CPSC MEETING LOG

Date: September 29, 2009

Meeting Between: Commissioner Robert Adler and Dr. Arlene Blum, Univ. of California / Berkeley

Meeting Topic: Flame Retardant Chemicals and Flammability Standards

Filed By: Dale Ray, EC, Project Mgr., Upholstered Furniture

Attendees:

Commissioner Adler
Arlene Blum, Univ. of Calif.
Chris Hudgins, Int'l. Sleep Products Ass'n.
Philip Wakelyn, Nat'l. Cotton Council
Sean Oberle, Product Safety Letter
Dale Ray, CPSC staff

Summary:

Dr. Blum made a presentation on 'The Flame Retardant Dilemma,' in which she discussed her views of potential health and environmental risks posed by the use of various flame retardant (FR) chemicals, including brominated FRs (and particularly polybrominated diphenyl ethers, or PBDEs) and certain chlorinated FRs (particularly chlorinated tris). Her general position is that fire safety is better served by targeting regulations at ignition sources, e.g., cigarettes, candles, etc., rather than by requiring or encouraging the use of FRs in products involved in ignitions. She praised state initiatives to require reduced ignition propensity cigarettes and to restrict some FR compounds. She expressed general support for CPSC's recent mattress rule (16 CFR 1633) and proposed upholstered furniture rule (pr. 16 CFR 1634), since compliance with these rules could be achieved without FR additives in fabrics, urethane foam fillings or other upholstery materials.

Dr. Blum discussed various aspects of EPA's regulatory authority and activities on FR chemicals, and generally characterized EPA's actions as insufficient. She mentioned a number of FRs considered for production limitations or other controls at the Stockholm Convention, and expressed concern that increasing numbers of products from China might continue nonetheless to use 'prohibited' FRs, particularly penta – BDE and chlorinated tris, to meet existing regulations such as California's Technical Bulletin 117. She stated that these FR products constitute a significant 'legacy problem' for consumers in California and elsewhere. Prominent among these products were upholstered furniture and foam-containing baby products like strollers, baby seats and crib pads. She also expressed concern about the use of these FRs in carpet cushion. A further concern was the impact of FR usage on firefighter safety, in relation to the potential for dioxin or

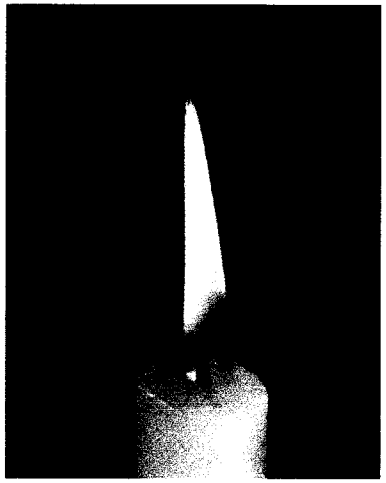
furans that could be released from burning FR products. Her overall conclusion was that TB-117 has not, on balance, been useful in addressing product flammability hazards.

Dr. Blum expressed concern over the relative lack of toxicity and exposure data for the current substitutes for the FRs she cited (some PBDEs and Chlorinated FRs have been the subject of EPA regulatory action). She mentioned some results from the EPA's Design for the Environment (DfE) program on FRs that echoed these concerns about limited data. She claimed partial credit for defeating a 2002 International Electrical Code proposal that would have increased FR usage in the plastic cabinets of TVs, computers and other electronic products. She also cautioned against positions taken by the National Association of State Fire Marshals (NASFM, an organization she characterized as being founded with support of the tobacco and chemical producing industries) and the Californians for Fire Safety, an organization she stated was a chemical industry group and was responsible for defeating a recent California Assembly bill (A.B. 706) to restrict FR usage.

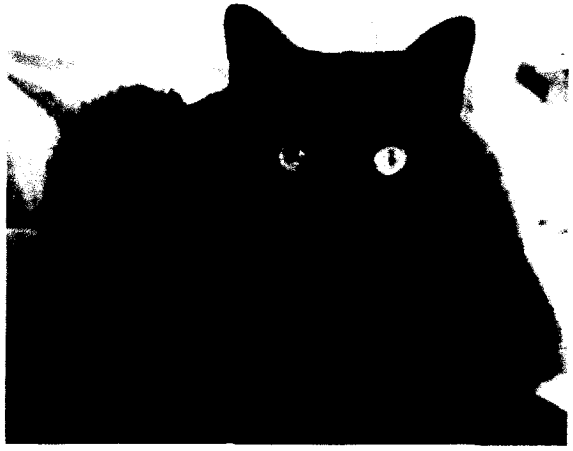
In response to some discussion about FRs in upholstery materials, Mr. Ray noted that CPSC's 2008 proposed rule on furniture would not require (or prohibit) the use of any FRs, and that textile and furniture manufacturers had reported that they would not likely use FR treatments to comply.

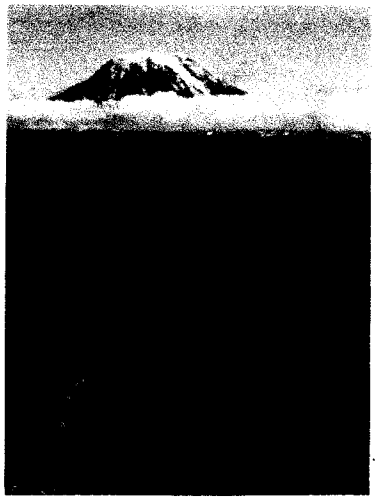
In response to a number of questions from Commissioner Adler, Dr. Blum and Dr. Wakelyn discussed several elements of Dr. Blum's presentation. She concluded by saying she was not seeking any specific action on the part of the Commission on FRs, but rather she wanted the agency to be aware of the continuing research about the use of certain FRs, including consumer product applications.

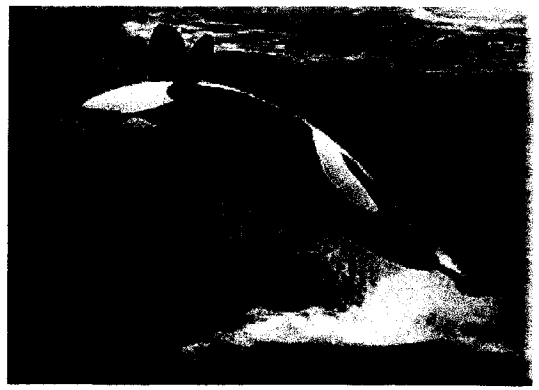
Dr. Blum agreed to send electronic copies of or web links to her presentation and related materials. These materials will be made available to interested parties. Some of these, and additional information on this topic, are posted on the web site of Dr. Blum's organization, the Green Science Policy Institute (www.greensciencepolicy.org).



The Fire Retardant Dilemma







www.greensciencepolicy.org

arlene@arleneblum.com 510 644 3164

A Problem: Most Chemicals aren't Effectively Regulated in the U.S.

The U.S. Toxic Substances Control Act (1976)

- 62,000 chemicals in commerce "grandfathered"
- 20,000 new chemicals have been introduced
  85% have no health data; 67% no data at all

Michael Wilson, *Green Chemistry in California*: http://coeh.berkeley.edu/news/06_wilson_policy.htm

Brominated Tris Flame Retardant

Tris (2,3-dibromopropyl) phosphate

- Used to treat U.S. children's sleepwear from 1975 to 1977.
- Up to 10% of the weight of fabric
- Not covalently bonded to fabric
- Absorbed in children's bodies; metabolite found in their urine

Science, January 7, 1977

Flame-Retardant Additives as Possible Cancer Hazards

The main flame retardant in children's pajamas is a mutagen and should not be used.

