

Transcript of 2021 CPSC Podcast Series, “OVERVIEW OF CHILDREN’S SLEEPWEAR REQUIREMENTS”

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The slides used in this podcast are not a comprehensive statement of legal requirements or policy, and thus, should not be relied upon for that purpose. You should consult official versions of U.S. statutes and regulations, as well as published CPSC guidance, when making decisions that could affect the safety and compliance of products entering U.S. commerce. Note that references are provided at the end of the presentation.

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Hi, my name is Sylvia Chen, and I want to welcome you to this podcast presentation today.

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As stated before: “design of safe products at the outset is critical.” CPSC is a United States federal government agency charged with protecting the public from unreasonable risks of injury or death associated with the use of consumer products under the agency’s jurisdiction. We have developed this podcast series not only to inform about regulations, standards, and other safety requirements, but also to emphasize the importance of designing products with safety considerations in mind, and to offer best practices for enhancing the safety of a variety of common consumer products.

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The series covers six common consumer products and the requirements for keeping consumers safe, focusing on products affecting millions of consumers, such as children’s sleepwear, wearables, batteries, gates and enclosures, micromobility, and cribs and play yards. In this podcast series, you can expect to learn about the key hazards and risks of the product, important design and manufacturing considerations, regulations and standards that CPSC uses to ensure product safety, best practices you can employ, and what resources are available to assist you in understanding and implementing the requirements.

The podcasts include English and Chinese slide decks and Chinese narration to make this important safety information as accessible as possible. Additionally, CPSC has established a dedicated email box, where listeners, at their convenience, can send in any questions, in English or Chinese. Our staff will monitor the email box and respond to your questions. Transcripts in English are available on this site.

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And now, I would like to introduce the presenter, Weiying Tao, a Textile Technologist from CPSC’s National Product Testing and Evaluation Center. Her presentation covers U.S. children’s

sleepwear requirements, including the Flammable Fabrics Act, certification requirements, chemical content, tracking labels, and small parts.

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This presentation will:

- Highlight the statutory authority for regulating textile flammability in the United States, the Flammable Fabrics Act;
- Provide an overview of CPSC children's sleepwear requirements for flammability performance;
- Review other relevant CPSC requirements, such as product certification, chemical content limitations, tracking labels, and small parts; and
- Summarize the requirements by specific product classes.
- Finally, we will provide resources that can help you understand better the CPSC requirements, testing, and other conditions that your products may be required to meet if they will be sold to U.S. consumers.

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The Flammable Fabric Act, or FFA, is the primary legal authority for CPSC's regulation of textile flammability. Enacted in 1953, this Act is decades older than the CPSC, but has been enforced by the CPSC since the establishment of the agency in the 1970s.

There are eight regulations under the FFA that cover various types of apparel or household textile goods.

Today, I will discuss two of these regulations: 16 CFR parts 1615 and 1616, which cover most children's sleepwear garments, with some exceptions.

Additionally, there are two apparel regulations, two carpet and rug regulations, and two mattress regulations.

CPSC produced two other podcasts on apparel and mattress requirements earlier in this series.

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First, we will cover specific CPSC children's sleepwear flammability requirements.

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As mentioned, the children's sleepwear regulations, 16 CFR parts 1615 and 1616, apply to almost all children's sleepwear sold in the United.

Part 1615 covers sizes 0-6x and part 1616 covers sizes 7-14.

These regulations apply to garments intended to be worn primarily for sleeping or activities related to sleeping, such as nightgowns, pajamas, and robes.

The standards specify a sampling scheme and testing procedures to determine the flammability of children's sleepwear, focused on two performance requirements. When tested according to the standards:

- The average char length of the test group may not exceed 17.8 cm (7.0 in), and
- No single test specimen may burn its full length (10 inches).

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The performance standards are rigorous, requiring that all children's sleepwear fabrics, trim, and garments must be flame resistant and self-extinguish, meaning that they do not continue to burn, when removed from a small, open-flame ignition source.

The regulations require tests of component, prototype, and production samples, meaning that testing must be performed on the fabric and components before production, and also require confirmation testing at the production stage. In some cases, fabric intended for use in U.S. children's sleepwear will be tested by the suppliers, and those results will be provided to the garment manufacturer.

