



CEH
center for environmental health

Eliminating Flame Retardant Chemicals in the Child Care Setting

Presented by: Alvaro Palacios Casanova

Center for Environmental Health (CEH)

A non-profit organization dedicated to protecting public health from exposures to toxic chemicals.

The Center for Environmental Health works with purchasers to utilize their buying power to incentivize the production of environmentally preferable products.



www.ceh.org



Overall Learning Goals:

To be able to understand and communicate:

3

- The harmful effects of flame retardant chemicals on vulnerable populations
- Ways to reduce human exposure to FRs
- How to identify safer products

Our goal is that by the end of the workshop you will have the tools you need to confidently share this information with your community.

Flame Retardants and Health Effects

4

Learning Goals: Understand environmental and public health effects of flame retardants



Toxic Substances Control Act (TSCA) (1976)

Most Chemicals in the U.S. are Not Regulated

62,000 chemicals in commerce “grandfathered”

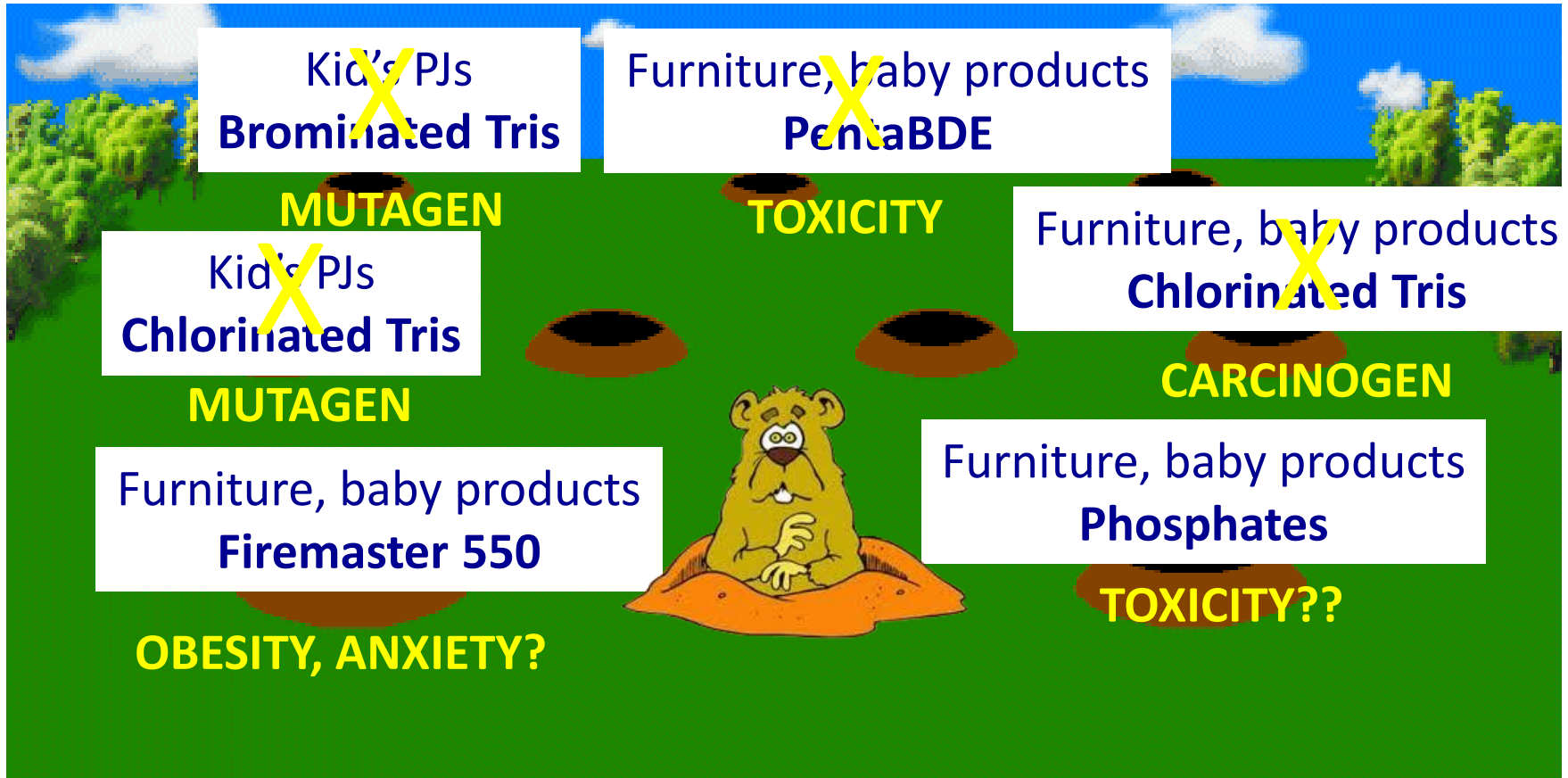
- EPA has regulated only **five** chemicals

2,000 new chemicals enter market each year

- **No** environmental or health data required
- **85%** lack data on chemical health effects

Burden of proof on EPA to prove chemical is harmful

Regrettable Substitutions?

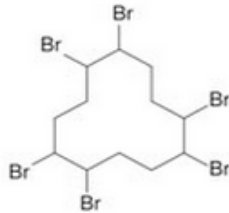


What is a Flame Retardant?

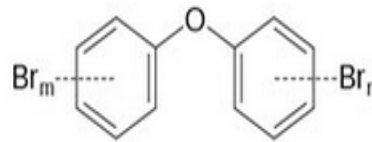
7

- Flame retardants are chemicals that resist or inhibit the spread of fire.

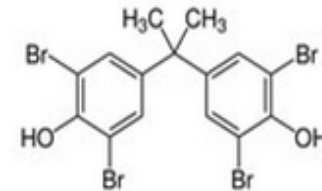
Hexabromocyclododecane (HBCD)



Polybrominated Diphenyl Ether (PBDE)



Tetrabromobisphenol A (TBBPA)



Flame Retardants

8



Long history of health & environmental problems



Dozens of flame retardants currently in use



Most are untested

Flame Retardants: Lack of Fire Safety Benefit

- No significant difference in fire growth between foam with flame retardants formulated to pass TB 117 and untreated foam.

