



Department for  
Business & Trade



Office for Product  
Safety & Standards

# Consultation: The Fire Safety of Domestic Upholstered Furniture

## Response form

### Introduction

This consultation seeks your views on important reforms to how we regulate the fire safety of domestic upholstered furniture.

The proposals set out below reflect the policy aim to maintain a high level of fire safety while meaningfully reducing chemical flame retardant use. They reflect the large volume of stakeholder engagement and evidence gathering that has taken place over a number of years. The Government will:

- Introduce new furniture fire safety requirements based on a smoulder test.
- Pragmatic testing solutions to facilitate innovation.
- Proportionate scope adjustments.

The proposed policy remains subject to review and may change as a result of the evidence and views provided by stakeholders in response to this consultation.

Please return to: [furniturefiresafety@businessandtrade.gov.uk](mailto:furniturefiresafety@businessandtrade.gov.uk)

**Closing: 23:59 on 23 June**

### Confidentiality and data protection

DBT is committed to protecting the privacy and security of your information. Details on how we collect and process your personal data in accordance with data protection legislation when you respond to one of our public consultations are provided in the Confidentiality and data protection section of the [consultation document on GOV.UK](#). You can also read the [Public consultations privacy notice](#).

| Your Details                                            |                                                                                                                                                                                                                       |   |
|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| 1. Your name                                            | Nerissa Wu                                                                                                                                                                                                            |   |
| 2. Your email address                                   | Nerissa.Wu@cdph.ca.gov                                                                                                                                                                                                |   |
| 3. Are you responding:                                  |                                                                                                                                                                                                                       |   |
| As an individual? Please go to 'Consultation Questions' |                                                                                                                                                                                                                       |   |
| On behalf of an organisation? Please continue           |                                                                                                                                                                                                                       |   |
| 4. Name of organisation                                 | State of California - Biomonitoring California<br>(Encompasses parts of the California Department of Public Health, Department of Toxic Substances Control, and the Office of Environmental Health Hazard Assessment) |   |
| 5. Number of employees                                  |                                                                                                                                                                                                                       |   |
| 1 to 9                                                  |                                                                                                                                                                                                                       |   |
| 10 to 49                                                |                                                                                                                                                                                                                       |   |
| 50 to 249                                               |                                                                                                                                                                                                                       | x |
| 250 or more                                             |                                                                                                                                                                                                                       |   |
| 6. Type of organisation                                 |                                                                                                                                                                                                                       |   |
| Business                                                |                                                                                                                                                                                                                       |   |
| Trade Association                                       |                                                                                                                                                                                                                       |   |
| Test House or Laboratory                                |                                                                                                                                                                                                                       |   |
| Consumer Body                                           |                                                                                                                                                                                                                       |   |
| Local Authority                                         |                                                                                                                                                                                                                       |   |
| Fire and Rescue Service                                 |                                                                                                                                                                                                                       |   |
| Government Body                                         |                                                                                                                                                                                                                       | x |
| Other (Please specify)                                  |                                                                                                                                                                                                                       |   |

## Consultation Questions

1. Do you agree with the proposal to introduce reformed furniture fire safety sector legislation, based on a smoulder test?

Agree

Neither agree nor disagree

x

Disagree

You can provide comments in the space below.

Please see comments at end of document.

2. Do you agree with the proposal to allow businesses to use composite/representative sample testing or component testing to demonstrate compliance with the new regulations?

Agree

Neither agree nor disagree

x

Disagree

You can provide comments in the space below.

No comment

3. Do you agree with the proposal to use the General Product Safety Regulations to regulate re-upholstery and repair of upholstered furniture?

Agree

Neither agree nor disagree

x

Disagree

You can provide comments in the space below.

No comment

|                                                                                                                                       |   |
|---------------------------------------------------------------------------------------------------------------------------------------|---|
| <b>4. Do you agree with the proposal to use the General Product Safety Regulations to regulate second-hand upholstered furniture?</b> |   |
| <b>Agree</b>                                                                                                                          |   |
| <b>Neither agree nor disagree</b>                                                                                                     | x |
| <b>Disagree</b>                                                                                                                       |   |
| <b>You can provide comments in the space below.</b>                                                                                   |   |
| No comment                                                                                                                            |   |

**Please email response form to: [furniturefiresafety@businessandtrade.gov.uk](mailto:furniturefiresafety@businessandtrade.gov.uk)**

### Comments for Consultation Question 1

The Government of the United Kingdom is currently considering changes to flammability regulations to reduce the use of flame retardants in home furnishings. We would like to offer perspectives from California pertinent to this consideration. In 2013, the State of California implemented similar changes to the proposed flammability standards with an aim to reduce human exposures to flame retardants (1). These efforts are considered a public health success. Reductions in exposure were tracked through a study by the Biomonitoring California program (2). Our multi-agency program<sup>1</sup> monitors chemical exposures in the state's population and examines trends in exposure to help assess the effectiveness of environmental health programs and legislation. We have been tracking concentrations of environmental chemicals in Californians' bodies for nearly twenty years and the presence of flame retardants in Californians' blood has been a persistent and troubling trend (3). Below we share a summary of work measuring body burden declines after the California standard change as a demonstration of the value the UK proposed regulatory change may bring.

