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Flame Retardants in Furniture, Foam, Floors

Leaders, Laggards, and the Drive for Change

By

Clean and Healthy New York,
Clean Water Action,
Conservation Minnesota

for the

Safe Sofas and More campaign

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Disclaimer

Our survey of domestic furniture, mattress and carpet padding manufacturers covers the top producers in the U.S., but we make no claim that our survey was exhaustive. Although we contacted each manufacturer to confirm our market research, any oversights were entirely unintentional and do not represent discrimination by the authors. Further, this survey relies on reports from the manufacturers themselves. No independent testing was conducted to determine the accuracy of their responses.

Executive Summary

Due to a relatively obscure California flammability standard, toxic chemicals were added to most foam-bearing products in the U.S. to act as flame retardants (FRs).

Because of this widespread use in practically every home across the country, toxic flame retardants are now found in wildlife, lakes and streams, and nearly every American. These chemicals can contribute to cancer, infertility, obesity, lowered IQ and learning problems, and other diseases and disorders.

Growing scientific evidence shows how these chemicals enter the environment, get into the human body, and can contribute to health problems across a lifetime. Governments are taking action to phase out chemical FRs. Increasingly, companies are prioritizing toxic-free fire safety, making informed decisions about safer substitutes, and using alternatives to toxic FRs.

Which companies are making foam-based products without adding FR chemicals? Is one sector doing better than others? How open are companies being about their approaches? We conducted a phone, letter and email survey of the top 17 furniture, 14 adult mattress, and seven carpet padding companies in the U.S. asking them about their flame retardant (FR) use. Here's what we found:

- **Upholstered furniture**: ten of seventeen companies reported no longer using FR chemicals. One has done so for products made in the US, but not for imported items. Six failed to provide public information.
- **Mattresses:** five of fourteen mattress makers reported not using FR chemicals. Five reported not being actively FR-free: four did not source FR-free foam and one did not offer clarity that their barrier was FR-free. One uses FRs in some products and not in others. Three did not provide information.
- **Carpet padding:** two of the seven companies surveyed do not use FR chemicals, as they use rubber instead of polyurethane foam. Two companies that use recycled polyurethane that already contains FR chemicals offer at least one product made from new foam without FRs. The remaining three companies did not provide information, but their websites reference recycled foam.

Although a growing number of companies are finding ways to meet flammability standards without using toxic chemicals, there are still several major product makers who either have not made the transition or do not let their customers know what is in their products. This has to change, so people can make smart choices that protect their families and environment.

Companies making home furniture, mattresses and carpet padding should source flame retardant-free foam. They should use only the least-toxic chemicals and disclose any FR use on the product label. Companies should examine their overall chemical selection processes, prioritize chemicals of concern for phase out and establish methods to choose the least-toxic materials.

Governments should act to phase out toxic FR chemicals and establish flammability standards that protect against house fires without driving the use of dangerous chemicals.

Individuals should look for and demand FR-free products, and take steps to limit contact with FRs in furniture, mattresses, or padded carpets they already own. To support the transition away from FR chemicals, the report includes numerous resources for companies, governments and individuals.

Introduction

Over the past 40 years, flame retardant chemicals (FRs) have been added to upholstered furniture and mattresses, ostensibly as a means of protecting our families from fires,. They have ended up in carpet padding, because of the use of recycled foam.

But contrary to chemical industry claims, flame retardants are both unnecessary and toxic in these products. Fire safety can be achieved by safer methods without exposing families to harmful chemicals. Several states have banned certain FRs, and many companies are offering products without them in response to consumer demand and updated flammability standards.

We come into contact with flame retardants in numerous products every day. Most products that contain polyurethane foam, such as sofas and carpet padding, are reservoirs of flame retardants. One study found them in 85% of 102 couches tested.[1] These toxic chemicals migrate out of our products into house dust and indoor air, and subsequently into people. Over 90% of Americans have flame retardants in our bodies, according to the Centers for Disease Control.