Source: U.S. Dept. of Commerce, National Bureau of Standards.

- Chairs with flame retardant foam offered no significant difference than those without FR-treated foam.

Source: CPSC, 2012.



Impacts of Flame Retardants

❖ Persistent

❖ Bioaccumulative

❖ Toxic

❖ Carcinogens

❖ Mutagens

❖ Reproductive

Toxicants

Flame Retardants Are Everywhere



Health Effects of Flame Retardants

Neurodevelopmental Effects

Decreased memory and learning
Reduced IQ
Hyperactivity

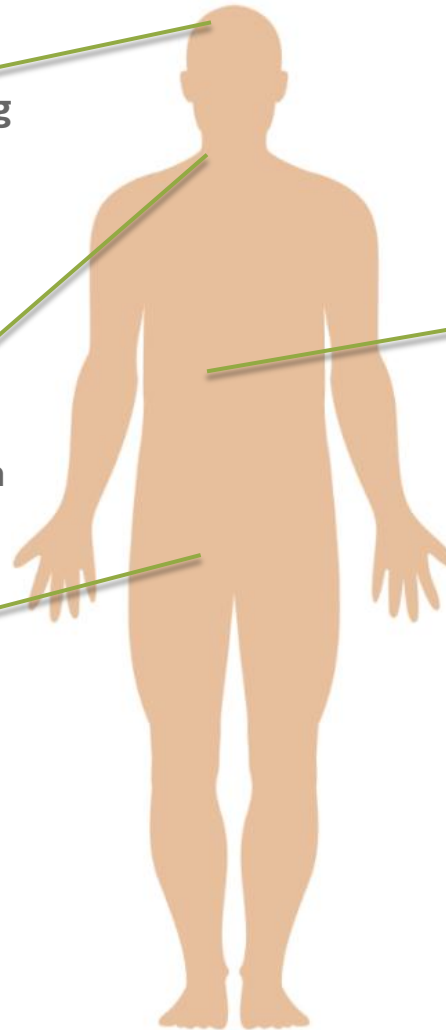
Endocrine System Disruption

Obesity
Chemicals that mimic estrogen
Alters thyroid hormone

Reproductive Toxicant

Decreased fertility
Decreased birth weight
Decreased sperm quality

Diabetes
Cancer



How are Adults Exposed?

- Inhalation or ingestion of contaminated dust particles
- Ingestion from food, especially meat and dairy



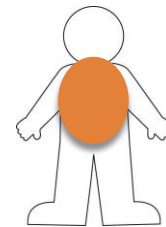
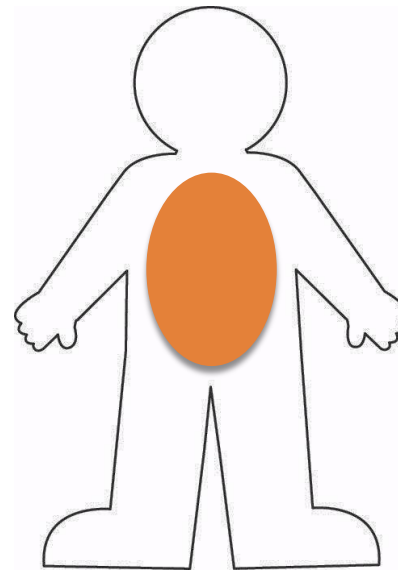
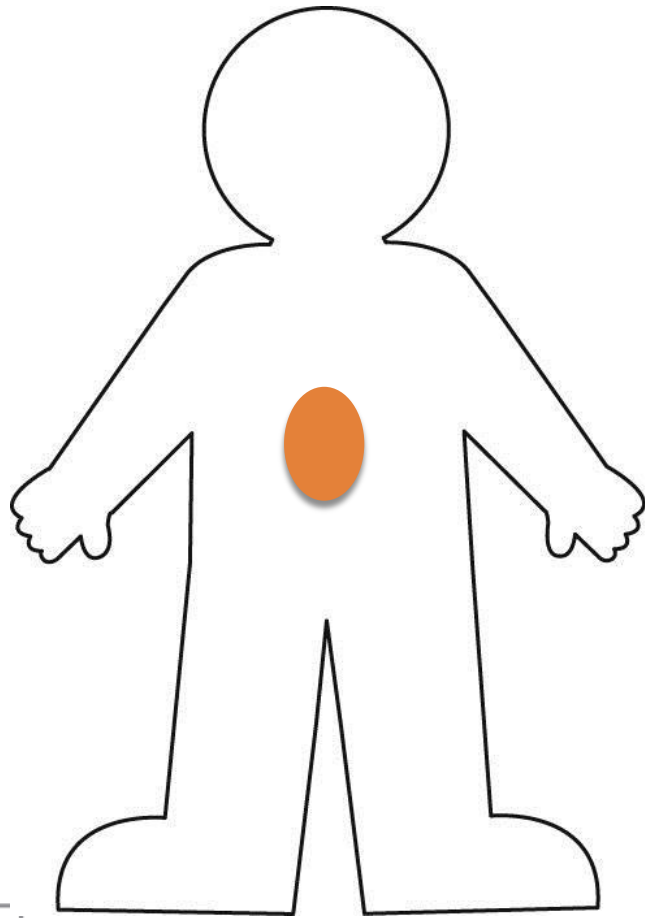
Occupational Exposures

- Fire Fighters/First Responders
- FRC Manufacturing Workers
- Foam Workers
(manufacturers, installers and recyclers)



Children Are Not “Little Adults”

