

CONCURRENCE IN SENATE AMENDMENTS

AB 1604 (Stefani)

As Amended August 21, 2026

Majority vote

SUMMARY

Prohibits, on and after January 1, 2028, a person from manufacturing, distributing, or selling a paper proof of purchase (receipt) that contains intentionally added bisphenol A (BPA); and, prohibits, on and after January 1, 2029, a person from manufacturing, distributing, or selling a paper receipt that contains intentionally added bisphenols. Authorizes the Department of Toxic Substances Control (DTSC) to enforce the prohibitions of this bill.

Senate Amendments

- 1) Delete provisions that would have:
 - a) Defined business and consumer.
 - b) Conferred express authority upon a district attorney, a county counsel, or a city attorney to enforce the provisions of this bill.
 - c) Required that a violation of the provisions of this bill be punishable by a civil penalty.
 - d) Required that a prevailing plaintiff who establishes a violation of the provisions of this bill be entitled to an award of reasonable attorney's fees and costs.
 - e) Prohibited manufacturers from replacing any form of bisphenol pursuant to this bill with any chemical identified by DTSC as a Candidate Chemical pursuant to Safer Consumer Products Regulations.
- 2) Update the definition of "intentionally added" bisphenols to align with current statute governing chemicals in consumer products.
- 3) Authorize DTSC to consider, on a case-by-case basis, the enforcement mechanism and the amount of any administrative penalty to be imposed.
- 4) Require DTSC, in determining the amount of an administrative penalty, to consider the following factors:
 - a) The nature and severity of the violation.
 - b) The good or bad faith of the person in violation.
 - c) The history of prior violations, if any.
 - d) Evidence that the violation was willful.
 - e) The extent that the person has cooperated with DTSC.
- 5) Make other technical and conforming changes.

COMMENTS

Bisphenols: Bisphenols are a group of synthetic, high-volume chemicals that are used in the manufacturing of polycarbonate plastics and epoxy resins. The most widely used and well-studied chemical in the group is BPA, but the use of other bisphenols, such as bisphenol S (BPS) and bisphenol F (BPF), is increasing as manufacturers use these chemicals to replace BPA, especially following restrictions on the use of BPA.

BPA is used as a building block in the production of polycarbonate plastics, creating plastic that is clear, tough, and used to manufacture a wide range of consumer goods, including sports equipment, impact-resistant safety equipment, automobile parts, and food containers, such as reusable beverage bottles and plastic tableware. BPA is also used in dental sealants; in the production of epoxy resins used to line food and beverage cans; to line water pipes; and, in the manufacture of thermal papers used for shop sales receipts, ATM receipts, public transport tickets, parking tickets, and airline boarding passes. Both BPS and BPF are also used in the manufacture of plastics, and BPS is increasingly used in the production of thermal papers.

Concerns with bisphenols: The 2019 article, "The adverse health effects of bisphenol A and related toxicity mechanisms," published in *Environmental Research*, summarizes concerns about BPA as follows: "Due to its mass productions and widespread applications, the presence of BPA is ubiquitous in the environment. BPA can enter the body via different ways such as [the] digestive tract, respiratory tract and dermal tract. As an endocrine disruptor, BPA has estrogen-like and anti-androgen effects causing damages to different tissues and organs, including [the] reproductive system, immune system and neuroendocrine system, etc. Recently, it has been shown that BPA could induce carcinogenesis and mutagenesis in animal models."

As concerns mounted over the health and environmental impacts of exposure to BPA, manufacturers replaced BPA with other, less-studied bisphenols. Unfortunately, studies indicate that these bisphenols display hazard traits similar to, and sometimes worse than, BPA. These studies include "Bisphenol S in Food Causes Hormonal and Obesogenic Effects Comparable to or Worse than Bisphenol A: A Literature Review," published in 2020 in *Nature*, which states,

"In recent years, bisphenol analogues such as bisphenol S (BPS) have come to replace bisphenol A in food packaging and food containers, since bisphenol A (BPA) has been shown to leach into food and water, causing numerous negative health effects. Unfortunately, little or no research was done to determine the safety of these BPA-free products before they were marketed to the public as a healthier alternative. The latest studies have shown that some of these bisphenol analogues may be even more harmful than the original BPA in some situations... It was found that BPS works via different pathways than does BPA while causing equivalent obesogenic [i.e., obesity-promoting] effects, such as activating preadipocytes, and that BPS was correlated with metabolic disorders, such as gestational diabetes, that BPA was not correlated with. BPS was also shown to be more toxic to the reproductive system than BPA and was shown to hormonally promote certain breast cancers at the same rate as BPA. Therefore, a strong argument may be made to regulate BPS in exactly the same manner as BPA."