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How is children's sleepwear determined to be sleepwear?

The garment should be evaluated, looking specifically at:

- The garment's suitability for sleeping and the likelihood of garment to be used for sleeping,
- The features of the garment and fabric such as nighttime or sleeping themes, and
- The marketing, merchandising or display, and stated or implied intended use of the garment. For example, if the garments are located with other items of sleepwear or marketing material implies the use of the garment as sleepwear, the items are likely to be considered sleepwear.

These considerations are more important than how the manufacturer or retailer labels the use of the garment. For example, items marketed as "loungewear" or similar terms are also subject to the requirements.

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Some garments that we may associate with children's sleepwear do not have to meet the flammability requirements in 16 CFR parts 1615 and 1616. Diapers and underwear, garments intended for infants, defined as sizes 9 months and less, and sleepwear that meets the requirements of "tight-fitting." While we will discuss some details about these garment types in

the next several slides, all of these categories are defined in §§1615.1(a)(1)-(3) and 1616.2(a)(1)-(2).

Just because these garments do not have to meet the children's sleepwear flammability requirements does not mean that they do not have to meet any flammability requirements. These garments must meet the flammability requirements for clothing textiles in 16 CFR part 1610 or, alternately, for vinyl plastic film in 16 CFR part 1611 if that is more appropriate.

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Because infants are less mobile than older children and are likely to be more closely watched by a caregiver, they are less likely to come into contact with small open flames around the home. For this reason, infant sleepwear garments are not subject to the sleepwear regulations.

An infant garment is defined as intended for ages 9 months and younger, as listed on the size label on the clothing. In addition to the label, there are measurements that cannot be exceeded. For one-piece infant garments, the total length of the garment may not exceed 64.8 cm (25.75"). If the garment is two pieces, neither piece may exceed 40 cm (15.75") in length.

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Tight fitting sleepwear options were added to the regulations when amended in the 1990s. When worn snug and tight to the body, the garments have a lower ignition risk than looser fitting garments. The garments must meet prescribed maximum dimensions in multiple garment locations based on the labeled size of the garment. These dimensions are listed in the two regulations. In addition, the specified measurements, the tight-fitting garments require additional labeling. The statement "WEAR SNUG FITTING; NOT FLAME RESISTANT" must be included on the permanent clothing label. Additionally, a hangtag must be present at the point of sale that states "For child's safety, garment should fit snugly. This garment is not flame resistant. Loose-fitting garment is more likely to catch fire." The regulation lays out the specific design of these labels. An example garment label and hang tag are shown in this slide.

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Tight-fitting garments have specific measurement requirements. While infant garments have only single maximum lengths, tight-fitting sleepwear must meet dimensional requirements at multiple points of construction. These pictures show just some of the measurement points that must be met and confirmed. Both regulations have tables listing the specified points of measurement and required dimensions. CPSC staff has provided additional guidance in Appendix B of our laboratory manual for these regulations.

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Here is a diagram of the testing procedure. The product design should be evaluated before any testing is considered to determine if the garment is intended or could be reasonably expected

to be used as children's sleepwear. If yes, then the garment should be identified as tight-fitting or not. If tight-fitting sleepwear, the design should be evaluated to be sure that the garments meet the measurement and labeling requirements in the standards.

If the garment is children's sleepwear that is not tight-fitting, testing is conducted at both the fabric and garment levels. As you can see, there are a number of steps involved.

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The standard also requires that prescriptive sampling plans be followed, meaning that fabric samples must be selected according to specific criteria intended to provide representative samples of the fabric lot. In this slide, the diagram shows examples related to a tightened fabric sampling plan with different numbers of fabric pieces used to make up the sample. Diagrams of example sampling plans are in the staff laboratory manual for these regulations.

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The standards require manufacturers to assign fabrics used in children's sleepwear to a fabric production unit. An FPU is a code that follows the fabric through production and included in the garments final label.

The standards also require manufacturers to assign children's sleepwear garments to a garment production unit. Like an FPU, a GPU follows the garment through production and is included in the garments final label. There are two stages of testing for a GPU, prototype and production.