Arlene Blum and Bruce N. Ames

Thousands of chemicals to which humans have been exposed have been introduced into the environment without adequate toxicological testing.

Some chemical flame retardants provide a good example of a technological innovation where adverse environmental effects may outweigh some of the benefits.

Until recently, little attention was paid to the long-term biological effects of these flame-retardant compounds. The main organic chemicals used in flame retardants contain bromine or chlorine or they are phosphate esters. Some have chemical structures (discussed below) that are closely related to compounds known to cause cancer or to be toxic to animals. Several compounds previously used as flame retardants have been shown to be teratogenic, carcinogenic, mutagenic, or highly toxic (*4*).

CPSC Bans TRIS-Treated Children's Garments

FOR IMMEDIATE RELEASE

April 7, 1977

Another Flame Retardant, Tris-(1,3-Dichloro-2-Propyl)-Phosphate, and Its Expected Metabolites Are Mutagens

Abstract. *A flame retardant used in children's sleepwear, tris-(1,3-dichloro-2-propyl)phosphate (Fyrol FR2) is a mutagen in the* Salmonella-*mammalian tissue homogenate test after it has been activated by mouse or rat liver homogenate. The expected enzymatic hydrolysis product, 1,3-dichloro-2-propanol, is similarly a mutagen after activation by liver homogenate. A proposed metabolite of the flame retardant, 1,3-dichloro-2-propanone, is a potent mutagen in the absence of such activation. A flame retardant with similar structure, tris-(2,3-dibromopropyl)phosphate (tris-BP), was shown previously to be a mutagen, to cause sterility in animals, to be a carcinogen, and to be absorbed through human skin. These and other flame retardants have characteristic nuclear magnetic resonance spectra that can be used to determine which flame retardant is present in commercially purchased sleepwear. Sleepwear treated with tris-BP, Fyrol FR2, and other chemical additives was being sold in late 1977.*

Science, 1978

The Fire Retardant Dilemma Part IX

January 29, 2010 at UC Berkeley

Asa Bradman, UC Berkeley, ***PBDE exposure and health effects in pregnant women and children.***

Margarita C. Curras-Collazo, Ph.D, UC Riverside
New information on how exposure to fire retardant chemicals before birth can permanently harm the neuroendocrine system, body water regulation, and cardiovascular function

David Epel, Ph.D., Stanford University
Ancient Cellular Toxic Defense Meets a New World of Chemical

Sarah Janssen, PhD, MD, MPH, Natural Resources Defense Council
Exposure to and Health Effects of Halogenated Fire Retardants

Myrto Petreas, Ph.D., MPH, Chief, Environmental Chemistry Branch, DTSC
Where have all PBDEs gone? To people, wildlife, and waste streams everywhere. When will we ever learn?

Heather Stapleton, Ph.D, Duke Universit
Human Exposure to Brominated Fire Retardants in Indoor Environments

NIEHS
National Institute of
Environmental Health Sciences

An Overview of Research on Halogenated Fire Retardants

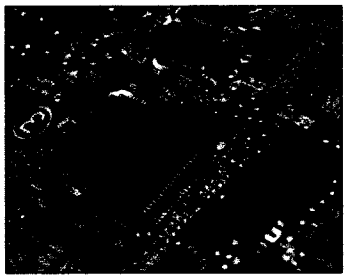
Linda S. Birnbaum, Ph.D., D.A.B.T., A.T.S.
Director
National Institute of Environmental Health Sciences/NIH
National Toxicology Program

Beijing, China – August 22, 2009

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health

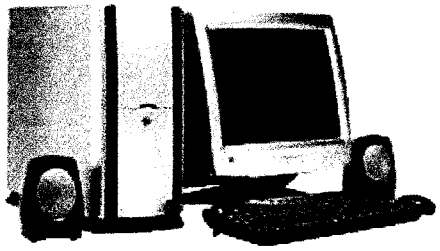
Three Examples of Fire Retardants of Concern and the Research on Their Health Effects

- TBBPA, primarily used in electronics/circuit boards



- HBCD, used in electronics, textile backings, and as thermal insulation in buildings

- PBDEs, is or has been used in polymers, electronic equipment, textile backing, and flexible polyurethane foam



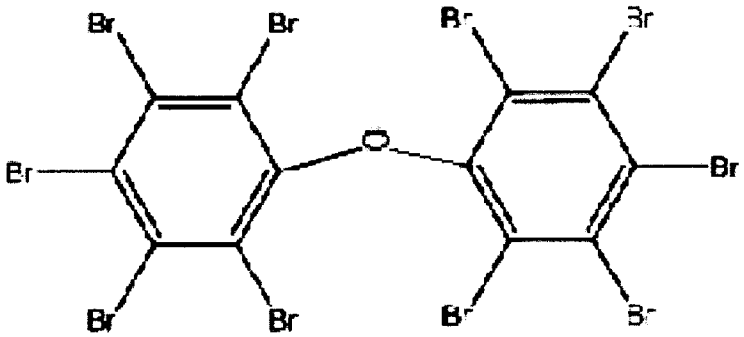
PBDE Effects in People

- Cryptorchidism (undescended testicles)
- Reproductive hormone effects – decrease in androgens, increase in FSH and Inhibin
- Increase in testosterone (BDE-47)
- Decrease in sperm quality
- Diabetes
- Thyroid Homeostasis – decrease TSH, decrease TT3, elevated T4, elevated rT3

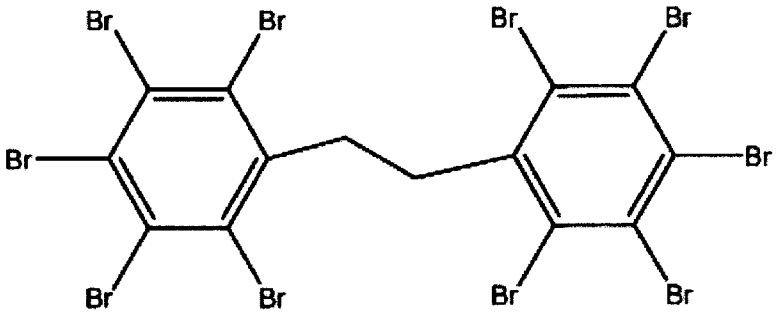
Developmental Effects of DBDE

- Developmental Reproductive Toxicity – decrease in sperm function, increase in oxidative stress
- Developmental Immunotoxcity – continuous exposure to high-dose PBDE-209 in female rats during pregnancy and lactation results in possible adverse effect on the immune function of offspring
- Changes in lymphocyte subsets
- Developmental Neurotoxicity – permanent effects on behavior, learning and memory

Deca ether replaced by Deca ethane



Decabromodiphenyl ether



Decabromodiphenyl ethane

December 3, 2008

Glut of data on "new" flame retardant documents its presence all over the world

Now that DBDPE has been detected in more than a dozen species of animals in Asia and North America, scientists are calling for more research into its toxicology.

Regulation of Brominated Flame Retardants

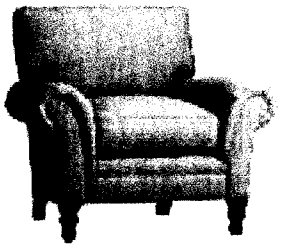
- TBBPA – not regulated
- HBCD banned in Norway, European Union "SVHC"
- PBDEs – Penta/Octa Commercial Products – voluntarily withdrawn in U.S. at end of 2004, bans in several U.S. states, SNUR in place; Europe banned July 31, 2004, use stopped in many EU countries about ten years ago; **targeted for elimination under the Stockholm Convention May 9, 2009.**
- Deca Product – US – HPV, banned in Washington State and Maine, proposed bans in many other states; Canada ban upheld March 30, 2009; banned in Sweden January 2007; banned in EU July 2008.