Young children, who increase their exposure through crawling and putting things in their mouths, have much higher levels in their bodies than adults. Studies of families with toddlers found they had 2-5 times higher levels than their parents.[2]

There is growing evidence this exposure puts our families' health at risk. Flame retardants are linked to a wide array of health problems like cancer, learning and developmental disabilities, and infertility. Several studies have found children with higher prenatal exposure to FRs have lower IQ and are more likely to demonstrate lack of attention, hyperactivity, and poor motor skills.[3]

In response to these health concerns, twelve states (Alaska, California, Hawaii, Illinois, Maryland, Minnesota, Maine, New York, Oregon, Rhode Island, Vermont and Washington) have banned certain flame retardants.[4] The bans are widely supported by fire fighters who suffer from higher rates of cancer linked to occupational exposure to flame retardants. While state bans do not cover all flame retardants in every product, enacted and pending state policies help drive the market away from their use.

In addition to state bans, better product design and modernized flammability standards for home furniture make it easier to find products without flame retardants.[5] These standards reflect updated science on fire ignition and require products to pass a smolder test. Products can more easily meet this smolder standard without hazardous flame retardants.

1 Stapleton HM, Sharma S, Getzinger G, Ferguson PL, et al. Novel and high volume use flame retardants in US couches reflective of the 2005 PentaBDE phase out. Environ Sci Technol. 2012;46 (24):13432-9. greensciencepolicy.org/wp-content/uploads/2014/01/38-Stapleton-Sharma-2012.pdf

2 Butt CM, Congleton J, Hoffman K, Fang M, Stapleton HM. Metabolites of organophosphate flame retardants and 2-ethylhexyl tetrabromobenzoate in urine from paired mothers and toddlers. Environ. Sci. Technol. 2014;48(17):10432-38. pubs.acs.org/doi/abs/10.1021/es5025299

Lunder S, Hovander L, Athanassiadis I, Bergman A, Significantly higher polybrominated diphenyl ether levels in young U.S. children than their mothers. *Environ. Sci. Technol.*, 2010;*44* (13); 5256–62 pubs.acs.org/doi/abs/10.1021/es1009357

3 Chen A, Yolton K, Rauch SA, et al. Prenatal polybrominated diphenyl ether exposures and neurodevelopment in U.S. children through 5 years of age: The HOME Study. Environ Health Perspect. 2014;122(8):856-62.ehp.niehs.nih.gov/wp-content/uploads/122/8/ehp.1307562.pdf

4 Safer States, www.saferstates.com/bill-tracker

5 Office of California Governor Edmund Brown, www.gov.ca.gov/news.php?id=18301

Companies meet these standards by inserting an inherently smolder-resistant barrier under the outer surface, or by using a smolder-resistant fabric. Mattress flammability standards changed in 2006, and can be met with an inherently flame-resistant barrier under the outer fabric. As a result, furniture and mattresses can be made without FR chemicals.

The market is responding and moving away from flame retardants. A 2015 survey of 37 residential furniture companies representing almost 60 brands verified some companies offer flame retardant-free furniture.[6] Our report examines which of the nation's top furniture, mattress, and carpet padding makers lead this trend and which are lagging behind.

Urging Product Makers to Change

With the shifts in regulation, retailer actions, and changing public demand, the purpose of this project was twofold:

1) Determine how the leading companies that make large, foam-based products are meeting flammability standards, and whether they have moved away from chemical flame retardants;
2) Encourage manufacturers to use the safest, least toxic materials available.

We identified the top-selling manufacturers in three sectors: home furniture, full sized mattresses, and carpet padding. This resulted in a list of 38 companies.

We assessed the information available on their websites regarding how they achieved fire safety, and called the customer service phone line to ask about flame retardant use This revealed what a member of the public could learn and enabled us to assess the company's transparency on the issue. We conducted online searches to find additional information in the public domain and consulted other recent surveys for the furniture sector.