Prototype testing characterizes the seams and any trim used in the garment.

Production testing is performed once the garment is in production as a confirmation of the prototype testing.

When planning sampling, manufacturers should be sure to include a second set of all samples for recordkeeping purposes.

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How does a manufacturer determine an FPU?

A fabric production unit can be made up of up to 4,600 meters of fabric in a normal sampling plan. For ongoing production with the same fabric, a reduced sampling plan may be possible that allows for double the length of fabric. Depending on the history of testing with the fabric, either four or six samples of five specimens each are tested. Half of the samples are tested in what is considered their "finished state," either unlaundered or after 1 laundering cycle. The remaining samples are tested after fifty laundering cycles, a number determined to approximate the life of the garment and to ascertain any changes in flammability performance over that life.

While it is possible to include different colors or prints in a single FPU, note that colors and prints cannot be combined. Additionally, equivalent flammability performance must be demonstrated when combining different colors or different prints into a single FPU. For example, an FPU may be composed of a print pattern that is manufactured using different colors. However, some evaluation must be performed to show that the different colorants do not affect flammability performance differently. This guidance presumes that the base fabric used for the different colors or prints is substantially the same. Characteristics such as fiber content, yarn type, thread count, surface treatments, and any other factor that may affect flammability performance should be equivalent.

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A garment production unit can be composed of up to 500 dozen finished garments, which is 6,000 garments. The manufacturer must identify the GPU based on the use of the same fabric, thread, and longest seam type. The garment size, trim, findings, color, and print patterns do not need to be considered when creating a GPU. However, as with an FPU, solid colors and prints cannot be combined in a single GPU and any combined colors or prints must have demonstrated equivalent flammability performance. For examples, a single GPU may have garments with different solid colors and trims applied, but may not have both solid colors and prints even if every other garment characteristic and component is the same.

At the prototype stage, required seam types and all trim must be tested. At the production stage, the flammability performance of the longest seam type is verified.

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Garment seams are tested at both the prototype and production stage. The standard requires testing of any seams that are at least 10 inches long. Example seam types include side seams, arm holes, collars, and yokes. If there is more than one construction of a type of seam, all construction types should be tested. For example, a side seam may be runched on one side and straight on the other. Three samples made up of five specimens each are required to be tested. The largest garment sizes should be used to determine the length of seams; however, CPSC staff suggests that it is prudent to characterize all seam types. These tests use the same fabric tested in the FPU in an unlaundered state.

During the production stage of testing, only the longest seam must be tested. The production seam samples should be taken from a sampling of the finished garments.

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Trim is considered decorative elements added to children's sleepwear to provide an aesthetic effect rather than a functional purpose. Trim should be tested at the prototype stage by applying the trim to a specimen of the sleepwear fabric in an orientation dependent on the location and orientation of the trim on the final garment. Note that trim in different colors

cannot be combined for testing purposes. For functional components such as elastic banding or zippers and any trim less than 5.08 cm is not required. Three samples of five specimens must be tested. These tests use the same fabric tested in the FPU in an unlaundered state.

The staff laboratory manual contains more information on trim, including example trim types and functional components.

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Prepare a minimum of three samples of five specimens each for each stage of testing. The test specimens are 8.9 cm wide by 25.4 cm long and should be representative of both the longitudinal and cross direction of the fabric. For example, a woven fabric test sample may have three specimens in the warp direction and two specimens in the filling direction. In the top photograph, a cut specimen is shown next to the test specimen holder pieces. The fabric is placed between the two metal frames and secured in place.

Before testing, the mounted specimens are placed in an oven for thirty minutes at 105 degrees Celsius to condition the specimens, removing any moisture so that the specimens are in a dry state for testing. Once conditioned, the specimens are placed in a chamber with desiccant material to stay in a completely dry state until tested.

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In the flammability test, a conditioned specimen is hung vertically in the test chamber. A 38 mm flame is placed at the bottom edge of the specimen for 3 seconds and removed. The specimen is allowed to burn until the flame self-extinguishes or the entire specimen has been consumed. The length of the consumed and charred part of the specimen is measured and reported. In this picture, the test operator has placed the specimen in the test chamber and is preparing to apply the flame. The hanging specimen is located just to the left of the flame.