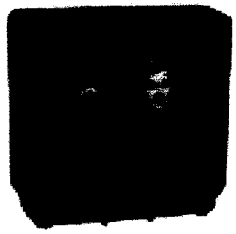
Stockholm Convention
on persistent organic
pollutants (POPs)

- The Dirty Dozen banned in 2001
- Nine more regulated May 2009
- Twelve more under consideration
- All are Halogens
- Halogens have carbon bonded to Bromine, Chlorine, Fluorine, Iodine
- Many halogenated flame retardants are POPs

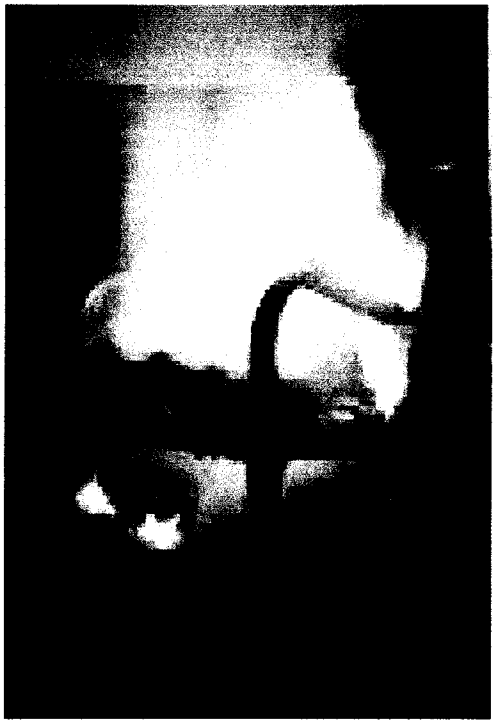
Fire Retardants in Consumer Products

- Fire retardant chemicals up to 10% by weight of foam in furniture and baby products and 30% plastic in electronics
- Use in furniture and baby products foam driven by California's Technical Bulletin 117 (TB117)
  - Standard usually met with halogenated fire retardants
  - Requires 12 second resistance to open flame
  - Some manufacturers comply with TB117 nationwide



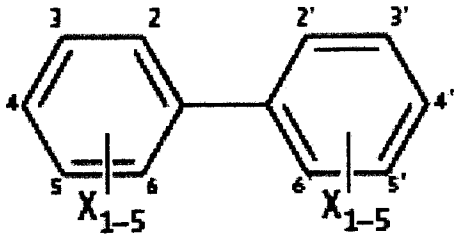


Firefighters have high levels of cancer

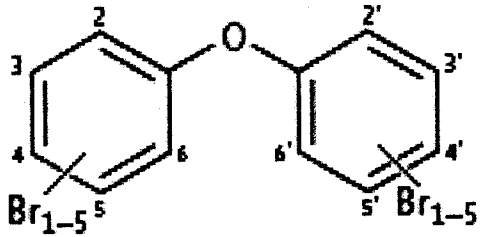


- Firefighters have significantly elevated rates of multiple myeloma, non-Hodgkin's lymphoma, prostate, and testicular cancer.
- These four types of cancer can be related to exposure to dioxins and/or furans.

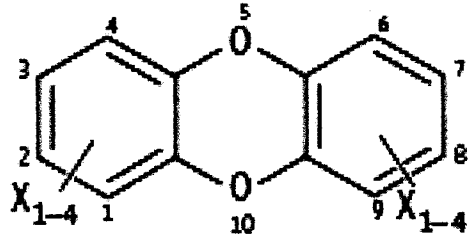
G.K. LeMasters, et al, Journal of Occupational and Environmental Medicine 48(11): 1189-202(2006).



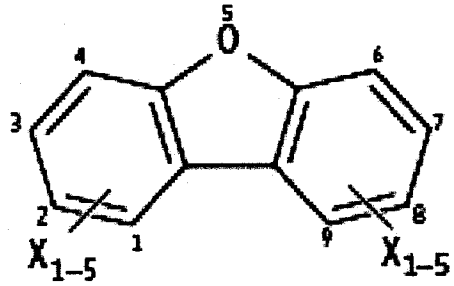
PCBs (X = Cl) and PBBs (X = Br)



PBDEs



Dioxins (X = Cl or Br)



Furans (X = Cl or Br)

PentaBDE used from 1980 to 2004 to meet TB117.

In 2002, 95% of the global use of pentaBDE was in North America.

High levels of brominated dioxins and furans produced during PBDE combustion.

Some are up to ten times more toxic than chlorinated dioxins.

Kielhorn, Dr. J., and Dr. C. Melber, Environmental Health Criteria 205: Polybrominated Dibenzo-p-dioxins and Dibenzofurans. WHO (International Programme on Chemical Safety); Geneva, 1998.

On the combustion and photolytic degradation products of some brominated flame retardants, Gunilla Söderström, University of Umea, Sweden

Human Exposure

- Flame retardants used in consumer products are found in house dust

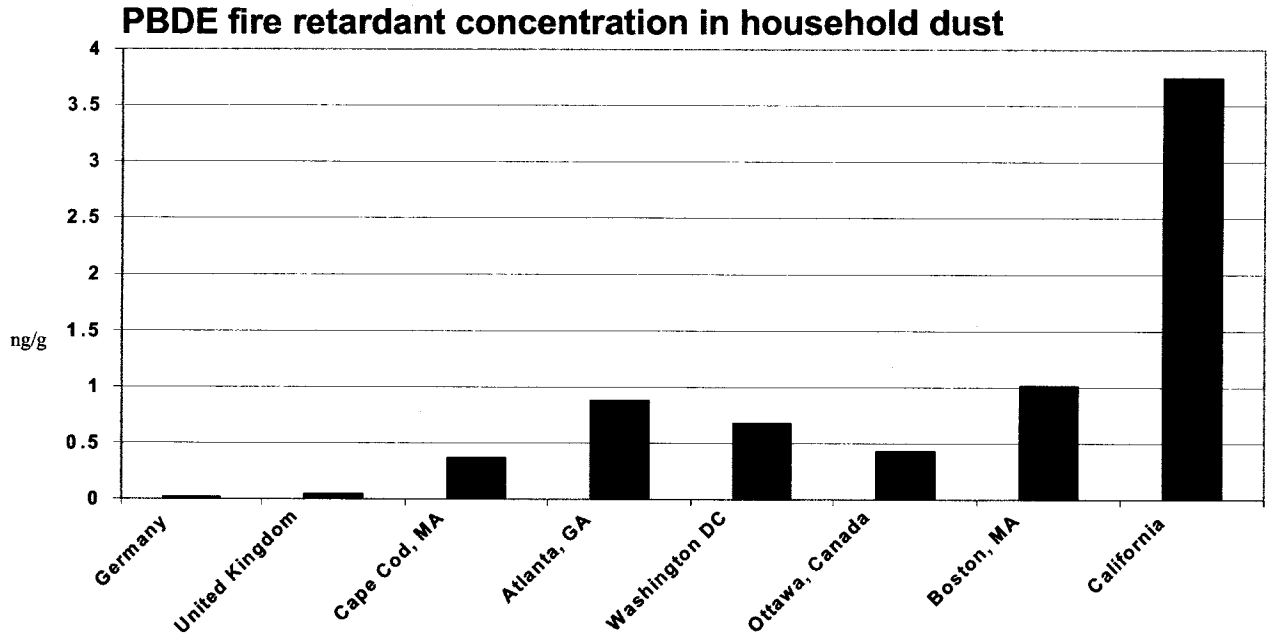
  Stapleton, H. M., J. G. Allen, S. M. Kelly, A. Konstantinov, S. Klosterhaus, D. Watkins, M. D. McClean, and T. F. Webster. 2008. Alternate and new brominated flame retardants detected in U.S. house dust. Environ Sci Technol 42 (18): 6910-6.

