Furnishings Focus

Spring • 2014

Wired Cabinets and Commercial Retail Store Displays – What's the Difference? Part 2 – Commercial Retail Store Displays

By Bruce Bohren */ Primary Designated Engineer, Furniture & Furnishings*

In the second article of our series, we will explore the types of product displays used in retail spaces, and which ones should be evaluated using UL 962.

Due to the rise in electrified consumer products, retailers are displaying a new diversity of products today and require displays that are certified to UL 962: The Standard for Household and Commercial Furnishings. Consumers want to see, touch and explore these products, and electrified displays can help retailers better show off their products. Similar to UL 65 for Wired Cabinets, UL 962 covers wired cabinets and lighted shelving, and includes additional types of retail displays.

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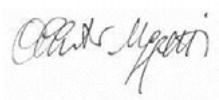
A Letter from Alberto Uggetti

It has been one year since UL formed our furniture industry team, and in that year we have worked to engage the industry as much as possible. In March, we exhibited at ISPA Expo, a tradeshow for the mattress and bedding industry. Then on April 1st, UL held its first Furniture Forum customer seminar in Grand Rapids, Michigan. The seminar gave us the unique opportunity to connect one-on-one with manufacturers and share information on some of the biggest topics in the industry, as well as hear their top concerns and challenges. Based on the great feedback we received, we plan to take the seminar to other locations this year. We hope to see you at one.

In this month's issue, you will see articles on some of the topics we are asked about most frequently - California Proposition 65, and revisions to the TB 117 flammability standard. UL is here to help you meet compliance challenges as your testing, inspection and certification partner. If there is anything we can help you with, please reach out to us at FurnitureNA@ul.com. We'd love to hear from you.

Email us at furnishingsfocus@ul.com to join our distribution list and send us your feedback.



Alberto Uggetti

Vice President and General Manager
UL Furniture Division

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Understanding the Changes to California TB 117 – 2013 on Flame Retardance of Resilient Filling Materials Used in Upholstered Furniture

By Dr. Tom Fabian / *Research Manager* and **Dwayne Sloan** / *Manager, Principal Engineers*

California Technical Bulletin 117, often called TB 117, is the Requirements, Test Procedure and Apparatus for Testing the Flame Retardance of Resilient Filling Materials Used in Upholstered Furniture. TB 117 is published by California Bureau of Home Furnishings (now BEARHFTI) and covers residential upholstered furniture component materials, except for the frames. Until recently, TB 117 included both open flame tests and smoldering cigarette tests. Last year, TB 117 was changed significantly to remove the open flame tests. The new 2013 version of the Standard, TB 117-2013, also more clearly defines the test approaches for cover fabrics, barrier materials, and resilient filling materials. This article discusses the "previous" version of the Standard compared to the "new" version, and summarizes some of the discussions surrounding the change.

As far back as 1972, the State of California passed a law requiring all upholstered furniture sold in California to be flame retardant. California TB 117 was developed and became mandated in 1975. While TB 117 is not required outside of California, it quickly became widely accepted and emerged as a de facto national standard for upholstered furniture.

To better understand the previous TB 117 Standard, let's examine the Open Flame Tests and Smoldering Ignition Tests prior to 2013. The Open Flame Tests were outlined in the Standard as follows:

As you can see, only the foams and filing materials were previously subjected to small open flame tests, not combinations of materials that comprise the furniture or the complete furniture itself.

The Smoldering Resistance Tests involved the following:

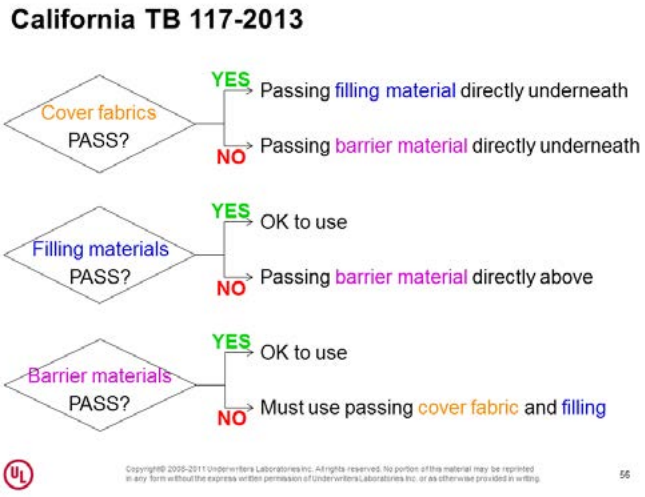
Resilient cellular materials (foam) are wrapped in a "standardized" fabric in a chair mock-up configuration. Specified test cigarettes are placed along the crevice and covered with smolder-prone fabric. The pass/fail criteria are based on weight loss.

