

Date of Hearing: July 15, 2025

ASSEMBLY COMMITTEE ON ENVIRONMENTAL SAFETY AND TOXIC MATERIALS

Damon Connolly, Chair

SB 682 (Allen) – As Amended June 23, 2025

SENATE VOTE: 28-7

SUBJECT: Environmental health: product safety: perfluoroalkyl and polyfluoroalkyl substances

SUMMARY: Prohibits, on and after January 1, 2028, a person from distributing, selling, or offering for sale in the state a cleaning product, cookware, dental floss, juvenile product, food packaging, or ski wax, that contains intentionally added perfluoroalkyl and polyfluoroalkyl substances (PFAS). Specifically, **this bill:**

- 1) Defines "covered PFAS restriction" as a restriction imposed by one of several specified statutes (Health and Safety Code (HSC) 108945, 108970, 109000, 109030).
- 2) Defines "covered product" as a juvenile product (as defined by existing law), textile articles, food packaging (as defined by existing law), and a 2028 product.
- 3) Defines "2028 product" as cleaning products, cookware, dental floss, juvenile products, food packing, and ski wax.
- 4) Defines "food packaging" as a package, packaging component, or food service ware that is intended to provide a means to market, protect, handle, deliver, serve, contain, or store a food or beverage, if it is likely to contact a food or beverage. It includes, but is not limited to, all of the following:
 - a) A unit package, an intermediate package, or a shipping container;
 - b) Unsealed receptacles, including, but not limited to, carrying cases, crates, cups, plates, bowls, pails, rigid foil and other trays, wrappers and wrapping films, bags, or tubs; and,
 - c) An individual assembled part of a food package, including, but not limited to, an interior or exterior blocking, bracing, cushioning, waterproofing or heat or cold protection, coating, closures, inks, or labels.
- 5) Defines "juvenile product" as a product designed for use by infants and children under 12 years of age.
- 6) Defines "ski wax" as a lubricant applied to the bottom of snow runners, including, but not limited to, skis and snowboards, to improve their grip or glide properties and includes related tuning products.
- 7) Authorizes, but does not require, the Department of Toxic Substances Control (DTSC), as part of its Safer Consumer Products Program, to evaluate uses of PFAS.
- 8) Authorizes, for any product covered by this bill, DTSC to request and requires the manufacturer to provide, a statement of compliance certifying that each covered product is in

compliance with the applicable covered PFAS restriction as well as technical documentation, including analytical test results to demonstrate compliance with the applicable covered PFAS restriction.

- 4) Defines "intentionally added PFAS" as PFAS added to a product that has a functional or technical effect in the product, including the PFAS components of intentionally added chemical mixtures and PFAS that are intentional results or outcomes of an added chemical or process, such as PFAS created as a result of fluorination of plastic.
- 5) Defines "juvenile product" as a product designed for use by infants and children under 12 years of age.
- 6) Defines "manufacturer" as:
 - a) A person that manufactures the product and whose name appears on the product label, or,
 - b) A person for whom the product is manufactured or by whom it is distributed, and who owns or is the licensee of the brand or trademark under which the product is used in a commercial enterprise, sold, offered for sale, or distributed in the state.
- 7) Provides, within the definition of manufacturer, that in the case of a product imported into the United States, manufacturer includes the importer or first domestic distributor of the product if no person that meets the requirements above has a presence in the United States.
- 8) Defines "perfluoroalkyl and polyfluoroalkyl substances" or "PFAS" as a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom.
- 9) Prohibits, on and after January 1, 2028, a person from distributing, selling, or offering for sale in the state a 2028 product that contains intentionally added PFAS.
- 10) Provides that the prohibition of intentionally added PFAS in 2028 products does not apply to either of the following:
 - a) A product for which federal law governs the presence of PFAS in the product in a manner that preempts state authority, or,
 - b) A previously used product.
- 11) Authorizes, on or before January 1, 2029, DTSC to adopt regulations to administer the provisions of this bill.
- 12) Provides that this bill does not limit or restrict any other mandates, prohibitions, deadlines, enforcement authorities, or rights of action.