We sent each company a letter on behalf of the Safe Sofas and More campaign summarizing our findings and giving them the opportunity to respond before this report was released. The letter includes the Safe Sofas and More campaign collaborative demand set that can accelerate the transition to safer products, and we urge all product makers to adhere to these guidelines:

- Commit to a near-term phase-out of flame retardant chemicals for products in the U.S., Canada and other markets they serve;
- Where there are no safer means to meet a flammability standard, use the least toxic chemicals and for only that market;
- Disclose on package labels chemical flame retardants used in their products;
- Establish a company chemical policy that evaluates current chemical usage, including but not limited to flame retardants, and sets criteria to determine the least toxic feasible substitute ingredients and processes (both chemical and nonchemical substitutes) for all products, and disclose this policy on their website.

6 Center for Environmental Health, Residential Furniture Survey, www.ceh.org/residential-furniture/

Results

There is both good news and bad news in this report. The good news is, some companies are demonstrating that it's entirely possible to make furniture, mattresses, and carpet padding without adding toxic chemicals as flame retardants. In fact, companies have been quite creative in their innovations to meet flammability standards without adding chemicals (see below). The bad news is, not every company has made this transition, and not every company is willing to disclose whether or not they're adding toxic chemicals to their products. Therefore, a person can't always find out whether or not the products they're buying for their homes and family are safe.

Use of Flame Retardants

Out of **17 residential furniture companies**, ten report having completely phased-out flame retardants. One company reported that they phased out flame retardants in domestically produced furniture, but still use them in imported products. The remaining six companies did not provide information for us to report on their use of flame retardants.

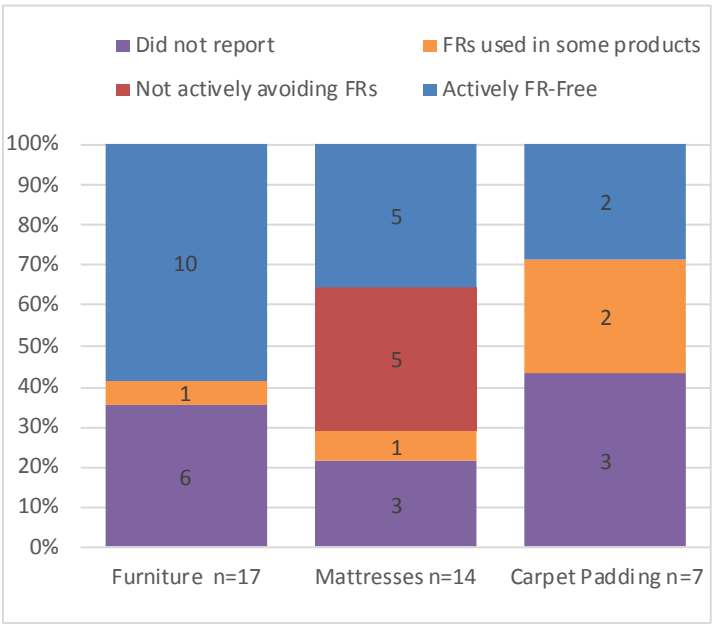
Of the **14 mattress makers,** five companies use inherently flame resistant barrier materials instead of flame retardants to meet the fire safety standards for this sector. Five more also use a barrier to achieve flammability standards, but do not actively source fully flame retardant-free foam, including two companies that source foam free of certain, but not all, chemicals. One company uses a barrier that may contain FR chemicals. One company reported offering a FR-free line, while still using FR chemicals in other products. Three companies did not disclose how they meet flammability standards.

Mattresses must resist surface smoldering, and the overall mattress must resist a thirty minute open flame. Addition of flame retardants to interior foam is insufficient to achieve this standard.

Out of **seven carpet padding manufacturers** contacted, two do not use flame retardants at all, because they use a rubber-based material. Two companies offer at least one product line that is free of flame retardants, but otherwise use recycled polyurethane foam. The remaining three only use recycled polyurethane. These three companies did not provide any information on FR chemicals online, via phone calls, or in response to our letter.

Recycled foam will likely contain flame retardants, certainly if material includes post-consumer content. There is no U.S. flammability standard for carpet padding (though there is for carpets themselves) and so flame retardants are not directly added by manufacturers of carpet padding.

Reported use and avoidance of flame retardants



Transparency

Methods of communication favored by companies, and how willing they were to disclose information about FR chemicals, varied by sector.

