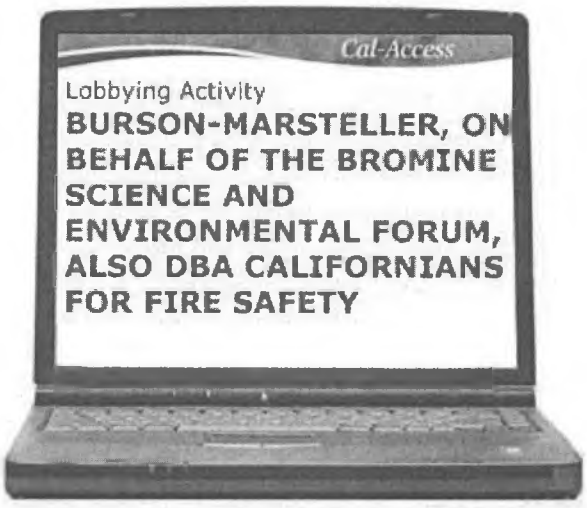
Four principal corporations that manufacture PBDEs are Albemarle, Israel Chemicals Limited (ICL), Chemtura, and Tosoh. When they saw that some of their flame retardant products were coming under regulatory pressure, they contracted with Burson-Marsteller, the giant global public relations firm, to change public and legislative perceptions about the hazards associated with PBDEs. Burson-Marsteller represents major chemical and oil companies such as Exxon-Mobil and Monsanto, as well as controversial businesses such as Blackwater and foreign military juntas.[5] Burson-Marsteller also represented Union Carbide, whose facility in India was responsible for the Bhopal Disaster.[6] It helped organize the Bromine Science and Environmental Forum (BSEF), as the neutral-sounding public relations arm of the four principle PBDE-producing companies. Lawrie McLaren, the BSEF Program Director,[7] is also European Practice Leader Public Affairs for Burson-Marsteller.[8]

In Burson-Marsteller, PBDE manufacturers picked a partner with vast experience in creating and managing front groups. Previously, Burson-Marsteller created the "National Smoker's Alliance" as a front group for the tobacco industry to fight against Clean Indoor Air acts and other anti-smoking legislative initiatives.[9] In Europe, the Merck pharmaceutical company engaged Burson-Marsteller to create a so-called "Coalition to Prevent Deep-Vein Thrombosis"[10] to market a product for that condition, and the star-studded "European Women for HPV Testing" was set up for the company that made the HPV tests.[11]

Front Group Formed: Citizens for Fire Safety

Just as in other campaigns to promote and defend its bottom line, industry has developed a strategy relying on a front group called "Citizens for Fire Safety" (CFFS) to campaign against state legislative initiatives regulating PBDE flame retardants, while attempting to influence state regulatory policy either by lobbying directly or paying firms who also lobby for the American Chemistry Council (ACC), Albemarle, Chemtura or BSEF. CFFS has formed "chapters" in a number of states where it actively lobbies, including Connecticut, Illinois, Maine, Maryland, Massachusetts and Minnesota. In California, a related organization called "Californians for Fire Safety" was created by the public relations consulting firm Jacobson Communications, and is explicitly listed on the lobbyist registration website. "Burson-Marsteller, on behalf of the Bromine Science and Environmental Forum, Doing Business As Californians for Fire Safety," spent $6,673,215.90 over the 4 quarters at the start of the

published Oct. 16, 2008



2007–2008 legislative session. It terminated its lobbying firms at the end of January 2008, and those firms picked up Citizens for Fire Safety Institute on Feb 1, 2008.[12]

Citizens for Fire Safety – Truth in Advertising?

Citizens for Fire Safety[13] describes itself as "... a coalition of fire professionals, educators, burn centers, doctors, fire departments and industry leaders..." but in fact is moving a special interest corporate agenda for a handful of actors. The primary purpose of CFFS is to work at the behest of PBDE manufacturers to defeat legislative initiatives calling for the prohibition of PBDE flame retardants. CFFS builds its membership list by attracting the support of organizations

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REAL PEOPLE FIGHT BACK:
Firefighters and Health Professionals Support Non-Toxic Fire Safety

The following organizations support phasing out PBDEs because of the health threats they pose and the availability of safer, effective fire protection methods.

- American Academy of Pediatrics – Maine Chapter
- American Academy of Pediatrics (Michigan Chapter)
- American Academy of Pediatrics District 2
- American College of Nurse Midwives, Region 1, Chapter 1
- American Nurses Association—Maine Chapter
- Amherst Health Department
- Associated Fire Fighters of Illinois
- Association of Comparative & Environmental Toxicology Students
- California Professional Firefighters
- Center for Children's Health and the Environment, Mount Sinai School of Medicine
- Columbia Center for Children's Environmental Health
- CT Association of Directors of Health (CADH)
- CT Association of Public Health Nurses (CAPHN)
- CT Association of School Nurses
- CT Nurses Association (CNA)
- CT Public Health Association (CPHA)
- Firemen's Association of the State of New York
- Greater Boston Physicians for Social Responsibility
- Illinois Fire Fighters Association
- Institute for Health and the Environment, University at Albany School of Public Health
- Institute of Neurotoxicology and Neurological Disorders
- Maine Fire Chiefs
- Maine Fire Commission
- Maine Public Health Association
- Maine State Fire Marshall
- Massachusetts Association of Registered Nurses
- Massachusetts Nurses Association
- Michigan Association of Fire Chiefs
- Michigan Nurses Association
- Michigan Professional Fire Fighters Union
- Minnesota Nurses Association
- Minnesota Professional Fire Fighters
- Minnesota Public Health Association
- New York State Nurses Association
- Nursing Program, University of Washington,Tacoma
- Physicians for Social Responsibility—Los Angeles
- Physicians for Social Responsibility—Maine Chapter
- Planned Parenthood Minnesota, North Dakota, South Dakota
- Professional Firefighters of Maine
- San Francisco Medical Society
- Student Nurses Association, Endicott College
- Uniformed Professional Firefighters Association of Connecticut
- Washington Physicians for Social Responsibility (WPSR)
- Washington State Association of Fire Chiefs
- Washington State Council of Fire Fighters
- Washington State Nurses Association (WSNA)

Coming Soon to a Statehouse Near You – Key Personnel

"Time and time again, I've seen good bills die because we are overwhelmed with corporate lobbyists. There are a finite number of us, and an increasing number of them. We're outgunned and outnumbered when it comes to passing policies to protect the environment and public health."

—Maryland State Delegate James W. Hubbard, President, National Caucus of Environmental Legislators

Kelley Cawthorne

In Michigan, CFFS hired the firm of Kelley Cawthorne, which retains several lobbyists, including David Ladd, once a staffer in former Governor John Engler's administration. Engler came under fire while in office for not holding Dow Chemical (another ACC member) accountable for dioxin and other contamination in Michigan. Dennis Cawthorne himself was in Engler's administration, and is currently active in Michigan politics.

Grant Gillham

Grant Gillman is the signatory to state lobbying forms for CFFS. Gillham is a former employee of R.J. Reynolds who also worked for lobbyist Joe Schumate under contract with the tobacco industry. Grant Gillham has said he is working in "15-20" state legislatures. Featured on CFFS's website are notices about:

- Alaska HB 271
- Maryland HB 1
- Maine LD 2048 (signed into public law April 15, 2007)
- Illinois HB 298 (now 1421)
- Minnesota HB 934
- Connecticut HB 5805

Seth Jacobson

Seth Jacobson, through his public relations firm Jacobson Communications, developed Californians for Fire Safety, which used false and misleading information to defeat AB 706, a bill to protect people from chlorinated and brominated flame retardants including PBDEs. Prior to creating Californians for Fire Safety, Jacobson created "Santa Monicans for Sensible Priorities" and "Santa Monicans for Change," an effort funded by hotel business interests. According to campaign documents, ET Whitehall Seascape LLC and Edward Thomas Management Co. (Casa Del Mar and the Shutters Hotels) made payments to SMSP for "public relations and consulting work," designed to gain control of city government. Prior to that, Jacobson was a spokesperson for "Fighting Against Irresponsible Regulation (FAIR), an anti-living wage group that was widely criticized for distributing false and misleading election mailers.[15]

George A. Morris

George Morris is Hawaii's chief lobbyist for CFFS. Morris is also the major lobbyist for the American Chemistry Council.

Laura Ruiz

Laura Ruiz is Albemarle's Corporate Director for Consumer Advocacy. She gives testimony opposing controls on PBDEs on behalf of CFFS at legislative hearings. She also signed a letter to California State Senator Ridley-Thomas opposing AB 706 as the Chair of the American Fire Safety Council in 2007.[16]

Peter Sparber

Peter Sparber is BSEF liaison and public relations specialist of Sparber and Associates. He was formerly a vice president at the Tobacco Institute, which supported fire experts to address other problems and deflected attention from the effort to make cigarettes more fire-safe. Cigarettes are a major source of house fires. BSEF supported tactics to oppose fire safe cigarettes, because reducing cigarette-caused fires would reduce the risk for fires, which would also reduce the market share for their flame retardant products.[17] Sparber devised the concept of creating fake grassroots groups to front tobacco industry lobbying objectives.[18]

Personnel in Connecticut

In Connecticut, many lobbying firms work to oppose legislation that restricts PBDEs. BSEF is represented by Hughes & Cronin Public Affairs Strategies. Albemarle Equity, a subsidiary of Albemarle Corporation, is represented by M.P. Guinan Associates. Citizens for Fire Safety Institute, (another name for CFFS), is represented by Capitol Strategies Group, which specializes in brokering deals between corporations and government. It has offices in Connecticut, Texas, Florida, New York and California.

continued from page 2

and individuals who may be unaware of its chemical industry motives by using misrepresentation of what a given proposed policy would accomplish.[14] The front group seeks to blunt the rising influence of actual citizen coalitions—of environmental health and justice communities working with physicians, "moms" groups, firefighters, children's health advocates and others—that have formed to support restricting brominated flame retardants, due to the environmental and public health concerns they pose, and the ready availability of safer, cost- and performance-effective alternatives.

Often the public face of CFFS is not what it appears to be. Sometimes, PBDEs manufacturers present themselves in public hearings as representatives of CFFS. For example, at a Minnesota hearing on brominated flame retardants, Ms. Laura Ruiz entered herself into testimony as being from CFFS, although she is Albemarle's Corporate Director for Consumer Advocacy. Albemarle is a founding member of BSEF.

The funding for CFFS is not described on their website. Although CFFS presents itself as a grassroots group, it does not appear to solicit funding from the communities it purports to represent. However, it spends significant resources to defeat legislation restricting flame retardants. For example, in California, CFFS reported spending $190,740.06 for the 2007–2008 legislative season with professional state lobbyists, who also lobby for Californians for Fire Safety (see above), the American Chemistry Council (which includes the four BSEF bromine corporations), the Bromine Science and Environmental Forum (BSEF), Albemarle and Chemtura. CFFS pays lobbying firms in California, Colorado, Connecticut, Hawaii, Illinois, Maine, Maryland, Massachusetts, Minnesota, Mississippi, New York, Texas, and Vermont. Another member of the ACC, ExxonMobil, lobbies for "fire safety" in New York.

Toxic Flame Retardants Hurt Firefighters

BSEF/Burson-Marstellar/CFFS has tried very hard to get firefighters to join their campaign. Their main strategy has been to get politically appointed fire and insurance commissioners on board. But the International Association of Firefighters, the organization which represents career firefighters in the U.S. and Canada, fully understands the risks posed by brominated flame retardants. Firefighters in Canada and in every state where bills restricting PBDEs have been introduced have gone on record to support those restrictions.

Firefighters have good reason to act in their own interests: In November 2006, the Journal of Occupational and Environmental Medicine published an analysis of 32 studies that found that fire fighters have significantly elevated rates of four types of cancer: multiple myeloma, non-Hodgkin's lymphoma, prostate, and testicular cancer, likely resulting from chemical exposures.[19]

In a recent letter to the International Electrotechnical Commission (IEC) signers representing many firefighter and other related organizations protested the industry push for adding brominated flame retardants to the television casing standards, including:

- International Association of Fire Fighters, Washington, D.C.
- John F. Hanley, San Francisco Fire Fighters Local 798,
- Tony Stefani, Executive Director and Founder San Francisco Firefighters Cancer Prevention Foundation
- Bob Shewbrooks, President, Hospital Fire Marshals Association, Philadelphia, PA
- Andrew McGuire, Executive Director Trauma Foundation, San Francisco General Hospital
- Elizabeth McLoughlin, Associate Director Ret.,Trauma Foundation, San Francisco General Hospital
- Peter A. Brigham, Founding and Emeritus Board Member, Federation of Burn Foundations.

In the letter, they state: "While the fire risk is very low, the health risk, especially for fire fighters, is very high. The proposed standard would lead to considerable levels of fire retardant chemicals in plastic TV housings. When these fire retardant chemicals burn, large amounts of toxic and cancer-causing brominated dioxins and furans can form. These combustion products present a significant health hazard for fire fighters.... The accumulation and health problems from the fire retardant chemicals, especially to fire fighters, have been documented in many dozens of peer-reviewed scientific research papers."[20]

This letter and others like it successfully defeated attempts by the chemical industry to mandate brominated flame retardants in the IEC television casing standard.

Conclusion

Everyone agrees we must protect people from fires, and do what we can to prevent them. Fortunately, we do not need to make the false choice between toxic chemical exposure and fire safety. If past is prologue, we can expect that this will not be the last front group the bromine industry uses to obscure its motives, manipulate public opinion and disrupt proposed legislative action. While the bromine industry attempts to use front groups like Citizens for Fire Safety to legitimize their profit-driven agenda, fire fighters, health professionals and truly grassroots organizations are taking a stand to protect people from fires *and* protect their health.