EXISTING LAW:

- 1) Requires, commencing January 1, 2022, a person that sells firefighter personal protective equipment to provide a written notice to the purchaser if the firefighter personal protective equipment contains intentionally added PFAS chemicals. (Health and Safety Code (HSC) § 13029 (b)(1))

- 2) Prohibits, commencing January 1, 2022, a manufacturer of class B firefighting foam from manufacturing, or knowingly selling, offering for sale, distributing for sale, or distributing for use, and a person from using, class B firefighting foam containing intentionally added PFAS chemicals. (HSC § 13061 (b)(1))
- 3) Prohibits, on and after July 1, 2023, a person, including, but not limited to, a manufacturer, from selling or distributing in commerce in this state any new, not previously owned, juvenile product, as defined, that contains intentionally added PFAS or PFAS at or above 100 parts per million (ppm), as measured in total organic fluorine. (HSC § 108946)
- 4) Prohibits, on or after January 1, 2025, a person from manufacturing, distributing, selling, or offering for sale in the state any new, not previously used, textile articles that contain intentionally added PFAS, or PFAS at or above 100 ppm, and on or after January 1, 2027, 50 ppm, as measured in total organic fluorine. (HSC § 108971)
- 5) Prohibits, commencing January 1, 2025, a person or entity from manufacturing, selling, delivering, holding, or offering for sale, in commerce any cosmetic product that contains any specified intentionally added ingredients, including some PFAS chemicals. (HSC § 108980 (a))
- 6) Prohibits, commencing January 1, 2025, a person or entity from manufacturing, selling, delivering, holding, or offering for sale in commerce any cosmetic product that contains intentionally added PFAS. (HSC § 108981.5)
- 7) Prohibits, commencing January 1, 2023, a person from distributing, selling, or offering for sale in the state any food packaging that contains intentionally added PFAS or PFAS at or above 100 ppm, as measured in total organic fluorine. (HSC § 109000)
- 8) Prohibits a person from manufacturing, distributing, selling, or offering for sale a menstrual product that contains regulated PFAS, as defined. (HSC § 25258.3)
- 9) Authorizes the State Water Resources Control Board (State Water Board) to order a public water system to monitor for PFAS; requires community water systems to report detections; and, where a detected level of these substances exceeds the response level, to take a water source out of use or provide a prescribed public notification. (HSC § 116378)
- 10) Requires a package or box containing menstrual products that was manufactured on or after January 1, 2023, for sale or distribution in this state to have printed on the label a plain and conspicuous list of all intentionally added ingredients in the product. (HSC § 111822.2)

Under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

- 1) Prohibits a person, in the course of doing business, from knowingly discharging or releasing a chemical known to the state to cause cancer or reproductive toxicity into water or onto or into land where such chemical passes or probably will pass into any source of drinking water. (HSC § 25249.5)
- 2) Prohibits a person, in the course of doing business, from knowingly and intentionally exposing any individual to a chemical known to the state to cause cancer or reproductive

toxicity without first giving clear and reasonable warning to such individual. (HSC § 25249.6)

- 3) Requires the Governor to publish a list of chemicals known to cause cancer or reproductive toxicity and to annually revise the list. The Office of Environmental Health Hazard Assessment (OEHHA) has listed perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), which are members of the PFAS class, as chemicals known to the state to cause developmental toxicity. (HSC § 25249.8)

Under the Safer Consumer Products (Green Chemistry) statutes:

- 1) Requires the DTSC to adopt regulations to establish a process to identify and prioritize chemicals or chemical ingredients in consumer products that may be considered chemicals of concern, as specified. (HSC § 25252)
- 2) Requires DTSC to adopt regulations to establish a process to evaluate chemicals of concern in consumer products, and their potential alternatives, to determine how to best limit exposure or to reduce the level of hazard posed by a chemical of concern. (HSC § 25253 (a))
- 3) Specifies, but does not limit, regulatory responses that DTSC can take following the completion of an alternatives analysis, ranging from no action, to a prohibition of the chemical in the product. (HSC § 25253)

FISCAL EFFECT: Unknown.