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In addition to the testing requirements for parts 1615 and 1616, there are recordkeeping requirements that must be met. Generally, manufacturers should maintain sampling plans; the fabric production unit (FPU) or garment production unit (GPU) of all garments; test results for all stages of testing, including test results used to include different colors or prints in the FPU; disposition of any failing or rejected items; the fabric and trim fiber content and manufacturing specifications; identification, composition, and details of any flame retardant (FR) treatments; and any marketing or sales information.

Additionally, the manufacturer or importer must maintain an identical set of fabric samples to those tested, as well as the FPU details. The sample maintained should be sufficient to perform an additional full test of the fabric.

The manufacturer or importer must also maintain records of the details of the garment's construction, fiber content, and manufacturing specifications; sampling details; an identical set of all prototype and production samples to those tested; remains of tested samples; FPU and GPU details and records; and, a complete untested garment from each style and type.

More information on recordkeeping requirements can be found at sections 1615.31(e) and 1616.31(d) of the standards.

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Here we see an example of a recall of a children's sleepwear garment. This garment is a cotton garment that is not tight-fitting. It did not meet the flammability requirements of the standards. While not all children's sleepwear made from cotton or other cellulosic fibers are non-compliant with the performance requirements, most need to be treated with FR finishes.

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Beyond the specific requirements for children's sleepwear that we have discussed, there are general requirements under other CPSC statutes that must be met.

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Consumer products subject to a consumer product safety rule, standard, or ban are required to be certified by the manufacturer or U.S. importer.

For general use products, those not intended specifically for children 12 years of age or younger, manufacturers or U.S. importers must issue a General Certificate of Conformity, or GCC. A GCC is based on a test of each product or a reasonable testing program and must include all requirements to which a product is subject. The testing does not need to be performed by a CPSC-accepted third party laboratory. Because 16 CFR part 1616 includes up to size 14, a manufacturer would issue a GCC for children's sleepwear lines that only have garments intended for ages over 12 years.

Children's Product Certificates, or CPCs, must be issued for children's sleepwear intended for ages 12 and under. The CPSC relies on testing performed by a CPSC-accepted third party laboratory for all of the requirements to which the apparel is subject. For lines that include sizing over 12 years, manufacturers only need to issue a CPC. A separate GCC is not necessary.

While manufacturers outside of the United States cannot certify their products under the CPSA, they can have the testing performed, and provide the results to the U.S. importer. The U.S. importer may rely on this testing to issue a certificate, as long as all requirements are met, and due care is exercised, meaning the degree of care that a prudent and competent person engaged in the same line of business or endeavor would exercise under similar circumstances. Due care does not permit willful ignorance. Due to the fact that testing takes place at multiple stages, manufacturers likely will be performing the testing.

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There are chemical content requirements that must be met for children's apparel. The Federal Hazardous Substances Act (FHSA) requires that the lead content in children's products not exceed 100 parts per million. This requirement applies to metal components used in children's sleepwear, such as zippers and buttons.

Under the Consumer Product Safety Act (CPSA), lead concentrations in paint and other surface coatings may not exceed 90 parts per million. Screen-prints are one example of potential lead in paint or surface coatings for children's sleepwear.

Under the CPSA, certain phthalate concentrations may not exceed 0.1% in children's toys and childcare articles. A "childcare article" is defined as a product used to facilitate sleeping and feeding for children 3 years or younger.

In 2017, the Commission issued a final phthalates rule (16 CFR part 1307) with an effective date of April 25, 2018. Any children's toy or child care article that contains concentrations of more than 0.1 percent of the following phthalates is prohibited:

- di-(2-ethylhexyl) phthalate (DEHP),
- dibutyl phthalate (DBP),
- benzyl butyl phthalate (BBP),
- diisononyl phthalate (DINP),
- diisobutyl phthalate (DIBP),
- di-n-pentyl phthalate (DPENP),
- di-n-hexyl phthalate (DHEXP), and
- dicyclohexyl phthalate (DCHP).

Example products are the feet on "footie" pajamas.