Eleven of the 17 home furniture makers provided information. One of these, Sherrill, only provided information after receiving our letter. The remaining 10 companies offered one or more ways for the public to learn about their ways of making products fire-safe. Eight provided information to callers.

Five provide clear information on their website. Three include the California-mandated product label on all furniture sold nationwide. One shares this information with their dealers for showroom communication. Six furniture makers did not make information available. One of them, Heritage Home, had previously reported they were FR free.

Eleven of the fourteen mattress manufacturers provided information. Ten provided information by phone. Only one mattress maker was explicit about their avoidance of added FR chemicals on their website. One company, Select Comfort Sleep Number, only provided information in response to our letter.

Five of the seven carpet padding companies provided information. Three provided it to our callers, one responded to email, one included information on their website. None provided information through multiple channels. Two did not provide information on the presence of flame retardants through any channel.

Discussion

Furniture makers are moving away from flame retardant chemicals. It is clear from this survey that several furniture makers are well aware of the shifting regulations and are making changes or have already made changes to remove unnecessary flame retardant chemicals. This is not surprising, given the intensive pressure on furniture makers and retailers since the 2013 change in California regulation.

However, it is interesting to note **more than a third of the leading furniture makers (35%) do not make information about flame retardant chemicals publicly available**.

One of the furniture companies that did not respond to our survey, Heritage Home, had previously reported no longer using flame retardant chemicals, so we cannot assume that the absence of information means anything in particular. Thus, we urge all product makers to be transparent about their materials choices, particularly regarding flame retardant chemicals, and ensure people have easy access while furniture shopping.

Mattress makers as a whole, despite a decade of opportunity to do so, have not stopped adding FR chemicals to their products—our results were mixed. When it comes to mattresses, conventional wisdom has been that because the federal flammability standards mandated a decade ago could not be met by relying on FR chemicals in the foam, mattress makers had

stopped using them. Our survey suggests that this is not the case: more than half of the 11 companies for which we have information are not reporting to be FR-free. Five were not sourcing FR-free foam, and an additional manufacturer told us two of their four product lines contained FR chemicals.

Because of previous assumptions, no major advocacy campaigns have been mounted in the past decade to ensure mattresses are in fact FR-free. Our findings suggest that greater scrutiny and pressure on this sector could yield a similar transition as in household furniture.

A Cautionary Tale: Toxic Tris' Ignoble Return

In the 1970s, when children's pajamas were first treated with flame retardant chemicals, the initial choice was brominated tris. This proved toxic, and was banned. The replacement, chlorinated tris, was found to be similarly problematic, and was voluntarily removed.

Years later, when polyurethane foam makers were phasing out toxic PBDE flame retardants, we learned some manufacturers never gave up still-legal chlorinated tris. Its use was widespread, including in products made for babies, exposing the very same population to the same toxic chemical.

It is vital for the market to identify safer solutions, and that governments act to keep toxic options from returning. Safe approaches exist that provide fire safety without the introduction of any chemical flame retardants.

Carpet padding makers are in a difficult situation. On the one hand, their recycling of foam from other manufacturing processes and from consumer goods keeps materials out of the waste stream. On the other, the materials can contain harmful chemicals, and thus reintroduce banned chemicals into a home setting, re-exposing families for years after the chemicals are no longer added to new products. As such, our findings are not surprising.

The only two fully FR-free lines employ rubber as their base material. However, one company reported using recycled tires, which may contain other toxic chemicals.[7] The two companies that offer polyurethane foam padding without FRs do so by sourcing virgin foam.

The Carpet Cushion Council has tracked the levels of phased out polybrominated diphenyl ether (PBDE) flame retardant chemicals (particularly pentaBDE) in foam over time. They report that 85% of the carpet cushion sector is based on recycled content foam. State pentaBDE bans passed in the mid 2000s often included industry-sought exemptions for carpet padding, to enable the ongoing use of post-consumer foam as a feedstock.