- Toddlers have three times the levels of their mothers

  http://www.ewg.org/reports/pbdesintoddlers

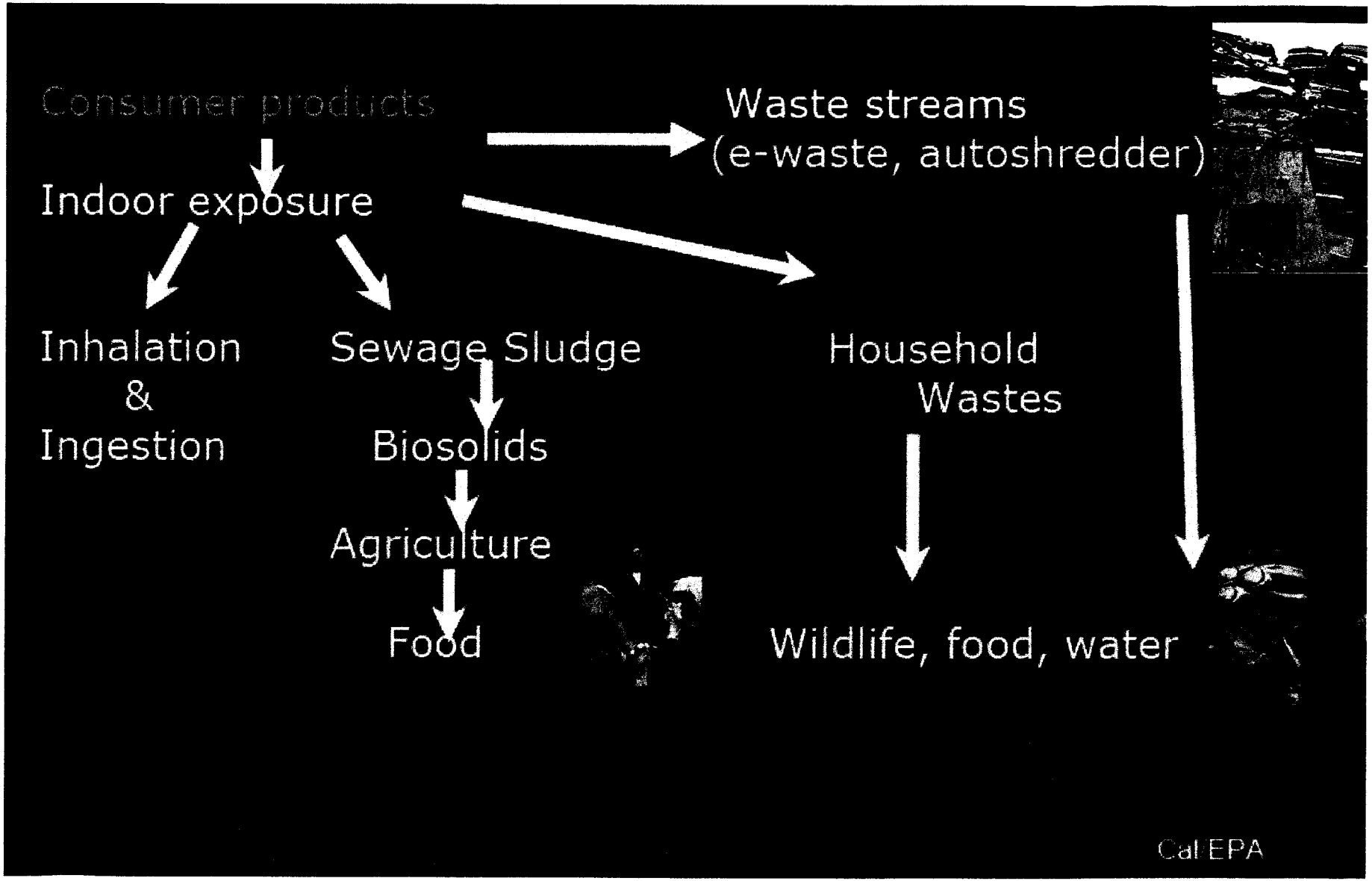
- Californians have higher levels in their house dust and body fluids than residents of other states

  Kellyn S. Betts, Environmental Health Perspectives 116, A202 - 208, 2008



Source: **Elevated House Dust and Serum Concentrations of PBDEs in California: Unintended Consequences of Furniture Flammability Standards?** Zota, Ami R., Rudel, Ruthann A., Morello-Frosch, Rachel A., and Brody, Julia Green, Environ. Sci. Technol., 2008, 10.1021/es801792z

Major Flame Retardant Exposure Pathways



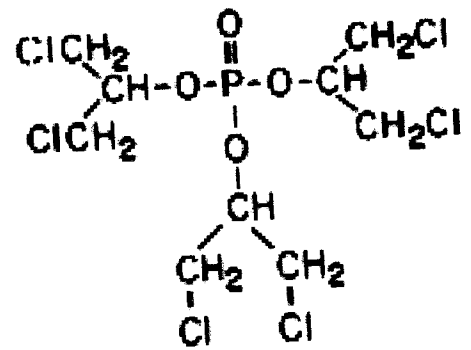
August, 2003

California Bans Penta and Octa-BDE

November, 2003

Great Lakes Chemical Co. agrees to cease Penta production.
Replacements: Firemaster 550
Chlorinated Tris

PentaBDE replacements: Chlorinated Tris (TDCP)



Fyrol·FR2

Tris·(1, 3·dichloro·2·propyl) phosphate

Estimated lifetime cancer risk from tris treated furniture foam is up to 300 cancer cases/million

(The CPSC chronic hazard guidelines define a substance as hazardous if lifetime cancer risk exceeds one in a million.)

Tris also shows liver, kidney, and testicular toxicity.

CPSC Report, Michael Babich, Dec 21, 2006

PentaBDE replacements: Firemaster 550

EPA Design for the Environment predicted reproductive, neurological, & developmental toxicity and persistent degradation products form Firemaster 550 in 2004.

In 2005, Chemtura agreed to doing reproductive and developmental toxicity and migration studies by Jan 2009. Data provided in November 2008 is being evaluated by EPA