ACAT
Alaska Community Action on Toxics

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**Testimony of Pamela Miller, Executive Director,
Alaska Community Action on Toxics**

**For a Hearing of the
Alaska State Senate Health and Social Services Committee
Concerning Senate Bill 27—An Act Relating to Flame Retardants
and Other Bioaccumulative Toxic Chemicals**

February 21, 2011

I would like to begin by thanking Chair Davis and Members of the Senate Health and Social Services Committee for this opportunity to provide testimony on SB 27. My name is Pamela Miller, Biologist and Executive Director of Alaska Community Action on Toxics (ACAT). ACAT is a statewide environmental health organization that conducts research and provides educational programs, technical assistance, and training. Alaska Community Action on Toxics urges your support of SB 27, "*An Act relating to flame retardants and to the manufacture, sale, and distribution of products containing flame retardants; relating to bioaccumulative toxic chemicals; and providing for an effective date.*"

SB 27 is an important measure to protect public health and especially the health of particularly vulnerable populations, including children as well as firefighters who are on the front lines of exposure to these dangerous chemicals. Polybrominated diphenyl ethers or PBDEs are similar in structure to the banned chemicals known as PCBs, polychlorinated biphenyls, and thus can have similar harmful effects on the body. PBDEs accumulate and are long-lasting, and we are concerned about them because they interfere with proper thyroid function in laboratory studies, cause problems with brain development and disrupt learning, memory, and behavior.

People are exposed to PBDEs through contaminated air, household dust, and foods. These chemicals leach out of products and we are exposed through indoor air and dust. PBDEs harm childhood brain development, and can contribute to learning disabilities that last into adulthood. Exposure to deca- and its breakdown products can harm women and children because they are passed to infants through

breast milk and to children through contact with household dust. Levels in wildlife and people are increasing exponentially. PBDEs in human breast milk are increasing and doubling every 2-5 years. Levels in the U.S. are the highest of all countries for which there are data and about 10-100 times greater than human tissue levels in Europe. PBDEs are persistent and can travel long distances via wind and ocean currents—PBDEs are now ubiquitous and found in northern air, sediments and wildlife. Alaskans are more vulnerable to exposures due to our higher levels of consumption of fish and marine mammals. Women of child-bearing age in the Yukon-Kuskokwim region of Alaska have the highest levels of any human population in the circumpolar Arctic.

Over the past year, new scientific evidence about the health effects of brominated flame retardants compels urgent action. Dr. Julie Herbstman of the Columbia University Center for Children's Environmental Health found that children who had higher prenatal exposures to PBDEs scored lower on tests of mental and physical development at ages 1, 4, and 6. Developing children are exposed to these toxic chemicals before they are born and this affects their learning and development throughout childhood and perhaps permanently. Concentrations of cord blood PBDEs in this study are similar to developing children throughout the U.S. As with public policy measures to reduce childhood exposure to lead, actions that we take now to reduce and eliminate exposure to PBDEs will have immeasurable benefits in preventing intellectual deficits in generations of children.

Also in the past year, more than 150 prominent scientists signed a consensus statement known as the San Antonio Statement on Brominated and Chlorinated Flame Retardants published in the December 2010 issue of Environmental Health Perspectives, the peer-reviewed journal of the National Institute of Environmental Health Sciences. The statement names brominated flame retardants as a class of substance of concern for persistence, bioaccumulation, long-range transport and toxicity. Among the twenty points, the scientists state: "Brominated and chlorinated flame retardants can increase fire toxicity, but their overall benefit in improving fire safety has not been proven."

The American Public Health Association recognizes the public health threat presented by the prevalence of toxic PBDE flame retardants and passed a resolution stating: "*In light of the emerging science on the inherent toxicity and persistence of PBDEs, evidence of adverse health effects on animals, and the prevalence and rising levels in fish, biota, and human breast milk, immediate action is needed to prevent further environmental contamination and to protect public health. The American Public Health Association urges state and federal*

governments to require the use of all PBDE flame retardants be phased out in all products manufactured and sold in the U.S. by a date certain."

No one disputes the importance of fire prevention and safety, however, with the availability and economic viability of safer alternatives, it does not make sense to expose people to these toxic chemicals. In summary, we urge you to pass SB 27 in order to protect health, particularly the health of vulnerable populations including pregnant women, developing children, fire fighters and other workers. Thank you.

ENDNOTES

1 Eriksson P, Jakobsson E, Fredriksson A. 2001. Brominated flame retardants: A novel class of developmental neurotoxicants in our environment? Environmental Health Perspectives 109(9):903-908.

2 Kuriyama SN, Talsness CE, Grote K, Chahoud I. 2005. Developmental exposure to low-dose PBDE-99: Effects on male fertility and neurobehavior in rat offspring. Environmental Health Perspectives 13(2):149-154.

3 Lilienthal, Hellmuth, et al. 2006. Effects of developmental exposure to 2,2',4,4',5-pentabromodiphenyl ether (PBDE-99) on sex steroids, sexual development, and sexually dimorphic behavior in rats. Environmental Health Perspectives 114(2):194-201.

4 Maine Department of Environmental Protection, Center for Disease Control. 2007. *Brominated Flame Retardants,* Third annual report to the Maine Legislature. www.maine.gov/dep/rwm/publications/legislativereports/pdf/finalrptjan07.pdf

5 http://en.wikipedia.org/wiki/Burson-Marsteller

6 Ibid.

7 As listed on their website, http://www.bsef.com/contact/, as of 9/12/08

8 As listed on their website, http://www.burson-marsteller.com/About_Us/Regional_Leadership/Pages/Europe_Africa.aspx, as of 9/12/08

9 http://www.sourcewatch.org/index.php?title=Burson-Marsteller_and_the_National_Smokers_Alliance

10 Barnett, Antony. 2004. Drug firm plays up long flights fear; Observer investigation reveals covert funding for health pressure groups. The Guardian.

11 www.guardian.co.uk/uk/2004/jan/25/society.research

12 http://cal-access.sos.ca.gov/Lobbying/Firms/Detail.aspx?id=1147235&session=2007

13 http://cffsi.org/about.html

14 Letter dated from Seth Jacobson on Citizens for Fire Safety letterhead to Dr. William Hickerson of Arkansas Children's Hospital in Little Rock, Arkansas. The letter conflates all state legislation, and claims uniformly that "these bills advocate the complete removal of this chemical without providing an alternative means of protection."

15 Santa Monica Daily Press, Volume 5, Issue 103, Monday, March 13th, 2006

16 Letter dated June 25, 2007 on American Fire Safety Council letterhead, subsequently circulated to fire fighter organizations.

17 Fighting for Safety *Washington Post* January 26, 2008 www.washingtonpost.com/wp-dyn/content/article/2008/01/25/AR2008012503170_pf.html

18 http://tobaccodocuments.org/landman/TI01770029-0100.html

19 "Cancer Risk Among Firefighters: A Review and Meta-analysis of 32 Studies" Journal of Occupational and Environmental Medicine November 2006 "http://www.joem.org/pt/re/joem/abstract.00043764-20061100000014.htm;jsessionid=LhZFMmHcv1D6KjLY2QdtyyKjGmX35pyQxT1KvBysQ1P1JTHWkcV4!1379360954!181195629!8091!-1

20 http://greensciencepolicy.org/

Sen. Bettye Davis

From: Marc! [marcslinger@yahoo.com]
Sent: Saturday, February 19, 2011 12:45 PM
To: Sen. Bettye Davis
Subject: Please support SB 27

Dear Representative Davis,

Please support the prevention of toxic exposures. As a member of the Anchorage Fire Department, I proudly protect and serve our community without hesitation. Please do your part and protect not only us as public servants, but everyone in our community, current and future.

Support SB 27.

With much gratitude,
Marc Esslinger

Sen. Bettye Davis

From: Briana Sullivan [brianasull@gmail.com]
Sent: Friday, February 18, 2011 9:16 PM
To: Sen. Bettye Davis
Subject: SB 27

Dear Senator,
Please make a healthy change to Alaska and its future; support Preventing Toxic Exposures.

Thank you for making a difference.
Peace,
Briana Sullivan

Celeste Hodge

From: Sen. Bettye Davis
Sent: Monday, February 21, 2011 12:29 PM
To: Celeste Hodge
Subject: FW: Thank you for supporting SB 27

-----Original Message-----
From: Christine Maack [mailto:cmaackster@gmail.com]
Sent: Monday, February 21, 2011 9:08 AM
To: Sen. Bettye Davis
Subject: Thank you for supporting SB 27

Dear Senator Davis,

Thank you for hearing SB 27, a bill to phase out the sale of PBDEs in Alaska, in Senate Health and Social Services. Alaskans deserve safe homes for their families and this piece of legislation is a smart first step to solve this problem. Thank you for your longtime support of this bill.

Sincerely,

Chris Maack

Christine Maack
[illegible]522 Alexander Ave
ANCHORAGE, AK 99508
907-278-4265

Celeste Hodge

From: Sen. Bettye Davis
Sent: Monday, February 21, 2011 12:01 PM
To: Celeste Hodge
Subject: FW: sb 27

From: james gilles [mailto:bigchief46@hotmail.com]
Sent: Monday, February 21, 2011 10:42 AM
To: Sen. Bettye Davis
Subject: sb 27

From: bigchief46@hotmail.com
To: senator_bettye_davis@legis.state.ak.usmember
Subject: sb 27
Date: Mon, 21 Feb 2011 19:37:36 +0000

Dear Committee,

I urge you to take careful look at sb 27. I feel this bill is a knee jerk reaction on fire retardants that have a proven safety record in the United States and have saved countless numbers of innocent lives.

Sincerely,

Pete Thering

The Association of Food, Beverage and Consumer Products Companies

February 20, 2011

The Honorable Bettye Davis
Chair, Senate Health and Social Services Committee
State Capitol Room 30
Juneau AK, 99801

VIA-ELECTRONIC MAIL ONLY

RE: SB 27 – OPPOSE

Dear Chair Davis:

On behalf of the Grocery Manufacturers Association (GMA[1]) I am writing to express our opposition to Senate Bill 27 because of its vagueness. As such, SB 27 appears to establish unfettered regulatory authority to the State to develop a potentially infinite list of bioaccumulative chemicals based on any number of potentially questionable authorities.

In reviewing SB 27 its ambiguity makes it difficult to assess the potential impacts to GMA members and their respective products. Therefore, it is impossible to provide substantive comments or specific amendments for consideration. For example, Section 18.31.680 assigns broad authority in the Departments of Environmental Conservation and Health and Social Services to establish "a list of persistent bioaccumulative toxic chemicals ["BTC"] that occur or are used in products used by human beings." Prior to granting such broad authority, GMA believes it would be helpful to know:

---

[1] Based in Washington, D.C., the Grocery Manufacturers Association is the voice of more than 300 leading food, beverage and consumer product companies that sustain and enhance the quality of life for hundreds of millions of people in the United States and around the globe.

Founded in 1908, GMA is an active, vocal advocate for its member companies and a trusted source of information about the industry and the products consumers rely on and enjoy every day. The association and its member companies are committed to meeting the needs of consumers through product innovation, responsible business practices and effective public policy solutions developed through a genuine partnership with policymakers and other stakeholders.

In keeping with its founding principles, GMA helps its members produce safe products through a strong and ongoing commitment to scientific research, testing and evaluation and to providing consumers with the products, tools and information they need to achieve a healthy diet and an active lifestyle.

The food, beverage and consumer packaged goods industry in the United States generates sales of $2.1 trillion annually, employs 14 million workers and contributes $1 trillion in added value to the economy every year.

Sen. Bettye Davis

From: Kristin Power [KPower@cspa.org]
Sent: Friday, February 18, 2011 3:56 PM
To: Sen. Bettye Davis; Sen. Dennis Egan; Sen. Johnny Ellis; Sen. Kevin Meyer; Sen. Fred Dyson
Cc: Sen. Bill Wielechowski
Subject: SB 27 (Wielechowski) - Scheduled for Hearing 2/21
Attachments: AK SB 27 SHealth.pdf

Senator Davis and Members of the Senate Health and Social Services Committee:

Attached please find CSPA's comments on Senate Bill 27 (Wielechowski), scheduled for hearing in the Senate Health and Social Services Committee on February 21. Please contact me at (916) 838-3587 or kpower@cspa.org if you have questions regarding our position on the measure.

Thank you,
Kristin Power

Kristin Power
Director, State Affairs – West Region

900 17th Street Suite 300
Washington, DC 20006

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(202) 833-7314
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February 18, 2011

The Honorable Bettye Davis, Chair
Senate Health and Social Services Committee
State Capitol
Juneau, AK 99801-1182

Re: SB 27 - Development of PBT Chemicals List – OPPOSE

The Consumer Specialty Products Association must respectfully oppose SB 27 (Wielechowski), which would, among other things, direct the Department of Health and Social Services to establish, and update every three years a list of "persistent bioaccumulative toxic chemicals (PBTs)" that occur or are used in products used by human beings.

The Consumer Specialty Products Association (CSPA) is the premier trade association representing the interests of some 250 companies engaged in the manufacture, formulation, distribution and sale of $80 billion annually in the U.S. of hundreds of familiar consumer products that help household and institutional customers create cleaner and healthier environments. Our products include disinfectants that kill germs in homes, hospitals and restaurants; candles, and fragrances and air fresheners that eliminate odors; pest management products for home, garden and pets; cleaning products and polishes for use throughout the home and institutions; products used to protect and improve the performance and appearance of automobiles; aerosol products and a host of other products used every day.

