



## Outdoor Industry Association Priority Issues Brief: **Flame Retardant (FR) Chemistries** March 2016

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### 1. Overview

Flame retardant (FR) chemistries are applied to backpacking and camping tents in North America to meet flammability standards. These standards, originating in the 1970's, were established to reduce fire risk in paraffin-coated canvas tents, such as circus tents. Over time, the standards were extended to a broader array of tents, shelters, and awnings.

Canada and seven US states have adopted tent flammability standards as mandatory regulatory requirements. Many North American companies are unable to create separate tents for each market, so the default is to meet the highest applicable standard. This also applies to companies seeking to enter the North American market - there is no global flammability requirement for camping and backpacking tents, so brands based in geographies like Europe must develop fabrics with FR chemistries in order to expand distribution to customers in the US.

Tent brands and manufacturers must balance the need for FR chemistries with the growing list of substances that are regulated by government bodies or voluntarily restricted by brands. There is a growing body of information indicating that current flammability standards do not reflect the array of uses for modern tents and fabrics, raising opportunities to revisit the net benefit of FR treatments to campers and backpackers.

OIA and its members are collectively seeking to promote informed, data-driven use of FR chemistries, including policies that ensure the health and safety of campers and backpackers.

### 2. History

The Canvas Products Association International (CPAI) created *A Specification for Flame Resistant Materials used in Tents (CPAI-84)* in 1975. The test method and standard, CPAI-84, was designed to address fire risk in paraffin-treated canvas used for event tents. In the 1980's, CPAI-84 grew in scope to include "all camping tentage," which includes a broad range of products from RV awnings to backpacking tents.

In 1990 Canada, under the Hazardous Products Act (HPA), put into effect the Hazardous Products (Tents) Regulations SOR/90-245. This regulation references CPAI-84 1980 version, but not in its entirety, and does not include subsequent updates in the CPAI-84 1995 version. In response, Health Canada developed their own internal test method, appended with CPAI-84 (1980), referred to as Test Method F-16: *Test Method for the Flame Resistance of Tents*. In 2011, the regulation SOR/90-245 continues under the Canada Consumer Product Safety Act (CCPSA). The F-16 (2011 revision) test method remains aligned with CPAI-84 (1980) with added specificity for material weathering, and no allowance for material test method modifications or exemptions by material weight as noted in CPAI-84 (1995).

Despite the evolution of tent design, materials, and uses, CPAI-84 in the US was last updated in 1995. It is the most stringent standard, and therefore it serves as the default to which brands specify material compliance.

In February 2014 Canada, through the CGSB and Health Canada, began work to support revision of F16, the Canadian tent flammability test standard. Subsequently in 2015, the ASTM in the U.S. began consideration of a redefined scope and new test methods for CPAI-84.

### **3. Key Facts and Context**

Flame retardant is a term that describes a diverse range of chemical substances that inhibit the onset or spread of fire.

FR chemistries are used in numerous consumer goods and industrial applications:

- Children's pajamas
- Occupational clothing
- Residential furniture
- Automobile upholstery
- Construction materials
- Electronics
- Backpacking and camping tents

The main types of FR chemistries are:

- Brominated
- Chlorinated
- Phosphorous based
- Nitrogen based
- Inorganic (mineral)

Flammability Standards:

There is no federally mandated tent flammability standard in the US; however, seven US states require compliance with one of several tent flammability standards, and state law cites the use of FR chemistries as a means to achieve compliance.

The following standards are cited in these jurisdictions:

- F-16
  - Canada
- CPAI-84 (1975)
  - California

- Michigan (on 4/14/2012 the Michigan Fire Marshall exempted tents and tent shelters for recreational camping)
- CPAI-84 (1995)
  - Louisiana
  - New Jersey
  - Minnesota (no flammability citation is available in current legislation; CPAI-84 (1995) is assumed by default)
- NFPA 701
  - Massachusetts
  - New York

Despite widespread use of FR chemistries to meet flammability standards, there is only limited scientific data for many of the commercially available chemistries.

#### Regulatory Requirements:

In the US, twelve states, including New York and California, have banned or restricted specific FR chemistries—either through a complete ban or for use in specific product categories such as children’s products and residential furniture. Other regulations in seven US states require reporting or labeling of products containing specific chemicals, including some FR chemistries. For example, under The Safe Drinking Water and Toxics Enforcement Act, also known as Proposition 65, California requires that manufacturers label products containing any amount of two chlorinated FRs, TDCPP and TCEP.