Firemaster 550 is found in dust and sewage sludge

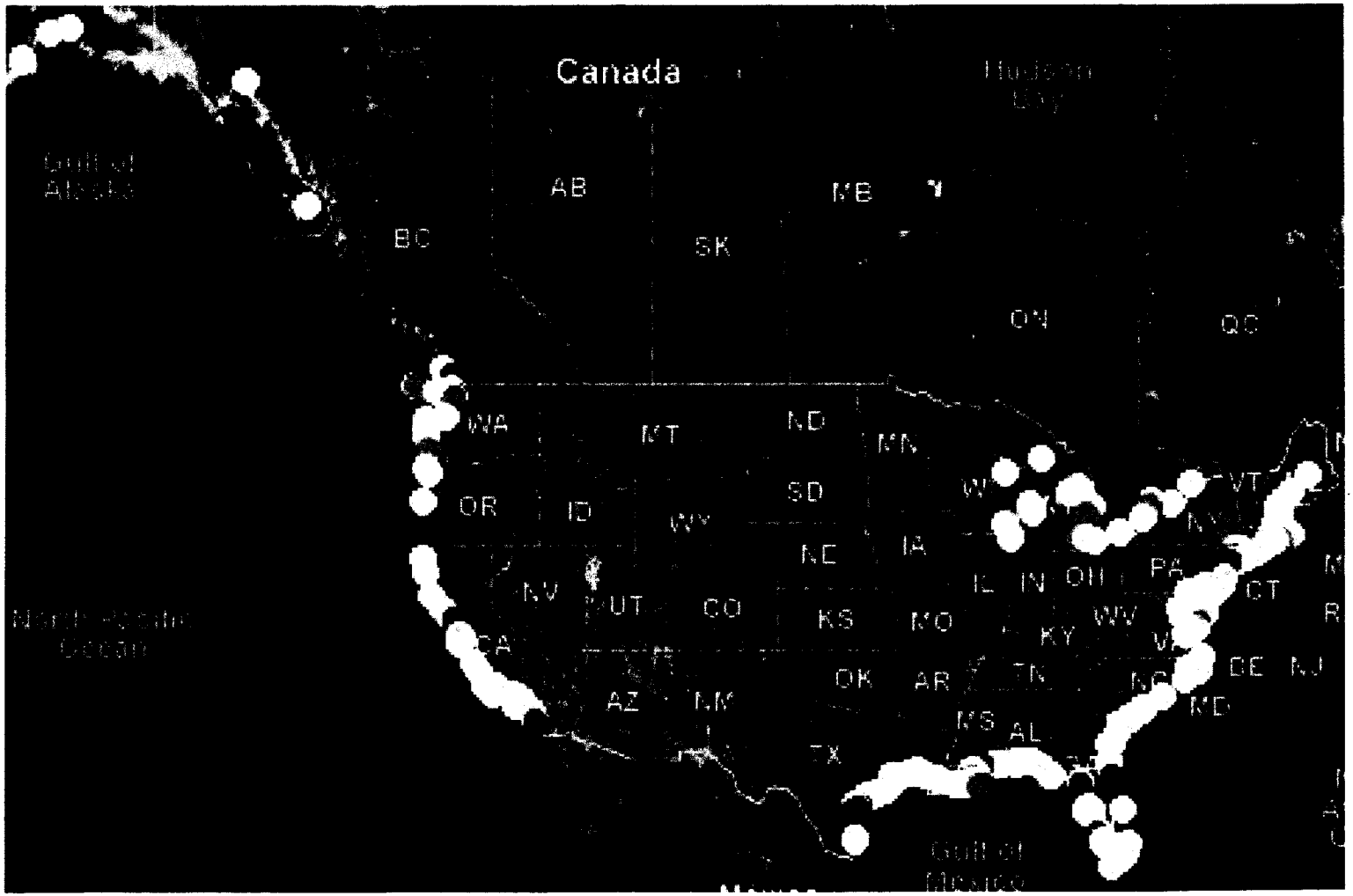
1. Triphenyl Phosphate (highly eco-toxic)
2. Triaryl phosphate isopropylated (probable reproductive toxin)
3. Bis(2-ethylhexyl) tetrabromophthalate
4. 2-ethylhexyl-2,3,4,5-tetrabromobenzoate

Firemaster 600 about which nothing is know is beginning to replace 550 for some uses.

Susan Klosterhaus et al., Environ. Sci. Technol., **2008**, 42 (18), pp 6910-6916, and Environ. Sci. Technol., **2008**, 42 (24), pp 9453–9454


Where should all the PBDE furniture go?

NOAA Mussel Watch Finds pentaBDE in Coastal Sediments and Bivalves

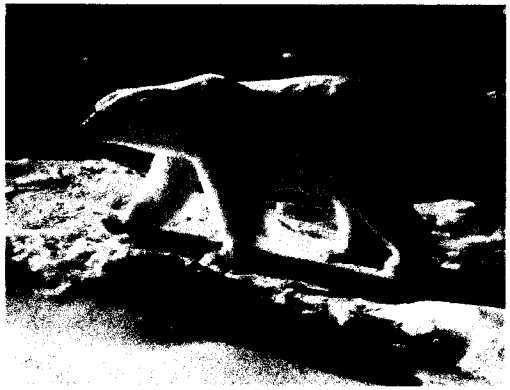


Fireproof Harbor Seals?

- BFRs are increasing in marine food webs
- Harbor seals are highly contaminated
- Recurring disease, mass mortalities

Courtesy, Susan Shaw, MERI

Widespread Environmental Impacts

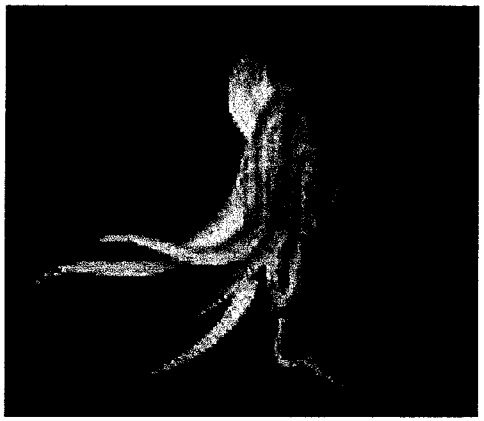


Brominated Flame Retardants in the Arctic
Arctic Monitoring and Assessment Programme (AMAP) and Arctic Council Action Plan to Eliminate Pollution of the Arctic (ACAP): Jan 2005

Chlorinated, brominated, and perfluorinated compounds, polycyclic aromatic hydrocarbons and trace elements in livers of sea otters
Kannan K, et al.
J Environ Monit. 2008 Apr;10(4):552-8.

Bioaccumulation and biotransformation of 61 polychlorinated biphenyl and four polybrominated diphenyl ether congeners in juvenile American kestrels.
Drouillard KG, et al.
Environ Toxicol Chem. 2007 Feb;26(2):313-24.

Fireproof killer whales (Orcinus orca): flame retardant chemicals and the conservation imperative in the charismatic icon of British Columbia, Canada
Peter S. Ross
Can. J. Fish. Aquat. Sci. 63: 224–234 (2006)

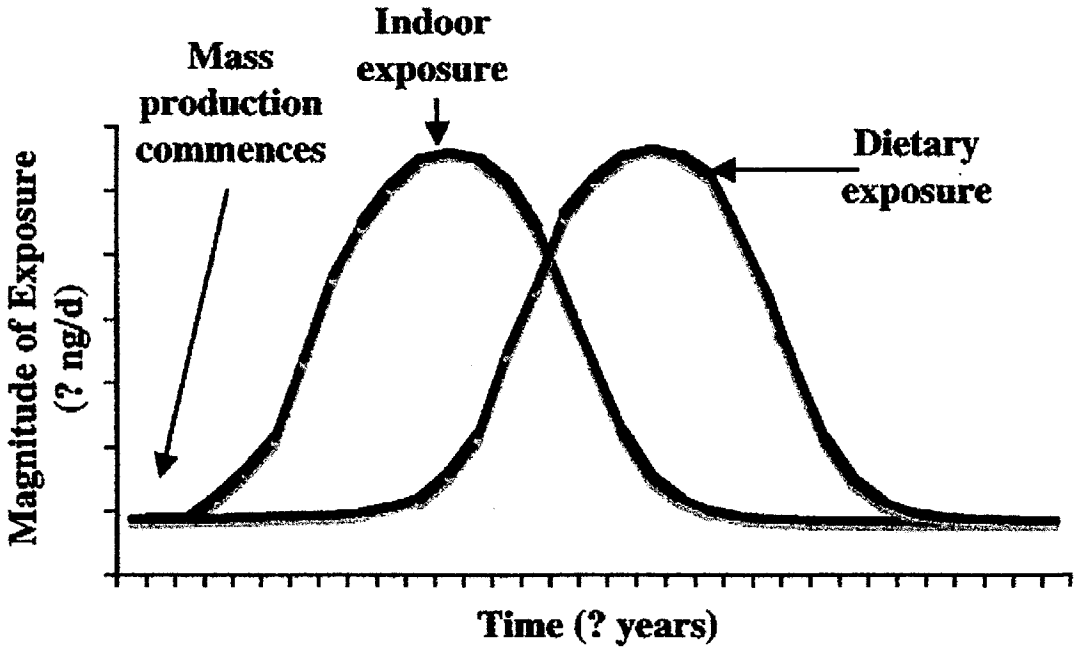


Persistent pollutants in nine species of deep-sea cephalopods
Unger, M.A. et al., Mar. Pollut. Bull. (2008), doi:10.1016/j.marpolbul.2008.04.018