15



Routes of Exposure for Children



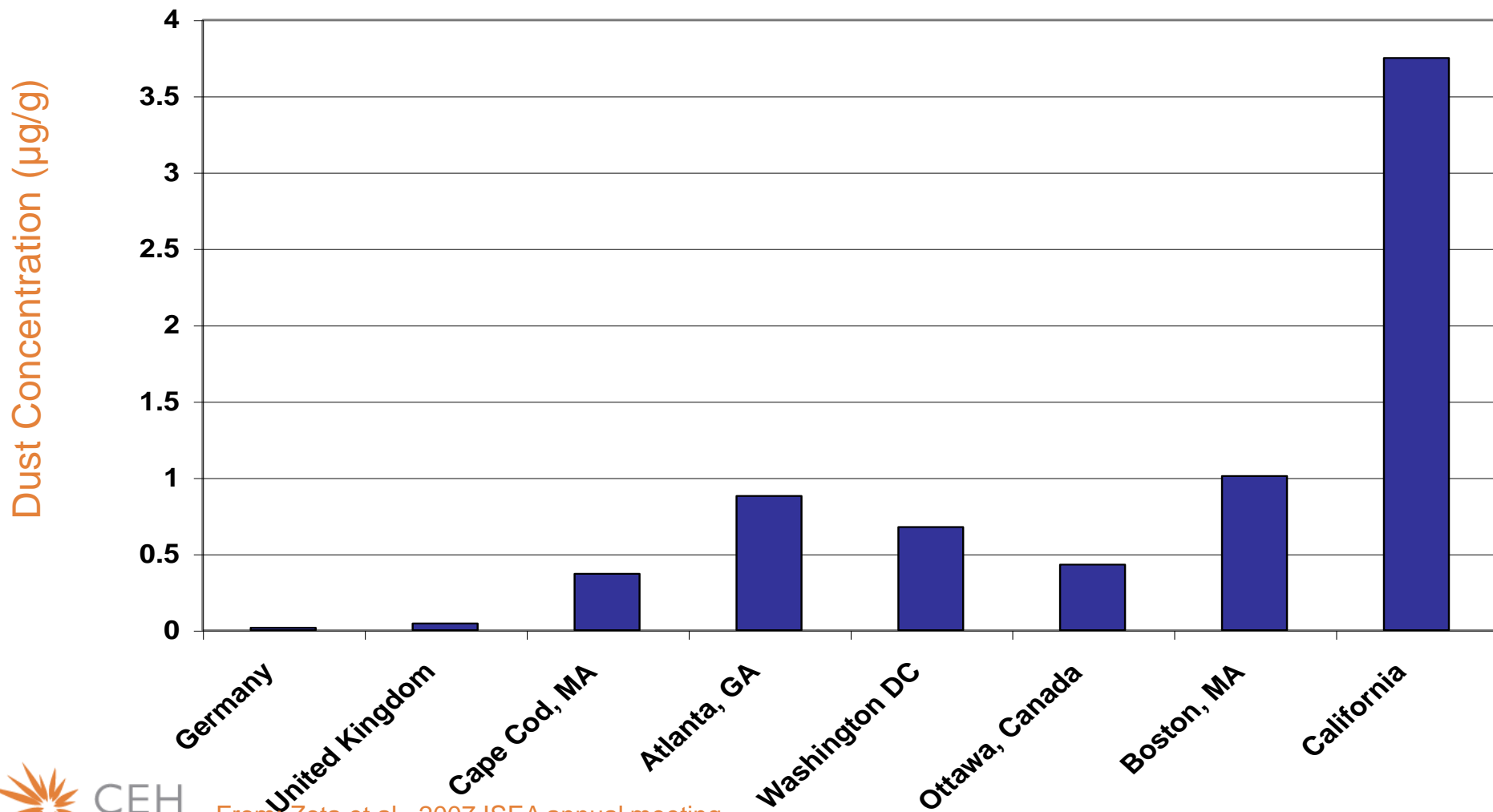
Children Highly Exposed

17

- **More time spent indoors: (typically more polluted than outdoor environments)**
- **Physically in contact with many products treated with flame retardants**
- **Frequent hand-to-mouth behavior**
- **Playing on the floor close to contaminated dust**