COMMENTS:

Need for the bill: According to the author,

"SB 682 aims to comprehensively ban unnecessary uses of per- and polyfluoroalkyl substances (PFAS), commonly known as "forever chemicals," in products. SB 682 will pragmatically shift California to an essential use model, eliminating unnecessary uses of PFAS while creating a pathway for necessary uses to continue. This will focus on reducing the public health impacts and financial burden of managing these toxic chemicals, while still allowing for critical uses of PFAS to continue.

Manufacturers who wish to continue to use PFAS will have to demonstrate that the use of PFAS in their product is unavoidable, the function provided by PFAS in the product is necessary for the product to work, and the product is critical for the health, safety, or functioning of society. To ensure industries have sufficient time to comply, this bill includes three time periods to phase-in various products, beginning in 2027 with a handful of products with known PFAS-free alternatives and PFAS prohibitions in other states, 2035 for many other products, and finally 2040. To focus on PFAS chemicals contaminating our water, the 2035 and 2040 timelines apply to those that are water soluble, may release water soluble chemicals, or may decompose into water soluble chemicals.

California has long been a national leader in regulating harmful chemicals, so this bill is the natural next step in this fight. PFAS is impacting our communities, our environment, and utility ratepayers. This issue is quickly becoming a significant and costly management concern for drinking water and wastewater utilities tasked with protecting public health and

the environment. SB 682 will protect people from exposure to harmful chemicals, prevent further contamination, and will hold manufacturers accountable to produce more sustainable products without these harmful chemicals."

Perfluoroalkyl and polyfluoroalkyl substances (PFAS): PFAS are synthetic, highly fluorinated substances that have been widely used in industrial and consumer applications for their heat, water, and lipid resistance properties for more than seven decades. In consumer products, PFAS are used in carpets, furniture fabrics, apparel, paper packaging for food, non-stick cookware, personal care products, and other products designed to be waterproof; grease, heat, water and stain resistant; or, non-stick. Commercial applications span many sectors of the economy, including aerospace, automotive, building and construction, pharmaceuticals, medical devices, paints, electronics, semiconductors, energy, oil and gas exploration, first responder safety, firefighting foams, and health care. During production, use, and disposal, PFAS can migrate into the soil, water, and air. Some PFAS are volatile, and can be carried long distances through the air, leading to contamination of soils and groundwater far from the emission source. Researchers have found PFAS in indoor and outdoor environments, plants, soil, food, drinking water, wildlife, companion animals, production animals, and humans at locations across the nation and around the globe. PFAS are extremely persistent and degrade very slowly over time, which has resulted in their accumulation in the environment since the onset of their production in the late 1940s. Currently, nearly 15,000 PFAS chemicals are included in the chemicals database CompTox, which is maintained by the United States Environmental Protection Agency (US EPA).

Exposure to PFAS: The main route of exposure to PFAS is through ingestion of contaminated food or liquid (accounting for up to half of total exposure), through contact with consumer products, and through inhalation and ingestion of contaminated indoor air and dust. Food can become contaminated with PFAS through soil and water used to grow the food, food packaging containing PFAS, and equipment that uses PFAS during processing. Some foods, such as fish, meat, eggs, and leafy vegetables, may contain PFAS due to bioaccumulation and crop uptake. Studies have shown that PFAS can transfer from pregnant mothers to their fetuses via the placenta during gestation, as well as transfer from nursing mothers to their infants via breastfeeding. Dermal exposure is also possible when people touch products treated with PFAS, such as carpets or clothing. Young children may be exposed to higher levels of PFAS than adults because they ingest more dust containing PFAS and mouth PFAS-treated consumer products. Workers, such as carpet installers, carpet cleaners, firefighters, and workers in furniture, furnishings, outdoor clothing, and carpet stores, may also experience above average PFAS exposure levels.