Brominated Fire retardants found in Tasmanian devils
The Australian, January 22, 2008

A PBDE Exposure "Time Bomb"

- Current exposure to PentaBDE: 80% indoor air and dust, 20% diet.
- Penta is "bleeding" into the outdoor environment.
- Owing to its persistence, it will amplify in food chains.
- Our main exposure route likely to shift from indoor air and dust to diet.
- **Critical needs: (a) reduce the existing indoor reservoir**
  (b) manage the end-of-life.



Harrad and Diamond, *Exposure to to PBDEs and PCBs: current and future scenarios*, 2006 *Atmospheric Environment*

The legacy PBDE problem:
Capture indoor reservoir and manage end of life

Step 1: Identify

Table 4. Blind test with PHAIA and dipstick format

Sample	Detected by PHAIA (%, w/w)	[b]Dipstick assay
#007	[a]ND	
#008	0.58	
#009	ND	
#010	0.98	
#011	1.0	
4B	ND	

[a]Not detected. [b]Protein A purified BDE-47 PAb was immobilized on nitrocellulose membrane at the amount of 1.0, 0.5, and 0.3 μg per spot from left. The assay methods are as described in the method section.

Dipstick immunoassay for BDE-47 developed by Hee-Joo Kim, Bruce Hammock and team.

(can perform the assay with BDE-47 antibody and novel reagent phage peptide within 1 hour after simple extraction)

Step 2: Remove

Step 3: Disposal

~~-Burn-~~

~~-Landfill-~~

--Degradation by bacteria?

-Research needed for end of life solutions

What we can do now:

What about Yucca Mountain?

Solutions

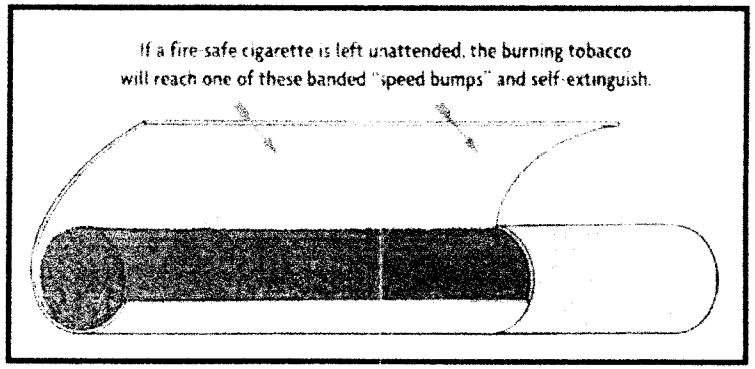
Fire retardants slow fires. Alternative strategies can prevent or stop them.

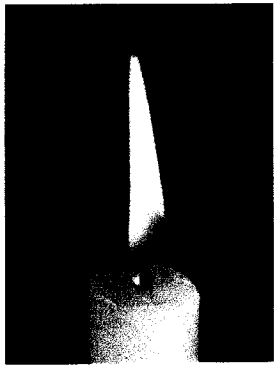
Use fire retardant chemicals only when a fire safety need is established and alternative technologies aren't available

Move away from toxic or suspected toxic chemicals to safer alternatives .

Fire Safety Without Toxic Chemicals

- Preventing ignition is less expensive, more effective, and healthier than adding chemicals to slow ignition
- Fire deaths in the US are rapidly declining due to:
  - 50% decrease in cigarette consumption since 1980
  - Enforcement of improved building, fire and electrical codes
  - Increased use of sprinklers and smoke detectors
  - Introduction of fire-safe cigarettes and candles





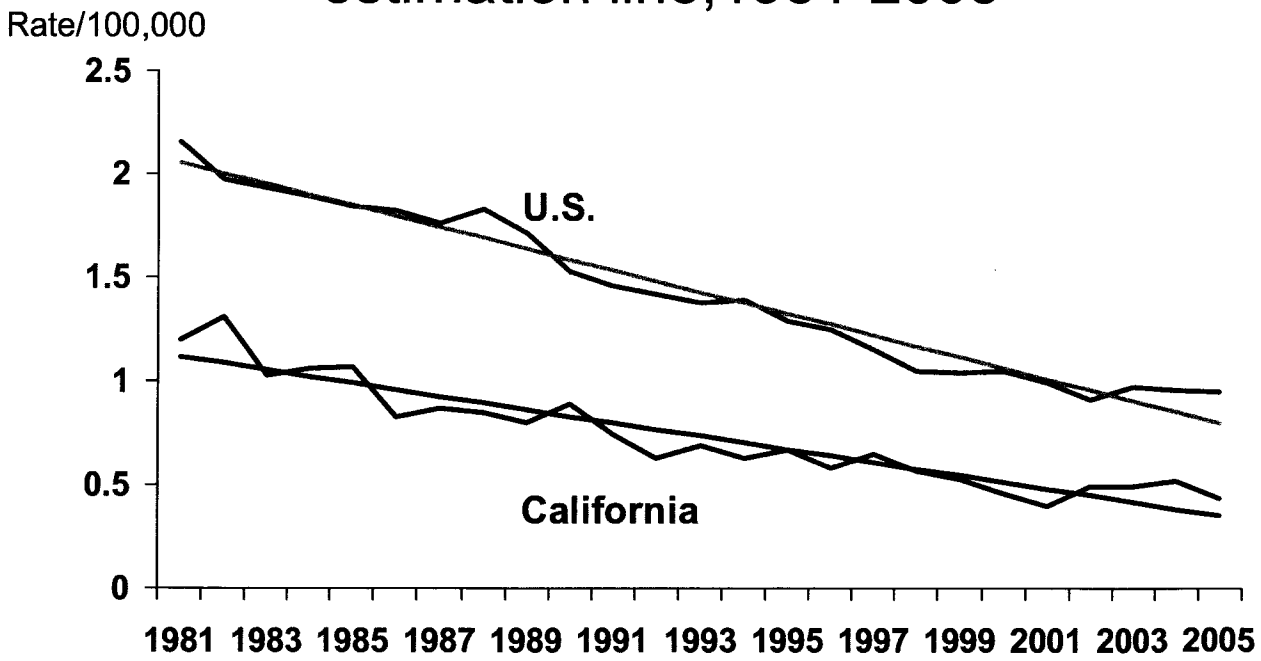
Is TB 117 Effective?

- Major cause of decrease in national fire deaths is:
  - Decreased cigarette smoking
  - Smoke alarms, Building sprinklers,
  - Child proof lighters, Fire safe cigarettes, etc.