As a result, pentaBDE continued to be present in carpet padding in decreasing amounts through December 2014, at which point it was present at an average of 10 parts per million, according to the Carpet Cushion Council.[8] The trade association has not publicly tracked the levels of other toxic FR chemicals, such as chlorinated Tris.

7 California Department of Resources Recycling and Recovery. Tire-derived rubber flooring chemical emissions study: laboratory study report. October 2010. www.calrecycle.ca.gov/publications/Documents/Tires%5C20110002.pdf

8 Self-reported by the Carpet Cushion Council. Bonded polyurethane carpet cushion profile. Accessed 11/2015. www.carpetcushion.org/bonded-cushion.cfm

Recommendations

Manufacturers, retailers, policy makers and the public should continue to take steps to eliminate the use of toxic chemical flame retardants.

What manufacturers can do

Several furniture manufacturers have made significant progress in shifting away from using toxic chemical flame retardants. Those companies that haven't should take immediate steps to do so. Mattress and carpet padding makers should work with suppliers to assure that all components of their products, including the foam, do not contain these chemicals.

Manufacturers need to be particularly mindful that many sources of foam contain recycled materials and are very likely to contain chemical flame retardants. It is important that manufacturers require and certify that suppliers of foam assure that no chemical flame retardants were used in making the foam. Manufacturers of these products should make information about FR use in their products readily available to the public.

We call on product makers to assess all chemicals in products they use, and develop a chemicals management policy that eliminates toxic chemicals.

What retailers can do

Retailers, particularly large corporations, have significant influence over the marketplace by the choices of products they sell in their stores. Retailers should work with their suppliers to assure that furniture, mattresses and carpet padding they sell no longer contains chemical flame retardants. Retailers can also provide information to their customers about which products they carry that are flame retardant free by posting information in stores and on websites.

TB 117: How a California standard drove the use of flame retardants in furniture

In 1975, the State of California enacted Technical Bulletin 117 (TB 117), which required that upholstered furniture comply with an open flame flammability test. Because petrochemical-based polyurethane foam is inherently highly flammable, manufacturers routinely added flame retardants to their furniture and children's products to comply with the standard.

For decades, penta-BDE was the flame retardant of choice. In 2005, chemical companies reached an agreement with the U.S. Environmental Protection Agency to cease domestic production of penta-BDE because it was found to be toxic and was bioaccumulating in fish, wildlife and human breast milk.

Without penta-BDE to meet TB 117 flammability requirements, manufacturers turned to a suite of replacement flame retardants for use in polyurethane foam, including Firemaster 550, TCEP, TDCPP, TCPP and others. Unfortunately, these replacement chemicals are similarly toxic.

As of January 1, 2014, California changed the TB 117 requirement from an open flame to a smolder test, which can be met without adding flame retardants. But since the new standard (TB 117-2013) does not ban flame retardants, and products with flame retardants can meet both the old and new standard, manufacturers may still be adding them. California now requires that upholstered furniture that contains flame retardants be labeled as such.

What policymakers can do

Policy makers at all levels of government can play a huge role in pressing for more health protective policies that reduce exposure to toxic chemical flame retardants.

- Local, state and federal governments can leverage their purchasing power to require that furniture, mattresses, carpet padding and other products purchased by the government do not contain chemical flame retardants.
- Policy makers can provide leadership in adopting policies that restrict the sale of products containing toxic chemicals. Several states have already taken action, and US Senator Schumer's "Children and Firefighters Protection Act" would expand these prohibitions nationwide.
- Departments of health and other government officials can issue bulletins that provide information on the health and environmental impacts of exposure to these chemicals, as well as steps to reduce exposure.
- Policy makers can use this report and state reporting databases, such as Washington State's (see Resources), to pass laws that require disclosure or labeling of products containing chemical flame retardants, and ban their use entirely over time.

What individuals can do

Ask questions, read labels and clean often to reduce exposure to toxic flame-retardants in your home. Get involved with advocacy efforts in your city, state or nation to advance policies that promote toxic-free fire safety (see resources below). Urge retailers and product makers to sell only nontoxic products, and to disclose what materials and chemicals they use in manufacturing (see resources below).