Another study, "Bisphenol Analogues Other Than BPA: Environmental Occurrence, Human Exposure, and Toxicity: A Review," published in *Environmental Science and Technology* in 2016, states, "Elevated concentrations of [bisphenol AF (BPAF)], BPF, and BPS (i.e., similar to or greater than that of BPA) have been reported in the abiotic environment and human urine from

some regions. Many [bisphenol] analogues exhibit endocrine disrupting effects, cytotoxicity, genotoxicity, reproductive toxicity, dioxin-like effects, and neurotoxicity in laboratory studies. BPAF, BPB, BPF, and BPS have been shown to exhibit estrogenic and/or antiandrogenic activities similar to or even greater than that of BPA."

Bisphenols in receipts: According to the 2023 article, "Bisphenols and alternative developers in thermal paper receipts from the U.S. market assessed by Fourier transform infrared spectroscopy," published in *Environmental Pollution*, "Cash register receipts made of thermal paper expose workers and shoppers to endocrine-disrupting chemicals and contaminate paper recycling streams." The article explains that cash register receipts are an underrecognized source of exposure to hormonally active chemicals, especially for workers who frequently handle receipts. It says that most receipts are made of thermal paper, which is coated with layers of chemicals that allow for rapid image formation under a thermal print head. Thermal paper receipts became common in the late 20th century, initially with BPA commonly used as the color developer. More recently, in response to concerns about BPA's health hazards, manufacturers replaced BPA in thermal receipts with alternative developers, typically BPS. The article states that, "Bisphenols and other developer chemicals may continue to expose people even after disposal; they have been found in recycled paper products."

Alternatives to bisphenols in receipts: The authors of the 2023 study published in *Environmental Pollution* state, "The results of this study suggest the [United States] retail market has shifted substantially to BPS-based receipts as replacements for BPA-based receipts. At the same time, a shift toward non-bisphenol receipts has begun. Bisphenol-based receipts (those with BPS or BPA as developer) decreased from about 93% of collected receipts in 2017 to 86% in 2022, while non-bisphenols increased from 5% to 14% of receipts." However, the study cautions, "While BPS and BPA present greater known hazards, the nonbisphenol developers detected in this study encompass various unknowns and potential hazards. Using them to replace bisphenol receipts should be considered an interim solution, and each should be subjected to a comprehensive chemical hazard evaluation. Certain other thermal papers such as Blue4est™, not detected in this study, might offer preferable alternatives due to the use of a polymer coating rather than migratable developer chemicals. A better strategy for businesses to protect workers, customers, and natural resources, however, is to eliminate or minimize printing thermal paper receipts. This can be accomplished by offering a choice to the customer to skip the receipt or to receive a digital receipt. Non-thermal paper receipts are another option."

This bill: This bill prohibits, on and after January 1, 2028, a person from manufacturing, distributing, selling, or offering for sale a receipt that contains intentionally added BPA; and, prohibits, on and after January 1, 2029, a person from manufacturing, distributing, selling, or offering for sale a paper receipt that contains intentionally added bisphenols. This bill also authorizes DTSC to adopt regulations to implement the prohibitions delineated in the bill, and authorizes DTSC to enforce these prohibitions, including by levying an administrative penalty not to exceed \$5,000 for a first violation, and \$10,000 for each subsequent violation.

Intentionally added chemicals in products: This bill focuses on intentionally added bisphenols in receipt paper. Similarly, to protect human health and the environment, several provisions of state law prohibit or limit other substances in specific products. Some of these provisions restrict intentionally added substances, but establish different, potentially less stringent, requirements for unintentionally added substances. These statutes include limitations on, prohibitions of, or disclosure of specified chemicals in cosmetics and cleaning products; PFAS in textiles, juvenile

products, and plant-based food packaging; and, Di(2-ethylhexyl) phthalate (DEHP) in intravenous tubing. To a large extent, legislators treated intentionally added and non-intentionally added substances differently to account for unavoidable environmental contamination of products, such as PFAS contamination from municipal water. However, recent discussions about this differential treatment of intentionally added versus non-intentionally added substances have raised critical policy questions, including whether these provisions are enforceable and truly capture the Legislature's intent to protect public health and the environment from harmful substances in products. Discussions should continue about how to ensure that concerning substances in products are restricted or prohibited, regardless of when in the manufacturing and distribution process the substances become present in the product.

According to the Author

"AB 1604 will better protect public health and the environment in California by eliminating harmful bisphenol chemicals from paper receipts. Beginning January 1, 2028, manufacturers and businesses will no longer be allowed to use BPA in receipts, with a full phase-out of all bisphenol chemicals by January 1, 2029. These chemicals have been linked to detrimental health issues for women and children, which are known to cause reproductive, developmental, and behavioral harm. By removing bisphenols from receipts, this legislation helps reduce daily exposure to toxic substances and prevents contamination in recycling and composting systems – prioritizing health, safety, and environmental responsibility for all Californians."