For all other resilient filling materials, they are wrapped in a "standardized" fabric in a chair mock-up configuration. Specified test cigarettes are placed along the crevice and covered with smolder-prone fabric. The pass/fail criteria are based on char length.

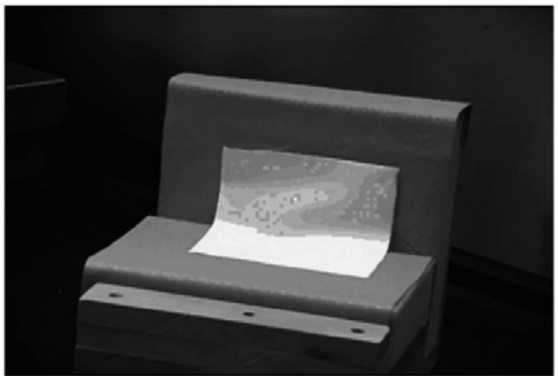
TB 117 was and remains a performance-based Standard, and does not specify or dictate the use of flame retardant chemicals. However, compliance with the open flame test requirements for some furniture components, such as polyurethane foam, was only achieved by the use of fire retardant chemicals. In recent years environmental advocates, health professionals and academics, expressed concern about the use of FR chemicals in upholstered furniture.

Component Material	Test Ignition Source	Pass / Fail
Resilient cellular (foam) & natural materials	1½ inch flame for 12 seconds	Char length, Flame & glowing time
Polystyrene beads (bean bag chair filling)	"Pill" test (burns about 2 minutes)	Weight Loss
Feathers, down & loose-fill materials		Must be encased in flame retardant fabric/ticking
Synthetic and blend fiber fill materials	5/8 inch flame for 5 seconds	Flame spread rate

These concerns ultimately led to an executive order from the California Governor instructing the BHFTI to revise California TB 117 to eliminate the need for FR chemicals in furniture sold in California, while at the same time not reducing the level of safety to the public. In response, BHFTI held workshops and public hearings, and solicited input from the public. The result was TB 117-2013 with the Open Flame Tests removed and only the Smoldering Cigarette Tests remaining. The smoldering ignition test scheme was clarified as follows:



Section 1 covering the Cover Fabric Test measures the tendency of upholstery cover fabrics to smolder and contribute to fire propagation, when subjected to a smoldering ignition source. The cover fabric is wrapped around "standardized" FR-free foams in a chair mock-up configuration. A specified cigarette is placed along the crevice and covered with smolder-prone fabric. The pass/fail criteria are based on smolder duration, char length, and no flames.



Section 2 covering the Barrier Materials Test measures the tendency of the barrier material to smolder after exposure to smoldering cigarettes under specified conditions. Type 2 cover fabric is wrapped around the candidate barrier material encasing FR-free foam in a chair mock-up configuration. A specified cigarette is placed along the crevice and covered with smolder-prone fabric. The pass/fail criteria are based on smolder duration, char length, and no flames.

Section 3 covering Resilient Filling Material Test measures the tendency of resilient filling materials to smolder and contribute to fire propagation, when covered with smolder resistant fabric and subjected to a smoldering ignition source. Type 1 cover fabric is wrapped around the candidate resilient filling materials in a chair mock-up configuration. A specified cigarette is placed along the crevice and covered with smolder-prone fabric. The pass/fail criteria are based on smolder duration, char length, and no flames.

Lastly, **Section 4** covers Decking Materials Test and measures the tendency of decking materials to smolder and contribute to fire propagation, when subjected to a smoldering ignition source. For this test, Type 2 cover fabric is placed over decking material in a flat configuration. Specified cigarettes are placed and covered with smolder-prone fabric. The pass/fail criteria are based on smolder duration, char length, and no flames.