CSPA members are committed to manufacturing and marketing safe products that are protective of human health and the environment while providing essential benefits to consumers. CSPA has adopted its members' commitment into the CSPA Principles for Chemicals Management Policy, available online at http://www.cspa.org/infocenter/our-issues/principles-for-chemicals-management-policy/.

CSPA supports programs that are risk based and use sound science. Programs should be governed by an advisory panel in which all stakeholders have a voice. CSPA supports programs that encourage resource pooling and build on existing statutory and regulatory structures, voluntary initiatives and data development efforts.

We are unclear why a PBT list is being drafted and how the list will be used in the future. SB 27 should include specific language that clearly describes the intent and future plans for creating and utilizing a state-specific PBT list.

To provide consistency with other regulatory structures, the PBT screening criteria used by the United States Environmental Protection Agency (USEPA) should be adopted. As currently drafted, Section 18.31.680 does not contain a clear set of definitions for the characteristics of P or B or T that is consistent with generally accepted PBT screening criteria. Though the bill does ask the Department to consider other sources of PBT information (e.g. Washington State PBT program, USEPA high production volume challenge program), CSPA believes that the bill should establish a clear definition to help ensure a focus on priority substances.

In addition, CSPA believes the bill should include language that directs the Department to develop and implement a stakeholder process through which interested parties can participate and provide input into the development and potential use of any PBT lists or potential alternative chemicals. A formal stakeholder process will help ensure that the overall process is informed by the best available scientific information.

SB 27 could be appreciably improved with the addition of language that provides transparent and objective parameters for selecting the best available scientific information. An example is the European Chemicals Agency's (ECHA)'s guidance document titled "Guidance on Information Requirements for Chemical Safety Assessment." The ECHA's guidance provides four specific parameters for selecting the best available scientific information based on relevance, reliability, and adequacy. The fundamental importance of having screening parameters is embodied in a quote by the ECHA, which stated "[t]he knowledge of how a study was carried out and consequently its relevance and reliability, is a prerequisite for the subsequent evaluation [and use] of [the] information."

For the reasons expressed above, we must oppose SB 27. Please contact me at (916) 838-3587 or kpower@cspa.org if you have questions regarding CSPA's concerns.

Sincerely,

Kristin Power

Kristin Power
Director, State Affairs – West Region

cc: Senator Wielechowski
Members, Senate Health and Social Services Committee
CSPA State Government Affairs Advisory Committee

- Does this list apply to BTC's at any level in a product (e.g., parts per million, parts per billion, etc)?
- Will this list include BTC's that are naturally occurring?
- Would this list include the packaging that accompanies the product?

SB 27's vagueness is also problematic because it provides the Departments of Environmental Conservation and Health and Social Services discretion to include "other sources the department determines are relevant" in establishing their list. As such, some additional questions that come to mind include, but are not limited to:

- What are the minimum scientific credentials required to be considered as a source?
- Can the Department rely on non peer-reviewed materials?
- Will the Department disclose the "other sources" it deems are relevant and will the public be allowed to question the scientific validity of these unnamed "sources".

Consumer safety is paramount to GMA and its members because it is the foundation of consumer trust and this consumer trust is built on providing safe and reliable products. Unfortunately, despite SB 27's laudable goal of consumer protection it creates more questions than it answers. As such, the Grocery Manufacturers Association must respectfully oppose SB 27.

Sincerely,

/s/

John Hewitt
Western Region Director
Grocery Manufacturers Association

American Chemistry Council

February 20, 2011

To: The Honorable Bettye Davis, Chair
Members, Alaska Senate Health & Social Services Committee

From: Tim Shestek, Senior Director
State Affairs

Re: **SB 27 – OPPOSE, AS DRAFTED**

The American Chemistry Council (ACC) must respectfully oppose as drafted SB 27, legislation that would, among other things, direct the Department of Health and Social Services to establish, and update every three years a list of "persistent bioaccumulative toxic chemicals (PBTs)" that occur or are used in products used by human beings.

ACC shares the objective of protecting human health and the environment from any significant risks associated with chemicals with PBT properties. PBT substances represent a very small percentage of chemicals in the United States. Many are either strictly regulated, are not currently in production, or are the by-products of human and natural activity. PBTs encompass a range of substances, including some metals and a variety of organic compounds.

DEFINITION OF PBT SHOULD BE CONSISTENT WITH RECOGNIZED STANDARDS

As currently drafted, Section 18.31.680 does not contain a clear set of definitions for the characteristics of P or B or T that is consistent with generally accepted PBT screening criteria. Though the bill does ask the Department to consider other sources of PBT information (e.g. Washington State PBT program, USEPA high production volume challenge program), ACC believes that the bill should establish a clear definition to help ensure a focus on priority substances.

ACC encourages you to consider the PBT screening criteria used by the United States Environmental Protection Agency (USEPA) as an example of specific criteria used to determine whether a chemical meets the generally recognized criteria for being a PBT. Information about the USEPA "PBT Profiler" can be found at: http://www.pbtprofiler.net/criteria.asp

FUTURE USE OF PBT LIST UNCLEAR

As drafted, the bill does not answer the question of why the PBT list is being created, nor does the bill provide any insight into the long-range plans for how the Department intends to utilize the list. SB 27 should include specific language that clearly describes the intent and future plans for creating and utilizing a state-specific PBT list.

In addition, ACC believes the bill should include language that directs the Department to provide a formal process by which stakeholders can participate and provide input into (1) the development and potential use of any PBT list and (2) any regulation or review by the Department of brominated flame retardants or potential alternative chemicals. Establishing a formal process – prior to implementing any regulatory action - will help ensure that the overall process is informed by the best available scientific information.

BEST AVAILABLE SCIENTIFIC INFORMATION

ACC believes that SB 27 could be significantly improved by adding a section that provides transparent and objective parameters for selecting the best available scientific information. One example of such parameters is the European Chemicals Agency's (ECHA)'s guidance document titled "Guidance on Information Requirements for Chemical Safety Assessment."

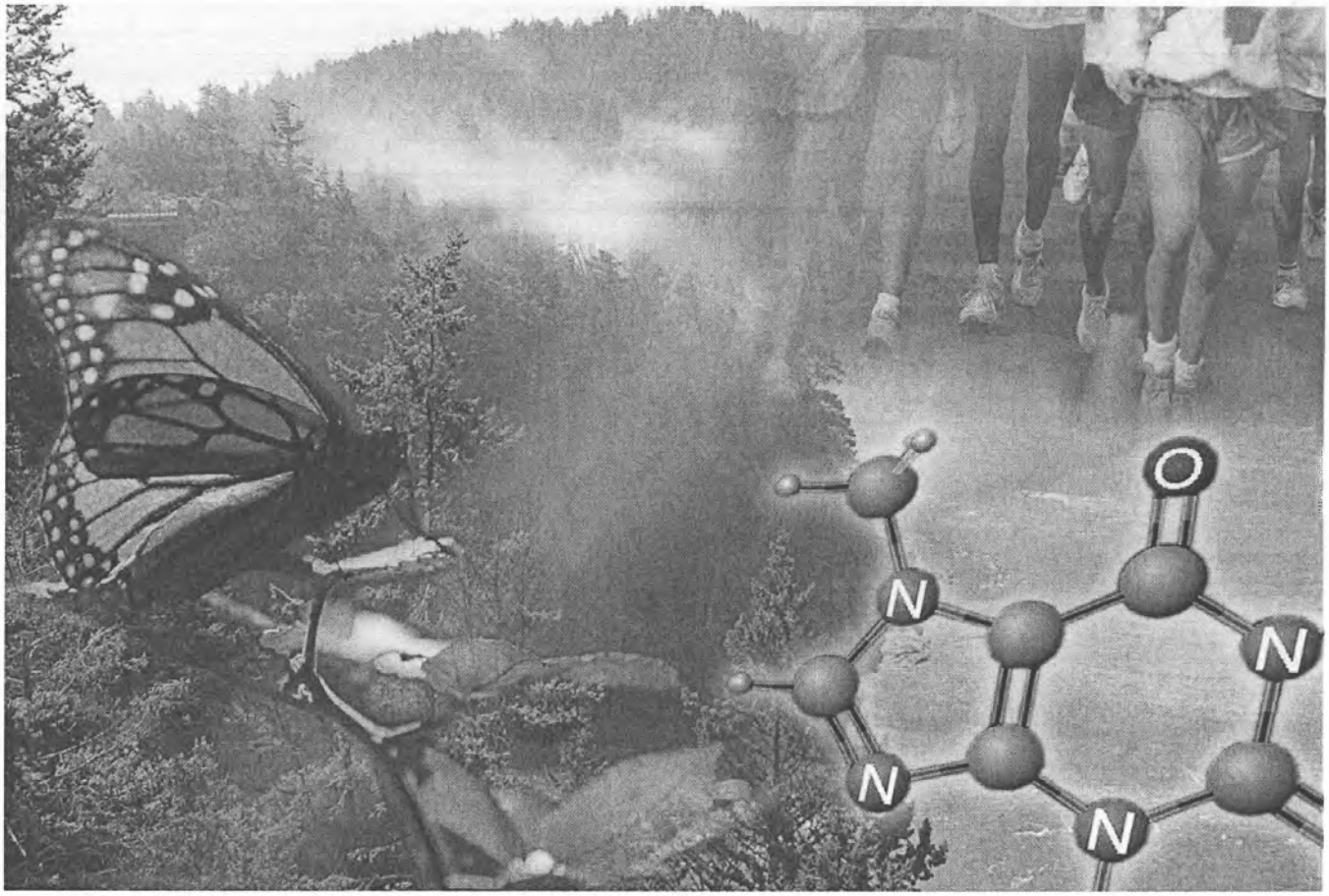
The ECHA's guidance provides four specific parameters for selecting the best available scientific information based on relevance, reliability, and adequacy. The fundamental importance of having screening parameters is embodied in a quote by the ECHA, which stated "[t]he knowledge of how a study was carried out and consequently its relevance and reliability, is a prerequisite for the subsequent evaluation [and use] of [the] information." Attached is the ECHA's guidance document for reference.

Thank you for the opportunity to share these comments. If you have any questions or comments, please do not hesitate to contact me at 916-448-2581or via email at tim_shestek@americanchemistry.com

ECHA

Guidance on information requirements and chemical safety assessment

Chapter R.4: Evaluation of available information



May 2008

Guidance for the implementation of REACH

LEGAL NOTICE

This document contains guidance on REACH explaining the REACH obligations and how to fulfil them. However, users are reminded that the text of the REACH regulation is the only authentic legal reference and that the information in this document does not constitute legal advice. The European Chemicals Agency does not accept any liability with regard to the contents of this document.

PREFACE

This document describes the information requirements under REACH with regard to substance properties, exposure, use and risk management measures, and the chemical safety assessment. It is part of a series of guidance documents that are aimed to help all stakeholders with their preparation for fulfilling their obligations under the REACH regulation. These documents cover detailed guidance for a range of essential REACH processes as well as for some specific scientific and/or technical methods that industry or authorities need to make use of under REACH.

The guidance documents were drafted and discussed within the REACH Implementation Projects (RIPs) led by the European Commission services, involving stakeholders from Member States, industry and non-governmental organisations. These guidance documents can be obtained via the website of the European Chemicals Agency (http://echa.europa.eu/reach_en.asp). Further guidance documents will be published on this website when they are finalised or updated.

This document relates to the REACH Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006[1]

1 Corrigendum to Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (OJ L 396, 30.12.2006); amended by Council Regulation (EC) No 1354/2007 of 15 November 2007 adapting Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) by reason of the accession of Bulgaria and Romania (OJ L 304, 22.11.2007, p. 1).

Convention for citing the REACH regulation

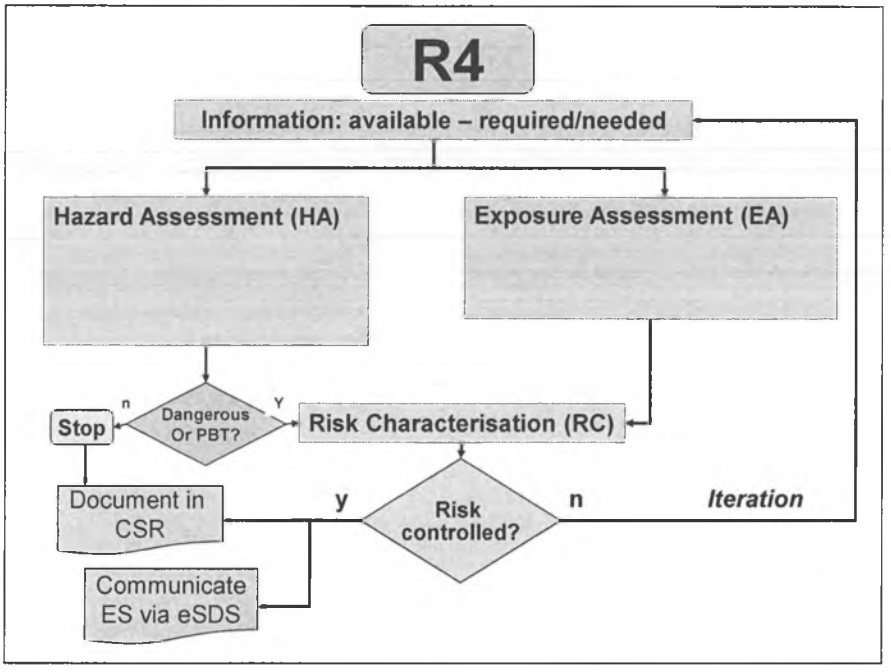
Where the REACH regulation is cited literally, this is indicated by text in italics between quotes.