- No evidence that TB 117 has had any greater effect in preventing fire deaths here than in other states (which have no furniture flammability standards)

U.S. Home Fire Deaths, 1981-2005

Residential Fire and Flame Death Rates in U.S. and California, trend data with linear estimation line,1981-2005



Source: WISQARS, Centers for Disease Control and Prevention

Prepared by: California Department of Public Health, EPIC Branch

Decline in Fire Deaths 2000-2004 compared to 1980-1984

California	- 40%
Georgia	- 36%
Illinois	- 45%
Michigan	- 38%
New York	- 48%
Ohio	- 41%
Pennsylvania	- 41%
Texas	- 37%

"US Unintentional Fire Death Rates by State"
National Fire Protection Association, 2008

CPSC Candle Standards 1997- 2008

1990-1998
350% growth in candle production
13-42% increase in candle fires injuries / deaths
How to improve safety?

85% of candle fires caused by: :
- Excessive flame heights
- End of life issues when the candle burns out.
- Stability of candles not tipping over
- Secondary ignition caused from by nearby items burning in or on the candle

| 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |

F15.45 sub committee formed to focus on candle product safety Focus on fire causes of:
-abandonment
-combustible
-child play

Standard
Guide for Terminology Relating to Candles and Associated Accessory Items

Standard
Specification for Annealed Soda-Lime-Silicate Glass Containers That Are Produced for Use as Candle Containers

Standard
Specification for Fire Safety for Candles addressing 4 root cause areas

Standard
Specification for Fire Safety for Candle Accessories

Standard
Specification for Candle Fire Safety Labeling:
- **keep candles insight**
- **out of reach of children/pets**
- **not to burn near combustible materials**

National Fire
Protection Association
The authority on fire, electrical, and building safety

NFPA estimates 750 lives/year saved by fire-safe cigarettes

On October 25, 2007, Reynolds American Inc. announced product-wide switch to fire-safe cigarettes

Jim Shannon, NFPA's president, said in an **"If cigarette manufacturers had begun producing only fire-safe cigarettes 20 years ago an estimated 15,000 lives could have been saved by now."**

NFPA press release

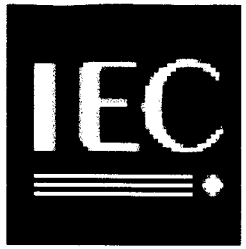
No Data to show a Reduction in Fire Deaths from Retardants in Furniture Foam in California

"U.S. fire data is not detailed or complete enough to show whether adding fire retardant chemicals to furniture foam in California since 1980 has made a measurable difference in fire deaths in that state."

Marty Ahrens, Fire Analysis Services, NFPA

Should we fire retard:

- Electronic housings?
- Insulation?
- Bed coverings?
- Children's products?



International Electrotechnical Commission

Worldwide electronics industry standards would have required plastic enclosures for consumer electronics to resist external candle ignition

- -proposed in 2002
- -an estimated additional 1.7 billion pounds of fire retardant chemicals would be required annually

Candle fires in computers and other consumer electronic enclosures pose a negligible hazard

When Product Safety and the Environment Appear to Collide:

The Defeat of the Candle Flame Ignition Requirement

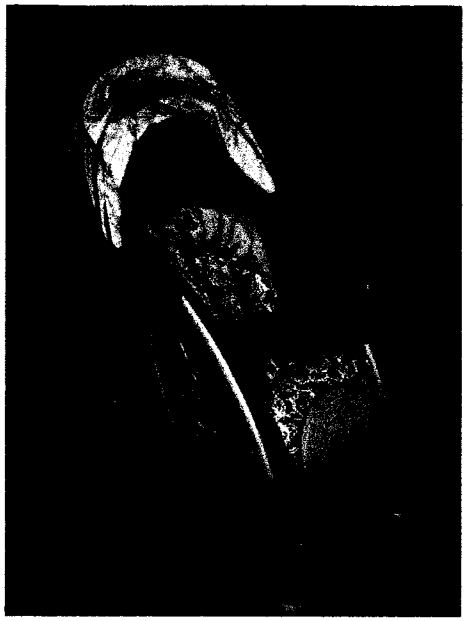
by Michael Kirschner, Design Chain Associates, and
Arlene Blum, Ph.D., Green Science Policy Institute

Conformity, January 2009

Halogenated Fire Retardants are used in Insulation materials

- Hexabromocyclododecane (HBCD) is in all polystyrene insulation,
  - On the first EU list of sixteen "Substances of Very High Concern".
  - Persistent, Bioaccumulative, Toxic (PBT)
  - Found in household dust, breast milk, sewage sludge
- Used to insulate cement foundations from soil. No fire hazard
- Slows fires by second and then burns to produce toxic brominated dioxins

Baby Products Can Contain Fire Retardants



Graco **baby stroller with 3% TDCP or chlorinated Tris in the foam** found within the padding.

Brestfriend said that **the chemical in its nursing pillow** wasn't a PBDE. It was Albemarle Antiblaze V6 and perfectly safe.

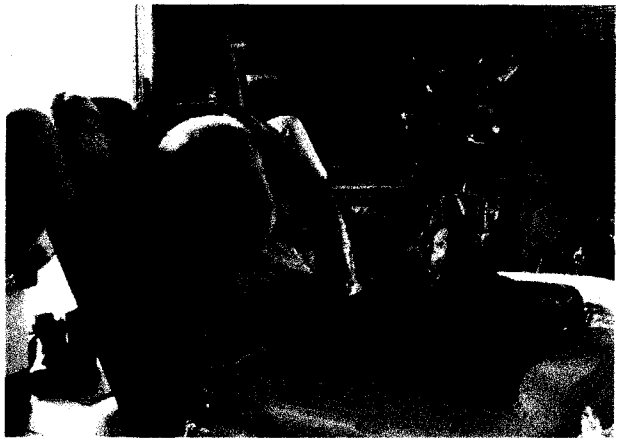
A V6 is 2,2-Bis(Chloromethyl) Trimethylene Bis(Bis(2-Chloroethyl) Phosphate).
It's 37% chlorine.

No fire hazard has been demonstrated for these baby products

California Senate Bill 772:

Protecting children from fire and toxic chemicals

- Modifies Technical Bulletin 117 to exempt foam in high chairs, cribs, strollers, nursing pillows etc from a de facto mandate that they be treated with fire retardants
- Baby products do not pose a fire hazard
- Defeated after fierce opposition from chemical industry

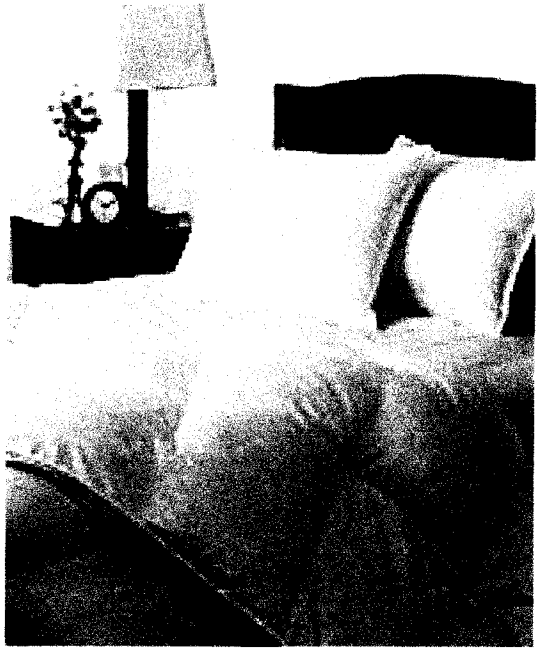


What we can do now:

California TB 604?