Many furniture and component manufacturers, environmental advocates, and others are celebrating the changes to TB 117-2013 and look forward to the promise of a wholesale removal of fire retardant additives to furniture foams. The rationale for the change was that the previous open flame test only addressed the performance of the interior foams and filling, but did not really positively impact the overall fire performance of the complete assembled furniture. Another point supporting the change to TB 117 was that all states within the US have moved to require Fire Standard Compliant (FSC) cigarettes. These cigarettes are required to have a reduced ignition propensity RIP as determined by ASTM E2187 - Standard Test Method for Measuring the Ignition Strength of Cigarettes. Based on these new RIP cigarettes, the assumptions are that RIP cigarettes will result in fewer cigarette ignitions of products with a smoldering potential, and consequently fewer lives will be lost and injuries will be reduced.

However, there are some furniture and component manufacturers that have shown reluctance to remove the FRs from their products. Fire safety advocates and organizations (such as NIST, CPSC, and UL) have voiced that TB 117 only addresses the performance of upholstered furniture under conditions of exposure to a smoldering cigarette and is lacking in evaluating performance under conditions of a small open flame

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Commercial Retail Store Displays ... continued

Examples of the displays include: ceiling and wall supported luminaires, displays for cameras and electronics, motorized wire spool and carpet racks, nightlights, door-bells, garage door openers, bathroom fans, stereos, TVs and other retail products.

There are a variety of safety issues that can be associated with these types of displays, including but not limited to the risk of electrical fire and shock hazards; physical entrapment concerns of the products on display; the motorized display that moves; and potential tip-over hazards from mounting speakers, video screens and other equipment on the display. UL 962 has requirements to address the fire contribution displays may present in retail stores.

UL 962 requirements provide for power supply cords up to 15 feet long and 2 supply cords on a single display. Cords may be sized for the electrical load, which often allows a lighter gauge cord than in UL 65. When motors are supplied to provide motion to the display, UL 962 provides guidance to evaluate the electrical safety of the motor. If an entrapment hazard exists, the standard requires barriers or safety controls to reduce the potential for injury from the moving parts. Some product displays such as a carpet rack not only display the product, but also have features to cut the product to size per the customer's requirements.

In addition to customer safety, UL 962 features provisions to address the safety of the store personnel as well. An example of this is a lock out requirement so that only a trained store operator can turn on the power to operate the display. UL 962 has requirements to address these hazards. The structural strength and flammability of the display is also investigated.

In part 3 we will explore if UL 65 or UL 962 is the right standard for your product. ■

NSF 336 Sustainability Standard for Contract Textiles Released

By Scott Laughlin */ Account Manager*

NSF/ANSI 336, a sustainability assessment for contract textiles used in furnishings, has been release after a 10 year development period, and UL is an official certifier to the standard. Developed under the leadership of the Association for Contract Textiles as the first consensus-based sustainability standard for contract textiles, NSF 336 addresses the environmental, economic, and social aspects of commercial furnishings fabric used in commercial spaces. The standard considers criteria from a product's life cycle to get a complete picture of the inputs, outputs and environmental impacts of textile products across a product's lifespan. The standard is applicable to a variety of contract textile types used in public spaces, including those used in upholstered furniture; walls, draperies, cubicles, furniture systems; and decorative bedding.

As a multi-attribute sustainability standard, NSF 336 considers eight sustainability parameters: Fiber Sourcing, Safety of Materials, Water Conservation, Water Quality, Energy, Air Quality, Recycling Practices, and Social Accountability. Certified textiles must meet pre-requisites for each parameter, and can achieve optional credits, earning up to a maximum of 100 points. Of these points, 50 percent address fabric composition and 50 percent address fabric manufacturing. Based on the total number of points achieved within each category, products are awarded certification levels of Compliant, Silver, Gold or Platinum. Products certified to NSF 336 are certified for 5 years and undergo yearly reviews to ensure continued compliance to the standard.

UL has awarded its first certification to Sunbrella Contract Indoor-Outdoor Upholstery Fabrics. If you are interested in having a product certified, please contact FurnitureNA@ul.com for more information. ■

California Proposition 65- Know the Risks for the Furniture and Bedding Industry

California's Safe Drinking Water and Toxic Enforcement Act was enacted in 1986 following a direct ballot initiative (Proposition 65) approved by California voters. While the overall goals of the Act are to protect drinking water sources from contamination by toxic substances that are linked to cancer, birth defects and other reproductive harms, the measure also seeks to reduce consumer exposure to such substances found in products.