Table of Terms and Abbreviations

See Chapter R.20

Pathfinder

The figure below indicates the location of Chapter R.4 within the Guidance Document



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R.4 EVALUATION OF AVAILABLE INFORMATION

This chapter aims to provide guidance on how to evaluate available information gathered in the context of REACH Annex VI-XI. The information should be evaluated for its *completeness* and *quality* for the purpose of REACH to assess whether:

1. it fulfils the specific requirements triggered by tonnage as described in REACH Annex VII-X, including application of REACH Annex XI.
2. it is appropriate for hazard classification and risk assessment, including CMR, PBT and vPvB assessment.

Practically, this assessment is usually performed by an evidence-based approach to determine whether the information requirements are already met by the available information. If this is not the case, the information gaps should be defined and appropriate action(s) taken to address these.

The evaluation of *data quality* includes assessment of *adequacy* of the information for hazard/risk assessment and C&L purposes (see above) and furthermore the two basic elements of *relevance* and *reliability*. These terms were defined by Klimisch *et al* (1997) as follows (see also OECD, 2005a):

> *"**Relevance** - covering the extent to which data and tests are appropriate for a particular hazard identification or risk characterisation.*
>
> ***Reliability** - evaluating the inherent quality of a test report or publication relating to preferably standardised methodology and the way the experimental procedure and results are described to give evidence of the clarity and plausibility of the findings. Reliability of data is closely linked to the reliability of the test method used to generate the data (see Section R.4.2).*
>
> ***Adequacy** - defining the usefulness of data for hazard/risk assessment purposes. Where there is more than one study for each endpoint, the greatest weight is attached to the studies that are the most relevant and reliable. For each endpoint, robust summaries need to be prepared for the key studies."*

The terms *relevance* and *reliability* are also used in the context of test methodology (see OECD GD 34 (OECD, 2005b)). The knowledge of how a study was carried out and consequently its relevance and reliability, is a prerequisite for the subsequent evaluation of information.

The *completeness* of the information refers to the conclusion on the comparison between the available information and the information that is required under the REACH registered for the tonnage level of the substance.

Available information on the individual substance should be evaluated in relation to the level of certainty and accuracy needed to meet the regulatory requirement under REACH; it should be considered whether generation of new data would impact such regulatory decision making. In other words, all information has to be *adequate for the purpose*.

A *Weight of Evidence* approach, mentioned in Annex XI Section1.2 of REACH, integrates available information from guideline tests, non-guideline tests, and other types of information which may justify adaptation of the standard testing regime.

R.4.1 Relevance of information

In order to evaluate the relevance of the available data the following aspects could for example be considered:

- Was the substance tested representative for the substance as being registered?
- Has the appropriate species been studied?
- Is the route of exposure relevant for the population?
- Were appropriate doses/concentrations tested?
- Were the critical parameters influencing the endpoint considered adequately?

Human data is in principle the most relevant source of information on human toxicity. Since there may be limitations with regard to the reliability of these studies, they are normally considered together with animal, *in vitro* and other information in order to be able to reach a conclusion about the relevance of the effects to humans.

The evaluation of the relevance for humans of data from studies in laboratory animals is aided by use of information (when available) on the toxicokinetics of the substance in both humans and the animals species used in the toxicity tests, even when such information is relatively limited. Further guidance on the value and use of toxicokinetics is given in Section R.7.12.

Normally, for human health hazard assessment, a *no* or *lowest observed (adverse) effect level* (NO(A)EL, LO(A)EL), or a *benchmark dose* (BMD) for adverse effects in laboratory animals are extrapolated to an exposure level (DNEL) below which it is assumed that adverse effects are unlikely to occur in humans exposed to the substance. For substances evoking effects that have no definable threshold, e.g. genotoxic carcinogens, it may not be possible to identify an exposure level without effects; in such cases, extrapolation is made to an exposure level that represents a risk level of very low concern for humans (DMEL). For more guidance on the derivation and application of these indices in the chemical safety assessment, see Chapter R.8.

For environmental compartments such as surface water, sediment and soil, a *predicted no effect concentration* (PNEC) is obtained by extrapolation based on the lowest *no observed effect concentration* (NOEC) or *effect concentration* causing marginal effects (ECx) by application of assessment factors. For more guidance on the derivation and application of these indices in the chemical safety assessment, see Chapter R.10.

When data are available, dose-response relationships in the animal studies (or the severity of the effect, when only a single dose has been tested) are also assessed as a part of the risk assessment process. Both aspects are taken into account at the risk characterisation stage when a judgement is made of whether adverse effects in humans or the environment would occur at a particular level of exposure.

Where the data suggest that an effect might be species specific, i.e. that the effects observed in the studies of one species are not likely to occur in a different species, specifically humans, clear, well-documented evidence is necessary (e.g. light hydrocarbon-induced nephropathy in the kidney of male rats) to justify the conclusion that a particular effect is not expected to occur in humans exposed to the substance.

In general, the results of *in vitro* tests provide supplementary information which may be used *inter alia* to facilitate the interpretation of the relevance of animal data for humans, or to gain a better understanding of the mechanism of action of a substance. Depending on the type of *in vitro* data and its predictivity for effects *in vivo*, such data may be also used as an alternative to test data on laboratory animals or as an important part of the basis for deciding whether such tests may be warranted.

R.4.2 Reliability of information

The quality of the study, the method, the reporting of the results, and the conclusions that are drawn, must be evaluated carefully. Reasons why existing study data may vary in quality include the use of outdated test guidelines, the failure to characterise the test substance properly (in terms of purity, physical characteristics, etc.), the use of crude techniques/procedures that have since become refined, and the fact that certain endpoint information, now recognised as being important, may have not been recorded or measured. Moreover, other reasons could be poor reporting of information and poor quality assurance.

Klimisch *et al* (1997) developed a scoring system to assess the reliability of data, particularly from toxicological and ecotoxicological studies, that may be extended to physico-chemical and environmental fate and behaviour studies:

> **1 = reliable without restrictions:** *"studies or data [...] generated according to generally valid and/or internationally accepted testing guidelines (preferably performed according to GLP) or in which the test parameters documented are based on a specific (national) testing guideline [...] or in which all parameters described are closely related/comparable to a guideline method."*
>
> **2 = reliable with restrictions:** *"studies or data [...] (mostly not performed according to GLP), in which the test parameters documented do not totally comply with the specific testing guideline, but are sufficient to accept the data or in which investigations are described which cannot be subsumed under a testing guideline, but which are nevertheless well documented and scientifically acceptable."*
>
> **3 = not reliable:** *"studies or data [...] in which there were interferences between the measuring system and the test substance or in which organisms/test systems were used which are not relevant in relation to the exposure (e.g. unphysiological pathways of application) or which were carried out or generated according to a method which is not acceptable, the documentation of which is not sufficient for assessment and which is not convincing for an expert judgment."*
>
> **4 = not assignable:** *"studies or data [...] which do not give sufficient experimental details and which are only listed in short abstracts or secondary literature (books, reviews, etc.)."*

The use of such scoring tools, e.g. the mentioned *Klimisch codes,* allows ranking the information, and organising it for further review. This implies focussing on the most relevant ones, taking into account the endpoint being measured or estimated. The evaluation of the reliability is performed considering certain formal criteria using international standards as references. The scoring of information, e.g. according to Klimisch codes, should not exclude all unreliable data from further consideration by expert judgement because of possible pertinence of these data related to the evaluated endpoints.

In general, some types of data that are not reliable (i.e. those where insufficient documentation exist for making an assessment) and data for which it is not possible to assign reliability, may only be used as supporting data.

For many existing substances, at least some of the available information could have been generated prior to the requirements of GLP and the standardisation of testing methods. While such information may still be usable for REACH purposes, both the data and the methodology used must be evaluated in order to determine their reliability. Such an evaluation needs evidence based decision making following established criteria and must be transparent to justify the use of a particular data set. For some substances, information may be available from tests conducted according to the methods included in EU Annex V of Directive 67/548/EEC or to OECD Test Guidelines (or other standards like CEN, ISO, ASTM, OSPAR methods, national standard methods), and in compliance with the principles of GLP or equivalent standards. REACH Article 13.3 states that any new tests should be "*conducted in accordance with the test methods laid down in a Commission Regulation or... other international test methods recognised by the Commission or the Agency as being appropriate.... Information on intrinsic properties may also be generated using other test methods provided they meet the conditions set out in Annex XI.*"

Furthermore, new ecotoxicological and toxicological tests shall be carried out in compliance with the principles of GLP (see Directive 2004/10/EC) or equivalent international standards. This does not apply to tests for physico-chemical properties.

The following are key points that an assessor should consider when evaluating data reliability:

- The proven ability of the laboratory to perform the test method
- The purity/impurities and origin of the test substance, as well as the reference substances, must be reported;
- The availability of the raw data from the study
- There must be an adequate description of the study e.g. a complete test report, or a sufficiently detailed description of the test procedure, which must be in accordance with generally accepted scientific standards. In these cases, the information may be considered reliable;
- When the test procedure used to generate the test data is found to differ significantly from that described by the recognised test method or generally accepted scientific standards, or the reliability of the data cannot be established fully, the assessor must decide if and how the information can be used, e.g. as supporting information where a reliable study already exists.

- The following factors, inter alia, can be used to support the view that these data may be acceptable for use in meeting the requirements of REACH:
  - there are other studies or calculations available on the substance, and the data under consideration are consistent with them,
  - other studies are available, for example on isomers with similar structure activity profile, homologues, relevant precursors, breakdown products or other chemical analogues, and the data under consideration are consistent with them,
  - an approximate value is sufficient for taking a decision on the endpoint of interest for the conclusion required by REACH;
- Where critical supporting information is not reported (e.g. species tested, substance identity and dosing procedure) the test data should be considered to be unreliable for the purposes of REACH.

In principle, the same criteria apply to test data reported in the published literature; the extent of the information provided will provide the basis for deciding upon the reliability of the data reported. In general, publications in peer-reviewed journals are preferable to those which are not. High-quality reviews, summaries or abstract publications may be used as supporting information.

R.4.3 Adequacy of information

Adequacy defines the usefulness of information for the purpose of hazard and risk assessment, in other words whether the available information allows clear decision-making by the registrant about (a) whether the substance meets the criteria for classification, (b) whether it is a potential PBT/vPvB and (c) whether appropriate DNEL/PNEC values can be derived for risk assessment purposes. The evaluation of adequacy of test results and documentation for the intended purpose is particularly important for substances under REACH where there may be (a number of) test results available for each effect, but where some or all of them have not been carried out according to current standards. Where there is more than one study for each endpoint, the greatest weight is attached to the studies that are the most relevant and reliable. For each endpoint, robust summaries need to be prepared for the key studies. Sound scientific judgement is an important principle in considering the adequacy of information and determining the key study.

The type of information that may be available consists of non-testing data, (the latter refer to (Q)SAR predictions or data on structurally-related substances, obtained by grouping approaches), *in vitro* data, data on living organisms, including data on laboratory animals, on humans or other data on (parts of) ecosystems.

R.4.3.1 Non-human data

The guidance given above on the evaluation of the adequacy (relevance and reliability) of information relates predominantly to information generated in tests on physico-chemical properties, animal studies, plant and micro-organism studies. Some specific guidance is given below for data generated *in vitro* systems.

R.4.3.1.1 In vitro data

When considering the adequacy of *in vitro* information it is important to distinguish between the suitability of the methodology per se and the adequacy of data that have been produced by such methods.

Use of *in vitro* methods within REACH

Suitable in vitro test methods are at least those that are sufficiently well developed according to internationally agreed test development criteria, e.g. fulfilling the ECVAM criteria for entry of the method into the pre-validation process (see details in Table R.4-2). In the frame of the Community Action Plan on the Protection and Welfare of Animals, a reference laboratory (CORRELATE) has been established at JRC-IHCP-ECVAM that assesses proposed *in vitro* test methods with regard to suitability and validation for the intended purpose.

At present the following two categories of *in vitro* methods are referred to within REACH as suitable:

- validated methods (e.g. *in vitro* tests for skin corrosion and *in vitro* genotoxicity tests, e.g. Ames salmonella typhimurium mutagenicity test) and
- those *in vitro* tests that meet the internationally agreed pre-validation criteria (e.g. meeting the ECVAM criteria of entering the pre-validation process).

There are clear definitions on what constitutes a fully validated *in vitro* assay. These criteria are detailed in OECD GD 34 (OECD, 2005b; see details in Table R.4-1) and were initially established by ECVAM and ECB and later refined by ECVAM (Hartung *et al*, 2004).

Use of adequate information derived from *in vitro* methods

Adequate information from *in vitro* studies can be used in two ways: first, the existing information from a validated and accepted *in vitro* test may fully or partly replace animal testing, and second, information derived from suitable *in vitro* methods can be used for adapting the standard testing regime as set out in Annex XI.

Information from validated in vitro tests may fully or partly replace an animal test

Article 25 (1) of the REACH Regulation states that testing on vertebrate animals shall only be performed as a last resort. Once scientifically validated according to internationally agreed validation principles (OECD GD 34 (OECD; 2005b)) *in vitro* test may fully or partly replace an *in vivo* test depending on the purpose for which the test method was validated and adopted. One of the main criteria for acceptance is the adequacy of the information generated using such a test(s) for the purpose of classification and labelling and/or risk assessment.