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To help relieve third party testing burdens, the Commission has made determinations that certain materials do not have to be tested for certification purposes because they will not contain certain chemicals at noncompliant concentrations. Lead determinations for certain textile fibers can be found at section 1500.91. Phthalate determinations for certain plastics can be found at section 1308.2. The Commission recently determined that certain unfinished manufactured fibers do not require testing for the ASTM F963 elements and the prohibited phthalates. These determinations can be found at sections 1253.1 and 1253.2.

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CPSC enforces the chemical content requirements for children's products. A relevant recall involved a children's garment with a decorative metal jewelry pieces with a lead content concentration exceeding the limits set forth under the FHSA.

We encourage manufacturers to check the chemical content of metal components on children's apparel (or any other children's product subject to these requirements), especially when there is a design or supply change that could impact the compliance of the product.

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Children's products that are designed or intended primarily for use by children ages 12 or younger must have distinguishing permanent marks, generally referred to as "tracking labels."

These labels must be:

Affixed to the product and its packaging;
Be visible and legible; and
Provide certain identifying information.

Tracking labels must contain certain basic information, including:

1. The name of the manufacturer or private labeler;
2. The location and date of production of the product;
3. Detailed information on the manufacturing process, such as a batch or run number, or other identifying characteristics; and
4. Any other information to facilitate ascertaining the specific source of the product.

All tracking label information should be visible and legible.

Compliance with the tracking label requirement will help improve the effectiveness and response rates for any future recalls. Compliance with this requirement also helps CPSC staff and companies in the chain of commerce. When a component has been identified as the source of a hazard or violation, the tracking label helps identify other products that may contain the same component.

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For products intended primarily for children under 3 years of age, there is a requirement related to small component parts that is intended to prevent choking deaths and injuries in children. A small part is any object that fits completely into a specially designed test cylinder 2.25 inches long with a diameter of 1.25 inches wide, which approximates the size of the fully expanded throat of a child under 3 years old.

If a small part fits completely into the cylinder, and the product from which it came is intended for use by children under 3, the product is banned because the small part presents a choking hazard. See 16 CFR § 1501.4 for more information.

It should be noted that fabrics and buttons are exempted from this requirement. However, manufacturers should be sure that buttons are well attached to these garments because those that are not securely attached could result in a determination of a substantial product hazard and potentially result in a recall.

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Here is a recall of an infant garment recalled for a small parts violation. The snaps on this garment detached and posed a choking hazard to children.

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How do you put all this information together for your product? I will now summarize the children's sleepwear requirements.

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Children's products have more requirements than adult products, and the requirements depend on the components and design of the product. All children's sleepwear must meet the requirements in 16 CFR part 1615 or 1616. Infant and tight-fitting sleep apparel must meet the clothing textile standard, 16 CFR part 1610, unless the Vinyl Plastic Film standard, 16 CFR part 1611, is more appropriate

If metal components, such as zippers, buttons, or decorative elements, are used on the garment, they may require testing for lead content.

If the garment has a screen print or painted components, the garment may require testing for lead in paint or surface coatings.

For sleepwear that is considered a childcare article containing any accessible plasticized component parts, such as a bib or the feet of pajamas, it will need to meet phthalate requirements.

For any of these tests that are required, the domestic manufacturer or importer will need to have testing performed by a CPSC-accepted, third party laboratory, and then issue a certificate based on that testing.

Additionally, children's apparel requires a tracking label that meets all of the requirements outlined.

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Thank you, and we hope you enjoyed this podcast. If you have any questions on the presentation, please do not hesitate to submit your questions in English or Chinese to the mailbox mentioned earlier: CPSCinChina@cpsc.gov. This mailbox is routinely monitored.

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We also wish to remind viewers that CPSC has many technical documents and resources available in Chinese. At the conclusion of this presentation, we provide many links to resources viewers may find useful.

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We encourage viewers to be sure to check out CPSC's Regulatory Robot, available in English, Chinese, and several other languages. The Regulatory Robot is an automated tool that can help identify safety requirements for many different types of products. Many companies have found this tool to be extremely helpful.

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Please also see the following slides to view a variety of apparel specific resources.

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Thank you for downloading this presentation.