- Purchase from a company known to make or sell flame retardant-free furniture. (See resources below.) When choosing your own fabric design, check with the company to ensure it is also flame retardant-free. Be cautious about floor samples and deeply discounted products that may be older, and more likely to be toxic. If a product is not labeled, contact the manufacturer and ask if flame retardants are in the product. For example, buybuyBABY provides information on flame retardants for crib mattresses and other baby products on its website.
- Read the labels. Furniture that is labeled "Contains NO added flame retardant chemicals" reflects the materials used in that product. Look for labels under cushions or on the bottom of furniture that indicate whether added flame retardants have been used. Look for children's and other upholstered furniture, baby mattresses and other products that are labeled "flame-retardant-free." If upholstered furniture is labeled "This article meets the flammability requirements of California technical bulletin 117," it likely contains added flame-retardants, so avoid it.
- Clean house and hands frequently. Damp or wet mop and vacuum (with a HEPA filter) frequently to eliminate the dust where chemicals lurk. Frequent handwashing can reduce exposure to toxic chemicals in dust and products.
- Choose area rugs or bare floor instead of wall-to-wall carpeting, and forego foam-based carpet padding.

Resources

For Companies

1. GreenScreen® for Safer Chemicals is a method of comparative Chemical Hazard Assessment that can be used for identifying chemicals of high concern and safer alternatives, www.greenscreenchemicals.org.
2. Access to GreenScreen assessments, Interstate Chemicals Clearinghouse, Chemical Hazard Assessment Database, theic2.org
3. Chemical Footprint Project provides a tool for benchmarking companies as they select safer alternatives and reduce their use of chemicals of high concern. www.chemicalfootprint.org.
4. Organizations dedicated to supporting businesses in adopting safer chemistry and sustainable business practices:
   - Sustainable Furnishings Council: sustainablefurnishings.org
   - The Business-NGO Workgroup for Safer Chemicals and Sustainable Materials: www.bizngo.org
   - American Sustainable Business Council: asbcouncil.org
   - Green Chemistry and Commerce Council: www.greenchemistryandcommerce.org
5. California flammability standard, Technical Bulletin 117-2013. www.bearhfti.ca.gov/about_us/tb117_2013.pdf

For Government

1. Green procurement policies
   - National Association Of State Procurement Officials: www.naspo.org/dnn/States.aspx
   - NYS Executive Order 4 : State Green Procurement: www.ogs.ny.gov/EO/4/
   - Healthy Purchasing Initiative: oeconline.org/healthy-purchasing-collaborating-for-change
2. Pending legislation to restrict chemical flame retardants. Examples may be found here: www.saferstates.org, go to “bill tracker” and filter for “toxic flame retardants.”
3. Interstate Chemicals Clearinghouse offers support for chemical policy, hazard assessment, alternatives assessment, and chemicals of concern. www.theic2.org
4. Washington State Children’s Safe Products Act database www.ecy.wa.gov/programs/hwtr/RTT/cspa/

For Individuals

1. Information on companies that sell flame retardant-free upholstered furniture, Center for Environmental Health (CEH) www.ceh.org/residential-furniture/
2. Various consumer tips, Green Science Policy Institute: greensciencepolicy.org/topics/flame-retardants/
3. Take action to urge the Consumer Product Safety Commission to use their existing authority to ban toxic flame retardant chemicals in children’s products and furniture here: bit.ly/1Sgv9ca
4. Get involved with market campaigns that focus on eliminating FR chemicals:
   - The Campaign for Healthier Solutions: www.nontoxicdollarstores.org
   - Mind the Store: saferchemicals.org/mind-the-store/
   - Getting Ready for Baby: www.gettingready4baby.org

