

Product Responsibility Best Practices	SUBJECT Regulations Regarding Flammability And Flame Retardants		LAST UPDATE July 2019
	APPLIES TO <ul style="list-style-type: none"> Suppliers Distributors 	FOCUS ON United States federal regulations regarding flammability of products and state restrictions on certain flame retardants.	
	QUICK LINKS <ul style="list-style-type: none"> PPAI Corporate Responsibility: ppai.org/corporate-responsibility UL: industries.ul.com/premiums-promotional-and-licensed-goods Consumer Product Safety Commission: www.cpsc.gov 		Intended for beginner compliance programs

Italic grey text indicates a hyperlink listed in the Online Resources section of this document.

Background

Flammability is one of the potential hazards associated with consumer products. There are various regulations addressing this hazard. For promotional products sold or distributed in the United States, the following regulations may apply.

The *Federal Hazardous Substances Act (FHSA)* defines various hazardous substances, including flammable and extremely flammable solids.

ASTM F963, the toy safety standard, references the FHSA definitions and test methods for flammability of toys.

The federal *Flammable Fabrics Act (FFA)* regulates the manufacture of highly flammable clothing and includes mandatory flammability standards for clothing textiles as well as children's sleepwear, vinyl plastic film used in clothing, carpets and rugs, and mattresses and mattress pads.

Flame retardants are chemicals that may be added to materials such as plastics and textiles as well as surface finishes and coatings. Flame retardants inhibit or delay the spread of fire and may be added to consumer products to meet applicable flammability requirements. There are concerns about the health impact of certain flame retardants, and there are restrictions on their use in some U.S. states.

Flammability Of Solids

The FHSA defines a flammable solid as "a solid substance that, when tested by the method described in § 1500.44, ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis" [16 CFR 1500.3 (c) (6) (vi)]. An extremely flammable solid is defined as a "solid substance that ignites and burns at an ambient temperature of 80°F or less when subjected to friction, percussion, or electrical shock."

Toys

ASTM F963, the Standard Consumer Safety Specification for Toy Safety, requires that "materials other than textiles (excluding paper) used in toys shall not be flammable, as defined under 16 CFR 1500.3 (c) (6) (vi) under the Federal Hazardous Substances Act (FHSA)...A test procedure for testing flammability of toys, which is an interpretation of 16 CFR 1500.44, is contained in Annex A5." Thus, toys are subjected to the federal flammability test method and must not be considered flammable, meaning that the burn rate must not exceed 0.1 inch per second. Any textile fabrics used in toys shall comply with *16 CFR 1610*, which is further described in *Flammability of Clothing Textiles*.

Under Section 106 of the *Consumer Product Safety Improvement Act (CPSIA)*, the *Consumer Product Safety Commission (CPSC)* adopted ASTM F963 and made compliance (and third party testing) mandatory with a few excepted sections. As part of the ASTM F963 standard, though, compliance to flammability is required for toys.

Children's Products

Children's products are defined by the CPSIA as items intended primarily for use by children 12 years of age or younger. The CPSIA provides four factors to consider in determining if a product is a children's product:

- A statement by a manufacturer about the intended use of such product, including a label on such product if such statement is reasonable.
- Whether the product is represented in its packaging, display, promotion, or advertising as appropriate for use by children 12 years of age or younger.
- Whether the product is commonly recognized by consumers as being intended for use by a child 12 years of age or younger.
- The Age Determination Guidelines issued by the commission staff (www.cpsc.gov/BUSINFO/adg.pdf)

In the promotional products industry, it can be particularly challenging to determine if a product will be targeted to children. *PPAI has resources available that provide further guidance.*

As with toys, it is not a federal mandate to test and certify compliance that a children's product is not considered a flammable solid. However, any children's product should not be highly flammable making testing and compliance a good industry practice. Testing per 16 CFR 1500.44 is typically performed as a core test for any children's product.

General Use / Adult Items

General use and adult items may also be subject to testing per 16 CFR 1500.44. While not a mandatory requirement, this testing identifies products that meet the definition of flammable solid. In determining whether a flammable solid is considered a hazardous substance, one must consider whether the product presents a hazard "in reasonably foreseeable handling or use" [16 CFR 1500.3(b)(4)(i)]. If under customary and reasonably foreseeable use, the product may come into contact with an ignition source, it may be deemed a hazardous substance and a warning statement may be required. If it is not expected to come into contact with an ignition source, it would not be considered a hazardous substance. A warning statement may still be included but is not mandatory.

Flammability Of Clothing Textiles

The FFA regulates a wide range of consumer products made of textile materials, including clothing textiles. The standard 16 CFR 1610 provides methods of testing the flammability of clothing and textiles intended to be used for clothing and establishes three classes of flammability, per below table.

- For plain surface fabrics, specimens are acceptable if they did not ignite, ignited but self-extinguished, or both. Plain surface fabrics refer to any textile fabric which does not have an intentionally raised fiber or yarn surface.
- For raised surface fabrics, specimens are acceptable if they did not ignite, ignited but self-extinguished, or both. Raised surface refers to any textile fabric which has an intentionally raised fiber or yarn surface such as pile, nap or tufting.