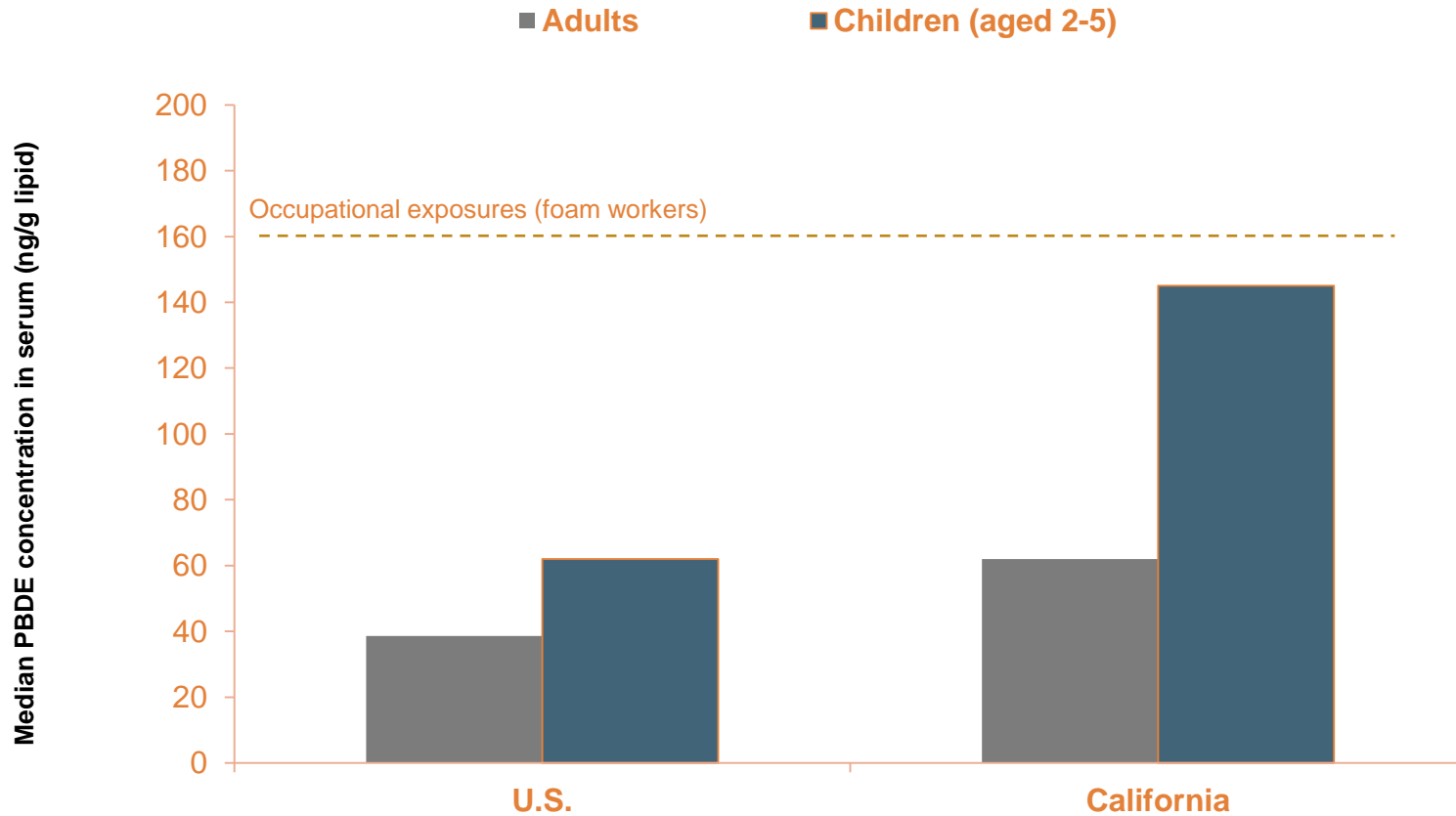


Measured Levels Of Certain FRs In Dust Samples

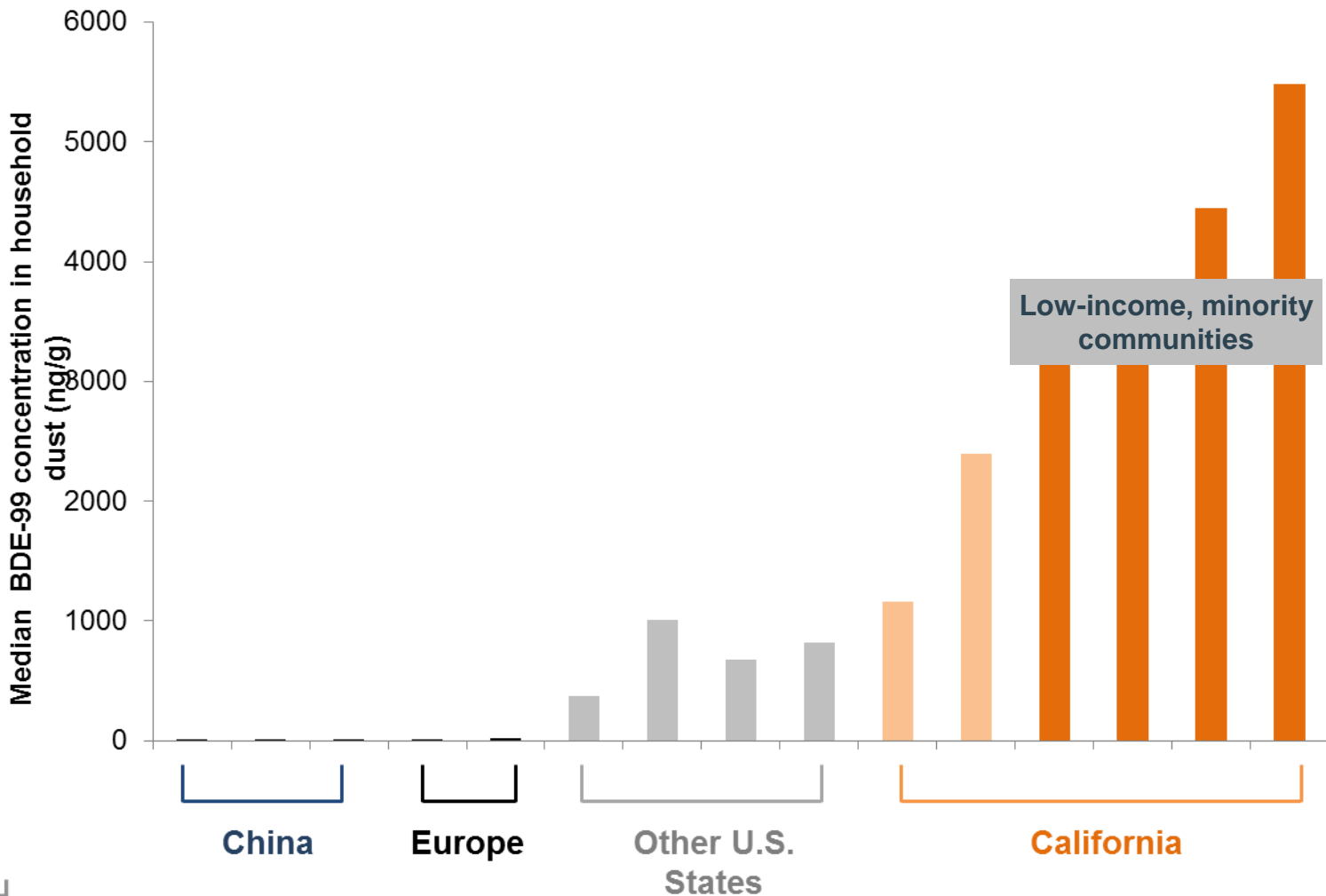


From: Zota et al., 2007 ISEA annual meeting.
Silent Spring Institute

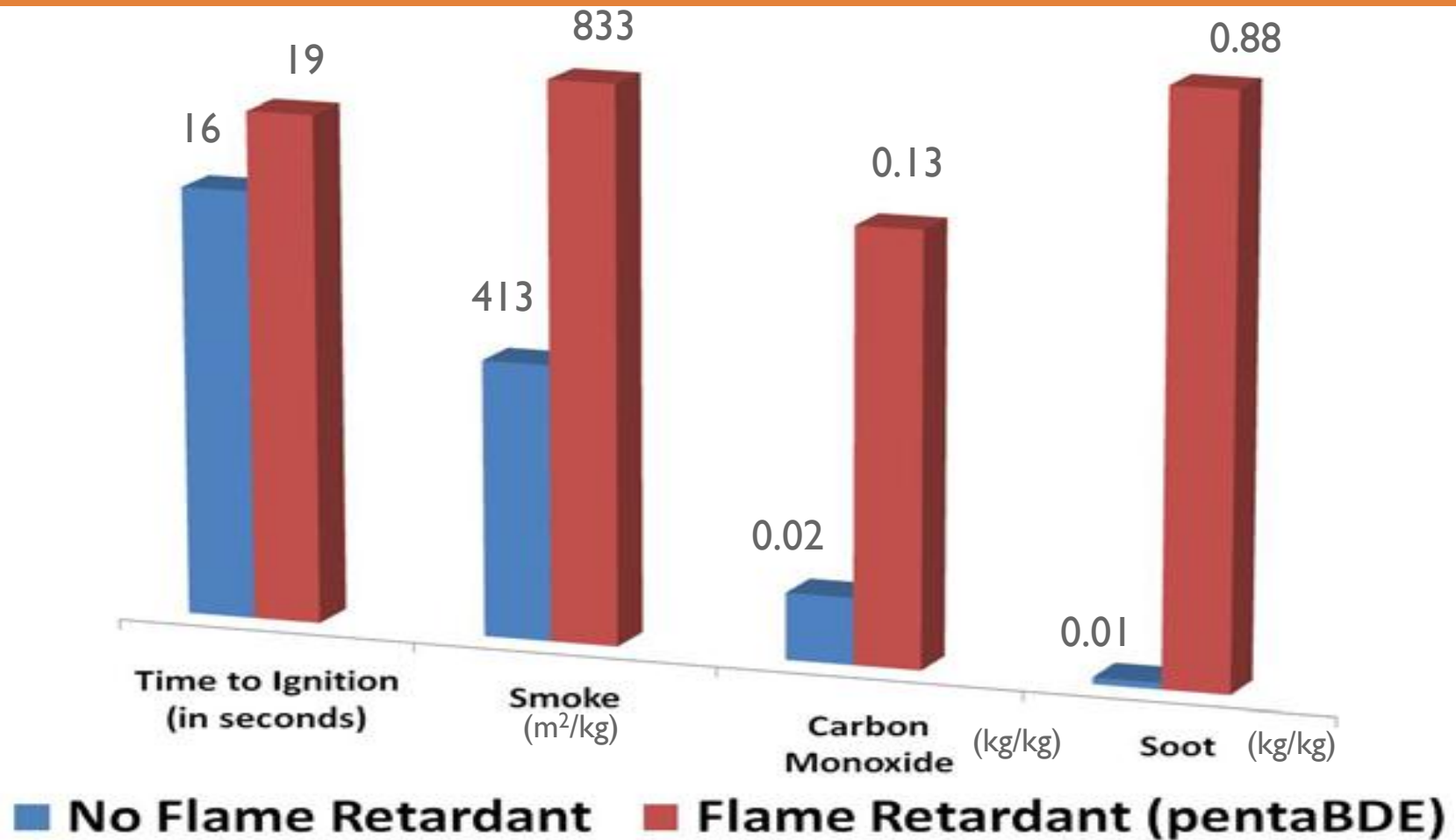
Children vs. Adult Occupational Exposure Levels



Disproportionate Impacts



Toxic Gases May Make Fires Less Survivable



Source: Chandra Jayakody, et al. J. Fire Sciences, Vol. 18, pp 430-455, 2000

Study of FRs in Child Care Settings (Bradman et al)

22

- Found in 100% of dust samples collected.
- Generally low in air samples
- Facilities with foam nap mats had significantly higher levels of a cancer causing FR,
- In 51% of facilities FR dose estimates for children < 6 years exceeded “No Significant Risk Levels (NSRLs)” for carcinogens