Appendix 1. Detailed Responses

A. Household Furniture Makers

Company	FR-Free Products?	How is information made public?	In the company's own words
Ashley	Yes	Phone, email, label	Direct communication: "Ashley has worked closely with our supply chain, and all upholstered furniture manufactured by or for us as of January 1, 2015, does not use flame retardant chemicals. All Ashley's upholstered furniture manufactured by or for us after January 1, 2015, no matter where it is shipped in the US, includes a label that complies with the requirements of California's SB-1019. "
Bassett	Yes for domestic products; no for imported	Phone	
Bernhardt	Unknown	None	
Best Home Furniture	Yes	Phone, website	Website: "Best Home Furnishings products are designed to meet flammability standards without the use of flame retardant agents."
Dorel	Unknown	None	
Ethan Allen	Yes	Phone, website (updated based on Safe Sofas and More inquiry)	Direct communication: "Upholstery products have been manufactured FR Free since January 1, 2015 with the exception of sleep sofa mattresses. Those have been shipped FR free since August 1, 2015." Also: "…we do have a chemical management policy in place."
Flex Steel	Yes	Website	Website: "Flexsteel home furniture is free from fire-retardant chemicals"
Franklin	Unknown	None. Customer service refused to answer questions	
Heritage Home	Unknown	None	Note: Reported FR-free to CEH
Home Meridian	Unknown	None	
Hooker	Yes	Phone, email, dealers, label	Direct communication: "[O]ur company is now exclusively buying all materials for residential furniture that is free of flame retardant chemicals."
Klaussner	Yes	Phone, website (updated based on Safe Sofas and More inquiry)	Website: "Klaussner has removed all flame retardant chemicals from our polyurethane foam as of March 28th, 2014. "
La-Z-Boy	Yes	Phone	Direct communication: "La-Z-Boy has not used chemical flame retardants in manufacturing its products (including in the foam) in over a year."
Lexington	unknown	None	
Natuzzi	Yes	Phone	
Sauder	Yes	label, phone (updated based on Safe Sofas and More inquiry)	Direct communication: Upholstered items "…meet the [CA] SB1019 requirements for signifying on the warning label that the products contain no flame retardant chemicals."
Sherrill	Yes	None	Direct communication: " Sherrill was one of the first manufacturers to mandate that our foam suppliers eliminate and not use any FR chemicals… Our decking materials and insulation/padding materials are also FR free."

B. Mattress Manufacturers

Company	Free of all flame retardant chemicals?	Where are chemical FRs?	How is information made public?
Corsicana	No	Foam	Phone
E.S. Kluft	No	Foam	Phone
Englander	No — but source FR-free foam	Barrier	Phone
King Koil	Unknown		None
Kingsdown	Yes		Phone
Lady Americana	Yes		Phone, website
Restonic	Unknown		Website
Sealy	Yes		Phone
Select Comfort Sleep Number	Free of specific flame retard-ant chemicals	Foam	None
Serta Simmons	Yes		Phone, with effort. Lim-ited info on website.
Southerland	No	Foam	Phone
Spring Air	Yes for two brands, no for two brands	In foam of two "no" brands	Phone
Symbol	No	Foam	Phone
Therapedic	Unknown		None

C. Carpet Padding

Company	FR-Free Products?	How information is made public?
Dura Undercushions	Yes - made with recycled tires, not polyurethane	Email
Future Foam	Unknown - made with scrap/recycled foam	None
Leggett and Platt-	Unknown - some made from recycled foam	None
Flex Foam	Yes - one product line (1835 BX) No for all others	Phone
NCFI	One line - BioLux Max is FR-free. Unknown for other product lines, which may contain post-consumer foam	Bio-Lux Max info is on website. Refused to speak to CHNY caller.
Scottdel	No added FR chemicals, but scrap foam may contain them	Phone
Sponge Cushion	Yes - doesn't use polyurethane, uses styrene butadi-ene rubber	Phone

Appendix 2: Methodology

This project was conducted over a 16 month period, starting in August 2014 through November 2015.

Initial Review

Phase one of the project identified the leading manufacturers in each sector. For furniture and mattresses, we relied on Furniture Today's November 2012 publication, The List. (www.ihfra.org/resource/resmgr/ft_thelist_nov12.pdf).

We relied on membership in the Carpet Cushion Council to identify the top carpet padding makers (www.carpetcushion.org).

Based on preliminary research, we eliminated companies that appeared on those lists when they only produced intermediary products that were not sold directly to consumers.