Exposure to PFAS in drinking water is an escalating concern due to the persistence of PFAS chemicals in the environment and their tendency to accumulate in groundwater. Groundwater PFAS contamination typically has been associated with industrial facilities where these chemicals were manufactured or are used in other products, and in airfields where the chemicals have been used for firefighting. PFAS chemicals can also enter the environment and drinking water through composting, landfilling, recycling, and incineration of products containing PFAS. The State Water Board indicates that the four major sources of PFAS in drinking water in California are fire training/fire response sites, industrial sites, landfills, and wastewater treatment plants/biosolids. The State Water Board notes that because of their presence and persistence in many drinking water supplies, PFAS remain a serious source of exposure decades after their release into the environment.

Like humans, wildlife is exposed to PFAS by consuming contaminated water or food. Within aquatic food webs, PFAS are found to increase in concentration from ambient water to plankton and further up the food chain.

Hazard traits of PFAS: According to DTSC, all PFAS display at least one of the hazard traits identified in California's Safer Consumer Products (Green Chemistry) Hazard Traits Regulations (22 C.C.R. § 69401 et seq.). An intrinsic property of PFAS is the extreme environmental persistence of either the individual compounds or their degradation products or both, resulting in their classification as "forever chemicals." Most PFAS are mobile in environmental media such as air and water, and thus are widespread in living organisms and the environment.

Scientific studies have shown that exposure to some PFAS can lead to adverse health outcomes in humans and animals. DTSC states that if humans are exposed to PFAS through diet, drinking water, or inhalation, some of these chemicals remain in the body for a long time. As people continue to be exposed to PFAS, the PFAS levels in their bodies may increase to the point that they suffer adverse health effects. According to the US EPA, current peer-reviewed scientific studies have shown that exposure to certain levels of PFAS may lead to: reproductive effects such as decreased fertility or increased high blood pressure in pregnant women; developmental effects or delays in children, including low birth weight, accelerated puberty, bone variations, or behavioral changes; increased risk of some cancers, including prostate, kidney, and testicular cancers; reduced ability of the body's immune system to fight infections, including reduced vaccine response; interference with the body's natural hormones; and, increased cholesterol levels and/or risk of obesity. In addition to direct human health impacts, some PFAS may have high global warming potential. Also, several PFAS bioaccumulate significantly in animals or plants and emerging evidence points to their phytotoxicity, aquatic toxicity, and terrestrial ecotoxicity.

The persistence and proliferation of PFAS chemicals makes it challenging to study and assess the overall potential human health and environmental risks of PFAS exposure.

Recent US EPA action on PFAS: According to the US EPA, "Under the Biden-Harris Administration, [US] EPA has restored scientific integrity and accelerated the pace of research and actions needed to tackle the PFAS crisis and protect American communities." On October 18, 2021, US EPA Administrator Michael S. Regan announced the agency's PFAS Strategic Roadmap, which laid out a whole-of-agency approach to addressing PFAS. The roadmap sets timelines by which US EPA plans to take specific actions and commits to, "bolder new policies to safeguard public health, protect the environment, and hold polluters accountable."

The US EPA reported that since the roadmap's release in October 2021, it has taken a number of key actions to address PFAS, including publishing a rule that will require all manufacturers (including importers) of PFAS to report information on PFAS uses, production volumes, disposal, exposures, and hazards; initiating nationwide monitoring of 29 PFAS in drinking water systems; allocating \$2 billion to address emerging contaminants, including PFAS, in drinking water across the country; and, releasing a framework for addressing new PFAS and new uses of PFAS under the Toxic Substances Control Act (TSCA). US EPA states that the framework will ensure that before these chemicals are allowed to enter into commerce, US EPA will undertake an extensive evaluation to ensure they pose no harm to human health and the environment.

State action on PFAS: California has undertaken efforts to address PFAS substances across several state entities. For example, at DTSC, all PFAS chemicals are "Candidate Chemicals" under the Safer Consumer Products (SCP, previously known as Green Chemistry) Program, because they exhibit a hazard trait and/or an environmental or toxicological endpoint, and the entire class of PFAS was added by the California Environmental Contaminant Biomonitoring Program to its list of priority chemicals.