CEH Nap Mat Study

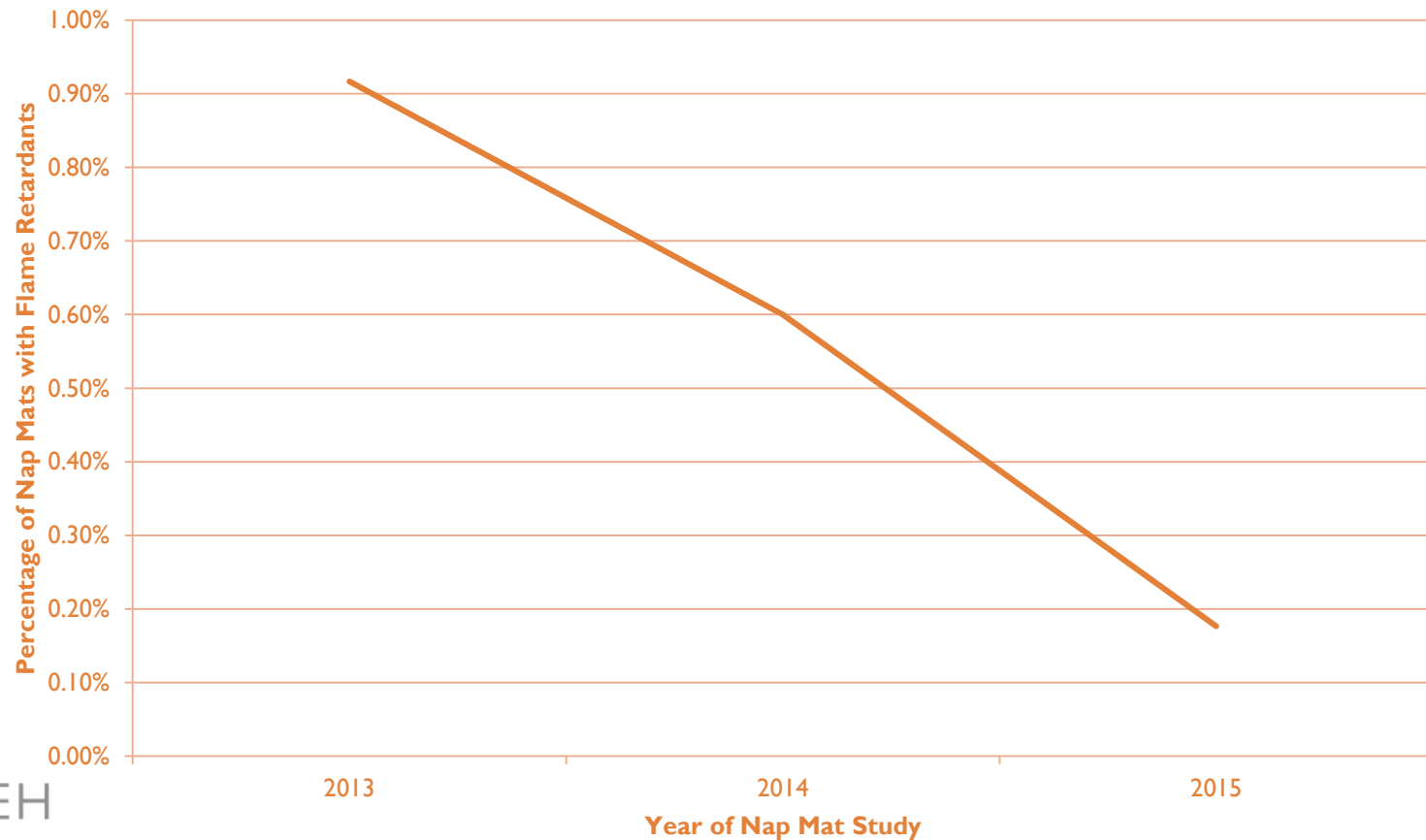
23

- 22 of 24 foam containing nap mats had been treated with at least one flame retardant chemical (FRC)
- 19 of 24 nap mats treated with 2 or more FRC's
- 9 mats contained chlorinated Tris, a cancer-causing chemical



CEH Nap Mat Studies Over Time

Percent of Flame Retardants Found in Nap Mats Over Time



Reducing Exposure to FRCs

25

Learning Goal: Understand how to reduce children's and adult's exposure to FRCs

Reduce Exposure

26

- **Wash your hands and children's hands frequently, especially before eating**
- **Vacuum with a HEPA filter**
- **Mop to minimize dust**
- **Repair torn covers or exposed foam**
- **Remove shoes before entering the home**
- **Open a window regularly for fresh air**
- **Wash hands after touching dryer lint or changing vacuum bag**



Reupholster or Replace Cushions

Ask for flame retardant-free foam when:

Reupholstering:

- ❑ Prolongs life
- ❑ Reduces waste

or

Replacing cushions:

- ❑ Can remove vast majority of FRs
- ❑ Cost \$45-\$95 per cushion



Where are Flame Retardants Found?

28

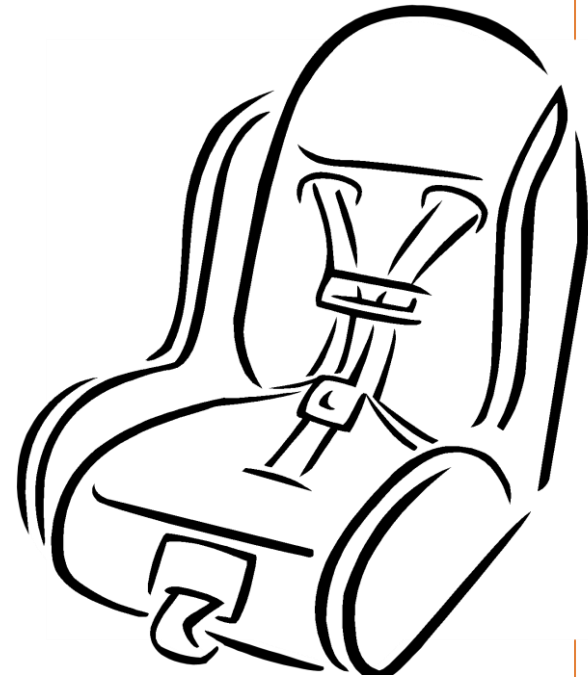
Learning Objective: Understand the sources of flame retardants in home, work and childcare environments.

Where are flame retardants?

29

Children's foam products (e.g):

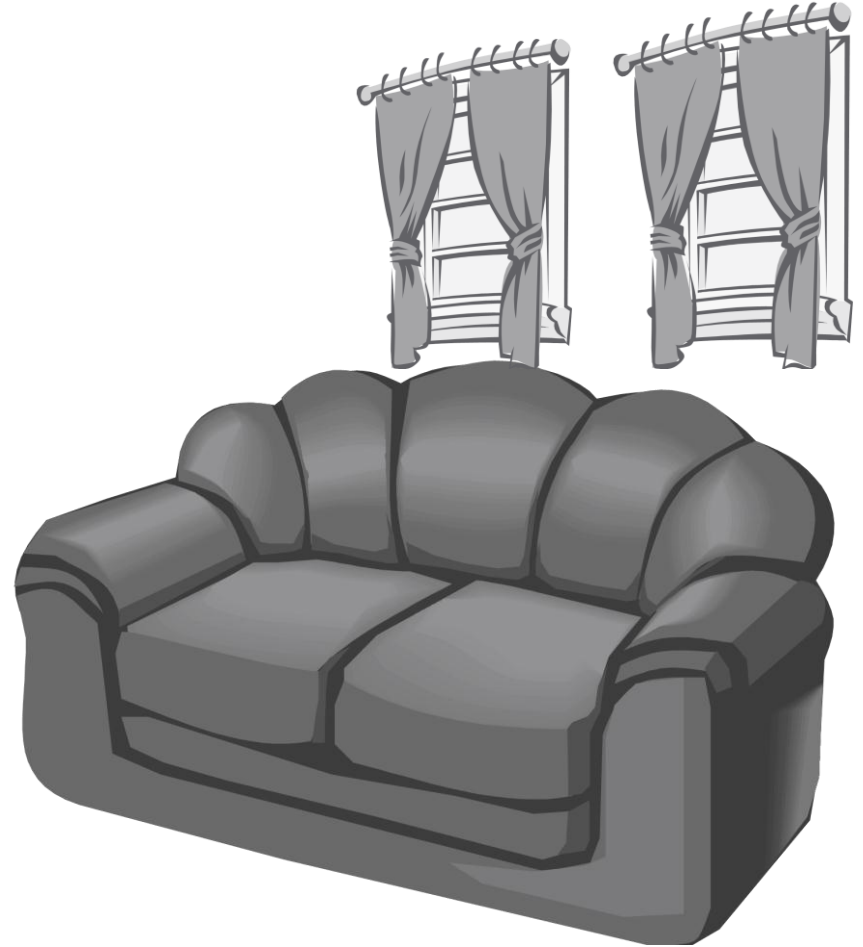
- nap mats
- car seats
- changing pads
- infant walkers
- crib wedges
- gym mats
- foam crib mattresses
- rockers



Where else are the chemicals?