Information derived from suitable in vitro methods

Annex XI Section 1.4 opens the way for the use of results of *in vitro* methods that have not yet been scientifically validated but are identified as being *suitable*, meaning that the methods are sufficiently well developed according to internationally agreed test development criteria e.g. the ECVAM criteria for entry of the method into the pre-validation process (see Table R.4-2 and Section R.5.2.1.4 for a discussion of the use of *in vitro* testing to adapt the standard testing regime).

Table R.4-1: The criteria for validation derived from the OECD GD 34

Concerned items	Decision criteria to be considered
Rationale for the test method	Clear statement of: - scientific basis - regulatory purpose - need for the test method
Relationship between the test method's endpoint and (biological) phenomenon of interest	Description of the scientific relevance of the measured effects Mechanistic (biological) or empirical (correlative) relationship to the specific type of effect or toxicity of interest
Detailed protocol for the test method	Detailed protocol and SOP including: - description of materials - what is measured - how it is measured - how data will be analysed - decision criteria for evaluation - criteria for acceptable test performance
Test method performance using reference substances (accuracy assessment)	Sufficient number of reference substances measured in coded procedure Reference data and reference results for reference substances established
Performance evaluation	Performance evaluation in relation to: - relevant information from the species of concern - existing relevant toxicity testing data
Intra- and Inter-laboratory reproducibility	Data available on - Repeatability and reproducibility - Robustness (variability)
Relevance	- Demonstration of the predictive capacity of the method - Precise definition of the applicability domain
Test method data quality	Evidence that all data supporting the validity are gained under quality conditions, e.g. GLP, GCCP
Data availability	- All raw data should be available for expert review - Detailed method protocol public available

Information from in vitro test may provide mechanistic insight

Information from advanced *in vitro* assays may provide valuable information that aid and inform the risk assessment process. For example, with the growth of new technologies such as toxicogenomics, new possibilities are emerging that allow designer cell lines to assess specific mode of action (molecular pathways) of the potential toxicity of a substance or substance class. Such information is likely to be increasingly important in the future.

Adequacy of information from in vitro testing

The assessment of alternative testing data (to decide whether and how they can be used) in terms of adequacy for fulfilling the information requirements of REACH will follow the general criteria already discussed, e.g. applied quality measures, i.e. how they take into account the relevance, reliability and completeness of the information with regard to the regulatory decision to be taken. This includes how well the study is reported, how well the test substance is characterised and to what extent the information requirements have been met for the endpoint under consideration.

Table R.4-2: The criteria for suitability assessment according to the ECVAM criteria for entering the pre-validation study, (Curren *et al*, 1995).

Concerned items	**Decision criteria to be considered**
Purpose and proposed use	- Description of intended purpose and scientific basis - Fit of intended purpose with intended use - Position of the method in the context of regulatory testing and/or 3Rs
Evidence of the need for the test in comparison with other *in vivo/in vitro* test, state of the art	Complete and concise presentation of state of the art, human data, *in vivo*, non-testing and *in vitro* data Weighed judgment about the contribution of the proposed test method compared to state of the art, including weaknesses and limitations e.g.: improved reliability: accuracy, sensitivity, specificity, robustness, defined performance e.g. improved relevance: predictive capacity, applicability domain
Addressed endpoint described	- Demonstration of relevance for the *in vivo* situation - Description of data analysis and interpretation
Availability of a written procedure detailed enough to allow performance in another laboratory	Method protocol: - complete and readable - feasible and transferable - SOP standardised with respect to selected model and measurement performance
Reference substances, test materials and related results	- Description of reference substances, test materials and controls - Selection, identity, use in the measurement process including calibration and data interpretation
Data derived from the test using an appropriate set of test materials	- Data gained by measuring above reference substances or test materials - Test performance evaluation
Development of method according to GLP and GCCP conditions	Statement about data quality
Summary of how method has been derived and the biological basis for its relevance	- List of any additional documentation, which contributes to the above items - Statement about intellectual property rights and search for existence of any protection of intellectual property rights

R.4.3.2 Non-testing data

Non-testing data refers to data obtained by applying computational methods, such as SARs and QSARs (collectively referred to as (Q)SARs) as well as data obtained by grouping approaches (analogue and chemical category approaches).

R.4.3.2.1 (Q)SAR data

According to Article 13 (1) of REACH, information on intrinsic properties of substances may be generated by means other than tests, provided that the conditions set out in Annex XI are met. In particular for human toxicity, information shall be generated whenever possible by means other than vertebrate animal tests, through the use of alternative methods, for example, *in vitro* methods or qualitative or quantitative structure-activity relationship models or from information from structurally related substances (grouping or read-across) [see also REACH Article 25 (1)].

REACH Annex XI allows for the results of (Q)SARs to be used instead of testing when the following conditions are met:

- results are derived from a (Q)SAR model whose scientific validity has been established,
- the substance falls within the applicability domain of the (Q)SAR model,
- results are adequate for the purpose of classification and labelling and/or risk assessment, and,
- adequate and reliable documentation of the applied method is provided.

REACH Annex XI also indicate that the Agency in collaboration with the Commission, Member States and interested parties shall develop and provide guidance in assessing which (Q)SARs will meet these conditions and provide examples. In the meantime, a database has been developed to provide information on QSAR models and their validity (JRC QSAR Model Database (QMDB) http://qsardb.jrc.it). In addition to replacing the need for testing, (Q)SAR results may also in some cases indicate the need for further testing.

To apply the conditions of REACH Annex XI, it is important to distinguish between the validity of the (Q)SAR model, and the reliability and adequacy of an individual (Q)SAR estimate, and the appropriateness of the documentation associated with models and their predictions (see Section R.6.1 for detailed explanation).

The extent to which valid (Q)SARs are available for the different REACH endpoints is variable and is an evolving situation, as an increasing number of models are being characterised and documented according to the OECD validation principles described below. Information on the status of (Q)SARs for specific endpoints is given in Chapter R.7.

Valid (Q)SARs should be assessed for their applicability to the substance of interest, to determine the reliability of the QSAR estimate, and for their relevance to the regulatory purpose, to determine the adequacy of the (Q)SAR estimate. The adequacy of a (Q)SAR estimate (see Section R.6.1.5.4) takes into account the relevance and reliability of the (Q)SAR model and its prediction for the substance of interest as well as completeness of the information generated by the model.

A valid (Q)SAR is a model that has been characterised and documented according to the internationally agreed OECD Principles for the validation of (Q)SAR models. According to these principles, a (Q)SAR model that is proposed for regulatory use should be associated with a defined endpoint (principle 1), an unambiguous algorithm to ensure transparency in the model algorithm (principle 2), a defined domain of applicability (principle 3), and appropriate measures of internal performance and predictivity (principle 4). If possible, a mechanistic interpretation should also be provided, to add to the confidence in the model (principle 5).

Taken together, these five principles form the basis of a conceptual framework for characterising (Q)SAR models.

Preliminary guidance on how to characterise (Q)SARs according to the OECD validation principles is provided in this document (see Section R.6.1) This report was subsequently adopted, with minor revisions, by the OECD Member Countries and the Commission, as an OECD GD (OECD, 2007).

Whether the prediction from a scientifically valid QSAR model is reliable depends, *inter alia*, on whether the substance is within the applicability domain (see also Section R.6.1.5.3). Consideration of the applicability domain may include: 1) descriptor domain - do the descriptor values of the chemical fall within defined ranges; 2) structural fragment domain - does the chemical contain fragments that are not represented in the model training set; 3) mechanistic domain - does the chemical of interest act according to the same mode or mechanism of action as other chemicals for which the model is applicable; and 4) metabolic domain - does the chemical of interest undergo transformation or metabolism, and how does this affect reliance on the prediction for the parent compound.

The QSAR Model Reporting Format (QMRF) has been developed to provide a means of documenting (Q)SAR model characteristics in a transparent and consistent manner, in accordance with the OECD validation principles. Further information on QMRFs is given in Section R.6.1.9. In particular, the JRC QSAR Model Database (JRC QMDB) is being developed as a repository of quality-reviewed information on QSAR models and their validity. In this database, QSAR models will be linked with their corresponding QMRFs. Before developing a QMRF, the registrant should check whether it is already included in the JRC QMDB or other suitable source (e.g. OECD QSAR Toolbox[2]). If the appropriate QMRF for a given model is not already available, it will be necessary to develop one by applying the five validation principles and documenting the results. Since the general format of the QMRF is already defined, it is sufficient to fill this in with the appropriate information on the model. The ECB has developed a QMRF editor as a tool to facilitate the generation of new QMRFs.

To be used as a replacement for experimental data, it is necessary, but not sufficient, for a (Q)SAR model to be valid. The (Q)SAR model should also be shown to be applicable to the substance of interest, to determine whether the model estimate is reliable for the intended purpose. Whereas the (Q)SAR model should be reported in the form of a QMRF, individual model predictions should be documented according to the (Q)SAR Prediction Reporting Format (QPRF). Further information on QPRFs is given in Section R.6.1.10, and in the JRC QMDB.

QMRFs and QPRFs are important tools for documenting and reporting information on (Q)SARs and their estimates, respectively. It should be noted that these reporting formats are likely to evolve as experience is gained.

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[2] http://www.oecd.org/dataoecd/33/41/37850114.pdf

The information in the QMRF and QPRF should be used when assessing whether a prediction is adequate for the purpose of classification and labelling and/or risk assessment. The assessment will also need to take into account the regulatory context. This means that the assessments of QSAR validity and QSAR estimate reliability need to be supplemented with an assessment of the relevance of the prediction for the regulatory purposes, which includes an assessment of *completeness*, i.e. whether the information is sufficient to make the regulatory decision, and if not, what additional (experimental) information is needed. The decision will be taken on a case-by-case basis (firstly by industry and then by the authorities working via an Agency committee). See Section R.6.1 for more detailed guidance.

(Q)SAR predictions may be gathered from databases (in which the predictions have already been generated and documented) or generated *de novo* through the applicable of available models. In the latter case, specialised expertise may be required.

Up to date information on QSAR models, QMRF, QPRF, editors, and examples is available in the JRC QMDB http://qsardb.jrc.it.

R.4.3.2.2 Data obtained by grouping approaches

Conclusions about the likely properties of a substance can also be based on the knowledge of the properties of one or more similar substances, by applying *grouping methods*. More details of such methods are provided in Section R.6.2.

REACH Annex XI contains under 1.5 a section on the use of grouping of substances and read-across approaches.

In this guidance, the terms *category approach* and *analogue approach* are used to describe techniques for grouping chemicals, whilst the term *read-across* is reserved for a technique of filling data gaps in either approach. The term *analogue approach* is sometimes used when the grouping is based on a very limited number of chemicals. A chemical category is a group of chemicals whose physico-chemical and human health and/or environmental toxicological properties and/or environmental fate properties are likely to be similar or follow a regular pattern as a result of structural similarity (or other similarity characteristic). In principle, more members are generally present in a chemical category, enabling the detection of trends across endpoints.

As with (Q)SARs, grouping approaches can be used to indicate either the presence or the absence of an effect.

Grouping approaches avoid the need to test all members of the group for all endpoints of interest, thereby reducing costs and animal testing. Additional benefits are described in Section R.6.2.

The assessment of chemicals by using a category approach differs from the approach of assessing them on an individual basis, since the effects of the individual chemicals within a category are assessed on the basis of the evaluation of the category as a whole, rather than based on measured data for any one particular substance alone.

The category approach has been applied successfully under the EU classification system, where all *similar* substances (sometimes identifying all the individual substances, sometimes leaving them as a generic group) are expected to have the same property as the substance[3]. Categories have also been developed in the context of the OECD HPV Chemicals Programme (http://www.oecd.org/document/21/0,3343,en_2649_34379_1939669_1_1_1_1,00.html Within a chemical category, data gaps may be filled by applying one or more of three general approaches: a) read-across; b) trend analysis (i.e. use of internal models, purposefully developed from the underlying data of the category); and c) use of external models (e.g. QSARs, Quantitative Activity-Activity Relationships (QAARs) and expert systems that were not specifically developed in the context of the category).

Read-across is a technique for data gap filling in which information for one or more *source* chemicals is used to make a prediction for a *target* chemical, which is considered to be *similar* in some way. Read-across can be used to fill data gaps in the context of both the analogue approach and the wider category approach.

The chemical category approach is, by its very nature, a *Weight of Evidence* approach, since it integrates estimated and experimental data, and involves expert judgement. The category approach also provides a means of strategic testing. The biggest challenge in this approach lays in defining the category itself (its underlying rationale/mechanistic basis) and in particular its boundaries.

The wider category approach is considered to be more robust than simple analogue approaches, which are more limited, ad-hoc ways of comparing small numbers of substances. As the number of possible chemicals being grouped into a category increases, the potential for developing hypotheses for specific endpoints and making generalisations about the trends within the category will also increase, and hence increase the robustness of the evaluation.

When applying the category approach, the robustness of the overall category is assessed, rather than the reliability for an individual substance (since in some cases, individual substances may display exceptional behaviour). Thus, the adequacy (relevance and reliability) of the approach needs to be assessed for individual substances of interest.

Grouping approaches can be used directly to fulfil information requirements in REACH, provided a number of conditions are met. Although REACH makes no explicit reference to the need for validation for grouping approaches, it will be necessary for the industry registrant making use of a grouping method to provide a scientific justification and to demonstrate that the grouping approach used is adequate for the regulatory purpose (classification and labelling and/or risk assessment). Guidance on how to demonstrate the adequacy of grouping approaches is provided in Section R.6.2.4.1. Furthermore, appropriate documentation of the grouping approach must be provided in the form of a suitable reporting format, as also described in Section R.6.2.6.