Proposition 65 required the Governor of California to publish a list of chemicals that are "known to the State of California" to cause cancer, birth defects or other reproductive harm. The list is administered by the California's Office of Environmental Health Hazard Assessment (OEHHA) and can be found at http://www.oehha.ca.gov/prop65.html. The list currently has almost 900 individual chemicals, including naturally-occurring chemicals such as lead, nickel and cadmium, as well as synthetic chemicals like phthalates and azo dyes, and is required to be reviewed and updated at least once a year.

How Does CA Prop 65 Affect Manufacturers?

The regulation affects manufacturers who sell products into the state of California. It prohibits businesses from knowingly exposing individuals to any listed chemicals without first providing a clear and reasonable warning regarding the presence of those chemicals.

The warning must:

1. clearly communicate that the chemical is known to cause cancer, and/or birth defects or other reproductive harm; and
2. effectively reach the person before exposure.

If manufacturers do not label their products and their products are found to contain chemicals from the OEHHA list, they may be subject to litigation. Warning requirements take effect 12 months after the date that a chemical is added to the Proposition 65 list.

What to do if you have been served a 60 day notice

If a notice is received, manufacturers should contact their legal counsel. It is recommended to seek advice from lawyers who specialize in CA Prop 65.

Businesses that cause exposures greater than the safe harbor level must provide Proposition 65 warnings. OEHHA provides safe harbor levels for some listed chemicals. It is the manufacturer's responsibility to develop a safe harbor level if none exists.

For more information on Prop 65 compliance and how UL can help, contact Derek Marsaa at (678) 431-7448 or email us FurnitureNA@ul.com.

Elements of a Prop 65 Determination

If a manufacturer chooses to do a Prop 65 evaluation on their products, here are some important steps to take:

1. Determine the potential listed chemicals that may be associated with your product.
2. Conduct testing to measure the level of listed chemical in your product or emitted from your product (leaching or off-gassing).

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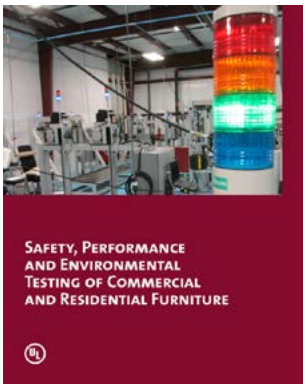
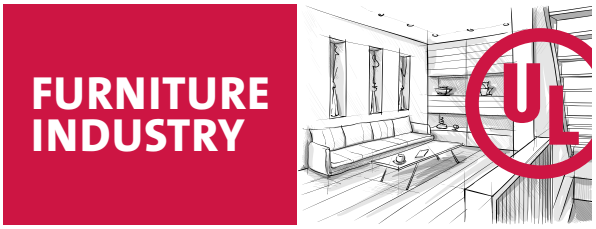
UL News

Download UL's New Furniture Testing White Paper

Furniture contributes to the functionality and usefulness of every inhabited space, including commercial and institutional settings, residential environments and retail establishments, as well as outdoor recreational areas. As general living standards continue to improve for billions of people around the world, the global demand for furniture and furniture products is expected to experience continued strong growth, and provide important business opportunities. This white paper provides a summary of the types of product testing and assessment applicable to manufacturers of various types of furniture products, including furniture intended for use in commercial, institutional, retail and residential settings. Download the white paper. ■



UL Hosts First Furniture Forum Customer Seminar



UL's first Furniture Forum customer seminar was held in Grand Rapids, Michigan on April 1st. UL and industry experts covered topics such as BIFMA Chemicals of Concern, Environmental Product Declarations (EPDs), GREENGUARD Certification updates, the 4th version of UL 962 and European furniture news and received very positive feedback from attendees. UL is planning to take the seminar on the road to other key furniture production centers in the US and Canada. Send your name and email address to FurnishingsFocus@ul.com to be notified about future seminars. ■