Arguments in Support

A coalition of over 60 environmental, public health, environmental justice, and community organizations writes in support of the bill,

"Exposure to bisphenols is widespread and continuous. Center for Disease Control data show that roughly 90% of Americans carry [BPA] and [BPS] in their bodies. These chemicals disrupt hormonal systems that regulate growth, fertility, and development, even at very low levels. Because BPA and BPS closely resemble estrogen, they are often described as "estrogen mimickers," with early-life exposures posing the greatest risk.

Thermal receipt paper is a major and preventable source of exposure, as bisphenols are readily absorbed through the skin. While everyone who shops is affected, cashiers face the highest risk. Occupational studies show that cashiers have significantly higher BPA and BPS levels. According to 2024 U.S. Bureau of Labor Statistics data, nearly 70% of cashiers are women and over 75% are of childbearing age, a population especially vulnerable to endocrine-disrupting chemicals.

Bisphenols are linked to serious health harms, including low birth weight, infertility, obesity, and increased cancer risk, and both BPA and BPS are listed under California's Proposition 65 for reproductive harm... Not only are intentionally added bisphenols incredibly toxic, but they also render the receipt paper unrecyclable and a persistent, hazardous contaminant in paper bales."

Arguments in Opposition

The California Restaurant Association, the Golden Gate Restaurant Association, and the Cinema Association of California write in opposition to the bill,

"The recent amendments made on June 22nd do not address our coalition's concerns, as the bill continues to leave brick-and-mortar operators open to fines that should instead be focused on

producers, importers, and distributors of the product for sale, not on the people and businesses who simply buy the paper.

... While the bill, as amended on June 22nd, currently holds manufacturers accountable, it also leaves end-user consumers vulnerable to fines of up to \$5,000 for the first instance or \$10,000 for every subsequent instance in which a business may provide a proof of purchase containing intentionally added bisphenols, despite not being the manufacturers, importers, or sellers of the products.

... Our coalition respectfully requests that AB 1604 be amended to explicitly levy fines against manufacturers, importers, and those who sell receipt paper to end-users, not on brick-and-mortar businesses that simply buy paper."

FISCAL COMMENTS

According to the Senate Appropriations Committee, DTSC estimates ongoing costs of about \$999,000 in fiscal year 2027-2028 and \$979,000 annually thereafter to develop and implement compliance and enforcement activities that would be required by this bill. These costs may require an increase to the Environmental Fee. Based on DTSC's current assumptions, the fee would need to be increased by less than 1% to generate sufficient revenues to support the increase in expenditures.

VOTES:

ASM ENVIRONMENTAL SAFETY AND TOXIC MATERIALS: 7-0-0

YES: Connolly, Ellis, Bauer-Kahan, Castillo, Lee, McKinnor, Papan

ASM JUDICIARY: 12-0-0

YES: Kalra, Macedo, Lee, Bryan, Connolly, Dixon, Harabedian, Pacheco, Papan, Sanchez, Stefani, Zbur

ASM APPROPRIATIONS: 11-1-3

YES: Wicks, Aguiar-Curry, Calderon, Caloza, Fong, Mark González, Krell, Pacheco, Pellerin, Sharp-Collins, Solache

NO: Tangipa

ABS, ABST OR NV: Hoover, Dixon, Ta

ASSEMBLY FLOOR: 70-2-8

YES: Addis, Aguiar-Curry, Ahrens, Alanis, Alvarez, Arambula, Ávila Farías, Bains, Bauer-Kahan, Bennett, Berman, Boerner, Bonta, Bryan, Calderon, Caloza, Carrillo, Chen, Connolly, Davies, Dixon, Elhawary, Ellis, Fong, Gabriel, Garcia, Gipson, Mark González, Hadwick, Haney, Harabedian, Hart, Hoover, Irwin, Jackson, Johnson, Kalra, Krell, Lee, Lowenthal, Macedo, McKinnor, Nguyen, Ortega, Pacheco, Papan, Patel, Patterson, Pellerin, Petrie-Norris, Quirk-Silva, Ramos, Ransom, Michelle Rodriguez, Rogers, Blanca Rubio, Sanchez, Schiavo, Schultz, Sharp-Collins, Solache, Soria, Stefani, Valencia, Wallis, Ward, Wicks, Wilson, Zbur, Rivas

NO: DeMaio, Tangipa

ABS, ABST OR NV: Castillo, Flora, Gallagher, Jeff Gonzalez, Lackey, Muratsuchi, Celeste Rodriguez, Ta

UPDATED

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