TABLE 1 TO §1610.4—SUMMARY OF TEST CRITERIA FOR SPECIMEN CLASSIFICATION

Class	Plain surface textile fabric	Raised surface textile fabric
1	Burn time is 3.5 seconds or more ACCEPTABLE (3.5 sec is a pass)	(1) Burn time is greater than 7.0 seconds; or (2) Burn time is 0-7 seconds with no base burns (SFBB). Exhibits rapid surface flash only. ACCEPTABLE.
2	Class 2 is not applicable to plain surface textile fabrics	Burn time is 4-7 seconds (inclusive) with base burn (SFBB). ACCEPTABLE.
3	Burn time is less than 3.5 seconds. NOT ACCEPTABLE	Burn time is less than 4.0 seconds with base burn (SFBB). NOT ACCEPTABLE.

It is important to note that these are mandatory flammability requirements for all wearing apparel, whether for children or adults. Compliance and certification of compliance is mandatory. If the item is children's apparel, the testing must be conducted by a third party-accredited, CPSC listed lab. If it is adult apparel, it can be conducted by any lab or even an in-house lab. In both cases, the domestic manufacturer or importer of record must issue a certification (*CPC* or *GCC*).

There are certain exceptions to 16 CFR 1610 flammability testing:

- Gloves
- Footwear
- Interlining fabrics
- Plain surface fabrics weighing 2.6 oz./square yard or more
- Fabrics made entirely of acrylic, modacrylic, nylon, olefin, polyester, wool

Additional FFA Regulations:

- 16 CFR 1611 – Flammability of Vinyl Plastic Film
- 16 CFR 1615 – Flammability of Children's Sleepwear (sizes 0-6X)
- 16 CFR 1616 – Flammability of Children's Sleepwear (sizes 7-14)
- 16 CFR 1630 – Surface Flammability of Carpets and Rugs
- 16 CFR 1631 – Surface Flammability of Small Carpets and Rugs
- 16 CFR 1632 – Flammability of Mattresses and Mattress Pads
- 16 CFR 1633 – Flammability of Mattress Sets

Flame Retardants

While flame retardants may help products comply with applicable flammability regulations, there is concern with regard to the health impact of certain flame retardants. Several U.S. state regulations, enacted or proposed, restrict or prohibit the use of certain flame retardants. The legislation applies primarily to flame retardants used in children's products or upholstered furniture. These regulations continue to evolve, and below is a summary overview. Halogenated flame retardants are a common class of flame retardants that are restricted or banned. These include the following:

- Decabromodiphenyl ether (decaBDE)
- Hexabromocyclododecane (HBCD/HBCDD)
- Tetrabromobisphenol A (TBBPA)
- Tris(2-chloroethyl) phosphate (TCEP)
- Tris(1,3-dichloro-2-propyl) phosphate (TDCP/TDCPP)
- Tris (1-chloro-2-propyl) phosphate (TCPP)

U.S. states with various flame retardant restrictions or bans (in place or upcoming) include California, Connecticut, Hawaii, Illinois, Maine, Maryland, Michigan, Minnesota, New York, Oregon, Rhode Island, Vermont, Washington and Washington, D.C.

Many of the listed states have restrictions or reporting requirements for other chemicals of high concern, in addition to the flame retardants. It is important to know which chemicals are used in your product, particularly for children's products, in order to meet state requirements.

- All production partners, including subcontractors and raw material suppliers, must monitor their use of chemicals to adequately reduce risk by establishing periodic reviews

of inks, paints, additives, plastics and other materials to ensure continued compliance with restriction of flame retardants of concern.

- All production partners should develop testing plans for key chemicals and "usual suspects" that are likely to be found in various core products and categories.

Online Resources:

PPAI Best Practice - Determining Children's Products: <http://www.ppai.org/media/1802/pr-bp-determining-childrens-products.pdf>

Federal Hazardous Substances Act (FHSA): www.cpsc.gov/en/Business--Manufacturing/Business-Education/Business-Guidance/FHSA-Requirements/

Flammable Fabrics Act (FFA): www.cpsc.gov/en/Regulations-Laws--Standards/Statutes/Flammable-Fabrics-Act/

CPSC Age Determination Guidelines: www.cpsc.gov/PageFiles/113962/adg.pdf

CPSC Third-Party Accepted Labs: www.cpsc.gov/cgi-bin/labsearch/

CPSIA FAQs: www.cpsc.gov/en/Business--Manufacturing/Business-Education/childrens-products/FAQs-Childrens-Products/

CPSC Flammability of Clothing Textiles: www.cpsc.gov/en/Regulations-Laws--Standards/Rulemaking/Final-and-Proposed-Rules/Flammability-of-Clothing-Textiles/

ASTM F963: www.astm.org/toys.html

ASTM F963-11: www.cpsc.gov/en/Business--Manufacturing/Business-Education/Toy-Safety/ASTM-F-963-11-Chart/

Association of Textile, Apparel & Materials Professionals: www.aatcc.org/

16 CFR 1500.44: www.gpo.gov/fdsys/pkg/CFR-2003-title16-vol2/pdf/CFR-2003-title16-vol2-sec1500-44.pdf

16 CFR 1610: www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title16/16cfr1610_main_02.tpl

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