UL and Advanced Furniture Testing Provide US Performance, Durability Testing

UL and Advanced Furniture Testing have signed an agreement to provide performance and durability testing for furniture in Advanced Furniture Testing's Michigan and Indiana facilities. Customers who work with UL can have their furniture performance and durability testing performed locally in Advanced Furniture Testing's 17025-accredited laboratory. In addition, Advanced Furniture Testing will begin expanding its capabilities this year to perform testing for UL furniture standards. This will enable manufacturers to test in more locations and have greater access to performance and durability testing, including BIFMA standards and testing to UL standards. Read more about the agreement. ■

Join UL Furnishings Focus LinkedIn Furniture Discussion Group

UL Furnishings Focus is now a discussion group on LinkedIn. Join the group to hear the latest updates on industry and standard updates, talk with peers and UL experts about issues, and connect with industry members. Join the group. ■

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exposure (such as a match or candle), or under severe, more fully developed fire exposure. TB 117 also does not necessarily indicate the performance of the same material component in other geometrical configurations, such as in full size furniture.

In response to the points regarding the RIP cigarettes (discussed earlier) used within the US, the following has been discussed:

- Only 75% of the cigarettes in a pack need comply
- There are limited fire statistics to support the effectiveness of RIP cigarettes
- Claims that RIP cigarettes do not prevent ignition under real-life conditions [1]
- CPSC studies did not predict (1) differences in the ignition propensity between RIP and non-RIP cigarettes, and (2) smoldering behavior on mattress substrates [2]

It is important to note that while the new TB 117 regulation can be met without using FR chemicals, it does not prohibit the use of FR chemicals. The TB 117-2013 change has certainly caught the attention of many different stakeholders, including but not limited to furniture manufacturers, component manufacturers, health and environmental advocates, the fire safety community, FR chemical industry, state and local officials, and first responders.

UL has several laboratories across the globe that can test to the revised standard. Please contact us at FurnitureNA@ul.com for inquires. ■

1 John DeHaan and James C. Albers, "Fire Safe Cigarettes, Aren't", presented at Fire & Materials 2013 (January 2013)
2 Shivani Mehta, "Cigarette Ignition Risk Project", Consumer Public Safety Commission (November 2012)

BIFMA Standards Corner

In his new column, Doug Woodard, Founder and President of Advanced Furniture Testing, will lend his expertise in performance and durability testing to Furnishings Focus, and provide relevant updates to standards that affect the industry in future issues.

After over 2 years of development, ANSI/BIFMA X5.5-2014 for desk products has been officially released! The ANSI/BIFMA X5.5 standard provides a basis for evaluating the safety, durability and structural performance (including potential misuse), of desk/table products intended for use in commercial and institutional office environments.

In this new standard there are several new tests as well as updates on the present ones. Below is an outline of the most critical updates to the standard:

- Tests have been added that are specific to benching systems (section 5.8 and 5.9) and monitor arms (sections 22 - 24)
- Changes in Section 4.3: use two loads for tables greater than 72 inches instead of one, now 4.3 is no longer applicable to Keyboard Tables.
- Section 4.5 no longer applies to screen or storage segments installed between double sided products.
- Section 15 changes: Expanded to include counterbalanced adjustment mechanisms. (was limited to motorized and crank)
- Section 18 changes: Clarified position of attachment device for cycling.
- Changed Wide Pull from 12 inches to 18 inches in Tables 2, 4, and 7 for Attachment Locations.

New Sections:

- Section 3.10 Temperature and Humidity Considerations
- Section 3.11 Cycle Rates
- Section 3.12 Glass Surfaces
- Section 5.8 Benching systems - Distributed Functional Load and stability
- Section 5.9 Benching systems - Distributed Proof Load
- Section 20 Tilting Top Table - Cycle Test
- Section 21 Tilting Top Table - Latch Strength Test
- Section 22 - 24 Monitor Arm

Manufacturers have three years (after the release of a new revision of a BIFMA standard) to provide updated test results to GSA. According to BIFMA, only the tests that have changed need to be re-done, but of course this is up to the customer. I recommend putting a plan together as soon as possible to address any new test requirements that may affect your current or upcoming products.

Doug Woodard is the Founder and President of Advanced Furniture Testing. Doug has 20 years of experience in furniture performance and durability testing, and currently serves as a testing partner with UL. Advanced Furniture Testing has locations in Holland, Michigan and Jasper, Indiana, USA, providing performance and durability testing for furniture manufacturers and suppliers.

