



Designation: **D6545 – 10 D6545 – 18**

Standard Test Method for Flammability of Textiles Used in Children's Sleepwear¹

This standard is issued under the fixed designation D6545; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method evaluates the relative flammability of textiles and garments intended for use in children's sleepwear. The procedures of this test method follow testing and laundering procedures used to evaluate the flammability of children's sleepwear contained in 16 CFR 1615 and 1616.

1.2 A textile used in children's sleepwear must be tested in its original state and after 50 laundering and drying cycles to assess the flame resistance of the textile relative to its use life.

1.3 This method is identical to the method outlined in the regulations 16 CFR 1615 or 1616. The regulation includes additional information such as sampling plans, record keeping requirements, and interpretations for compliance applicable to children's sleepwear. Please consult 16 CFR 1615 and 1616 for these operations and interpretations.

1.4 The values stated in SI units are to be regarded as the standard; inch-pound units are provided for information only.

1.5 *This test method is used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions, but does not by itself incorporate all factors required for fire hazard or fire risk assessment of the materials, products, or assemblies under actual fire conditions.*

1.6 *Fire testing is inherently hazardous. Adequate safeguards for personnel and property shall be employed in conducting these tests.*

1.7 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental health practices and determines the applicability of regulatory limitations prior to use. Specific precautionary information is found in 8.5 and 9.5.*

1.8 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

~~D123~~ D123 Terminology Relating to Textiles

D1230 Test Method for Flammability of Apparel Textiles

D4391 Terminology Relating to The Burning Behavior of Textiles

2.2 AATCC Test Method ~~Method~~.³

Glossary of AATCC Standard Terminology

AATCC Test Method 124— Appearance of Fabrics After Repeated Home Laundering

2.3 Federal Standards and Regulations:

16 CFR Part 1610 Standard for the Flammability of Vinyl Plastic Film Clothing Textiles⁴

16 CFR Part 1611 Standard for the Flammability of Clothing Textiles Vinyl Plastic Film⁴

16 CFR Part 1615 Standard for the Flammability of Children's Sleepwear: Sizes 0 through 6X⁴

¹ This test method is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.52 on Flammability.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For Annual Book of ASTM Standards volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from the American Association of Textile Chemists and Colorists, Colorists (AATCC), P.O. Box 12215, Research Triangle Park, NC 27709-27709-2215, <http://www.aatcc.org>. Reference from the 1970 edition of the manual.

⁴ Available from U.S. Government Printing Office, Superintendent of Documents, Mail Stop SSOP, Washington, DC 20402-9328. Publishing Office, 732 N. Capitol Street, NW, Washington, DC 20401, <http://www.gpo.gov>.

16 CFR Part 1616 Standard for the Flammability of ~~Children's~~ Children's Sleepwear: Sizes 7 through 14⁴
 Department of Commerce Voluntary Product Standard, previously identified as Commercial Standard, CS 151-50 "Body Measurements for the Sizing of Apparel for Infants, Babies, Toddlers, and Children"⁵

3. Terminology

3.1 ~~Definitions:~~

3.1.1 ~~char length, *n*~~—the distance from the original lower edge of the specimen exposed to the flame to the end of the tear or void in the charred, burned, or damaged area.

3.1.2 ~~children's sleepwear, *n*~~—any product of wearing apparel such as nightgowns, pajamas, or similar or related items, such as robes, intended to be worn primarily for sleeping or activities related to sleeping.

3.1.2.1 ~~Discussion—~~

While children's sleepwear can include a range of configurations, these do not include diapers and underwear, infant garments, and tight-fitting garments, as defined by 16 CFR 1615 and 1616. The size range of these garments is limited to those defined in 16 CFR 1615 and 1616 and the Department of Commerce/Commercial Standard 151-50 reference provides background information on how these size ranges were selected and how the body measurements were conducted.

3.1.3 ~~fabric piece (piece), *n*~~—a continuous, unseamed length of fabric, one or more of which make up a fabric production unit.

3.1.4 ~~fabric production unit (unit), *n*~~—any quantity of finished fabric pieces which have a specific identify that remains unchanged except for color or print pattern.

3.1.4.1 ~~Discussion—~~

This fabric production unit, as specified in 16 CFR 1615, and 1616 can consist of quantities from 5 000 linear yards for normal sampling or up to 10 000 linear yards for reduced sampling. Finished fabrics are those fabric pieces which have undergone all processes prior to being cut or slit into components to be manufactured into children's sleepwear.

3.1.5 ~~flame retardant, *n*~~—a chemical used to impart flame resistance.

3.1.6 ~~flame retardant treated, *adj*~~—having received a flame-retardant treatment.

3.1.6.1 ~~Discussion—~~

The term "flame retardant treated" does not apply to textiles that are inherently flame resistant due to the intrinsic properties of the material or the fiber-forming polymer.

3.1.7 ~~flammability, *n*~~—those characteristics of a material that pertain to its relative ease of ignition and relative ability to sustain combustion.

3.1.8 ~~flammable textile, *n*~~—any combustible textile that burns with a flame.

3.1.9 ~~garment production unit (unit), *n*~~—any quantity of finished garments which has a specific identity that remains unchanged throughout the unit except for size, trim, findings, color, and print patterns.

3.1.9.1 ~~Discussion—~~

As specified in 16 CFR 1615 and 1616, a garment production unit is normally any quantity up to 500 dozen.

3.1.10 ~~infant garment, *n*~~—a garment, which is, sized nine months or smaller.

3.1.10.1 ~~Discussion—~~

An infant garment is either a one-piece garment (which does not exceed 64.8 cm [25.75 in.] in length) or a two-piece garment (no piece exceeding 40 cm [15.75 in.] in length); and complies with all applicable requirements of the 16 CFR Part 1610 and 16 CFR part 1611; and bears a label stating the size of the garment expressed as age in months.

3.1.11 ~~item, *n*~~—a single article or unit.

⁵ Available from the National Technical Information Service, 5285 Port Royal Street, Springfield, VA 22151, order CS 15150; Service (NTIS), 5301 Shawnee Rd., Alexandria, VA 22312, <http://www.ntis.gov>.