Flame retardant standards instituted in California in the 1970s led to large quantities of chemical flame retardants being mixed into foam formulations to meet the open flame standard. Over the subsequent decades, scientists observed large quantities of flame retardants in household dust and then in increasing concentrations and frequencies in the bodies of Californians, eventually showing levels higher in California than the rest of the US and the world (3, 4). This was concerning as studies on health effects have revealed links to loss of IQ and other neurodevelopmental damage, cancer, and reproductive impacts with

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<sup>1</sup> The California Environmental Contaminant Biomonitoring Program (also known as Biomonitoring California, <https://biomonitoring.ca.gov/>) is a collaborative effort of three State departments: the California Department of Public Health (CDPH), Office of Environmental Health Hazard Assessment (OEHHA), and Department of Toxic Substances Control (DTSC).

older flame retardants and other health impacts, such as asthma and allergy exacerbation and birth outcome impacts with newer flame retardants (reviewed in 2, 5).

While available information regarding health effects of flame retardant exposure was accumulating, evidence about the actual flammability benefits of flame retardant use was inconclusive (6). In addition, some studies showed that flame retardants and other chemicals present in the indoor environment contribute to the toxicity of smoke (7).

In the context of these concerns, in 2013, California changed flammability standards for upholstered furniture, to move from an open flame test to a smolder test (TB117-2013). The updated standard allowed manufacturers to meet requirements without adding flame retardant chemicals. Additional legislation (SB 1019) set requirements for a flammability label that lets consumers know if upholstered furniture contains added flame retardant chemicals (8).

Following adoption of TB117-2013, Biomonitoring California collaborated with several academic and environmental health organizations to investigate whether the changed standard would impact the level of flame retardants in the homes and bodies of Californian's. Participating households replaced furniture foam or foam-containing furniture with foam or furniture which did not contain flame retardants. Biological samples from household residents were examined for changes in participants' flame retardant biomarker concentrations of polybrominated diphenyl ethers (PBDEs) in serum and organophosphate flame retardants (OPFRs) in urine.

Concerningly, we found flame retardant chemicals in all participants' biological samples showing, like other studies, that flame retardants have become pervasive in indoor environments after migrating out of their original products. Due to manufacturing and regulatory changes prior to TB 117-2013, PBDE levels were already slowly decreasing over time in the California population (and furniture) in general (9,10). However, PBDE levels decreased 1.9 to 3.9 times faster in participants who had removed foam-containing furniture from their homes over a year of observation compared to a group who had made no change. For OPFRs, removing or replacing furniture did not significantly change levels in biological samples, likely related to the continued use in many other products like vehicles and electronics.

In addition to the biomarker results, our collaborators' analysis of dust samples over time also indicated decreased levels of flame retardant chemicals in nearly all homes after furniture replacement (11). Over the 12 months, PBDEs overall decreased by approximately 50% and up to 71% for OPFRs. Overall, these results indicate that updated flammability standards can reduce exposures to flame retardant chemicals in a relatively short period of time.

In 2020, the California smolder standard was adopted as the federal US standard, paving the way for reduced flame retardant exposures nationally (12). The UK is proposing to implement a similar change. We hope evidence of the public health success that California has enjoyed provides a compelling rationale as the UK considers the proposed regulation change.

## References

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4. Zota AR, Rudel RA, Morello-Frosch RA, Brody JG. 2008. Elevated house dust and serum concentrations of PBDEs in California: Unintended consequences of furniture flammability standards *Environ. Sci. Technol.* 42, 8158– 8164.
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7. Weber R, Kuch B. 2003. Relevance of BFRs and thermal conditions on the formation pathways of brominated and brominated-chlorinated dibenzodioxins and dibenzofurans. *Environ. Int.* 29(6):699-710.
8. State of California. 2014. SB 1019, Leno. Upholstered furniture: flame retardant chemicals. Sacramento, CA.
9. Hurley S, Goldberg D, Nelson DO, Guo W, Wang Y, Baek HG, Park JS, Petreas M, Bernstein L, Anton-Culver H, Reynolds P. 2017. Temporal Evaluation of Polybrominated Diphenyl Ether (PBDE) Serum Levels in Middle-Aged and Older California Women, 2011-2015. *Environ. Sci. Technol.* 51(8):4697-4704.
10. Gill R, Wang Q, Takaku-Pugh S, Lytle E, Wang M, Bennett DH, Park J, Petreas M. 2024. Trends in flame retardant levels in upholstered furniture and children's consumer products after regulatory action in California. *Chemosphere.* 351:141152.
11. Rodgers KM, Bennett D, Moran R, Knox K, Stoiber T, Gill R, Young TM, Blum A, Dodson RE. 2021. Do flame retardant concentrations change in dust after older upholstered furniture is replaced? *Environ. Int.* 153, 106513.
12. Consumer Product Safety Commission (CPSC). 2021. Standard for the flammability of upholstered furniture. *Fed. Regist.* 16 CFR Part 1640.