[3] Under EU legislation, these *categories* are the *group entries* in Annex I of Directive 67/548/EEC.

R.4.3.3 Human data

The evaluation and use of information derived from studies in humans usually requires more elaborate and in-depth critical assessment of the reliability than animal data (WHO, 1983). Four major types of human data may be submitted (1) analytical epidemiology studies on exposed populations, (2) descriptive or correlation epidemiology studies, (3) case reports and (4) in very rare, justified cases controlled studies in human volunteers.

Analytical epidemiology studies (1) are useful for identifying a relationship between human exposure and effects such as biological effect markers, early signs of chronic effects, disease occurrence, or mortality and may provide the best data for risk assessment. Study designs include:

- **Case-control (case-referent) studies**, where a group of individuals with (cases) and without (controls/referents) a particular effect are identified and compared to determine differences in exposure in the recent or more distant past;
- **Cohort studies**, where groups of variously exposed and *non-exposed* individuals are identified and differences between the groups in effect occurrence over time are studied;
- **Cross-sectional studies**, where a population (e.g. a workforce) is studied, so that morbidity at a given point in time can be assessed in relation to concurrent exposure.

The strength of the epidemiological evidence for specific health effects depends, among other things, on the type of analyses and on the magnitude and specificity of the response. Confidence in the findings is increased when comparable results are obtained in several independent studies on populations exposed to the same agent under different conditions. In general, cohort studies provide stronger evidence than case-control studies, because exposure is assessed independently of the health status or outcome of the subjects in the study. Other characteristics that support a causal association are presence of a dose-response association, a consistent relationship in time and (biological) plausibility.

Criteria for assessing the adequacy of epidemiology studies include the proper selection and characterisation of the case and control groups (in case-control studies), adequate characterisation of exposure, sufficient length of follow-up for disease occurrence (in cohort studies), valid ascertainment of effect, proper consideration of biases and confounding factors. Assessment of adequacy of the studies should be conducted by epidemiologists by training.

Due to both uncertainties in epidemiological studies and true variability in the association between exposure and health outcomes within and among human populations, the available body of epidemiological evidence should be systematically reviewed and, if possible, combined. A *Weight of Evidence* approach is essential for risk assessment based on epidemiological data to (a) assess (sources of) heterogeneity across the studies and (b) increase statistical stability of the risk estimates. The best option to combine and summarise epidemiological data is a pooled analysis of the original data sets of the contributing studies. A meta-analysis based on published study results is a good, but somewhat more restricted alternative.

A comprehensive guidance of both the evaluation and use of epidemiological evidence for risk assessment purposes is provided by Kryzanowski *et al* (WHO 2000).

Descriptive epidemiology studies (2) examine differences in disease rates among human populations in relation to age, gender, race, and differences in temporal or environmental conditions. These studies are useful for identifying areas for further research but are not very useful for risk assessment. Typically these studies can only identify patterns or trends in disease occurrence over time or in different geographical locations but cannot ascertain the causal agent or degree of human exposure.

Case reports (3) describe a particular health condition in an individual or a group of individuals who were exposed to a substance. They may be particularly relevant when they demonstrate effects which cannot be observed in experimental animal studies. In many such studies, information is lacking on critical aspects such as substance identity and purity, exposure, health status of the persons exposed and even the symptoms reported; thorough assessment of the reliability and relevance of case reports is therefore necessary. Case reports also trigger analytical studies.

When they are already available, well-conducted controlled human exposure studies (4) in volunteers, including low exposure toxicokinetics studies, can also be used in risk assessment. However, few human experimental toxicity studies are available due to the practical and ethical considerations involved in deliberate exposure of individuals. Such studies, e.g. studies carried out for the authorisation of a medical product, have to be conducted in line with the World Medical Association Declaration of Helsinki, which describes the general ethical principles for medical research involving human subjects (World Medical Association, 2000).

Criteria for a well-designed experimental study include the use of a double-blind study design, inclusion of a randomised control group, sufficient duration of exposure and an adequate number of subjects to detect an effect. A meta-analysis of available similar, even small, studies is a good option.

It is emphasised that testing with human volunteers is strongly discouraged, but when there are good quality data already available they should be used as appropriate, in well justified cases.

R.4.4 Evaluation and Integration of all available Information including Weight of Evidence

Within the REACH legislation, the so-called *Weight of Evidence* (WoE) approach is a component of the decision-making procedure on substance properties and thus an important part of the chemical safety assessment.

The term WoE does neither constitute a scientifically well-defined term nor an agreed formalised concept characterised by defined tools and procedures (Weed, 2005). Nevertheless, from daily life everybody is familiar with the essence of *Weight of Evidence* reasoning and its basic mechanism may be regarded as a matter of commons sense.

An evidence based approach involves an assessment of the relative values/weights of different pieces of the available information that has been retrieved and gathered in previous steps. To this end, a value needs to be assigned to each piece of information. These weights/values can be assigned either in an *objective* way by using a formalized procedure or by using expert judgement. The weight given to the available evidence will be influenced by factors such as the quality of the data, consistency of results/data, nature and severity of effects, relevance of the information for the given regulatory endpoint. In all cases the relevance and reliability and adequacy for the purpose have to be considered.

Examples of tools to identify the quality include the Klimisch scores (for toxicological studies, see also Section R.4.2), Hills criteria for evaluation of epidemiological data in Hill (1965), ranking of chemicals on their endocrine potential (Calabrese *et al*, 1997), evaluation of ecologic risk (Menzie *et al*, 1996).

An evidence based approach may imply formalised decision schemes where explicit rules for weighing information elements have been established. After having assessed/ranked the quality of the individual components the next step should be the integrating, comparing and putting together all information pieces with their relative values or weights and drawing a conclusion. This often includes expert judgement.

In the GHS, an evidence based approach is given a prominence for classification. All available information that can contribute to the determination of classification for an endpoint is considered together. Included is information such as epidemiological data and case reports in humans, and specific studies along with the sub-chronic, chronic and special study results in animals that provide relevant information, etc.

In REACH there will also be cases where data from sources other than tests specifically addressing an endpoint can provide valuable information. In addition, it is reasonable to expect that there will be cases where several pieces of *inadequate* data on a given REACH endpoint may exist. For example there may be several repeated dose studies available on a chemical, none of which would be acceptable by itself due to some deficiency (e.g. small group sizes, insufficient number of dose groups, insufficient parameters, etc). Collectively, however, the different studies show effects in the same target organ at approximately the same dose and time. If a rationale is given to show that such data adequately describe the REACH endpoint of concern, further information on that particular endpoint may not be necessary.

The way the *Weight of Evidence* is implemented is case-dependent. It is influenced by the relation between the amount of information needed and the importance of the decision to be taken and also by the likelihood of, and consequences for, the decision based on that information being wrong. It is important to document and communicate how the evidence based approach was used in a reliable, robust and transparent manner.

R.4.5 References

Calabrese, E. J., Baldwin, L. A.,Kostecki, P.T.,&Potter,T.L. (1997). A toxicologically based weight-of-evidence methodology for the relative ranking of chemicals of endocrine disruption potential. *Regulatory Toxicology and Pharmacology*, **26**, 36–40.

Curren, Southee, Spielmann, Liebsch, Fentem and Balls M. (1995) - The Role of Prevalidation in the Development, Validation and Acceptance of Alternative Methods - ECVAM Prevalidation Task Force Report 1. *ATLA,* **23**, 211-217.

Hartung T., Bremer S., Casati S., Coecke S., Corvi R., Fortaner S., Gribaldo L., Halder M., Hoffmann S., Roi A., Prieto P., Sabbioni E., Scott L., Worth A. and Zuang V. (2004) - A Modular approach to the ECVAM principles on test validity. *Altern Lab Anim,* **32,** 5, 467-472.

Hill, A. B. (1965).The environment and disease: Association or causation? *Journal of the Royal Society of Medicine*, **58**, 295–300.

Klimisch H., Andreae M. and Tillmann U. (1997) - A systematic approach for evaluating the quality of experimental toxicological and ecotoxicological data. *Regul Toxicol Pharm,* **25**, 1-5.

Menzie,C., Henning,M. H., Cura, J., Finkelstein, K., Gentile, J., Maughan, J., Mitchell, D., Petron, S., Potocki, B., Svirsky, S., & Tyler, P. (1996). Special report of the Massachusetts weight-of-evidence workgroup: A weight-of-evidence approach for evaluating ecological risks. *Human Ecological Risk Assessment*, **2**, 2, 277–304.

OECD (2005a) – Manual for Investigation of HPV Chemicals. Chapter 3 – Data Evaluation. Organization for Economic Co-operation and Development.

OECD (2005b) - Guidance Document n°34 on the Validation and International Acceptance of New or Updated Test Methods for Hazard Assessment. Organization for Economic Co-operation and Development.

OECD (2007) – Guidance Document on the Validation of (Quantitative) Structure Activity Relationship [(Q)SAR] Models. OECD Series on Testing and Assessment No. 69. ENV/JM/MONO(2007)2. Organisation for Economic Cooperation and Development, Paris, France. 154 pp.
http://www.oecd.org/document/30/0,2340,en_2649_34365_1916638_1_1_1_1,00.html.

Weed D. (2005) - Weight of evidence: a review of concept and methods. *Risk Anal,* **25,** 6, 1545-1557.

WHO (2000) Working Group report on Evaluation and use of epidemiological evidence for environmental health risk assessment: WHO Guideline Document. *Environm Health Perspect*, **108**, 997-1002.

World Medical Association (2000). Declaration of Helsinki: Ethical Principles for Medical Research Involving Human Subjects. Adopted by the 18th World Medical Association (WMA) General Assembly Helsinki, Finland, June 1964 and amended by the 29th WMA General Assembly, Tokyo, Japan, October 1975, 35th WMA General Assembly, Venice, Italy, October 1983, 41st WMA General Assembly, Hong Kong, September 1989, 48th WMA General Assembly, Somerset West, Republic of South Africa, October 1996 and 52nd WMA General Assembly,

Edinburgh, Scotland, October 2000.

SENATE COMMITTEE

HEALTH & SOCIAL SERVICES

AGENDA

MONDAY, FEBRUARY 21, 1:30 PM

Butrovich Room #205

1:30 PM – Call to Order

Time:

Members Present:

BILL: Need to adopt CS

SB27 FLAME RETARDANTS AND TOXIC CHEMICALS

(Sen. Bill Wielechowski)

NEED TO allow 20 minutes for

PRESENTATION:

- *AKEELA ORGANIZATION (Rosale Nadeau, Exec. Dir.)*

ADJOURNMENT:

H&SS Committee: Sen. Bettye Davis, Chair; Sen. Johnny Ellis, Sen. Fred Dyson, Sen. Kevin Meyer, Sen. Dennis Egan

SENATE COMMITTEE REPORT
First Committee of Referral

DATE: 1/19/11

Date of 5-Day Notice: 2/24/11
(in accordance with Uniform Rule 23)

FURTHER: Finance

DATE TURNED IN TO OFFICE: 2/28/11

Health and Social Services Committee considered SENATE BILL NO. 27

SB 27-FLAME RETARDANTS AND TOXIC CHEMICALS

"An Act relating to flame retardants and to the manufacture, sale, and distribution of products containing flame retardants; relating to bioaccumulative toxic chemicals; and providing for an effective date."

and recommends:

[X] be **replaced** with **CS** SB27 (HSS) *[ ] Same Title [ ] New Title*

[ ] adopt **previous CS** _____ (_____) *[ ] Same Title [ ] New Title*

[ ] attached amendment(s)

[ ] adopt _____ Letter of Intent

[ ] further referral to _____ Committee

Dept Abbr.	
ADM	LEG
CED	LAW
COR	LWF
CRT	MVA
EED	DNR
DEC	DPS
DFG	REV
GOV	DOT
DHS	UA

NEW FISCAL NOTE(S)				
Dept.	Fiscal	Indet.	Zero	FN #
DPS	✓		✓	
DHS	✓			
DEC	✓			

PREVIOUS FISCAL NOTE(S)				
Dept.	Fiscal	Indet.	Zero	FN #

[ ] **APPROPRIATION - no fiscal note**

SIGNATURES AND RECOMMENDATIONS:	PRINTED LAST NAME	DO PASS	DO NOT PASS	NO REC	AMEND
	Meyer			✓	
	Ellis	✓			
	EGAN	X			
CHAIR:	DAVIS	X			

27-LS0300\B
Bannister
2/23/11

CS FOR SENATE BILL NO. 27( )

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-SEVENTH LEGISLATURE - FIRST SESSION

BY

Offered:
Referred:

Sponsor(s): SENATOR WIELECHOWSKI

A BILL

FOR AN ACT ENTITLED

"An Act relating to flame retardants and to the manufacture, sale, and distribution of products containing flame retardants; relating to a multistate chemicals clearinghouse; and providing for an effective date."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* **Section 1.** AS 18.31 is amended by adding new sections to read:

Article 4. Chemicals in Products.

Sec. 18.31.600. Prohibitions. (a) A person may not manufacture, sell, or distribute a product if one or more components of the product contains more than 0.1 percent by mass of pentaBDE, octaBDE, or a combination of pentaBDE and octaBDE.

(b) A person may not manufacture, sell, or distribute a mattress, a mattress pad, or upholstered furniture if one or more components of the mattress, mattress pad, or upholstered furniture contains more than 0.1 percent by mass of decaBDE.

(c) A person may not manufacture, sell, or distribute an electronic product if the electronic product has a plastic housing or other external component that contains

more than 0.1 percent by mass of decaBDE.