On July 1, 2021, DTSC designated carpets and rugs containing PFAS as a "Priority Product." A Priority Product is a consumer product identified by DTSC that contains one or more Candidate Chemicals and that has the potential to contribute to significant or widespread adverse impacts to humans or the environment. The Priority Product designation required domestic and foreign carpet and rug manufacturers that use PFAS and related chemicals in their products to submit information on all of the manufacturer's products that contain PFAS and are sold in California, by August 30, 2021. Manufacturers were then required to show intent to remove or replace PFAS in their products, remove the product from the market, or identify potential alternatives to PFAS to be used in the product by December 28, 2021. This process is ongoing.

In regulations that went into effect on April 1, 2022, DTSC also designated treatments containing PFAS for use on converted textiles or leathers such as carpets, upholstery, clothing, and shoes as a Priority Product. Domestic and foreign manufacturers of treatments for converted textiles or leathers that contain any member of the class of PFAS selling their products in California were required to submit information on those products by May 31, 2022. After submitting the required information, manufacturers were then required to show intent to mitigate exposure to PFAS in their products by September 28, 2022. This process is ongoing.

Previously, DTSC proposed investigating PFAS in other product categories, such as food packaging and children's products, but during the investigative period the Legislature prohibited PFAS in those product categories and it appears DTSC has shifted its resources to investigating other product/ chemical combinations.

OEHHA, under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65), listed PFOA and PFOS as chemicals known to the state to cause reproductive toxicity. In July, 2021, OEHHA announced the release of a draft document for public review describing proposed Public Health Goals (PHGs) for PFOA and PFOS in drinking water. A PHG is the level of a chemical contaminant in drinking water that does not pose a significant risk to health. PHGs published by OEHHA are considered by the State Water Board in setting drinking water regulatory standards (Maximum Contaminant Levels, or MCLs) for California.

The State Water Board has taken a number of recent actions related to PFAS in drinking water, including several investigative orders to public water systems requiring testing for PFAS. Most recently, it issued General Order DW 20240002DDW (2024 Order), in March 2024, to public water systems for monitoring PFAS in community public water systems serving disadvantaged and severely disadvantaged communities. The purpose of this monitoring is to understand PFAS's impacts on drinking water in these communities.

Recently, the State Legislature has also taken action on PFAS by enacting a slew of bills prohibiting PFAS at different levels across many product categories. These include a ban on menstrual products that contain PFAS (AB 2515, Papan, Chapter 1008, Statutes of 2024); a ban on textiles that contain PFAS (AB 1817, Ting, Chapter 762, Statutes of 2022); a ban on cosmetic

products that contain PFAS (AB 2771, Friedman, Chapter 804, Statutes of 2022); a ban on food packaging that contains PFAS (AB 1200, Ting, Chapter 503, Statutes of 2021); a ban on new juvenile products that contain PFAS (AB 652, Friedman, Chapter 500, Statutes of 2021); and, a ban on firefighting foam containing PFAS (SB 1044, Allen, Chapter 308, Statutes of 2020). The Legislature also authorized the State Water Board to order public water systems to monitor for PFAS and required municipalities to notify consumers of PFAS detected above notification levels (AB 756, C. Garcia, Chapter 162, Statutes of 2019).

Chemical bans and the Safer Consumer Products Program: In 2008, California enacted AB 1879 (Feuer and Huffman, Chapter 559, Statutes of 2008) to establish a regulatory process for identifying and prioritizing chemicals of concern in consumer products, to create methods for analyzing alternatives to existing hazardous chemicals, and to ultimately take regulatory action to reduce the level of harm from the chemicals in those products. DTSC did this by promulgating the Safer Consumer Products regulations, which took effect in October 2013. DTSC's approach provides science-based criteria and procedures for identifying and evaluating alternatives with the objective of replacing chemicals of concern with safer chemicals and avoiding the use of substitute chemicals that pose equal or greater harm.