UL Standards Corner

Standards information link: http://www.ul.com/global/eng/pages/solutions/standards/.

Register for "What's New" to receive e-mails twice a month indicating the new published UL Standards, Outlines, and Proposals: http://www.ul.com/global/eng/pages/solutions/standards/accessstandards/whatsnew/register/

UL 962 – Household and Commercial Furnishings

- Proposed 4th edition went out for preliminary review on November 22, 2013 with a due date of January 17, 2014. This proposed 4th Edition of the Standard for Safety for Household and Commercial Furnishings, UL 962, includes the following major changes: (a) Separation of some product types such as massage tables and chairs and powered table systems into new supplements as these products have requirements unique to their product type; and (b) Combination of household and commercial requirements into the main body of the standard to improve readability. The 4th edition will be sent out for ballot in the future.

UL 1286 – Office Furnishings

- Four proposals went out for ballot on March 28, 2014 with a due date of May 12, 2014. The proposals related to: (1) Additional Requirement for Vertically Adjustable Surfaces, (2) Revisions to Align with the New Edition of BIFMA X5.9, Storage Units, (3) Additional Requirements for a New Supplement Covering Office Furnishings Attached to the Building Structure, and (4) Revisions to Align with the New Edition of BIFMA X5.5, Desk and Table Products.

UL 1678 – Household, Commercial, and Institutional-Use Carts, Stands and Entertainment Centers for Use with Audio and/or Video Equipment

- The title of the Standard was changed during the 5th edition to: UL 1678 Household, Commercial, and Institutional-Use Carts, Stands and Entertainment Centers for Use with Audio and/or Video Equipment.
- Prior to the 5th Edition of UL 1678, the requirements for Tall Institutional Carts were included in the Standard for Tall Institutional Carts for Use with Audio-, Video-, and Television-Type Equipment, UL 1667.
- The 5th edition of UL 1678 has been adopted and has replaced UL 1667. The 3rd edition of UL 1667 was withdrawn on January 31 2014.
- New proposal went out for ballot September 20, 2013 with a due date of October 21, 2013. The proposal related to the Revision of Requirements for the Simulated TV Test Fixture with Respect to Weight of Product and Center of Gravity. A revised proposal went out for recirculation on March 14, 2014 with a due date of April 14, 2014.

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3. Use the data to perform an exposure assessment using conservative assumptions.

4. Compare the exposure level to the safe harbor level. Develop a safe harbor level if one doesn't exist.

Even if your product is shown to be under the safe harbor levels for any chemicals of concern, manufacturers should consult their attorney regarding the decision to label or not label their products!

Settlements

Joining an existing Prop 65 settlement is a form of voluntary compliance. Settlements can take some of the guesswork out of out of compliance by providing specific test methods and chemical content limits for your products.

UL offers advisory services for companies that wish to review the applicability of Prop 65 labeling requirements to their products. UL can also conduct testing on products to measure chemical content and emissions. UL does not provide legal or labeling advice, but can work with companies to minimize the risk of noncompliance with Prop 65. For more information on Prop 65 compliance and how UL can help, contact Derek Marsaa at (678) 431-7448 or email us FurnitureNA@ul.com. ■

* Statistics compiled from http://oag.ca.gov/prop65

Come See Us

Upcoming Tradeshows/Events

Furniture Today: Bedding Conference
May, 14-16 Orlando, FL
Sponsoring/Exhibiting

China Sustainable Furniture Summit
May. 15-16 Crowne Plaza Century Park Hotel, Shanghai, China
Attending

NEOCON
June, 9-11, Chicago, IL
Speaking/Exhibiting (Materials Pavilion, 8th Floor)

Orgatec
October, 21-24 Cologne, Germany
Exhibiting

UL Webinars

Prop 65: Know the Risk for the Furniture and Bedding Industry

LISTEN NOW (in English)

California Proposition 65 regulation affects manufacturers of products sold in California that contain any one of hundreds of chemicals listed by the State as known carcinogens or reproductive toxins. Over the last decade, nearly 2000 settlements and more than $144.6 million in damages have been paid by California businesses as the result of litigation against products that have the potential to contain any of the listed chemicals.* This means that manufacturers are required to ensure that user exposure is below the acceptable levels set in the law, or to properly label products with the language "known by the State of California to cause cancer, birth defects, or other reproductive harm."

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