30

- building insulation
- carpet padding
- draperies
- fatty foods
- foam furniture
- household dust
- dryer lint



Furniture Standards

31

Learning Goal: Understand the main difference between TB 117 and TB 117-2013

- How do you know if a product is free of flame retardant chemicals? – SB 1019



List of Excluded Products from Flammability Standard

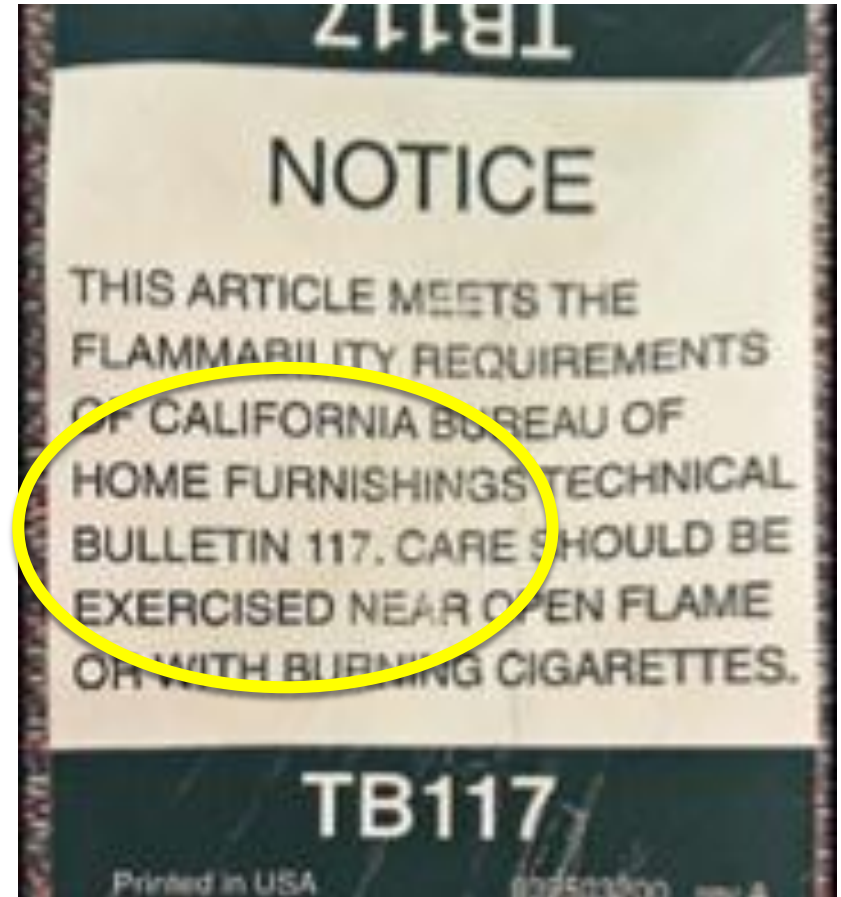
32

- Infant walkers, booster seats, infant seats, changing pads, floor play mats, highchairs, highchair pads, infant swings, bassinets, infant bouncers, nursing pads, play yards, playpen side pads, and portable hook-on chairs.
- **Legacy products still on shelf!**
- Infant carriers, nursing pillows and strollers exempted (12/2010)

Avoid these Products

33

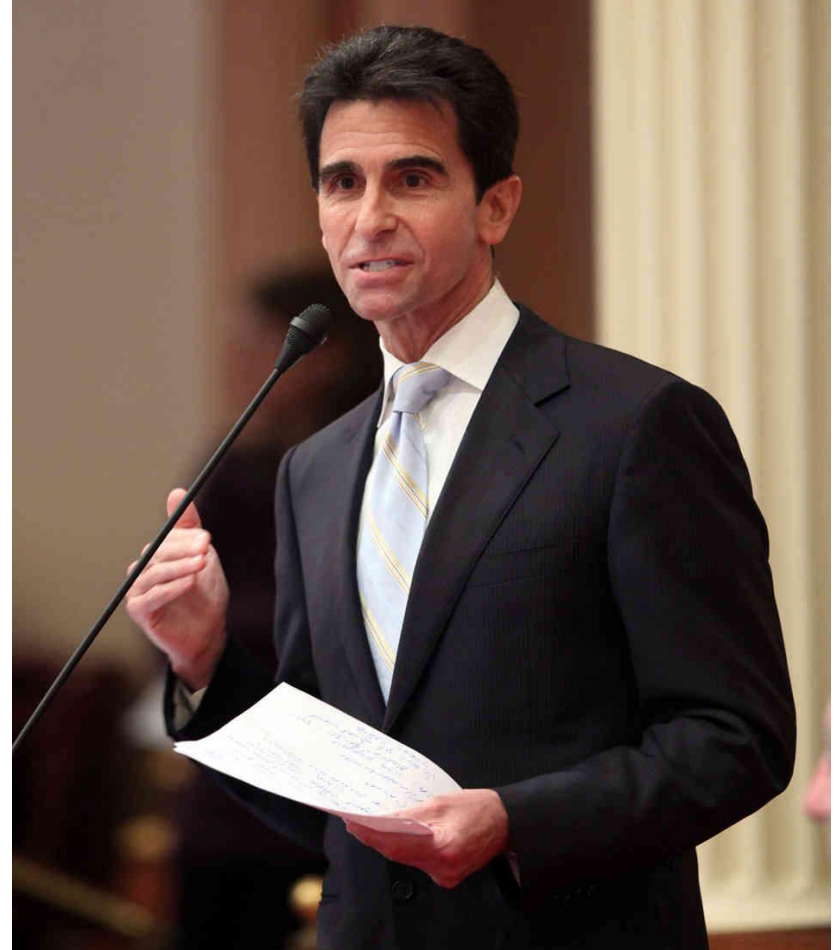
- Avoid polyurethane foam
- Avoid products with TB 117 label



Flame Retardant Disclosure Bill SB 1019 (Leno)

34

- Require manufacturers to label products as to whether they contain or do not contain flame retardant chemicals.