Between November 2014 and 2015, Clean and Healthy New York reviewed corporate websites, and made calls to customer service to determine the answers to the following questions:

- How do you meet flammability standards?
- Do you use foam?
- Do you source flame retardant-free foam?
- Do you use a chemical spray or barrier?
- Do you use nanomaterials to achieve flame retardancy?

These modes of inquiry not only gave us insight into how each company achieves flammability standards, but also how transparent they were being with potential customers. We made a definitive round of calls to all product makers in May 2015.

Outreach to Corporate Leadership

After completing our survey, we conducted additional research to gain more information, especially from companies that did not disclose how they meet FR standards by phone or on their websites. We searched for news stories about companies' use of flame retardants to determine if companies were making changes but not being forthcoming via phone or on their website. We reviewed information gathered by the Center for Environmental Health, published in May 2015.

We then drafted letters to each manufacturer, based on all of the information we had gathered, to give companies an opportunity to disclose how they meet flammability standards and verify the accuracy of what we had discovered through the more public approaches to data gathering.

We completed a last check of corporate websites in October and November 2015, and made some selected calls to specific companies to clarify information.

In our final round of outreach, we were more persistent than we had been in our initial survey, and often reached higher level employees who were able to answer our questions when customer service had not.

The information presented here pulls together everything we discovered during this process. If a company did not make information available to average consumers, we have noted this, even if we , through our expertise, were able to uncover more details.

Appendix 3: About Flame Retardant Standards

Household Furniture

There is not a federal flammability standard for household upholstered furniture. Current regulations are driven by California's Technical Bulletin 117, which until 2013, required that foam in such furniture resist a small open flame. This has not been shown to prevent fires in real life scenarios. The current regulation now focuses on preventing fire from penetrating the exterior surface. TB-117 2013 does not require use of flame retardant chemicals to meet, even when using polyurethane foam.

Mattresses

Federal regulations 16 CFR § 1632 and 1633, administered by the U.S. Consumer Product Safety Commission (CPSC), require all mattresses sold in the United States to meet flammability standards, including children's mattresses. The standard requires that mattresses resist ignition when exposed to a lighted cigarette and limit heat release when exposed to an open flame. Flame retardant chemicals in foam are insufficient to meet the open flame standard. All reporting companies use a form of barrier material to achieve this.

Carpet Padding

There are no flammability standards governing carpet padding. No flame retardant chemicals are needed.

About the Safe Sofas and More Campaign

The Safe Sofas and More campaign advocates for non-hazardous fire safety techniques to improve health and safety. The campaign is supported by a growing, diverse alliance of public health, environmental and consumer groups representing millions of Americans who support the safety of chemicals and materials in products, and who are concerned about the use of flame retardant chemicals such as organohalogens, organophosphates, and nanomaterials.

Campaign Partners: Alaska Community Action on Toxics ▪ Capital District Against Fracking ▪ Center for Environmental Health ▪ Center for Media and Democracy ▪ Children and Adults with Attention Deficit/Hyperactivity Disorder of Georgia (CHADD) ▪ Citizens Campaign for the Environment ▪ Clean and Healthy New York, Inc. ▪ Clean Water Action Massachusetts ▪ Clean Water Action Minnesota ▪ Coalition for a Safe and Healthy CT ▪ Connecticut Clean Water Action/Clean Water Fund ▪ Connecticut Citizens Action Group ▪ Connecticut Coalition for Environmental Justice ▪ Connecticut Nurses' Association ▪ Conservation Minnesota ▪ Ecology Center ▪ Health and Environment Program, Commonweal ▪ Healthy Legacy Coalition ▪ Informed Green Solutions ▪ Kids Enabled ▪ Learning Disabilities Association of America ▪ Learning Disabilities Association of Georgia ▪ Learning Disabilities Association of Illinois ▪ Learning Disabilities Association of Maine ▪ Maryland PIRG ▪ Physicians for Social Responsibility ▪ Texas Campaign for the Environment & TCE Fund ▪ Texas Physicians for Social Responsibility ▪ UPSTREAM ▪ Vermont Conservation Voters

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