(d) A person may not manufacture, sell, or distribute a product that is prohibited by the department under AS 18.31.610.

Sec. 18.31.610. Prohibition by department. (a) The department may prohibit by regulation the manufacture, sale, and distribution of a product that contains a flame retardant that is not already prohibited under AS 18.31.600(a) - (c), if the department determines that

(1) the flame retardant is harmful to public health or the environment; and

(2) an alternative to the flame retardant exists, is safer for the public health or the environment, and is available on a nationwide basis.

(b) Before establishing a prohibition under (a) of this section, the department shall consult with the Department of Health and Social Services, and the state fire marshal shall determine that the flame retardant alternative identified in (a)(2) of this section satisfies applicable fire safety standards.

(c) In this section, "product" means

(1) a mattress, a mattress pad, or upholstered furniture if the mattress, mattress pad, or upholstered furniture contains plastic fibers that contain the flame retardant; or

(2) an electronic product that has a plastic housing that contains the flame retardant.

Sec. 18.31.620. Exemptions. The prohibitions in AS 18.31.600 do not apply if the product that is prohibited is part of

(1) a transportation vehicle or a product or part used in a transportation vehicle or transportation equipment;

(2) a product or equipment used in an industrial, mining, or manufacturing process;

(3) electronic wiring or cable used for power transmission;

(4) a used item that is resold; or

(5) a new item that is brought into the state before the effective date of this section.

Sec. 18.31.630. Notification by manufacturer. A person who manufactures products whose sale and distribution are prohibited by AS 18.31.600 shall inform its retailers in the state of the prohibitions under AS 18.31.600 and the penalty under AS 18.31.650.

Sec. 18.31.640. Enforcement. If the department determines that there are grounds to suspect that a retailer is selling a product in violation of AS 18.31.600, the department may request that, within 10 days, the manufacturer of the product

(1) provide the department with a sworn certificate indicating that the sale of the product does not violate AS 18.31.600; or

(2) notify each retailer who sells the product in the state that the sale of the product is prohibited by AS 18.31.600 and provide the department with a list of the names and addresses of the retailers notified.

Sec. 18.31.650. Civil penalty. A person who violates AS 18.31.600 - 18.31.640 is liable to the state for a civil penalty of up to $1,000 for each violation.

Sec. 18.31.660. Multistate chemicals clearinghouse. The department shall participate in a multistate chemicals clearinghouse to

(1) build governmental capacity to identify and promote safer chemicals and products;

(2) avoid duplication of state initiatives on chemicals and enhance the efficiency and effectiveness of state initiatives on chemicals through collaboration and coordination;

(3) ensure that state agencies, businesses, and the public have easy access to high quality and authoritative information on chemicals.

Sec. 18.31.670. Regulations. In addition to the regulations allowed under AS 18.31.610, the department may adopt regulations to implement AS 18.31.600 - 18.31.690. The department shall adopt the regulations for AS 18.31.600 - 18.31.690 under AS 44.62 (Administrative Procedure Act).

Sec. 18.31.690. Definitions for AS 18.31.600 - 18.31.690. In AS 18.31.600 - 18.31.690, unless the context indicates otherwise,

(1) "congener" means a specific polybromodiphenyl ether molecule;

(2) "decaBDE" means decabromodiphenyl ether or a technical mixture

in which decabromodiphenyl ether is the predominant congener;

(3) "department" means the Department of Environmental Conservation;

(4) "distribution" means distribution for sale or for a commercial purpose;

(5) "electronic product" means a television, a computer, or another piece of electronic equipment;

(6) "flame retardant" means a chemical that is added to plastic, foam, or a textile to inhibit flame formation;

(7) "manufacture" means manufacture for sale;

(8) "manufacturer" means a person who

(A) manufactures a product or whose brand name is affixed to the product; or

(B) imports or distributes a product in the United States if the person who manufactured or assembled the product or whose brand name is affixed to the product does not do business in the United States;

(9) "octaBDE" means octabromodiphenyl ether or a technical mixture in which octabromodiphenyl ether is the predominant congener;

(10) "pentaBDE" means pentabromodiphenyl ether or a technical mixture in which pentabromodiphenyl ether is the predominant congener;

(11) "sell" includes an offer to sell;

(12) "technical mixture" means a mixture that is named for the predominant congener and that is not exclusively composed of the predominant congener;

(13) "transportation vehicle" means a mechanized vehicle that is used to transport goods or individuals, and includes an airplane, an automobile, a motorcycle, a truck, a bus, a train, and a ship.

*** Sec. 2.** The uncodified law of the State of Alaska is amended by adding a new section to read:

TRANSITION: REGULATIONS. The Department of Environmental Conservation may adopt regulations necessary to implement this Act. The regulations take effect under

AS 44.62 (Administrative Procedure Act), but not before the effective date of the statutory changes.

*** Sec. 3.** The uncodified law of the State of Alaska is amended by adding a new section to read:

REVISOR'S INSTRUCTION. Wherever "chapter" appears in AS 18.31.010 - 18.31.500, the revisor of statutes shall substitute "AS 18.31.010 - 18.31.500."

*** Sec. 4.** AS 18.31.660, enacted by sec. 1 of this Act, and sec. 2 of this Act take effect immediately under AS 01.10.070(c).

*** Sec. 5.** Except as provided in sec. 4 of this Act, this Act takes effect January 1, 2013.

FISCAL NOTE

STATE OF ALASKA
2011 LEGISLATIVE SESSION

Fiscal Note Number
Bill Version: **27-LS0300\A**
() Publish Date

Identifier (file name) SB027-DEC-SWM-2-8-11
Title: Flame Retardants and Toxic Chemicals
Sponsor: Senator Wielechowski
Requester: Senate Health and Social Services Committee

Dept. Affected: Environmental Conser
Appropriation: Environmental Health
Allocation: Solid Waste Management
OMB Component Number: 2344

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	Appropriation Required	Information					
OPERATING EXPENDITURES	**FY 2012**	**FY 2012**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**
Personal Services	289.7		289.7	289.7	289.7	289.7	289.7
Travel	13.0		13.0	13.0	13.0	13.0	13.0
Services	60.0		60.0	60.0	60.0	60.0	60.0
Commodities	25.0		2.5	2.5	2.5	2.5	2.5
Capital Outlay	0.0		0.0	0.0	0.0	0.0	0.0
Grants	0.0		0.0	0.0	0.0	0.0	0.0
Miscellaneous	0.0		0.0	0.0	0.0	0.0	0.0
TOTAL OPERATING	**387.7**	**0.0**	**365.2**	**365.2**	**365.2**	**365.2**	**365.2**
CAPITAL EXPENDITURES							
CHANGE IN REVENUES							

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts	0.0		0.0	0.0	0.0	0.0	0.0
1003 GF Match	0.0		0.0	0.0	0.0	0.0	0.0
1004 GF	387.7		365.2	365.2	365.2	365.2	365.2
1005 GF/Program Receipts	0.0		0.0	0.0	0.0	0.0	0.0
1037 GF/Mental Health	0.0		0.0	0.0	0.0	0.0	0.0
Other (please identify)	0.0		0.0	0.0	0.0	0.0	0.0
TOTAL	**387.7**	**0.0**	**365.2**	**365.2**	**365.2**	**365.2**	**365.2**

Estimate of any current year (FY2011) cost

POSITIONS

Full-time	**3.0**		3.0	3.0	3.0	3.0	3.0
Part-time	0.0		0.0	0.0	0.0	0.0	0.0
Temporary	0.0		0.0	0.0	0.0	0.0	0.0

Why this fiscal note differs from previous version (if initial version, please note as such)

Not applicable, initial version.

Prepared by: Kristin Ryan, Director — Phone: 907-269-7645
Division: Environmental Health — Date/Time: 2/8/11 9:30 AM
Approved by: Dan Easton — Date: 2/18/2011
Deputy Commissioner

(Revised 1/27/2011 OMB)

FISCAL NOTE

STATE OF ALASKA
2011 LEGISLATIVE SESSION

BILL NO. SB27

Analysis

The prohibition and regulation of products containing flame retardants will require significant outreach because we do not regulate or interact with these businesses currently. In addition, a public campaign to educate the public about brominated flame retardants and the risks associated with them would be necessary. A publication specialist will manage the outreach process and a toxicologist will evaluate the data and develop the regulations and list of persistent bioaccumulative toxic chemicals and update that list every three years. The research analyst will maintain statewide statistical information on those toxins.

FISCAL NOTE

STATE OF ALASKA
2011 LEGISLATIVE SESSION

Fiscal Note Number:
Bill Version: **SB027**
() Publish Date:

Identifier (file name): SB027-DHSS-EPI-02-18-11
Title: Flame Retardants and Toxic Chemicals
Sponsor: Sen. Bill Wielechowski
Requester: Senate HSS Committee

Dept. Affected: Health and Social Services
Appropriation: Public Health
Allocation: Epidemiology
OMB Component Number: 296

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	Appropriation Required	Information					
OPERATING EXPENDITURES	**FY 2012**	**FY 2012**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**
Personal Services	26.0		26.0				
Travel							
Services							
Commodities	0.5		0.5				
Capital Outlay							
Grants							
Miscellaneous							
TOTAL OPERATING	**26.5**	**0.0**	**26.5**	**0.0**	**0.0**	**0.0**	**0.0**
CAPITAL EXPENDITURES							
CHANGE IN REVENUES							

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts							
1003 GF Match							
1004 GF	26.5		26.5				
1005 GF/Program Receipts							
1037 GF/Mental Health							
Other (please identify)							
TOTAL	**26.5**	**0.0**	**26.5**	**0.0**	**0.0**	**0.0**	**0.0**

Estimate of any current year (FY2011) cost:

POSITIONS

Full-time							
Part-time							
Temporary							

Why this fiscal note differs from previous version (if initial version, please note as such)

Not Applicable. Initial version.

Prepared by: Ward B. Hurlburt, MD, MPH - Chief Medical Officer / Director — Phone 269-6680
Division: Public Health — Date/Time 2/18/11 5:00 PM
Approved by: Alison Elgee, Assistant Commissioner — Date 2/18/2011
DHSS Finance & Management Services

(Revised 1/27/2011 OMB)

FISCAL NOTE

STATE OF ALASKA **BILL NO.** SB027
2011 LEGISLATIVE SESSION

Analysis:

This bill requires the Department of Environmental Conservation (DEC) to work with the Department of Health & Social Services (DHSS) to establish a list of persistent bioaccumulative toxic chemicals that occur or are used in products used by human beings. DEC would seek consultation from DHSS in two situations when: (1) proposing to prohibit a flame retardant under Section 18.31.610; and (2) establishing a list every three years of persistent bioaccumulative toxic chemicals that occur or are used in products used by human beings, under Section 18.31.680. Additionally, DHSS and DEC would perform a one-time review of brominated flame retardants under Section 18.31.670. These environmental health efforts will require a total appropriation of $26.5 GF. This will not require a new position, as the work will be done by an existing position that is only partially funded. Personal Services for 0.25 FTE Health Program Manager III will be $26.0. The additional cost of $0.5 is for office supplies. No travel or equipment costs are expected. It is anticipated this project will not take more than two years to complete.

FISCAL NOTE

STATE OF ALASKA
2011 LEGISLATIVE SESSION

Fiscal Note Number
Bill Version: **SB027**
() Publish Date

	SB027-DPS-FLS-02-18-11	Dept. Affected	Public Safety
Title	"An Act relating to flame retardants and to the manufacture, sale...bioaccumulative toxic chemicals"	Appropriation	Fire and Life Safety
		Allocation	Fire and Life Safety Operations
Sponsor	Senator Wielechowski		
Requester	Senate Health & Social Services	OMB Component Number	2883

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	Appropriation Required	Information					
OPERATING EXPENDITURES	**FY 2012**	**FY 2012**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**
Personal Services							
Travel							
Services							
Commodities							
Capital Outlay							
Grants							
Miscellaneous							
TOTAL OPERATING	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
CAPITAL EXPENDITURES							
CHANGE IN REVENUES							

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts							
1003 GF Match							
1004 GF							
1005 GF/Program Receipts							
1037 GF/Mental Health							
Other (please identify)							
TOTAL	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Estimate of any current year (FY2011) cost

POSITIONS

Full-time	**0.0**						
Part-time							
Temporary							

Why this fiscal note differs from previous version (if initial version, please note as such)

Not applicable; initial version

Prepared by: David L. Tyler, State Fire Marshal — Phone: (907) 269-5491
Division: Fire & Life Safety — Date/Time: 2/18/11 12 00 PM
Approved by: Joseph A Masters — Date: 2/19/2011
Commissioner

(Revised 1/27/2011 OMB)

FISCAL NOTE

STATE OF ALASKA
2011 LEGISLATIVE SESSION

BILL NO. SB027

Analysis

If passed, this legislation requires the state fire marshal ensure the flame retardant alternative satisfies applicable fire safety standards.

Passage of this legislation will have no fiscal impact on the division of Fire and Life Safety.

Celeste Hodge

From: Laughlin, Wilda J (HSS) [wilda.laughlin@alaska.gov]
Sent: Friday, February 18, 2011 12:57 PM
To: Karla Hart; Celeste Hodge
Cc: McLaughlin, Joseph B (HSS); Lewis, Jill (HSS); Ryan, Kristin J (DEC); Carlson-Van Dort, Marit K (DEC)
Subject: SB 27//flame retardant//HSS game plan

This is to let you know that Nim Ha, an education specialist in the DHSS Division of Public Health, will be available for questions regarding SB 27 at Monday's Senate HSS hearing. She will be participating from the Anchorage LIO.

w.