Labeling Requirements

35

NOTICE

**THIS ARTICLE MEETS THE
FLAMMABILITY REQUIREMENTS OF
CALIFORNIA BUREAU OF ELECTRONIC
AND APPLIANCE REPAIR, HOME
FURNISHINGS AND THERMAL
INSULATION TECHNICAL BULLETIN
117-2013. CARE SHOULD BE
EXERCISED NEAR OPEN FLAME OR
WITH BURNING CIGARETTES.**

The upholstery materials in this product:
____ contain added flame retardant
chemicals
____ contain NO added flame retardant
chemicals

The State of California has updated the
flammability standard and determined that
the fire safety requirements for this product
can be met without adding flame retardant
chemicals. The State has identified many
flame retardant chemicals as being known
to, or strongly suspected of, adversely
impacting human health or
development.

TB117-2013 labeling requirement

This means that the combination of fabric/covering and foam together meet the new flammability standard. It is possible to meet this new standard with or without using flame retardant chemicals.

SB 1019 labeling requirement

This label specifically identifies if the furniture item includes flame retardant chemicals or not.

Prefer these Products

36

- Cotton, Down, Wool and Wood
- Products with labels: “Does not Contain Flame Retardant Chemicals”

***Baby products are not required to have any flammability label.

NOTICE

THIS ARTICLE MEETS THE FLAMMABILITY REQUIREMENTS OF CALIFORNIA BUREAU OF ELECTRONIC AND APPLIANCE REPAIR, HOME FURNISHINGS AND THERMAL INSULATION TECHNICAL BULLETIN 117-2013. CARE SHOULD BE EXERCISED NEAR OPEN FLAME OR WITH BURNING CIGARETTES.

The upholstery materials in this product:

contain added flame retardant chemicals

contain NO added flame retardant chemicals

The State of California has updated the flammability standard and determined the fire safety requirements for this product can be met without adding flame retardant chemicals. The State has identified many flame retardant chemicals as being known to, or strongly suspected of, adversely impacting human health or development.

Action!

37

Learning goal: Ways organizations and providers can take action on this issue: Educate providers, parents, and your elected official.

SB 763 (Leno)

38

- Would require manufactures to label foam containing children's products as to whether they do or do not contain flame retardant chemicals
- Passed the senate and assembly with bipartisan support.
- Bill was gutted by Appropriations Committee, will go back to legislature in 2016.



What We Want YOU to Do

39

- Implement methods to reduce exposure
- Prefer FR free products
- Take inventory of products and develop a replacement plan FR-free products
- Patch foam products with tears



What We Want YOU to Do

40

- Educate childcare providers and parents regarding this issue and ways to reduce exposure
 - Newsletters, workshops, flyers
- Participate in efforts to protect children's health
 - CEH can provide: sample letters, talking points, etc.
- Sign up for CEH's email updates and action alerts
- Share the next webinar date 10/29 with colleagues or interested organizations.

Nap Mats Without FRs

41

- **Angeles**
- **Children's Factory (Lakeshore Learning sells)**
- **Community Playthings**
- **Peerless Plastics, Inc.**

Children's Products without FRs

Company	Products	Flame Retardant Free	Labels?	Info on Website	Website URL
MamaDoo Kids	Play yards/play yard mattress topper	Yes	Yes	Yes	www.mamadookids.com
Naturepedic	Changing pads	Yes	Yes	Yes	www.naturepedic.com
Baby Bjorn	Infant bouncers	Yes	No	No	www.babybjorn.com
Britax	Strollers	Yes	No	No	www.britax.com
Carters	Changing pads, high chairs, strollers, play yard	Yes	No	No	www.carters.com
Inglesina	Strollers, high chairs, hook-on chairs	Yes	No	No	www.inglesina.us
Kolcraft	Bassinets, walkers, strollers	Yes	No	No	www.kolcraft.com
PegPerego	High chairs, booster chairs, strollers	Yes	No	No	www.pegperegousa.com
Summer Infant	Changing pads, bassinets, infant seats/bouncers, play yards, swings, high chairs, booster seats, strollers	Not All Products	No	No	www.summerinfant.com
EduShape	Floor play mats	Unknown	Unknown	Unknown	www.edushape.com
EvenFlo	Play yards, high chairs, strollers	Unknown	Unknown	Unknown	www.evenflo.com
RC2/The First Years	Play yards, strollers, bassinets	Unknown	Unknown	Unknown	www.thefirstyears.com
Fisher Price	High chairs, floor playmats, infant seats/bouncers, bassinets, infant swings, booster seats	Unknown	Unknown	Unknown	www.fisher-price.com/
Graco	Changing pads, infant swings, highchairs, bassinets, bouncers, play yards, strollers	Unknown	Unknown	Unknown	www.gracobaby.com
Kids II/ Bright Starts	Infant swings, infant seats/bouncers, high chairs, play yards	Unknown	Unknown	Unknown	www.kidsii.com/brightstarts
Munchkin	Changing pads	Unknown	Unknown	Unknown	www.munchkin.com
Skiphop	Floor playmat	Unknown	Unknown	Unknown	www.skiphop.com



Furniture Without FRs

43

Complete list available at:

<http://www.ceh.org/residential-furniture/>

60 Brands Available including:

Ashley, Broyhill, Crate and Barrel, IKEA, La-Z-Boy, Scandinavian Designs, Sherrill and more!

Additional Resources

44

Center for Environmental Health

<http://www.ceh.org/campaigns/flame-retardants>

Green Care for Children

www.greencareforchildren.org

UC Center for Environmental Research & Children's Health

www.ucsfchildcarehealth.org

Questions?

45

Judy Levin, MSW
Center for
Environmental Health
510-655-3000 x 316
judy@ceh.org

Alvaro Casanova, MAS
Center for
Environmental Health
510-655-3000 x 335
alvaro@ceh.org