Select jurisdictions, including the European Union, South Korea, and Canada, have banned or restricted use of certain FR chemistries, such as pentaBDE and decaBDE. A list of regulated FRs can be found within various restricted substances lists, including the [AAFA Restricted Substances List](#).

#### **4. What OIA and its members are doing**

Concerns of OIA and its members include:

- Flammability standards for tents, such as CPAI-84, should be examined in light of modern tent materials and the broad variance in tent uses (e.g. camping tents, large event tents). It is important to review the original purpose of the standards to understand appropriateness for both current and potential future tent materials.
- The current variance in standards across Canada and the US poses barriers to trade, both within North America and for companies entering the North American market. Outside of Canada and the seven US states there are no mandatory flammability requirements for camping and backpacking tents. The European Union’s ISO standard provides an optional path for pursuing FR in camping and backpacking tents. Most companies do not pursue that pathway, minimizing their reliance on FR chemistries.
- There is a notable lack of robust toxicity and exposure data for most FR chemistries. This data gap creates a hurdle for selecting chemistries. As older FR chemistries are banned or voluntarily restricted, companies lack sufficient information to appropriately assess alternatives.
- Protection against the acute risk of flammability must be balanced against the chronic risks of exposure to substances of concern. While flammability standards should remain

focused on providing fire-safe products to consumers, the industry must explore the broader topic of chemical exposure in collaboration with scientific experts, advocacy groups, and regulatory agencies.

- *Current tent flammability standards restrict the potential for product innovation.* The mandatory standards in North America limit materials that can be used in tents to those that can support the FR chemicals. This limitation limits consumer options compared to other standards, such as that of the EU.

Since 2011, the OIA Sustainability Working Group has worked proactively and collaboratively to implement chemicals management best practices in the supply chain. The topic of FR is addressed under the OIA Flame Retardant Task Force, an initiative created in 2015 as part of the OIA Chemicals Management Working Group. The FR Task Force is committed to building outdoor industry knowledge, understanding on the issues associated with certain FR chemistries, and supporting creation and adoption of best practices chemicals management guidelines for FR selection and use.

OIA and its members are also engaging with the organizations overseeing tent flammability test methods in the US and Canada. These are, respectively, the American Standards and Testing Methods (ASTM) board and The Canadian General Standards Board (CGSB). By working with these groups, OIA supports the creation of a harmonized North American tent flammability standard.

OIA also serves its members through a Regulatory Program within its well-established Government Affairs department. The OIA Regulatory Program seeks to translate the work of the Sustainability Working Group into policies that will improve consumer, worker and environmental safety while strengthening outdoor businesses.

Through these programs, OIA is actively working with outdoor industry stakeholders – including brands, retailers, suppliers, government agencies, and academic institutions – to achieve the following:

- Ensure products meet all relevant performance and consumer safety requirements;
- Promote modernization and harmonization of requirements for the new generation of outdoor products, including tents;
- Gain a clear, data-driven understanding of the potential impacts of FR chemistries and their efficacy;
- Use scientific evidence to make informed decisions on all classes chemical treatments used in outdoor products and to avoid regrettable chemical substitutions;
- Employ performance chemistries as responsibly as possible, including reducing or eliminating chemical use;
- Promote development and adoption of green chemistry solutions that can be implemented at scale;
- Gain a clear understanding of the industry's specific role and leverage points, so that we can most effectively deploy our efforts;
- Collaboratively develop tools and resources by the industry, for the industry, to help manage this issue.

OIA and its members are committed to pursuing these objectives in partnership with the diverse group of stakeholders who share our desire to adopt global environmental and social best practices to benefit the operations and communities in which we conduct our business.

## 5. Key Resources:

American Apparel and Footwear Association (AAFA) Restricted Substances List (RSL):  
<https://www.wewear.org/industry-resources/restricted-substances-list/>

American Chemistry Council Flame Retardant Basics fact sheet:  
<https://flameretardants.americanchemistry.com/FAQs/Flame-Retardant-Basics.html#FRs-the-same>

CPAI-84 flammability specification, 2011:  
<http://tentexperts.org/safety/safetyarticles/flammabilityrequirements>

Research Study: Flame Retardant Applications in Camping Tents and Potential Exposure,  
*Environmental Science & Technology* 2014, pp 152–155:  
<http://pubs.acs.org/doi/abs/10.1021/ez400185y>

Safer States bill tracking online platform: <http://www.saferstates.com/bill-tracker>

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