California Technical Bulletin 604 is a Bed Clothing Standard to slow open flame ignition of bed clothing such as comforters, mattress pads and pillows

- Limited fire safety rationale
- No health information about fire retardant chemicals and materials required
- No labeling for consumers
- Expected implementation in 2009



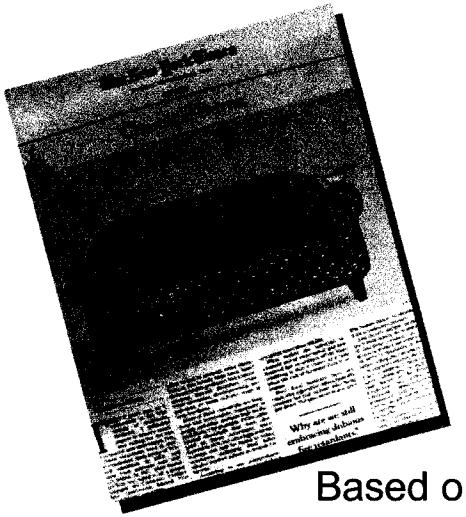
In December 2007 the Consumer Product Safety Commission (CPSC) proposed a national furniture flammability standard that can be met without fire retardant chemicals in foam.

"No one wants to trade fire risks for chemical toxicity risks."

CPSC Commissioner Thomas Moore

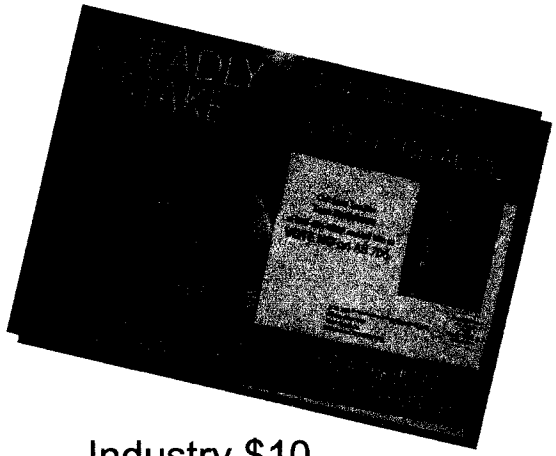
BUREAU OF HOME FURNISHINGS AND THERMAL INSULATION

California AB 706: Improving Fire Safety Without Toxics



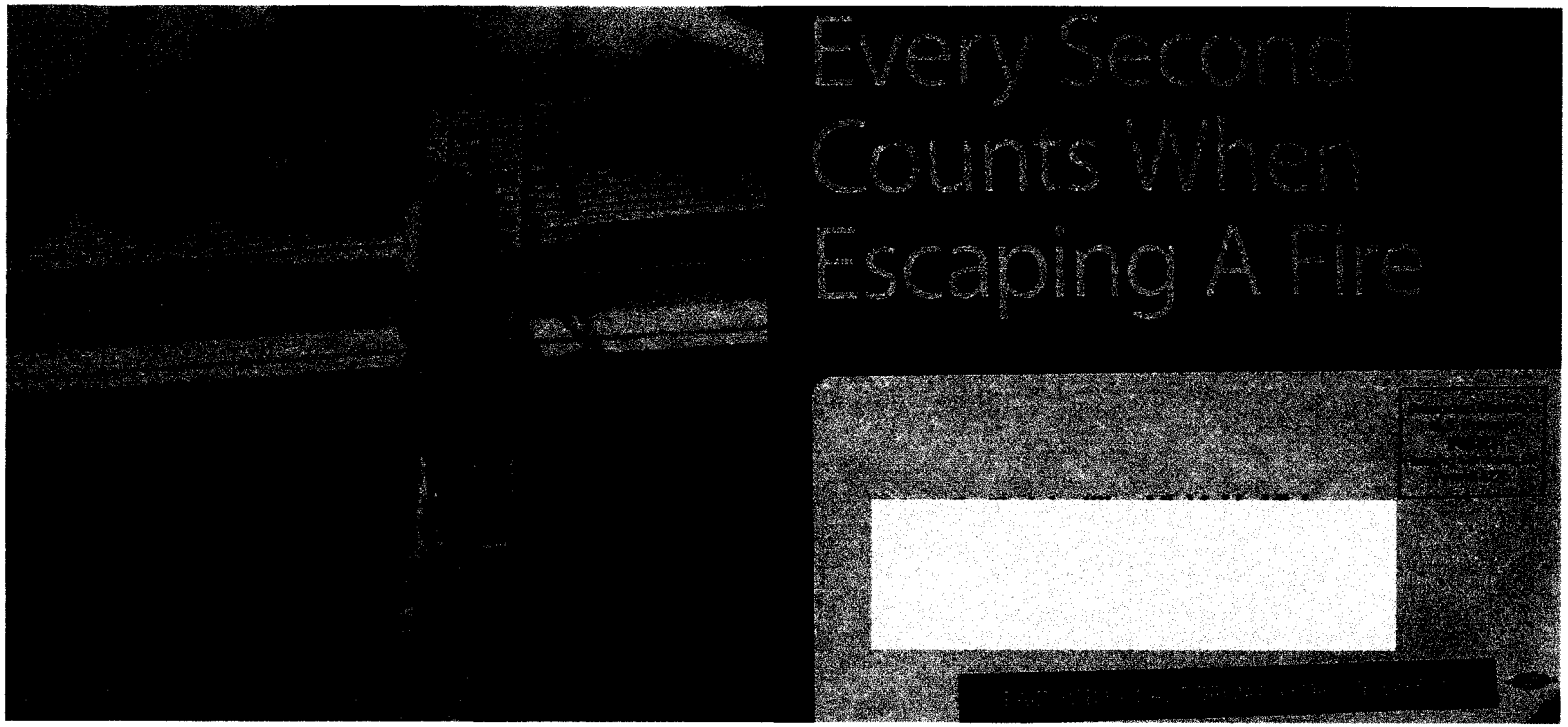
Based on Blum's Op-ed

Introducing bill with Mary Brune (MOMS), Russell Long (FOE), Mark Leno, and Andrew McGuire



Industry $10 million media blitz

- Replaces open flame standard for foam which led to high levels of chemicals with a smolder standard for fabric like proposed federal standard.
- Maintains fire safety without adding chemicals to foam in California
- Defeated after PR and lobbying campaign by chemical industry.



Paid for by Californians for Fire Safety

- Albemarle
- Chemtura,
- IC-Ltd Industrial Products (Dead Sea Bromine)

Fire retardant chemical producers

Lobbying Activity

BURSON-MARSTELLER, ON BEHALF OF THE BROMINE SCIENCE AND ENVIRONMENTAL FORUM, ALSO DBA CALIFORNIANS FOR FIRE SAFETY

View:

- ○ General Information
- ◉ Financial Activity/Filing History

Legislative Session

- ◉ 2007 through 2008
- ○ Historical

As disclosed in quarterly reports filed with the Secretary of State, payments made by an organization to its own in-house lobbyists or to lobbying firms are reported here. Links to legislative bills or state agencies lobbied also are available.

2007-2008 LEGISLATIVE SESSION

LOBBYING PAYMENTS MADE			
SESSION	QUARTER	GENERAL LOBBYING	P.U.C. LOBBYING
2007-2008	5th	$0.00	$0.00
2007-2008	4th	$330,854.96	$0.00
2007-2008	3rd	$6,169,810.99	$0.00
2007-2008	2nd	$148,278.78	$0.00
2007-2008	1st	$24,271.17	$0.00


www.arleneblum.com
www.greensciencepolicy.org