Wilda J. Laughlin
Legislative Liaison, Dept. of Health and Social Services
Phone (907) 465-1613
Fax (907) 465-3068
Cell (907) 723-3802

CS FOR SENATE BILL NO. 27(HSS)

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-SEVENTH LEGISLATURE - FIRST SESSION

BY THE SENATE HEALTH AND SOCIAL SERVICES COMMITTEE

Offered:
Referred:

Sponsor(s): SENATOR WIELECHOWSKI

A BILL

FOR AN ACT ENTITLED

"An Act relating to flame retardants and to the manufacture, sale, and distribution of products containing flame retardants; relating to a multistate chemicals clearinghouse; and providing for an effective date."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* **Section 1.** AS 18.31 is amended by adding new sections to read:

Article 4. Chemicals in Products.

Sec. 18.31.600. Prohibitions. (a) A person may not manufacture, sell, or distribute a product if one or more components of the product contains more than 0.1 percent by mass of pentaBDE, octaBDE, or a combination of pentaBDE and octaBDE.

(b) A person may not manufacture, sell, or distribute a mattress, a mattress pad, or upholstered furniture if one or more components of the mattress, mattress pad, or upholstered furniture contains more than 0.1 percent by mass of decaBDE.

(c) A person may not manufacture, sell, or distribute an electronic product if the electronic product has a plastic housing or other external component that contains

more than 0.1 percent by mass of decaBDE.

(d) A person may not manufacture, sell, or distribute a product that is prohibited by the department under AS 18.31.610.

Sec. 18.31.610. Prohibition by department. (a) The department may prohibit by regulation the manufacture, sale, and distribution of a product that contains a flame retardant that is not already prohibited under AS 18.31.600(a) - (c), if the department determines that

(1) the flame retardant is harmful to public health or the environment; and

(2) an alternative to the flame retardant exists, is safer for the public health or the environment, and is available on a nationwide basis.

(b) Before establishing a prohibition under (a) of this section, the department shall consult with the Department of Health and Social Services, and the state fire marshal shall determine that the flame retardant alternative identified in (a)(2) of this section satisfies applicable fire safety standards.

(c) In this section, "product" means

(1) a mattress, a mattress pad, or upholstered furniture if the mattress, mattress pad, or upholstered furniture contains plastic fibers that contain the flame retardant; or

(2) an electronic product that has a plastic housing that contains the flame retardant.

Sec. 18.31.620. Exemptions. The prohibitions in AS 18.31.600 do not apply if the product that is prohibited is part of

(1) a transportation vehicle or a product or part used in a transportation vehicle or transportation equipment;

(2) a product or equipment used in an industrial, mining, or manufacturing process;

(3) electronic wiring or cable used for power transmission;

(4) a used item that is resold; or

(5) a new item that is brought into the state before the effective date of this section.

Sec. 18.31.630. Notification by manufacturer. A person who manufactures products whose sale and distribution are prohibited by AS 18.31.600 shall inform its retailers in the state of the prohibitions under AS 18.31.600 and the penalty under AS 18.31.650.

Sec. 18.31.640. Enforcement. If the department determines that there are grounds to suspect that a retailer is selling a product in violation of AS 18.31.600, the department may request that, within 10 days, the manufacturer of the product

(1) provide the department with a sworn certificate indicating that the sale of the product does not violate AS 18.31.600; or

(2) notify each retailer who sells the product in the state that the sale of the product is prohibited by AS 18.31.600 and provide the department with a list of the names and addresses of the retailers notified.

Sec. 18.31.650. Civil penalty. A person who violates AS 18.31.600 - 18.31.640 is liable to the state for a civil penalty of up to $1,000 for each violation.

Sec. 18.31.660. Multistate chemicals clearinghouse. The department shall participate in a multistate chemicals clearinghouse to

(1) build governmental capacity to identify and promote safer chemicals and products;

(2) avoid duplication of state initiatives on chemicals and enhance the efficiency and effectiveness of state initiatives on chemicals through collaboration and coordination;

(3) ensure that state agencies, businesses, and the public have easy access to high quality and authoritative information on chemicals.

Sec. 18.31.670. Regulations. In addition to the regulations allowed under AS 18.31.610, the department may adopt regulations to implement AS 18.31.600 - 18.31.690. The department shall adopt the regulations for AS 18.31.600 - 18.31.690 under AS 44.62 (Administrative Procedure Act).

Sec. 18.31.690. Definitions for AS 18.31.600 - 18.31.690. In AS 18.31.600 - 18.31.690, unless the context indicates otherwise,

(1) "congener" means a specific polybromodiphenyl ether molecule;

(2) "decaBDE" means decabromodiphenyl ether or a technical mixture

in which decabromodiphenyl ether is the predominant congener;

(3) "department" means the Department of Environmental Conservation;

(4) "distribution" means distribution for sale or for a commercial purpose;

(5) "electronic product" means a television, a computer, or another piece of electronic equipment;

(6) "flame retardant" means a chemical that is added to plastic, foam, or a textile to inhibit flame formation;

(7) "manufacture" means manufacture for sale;

(8) "manufacturer" means a person who

(A) manufactures a product or whose brand name is affixed to the product; or

(B) imports or distributes a product in the United States if the person who manufactured or assembled the product or whose brand name is affixed to the product does not do business in the United States;

(9) "octaBDE" means octabromodiphenyl ether or a technical mixture in which octabromodiphenyl ether is the predominant congener;

(10) "pentaBDE" means pentabromodiphenyl ether or a technical mixture in which pentabromodiphenyl ether is the predominant congener;

(11) "sell" includes an offer to sell;

(12) "technical mixture" means a mixture that is named for the predominant congener and that is not exclusively composed of the predominant congener;

(13) "transportation vehicle" means a mechanized vehicle that is used to transport goods or individuals, and includes an airplane, an automobile, a motorcycle, a truck, a bus, a train, and a ship.

*** Sec. 2.** The uncodified law of the State of Alaska is amended by adding a new section to read:

TRANSITION: REGULATIONS. The Department of Environmental Conservation may adopt regulations necessary to implement this Act. The regulations take effect under

AS 44.62 (Administrative Procedure Act), but not before the effective date of the statutory changes.

* **Sec. 3.** The uncodified law of the State of Alaska is amended by adding a new section to read:

REVISOR'S INSTRUCTION. Wherever "chapter" appears in AS 18.31.010 - 18.31.500, the revisor of statutes shall substitute "AS 18.31.010 - 18.31.500."

* **Sec. 4.** AS 18.31.660, enacted by sec. 1 of this Act, and sec. 2 of this Act take effect immediately under AS 01.10.070(c).

* **Sec. 5.** Except as provided in sec. 4 of this Act, this Act takes effect January 1, 2013.

FISCAL NOTE

STATE OF ALASKA
2011 LEGISLATIVE SESSION

Fiscal Note Number:
Bill Version: SB052
() Publish Date:

Identifier (file name): SB052-DHSS-BHMS-02-25-11
Title: Mental Health Care Insurance Benefit
Sponsor: Davis
Requester: Senate HSS Committee

Dept. Affected: Health and Social Services
Appropriation: Medicaid Services
Allocation: Behavioral Health
Medicaid Services
OMB Component Number: 2660

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	Appropriation Required	Information					
OPERATING EXPENDITURES	**FY 2012**	**FY 2012**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**
Personal Services							
Travel							
Services							
Commodities							
Capital Outlay							
Grants							
Miscellaneous							
TOTAL OPERATING	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
CAPITAL EXPENDITURES							
CHANGE IN REVENUES	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts							
1003 GF Match							
1004 GF							
1005 GF/Program Receipts							
1037 GF/Mental Health							
Other (please identify)							
TOTAL	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Estimate of any current year (FY2011) cost: 0.0

POSITIONS

Full-time							
Part-time							
Temporary							

Why this fiscal note differs from previous version (if initial version, please note as such)

Not applicable, initial version

Prepared by: Melissa W Stone — Phone 269-3410
Division: Behavioral Health — Date/Time 2/14/11 2:30PM
Approved by: Alison Elgee, Assistant Commissioner — Date 2/25/2011
DHSS Finance & Management Services

(Revised 1/27/2011 OMB)

FISCAL NOTE

STATE OF ALASKA
2011 LEGISLATIVE SESSION

BILL NO. SB052

Analysis:

Health plans have often treated mental health and substance abuse treatment services differently than they have medical and surgical benefits. This bill defines medical care to include mental health care or care for an alcoholism or substance abuse disorder and requires parity between health care insurance coverage for mental health, alcoholism, substance abuse benefits and other medical care benefits in order to prohibit benefit or service limitations that are more restrictive or financially burdensome.

Assumptions:

The Division of Behavioral Health believes that although the State Medicaid programs under our supervision will experience some minor relief as services are covered through private insurance rather than the state's Medicaid Program, the effect would be offset by increased premiums for group health insurance. Responses to this increase would include reductions in the number of employers offering insurance to their employees and in the number of employees enrolling in employer-sponsored insurance, changes in the types of health plans that are offered (including eliminating coverage for mental health benefits and/or substance benefits), and reductions in the scope of generosity of health insurance benefits, such as increased deductibles or higher copayments.

FISCAL NOTE

STATE OF ALASKA
2011 LEGISLATIVE SESSION

Fiscal Note Number:
Bill Version: **SB052**
() Publish Date:

Identifier (file name): SB052-DHSS-BHMS-02-25-11
Title: Mental Health Care Insurance Benefit
Sponsor: Davis
Requester: Senate HSS Committee

Dept. Affected: Health and Social Services
Appropriation: Medicaid Services
Allocation: Behavioral Health
Medicaid Services
OMB Component Number: 2660

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	Appropriation Required	Information					
OPERATING EXPENDITURES	**FY 2012**	**FY 2012**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**
Personal Services							
Travel							
Services							
Commodities							
Capital Outlay							
Grants							
Miscellaneous							
TOTAL OPERATING	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
CAPITAL EXPENDITURES							
CHANGE IN REVENUES	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts							
1003 GF Match							
1004 GF							
1005 GF/Program Receipts							
1037 GF/Mental Health							
Other (please identify)							
TOTAL	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Estimate of any current year (FY2011) cost: 0.0

POSITIONS

Full-time							
Part-time							
Temporary							

Why this fiscal note differs from previous version (if initial version, please note as such)

Not applicable, initial version

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SB 27

An Act Relating to Flame Retardants

Changes from 27-LS0300\M to version _____

The first changes make enforcement easier by clarifying the limit of PBDE by mass applies to each individual component. Technology exists to quickly test components of products without damage to identify if any bromines are present at the stated 0.1 percent.

Page 1, line 8 clarifies that **no component of a product** may contain more than 0.1 percent by mass

line 12 changes "a textile component" to "any component"

line 14 changes to: "a plastic housing or other external component that contains..." to account for parts of an electronic product, not just the housing, that someone may come into contact with in the routine use of the product, such as handles and knobs.

Page 3, lines 5-6. Deletes **Sec. 18.31.640. Retailer Assistance.**

Lines 17-23. Deletes **Sec. 18.31.670. Review by departments.**

Lines 24-Page 4, line 4. Deletes **Sec. 18.31.680. List of Toxic Chemicals.**

Page 4, lines 5-11. **Sec. 18.31.690. Interstate clearinghouse.** Requires the department to participate in the interstate clearinghouse and provides reasons.

The department shall participate in a multi-state chemicals clearinghouse to:

- Avoid duplication and enhance efficiency and effectiveness of agency initiatives on chemicals through collaboration and coordination
- Build governmental capacity to identify and promote safer chemicals and products
- Ensure that agencies, businesses, and the public have ready access to high quality and authoritative chemicals data, information, and assessment methods

The new bill provides for an immediate effective date for participation in the Interstate Clearinghouse.

The new bill renumbers sections to account for changes.

Prepared by Karla Hart, Aide to Senator Wielechowski, 2/24/2011

SB 27

An Act Relating to Flame Retardants

Changes from 27-LS0300\M to version B

➔ The first changes make enforcement easier by clarifying the limit of PBDE by mass applies to each individual component. Technology exists to quickly test components of products without damage to identify if any bromines are present at the stated 0.1 percent.

Page 1, line 8 and 12[1] clarifies that **no component of a product** may contain more than 0.1 percent by mass

line 14 changes to: "a plastic housing or other external component that contains..." to account for parts of an electronic product, not just the housing, that someone may come into contact with in the routine use of the product, such as handles and knobs.

➔ Three sections are deleted:

Page 3, lines 5-6. **Sec. 18.31.640. Retailer Assistance.**

Lines 17-23. **Sec. 18.31.670. Review by departments.**

Lines 24-Page 4, line 4. **Sec. 18.31.680. List of Toxic Chemicals.**

➔ And replaced with required participation in an interstate chemical clearinghouse which will more efficiently accomplish some of the review and list functions deleted above.

Page 4, lines 5-11. **Sec. 18.31.690. Interstate clearinghouse.** The department shall participate in a multi-state chemicals clearinghouse to:

- Avoid duplication and enhance efficiency and effectiveness of agency initiatives on chemicals through collaboration and coordination
- Build governmental capacity to identify and promote safer chemicals and products
- Ensure that agencies, businesses, and the public have ready access to high quality and authoritative chemicals data, information, and assessment methods

➔ The new bill provides for an immediate effective date for participation in the Interstate Clearinghouse.

The new bill renumbers sections to account for changes.

Prepared by Karla Hart, Aide to Senator Wielechowski, 2/25/2011

[1] Page and line numbers refer to version \M.