While the intent of AB 1879 is to establish a robust and thorough regulatory process rooted in science to consider exposure to chemicals in consumer products, it has long been recognized that DTSC does not have the resources to evaluate all, or even a significant percentage of, chemicals in every consumer product application. The permutations of product and chemical combinations are virtually limitless. To that end, the Safer Consumer Products statute does not preclude the Legislature from taking legislative action on the use of chemicals in consumer products. When there is credible scientific evidence to support a change in state policy to protect public health, the Legislature can respond to that science more expeditiously than can DTSC. Since AB 1879 was enacted, the Legislature has enacted policies on various chemical-product applications, which include, in addition to the PFAS prohibitions listed above, a ban on flame retardants in children's products, mattresses, and upholstered furniture (AB 2998, Bloom, Chapter 924, Statutes of 2018); a ban on BPA in toddler sippy cups and bottles (AB 1319, Butler, Chapter 467, Statutes of 2011); a ban on the sale of jewelry with cadmium at certain levels (AB 929, Pavley, Chapter 313, Statutes of 2010); and, a ban on the sale of brake pads containing copper in exceedances of certain levels (SB 346, Kehoe, Chapter 307, Statutes of 2010).

DTSC, in fact, wrote in support of AB 1319 (Butler) stating: "DTSC does not believe that the [Safer Consumer Products] regulations should ever be viewed as excluding action that the Legislature might take to address specific product related concerns that are brought to its attention. Not only have the regulations taken longer to adopt than originally anticipated, DTSC also expects that the process to be represented in the regulations will be subject to time and resource constraints. There may be circumstances that warrant more timely action than DTSC can accommodate through its process."

Regulating PFAS as a class: DTSC adopted a rationale for regulating PFAS chemicals as a class, concluding, "it is both ineffective and impractical to regulate this complex class of chemicals with a piecemeal approach." This rationale was presented in the February, 2021, *Environmental Health Perspectives* article, "Regulating PFAS as a Chemical Class under the California Safer Consumer Products Program." The authors of the article state,

"The widespread use, large number, and diverse chemical structures of PFAS pose challenges to any sufficiently protective regulation, emissions reduction, and remediation at contaminated sites. Regulating only a subset of PFAS has led to their replacement with other members of the class with similar hazards, that is, regrettable substitutions. Regulations that focus solely on perfluoroalkyl acids (PFAAs) are ineffective, given that nearly all other PFAS can generate PFAAs in the environment... We at the California DTSC propose regulating certain consumer products if they contain any member of the class of PFAS because: a) all PFAS, or their degradation, reaction, or metabolism products, display at least one common hazard trait according to the California Code of Regulations, namely environmental persistence; and b) certain key PFAS that are the degradation, reaction or metabolism products, or impurities of nearly all other PFAS display additional hazard traits, including toxicity; are widespread in the environment, humans, and biota; and will continue to cause adverse impacts for as long as any PFAS continue to be used. Regulating PFAS as a class is thus logical, necessary, and forward-thinking."

Other researchers have made the case for managing PFAS as a chemical class, including in "Scientific Basis for Managing PFAS as a Chemical Class" published in June, 2020, in *Environmental Science & Technology Letters*, and "Strategies for grouping per- and polyfluoroalkyl substances (PFAS) to protect human and environmental health," also published in June, 2020, in *Environmental Science: Processes & Impacts*.

PFAS in cleaning products: Cleaning products are commonly listed on governmental and academic websites as known sources of PFAS. To illustrate the prevalence of PFAS in cleaning products, the sponsors of the bill point to an informal Environmental Working Group (EWG) analysis of online cleaning product data, which found that approximately 50% of industrial and institutional floor cleaners, finishes, polishes, and restorers contain PFAS. These products are used in public buildings, schools, and commercial offices. EWG's analysis also found that 1 in 6 household versions of these floor cleaning product categories contain PFAS.

A January 2022, study published in *Atmospheric Environment* focusing on PFAS in floor waxes conveys that the flooring industry reports a strong demand for PFAS-containing products. Fluorosurfactants are added to floor polishes to modify their flow, leveling, and wetting properties, or more specifically, to lower the surface tension of the floor polish. The article says that DuPont, one of the world's largest PFAS-containing product manufacturers, reports that almost every acrylic/wax floor polish formulation on the market contains a fluorosurfactant. The authors of the article conducted a study that demonstrated occupational exposure to PFAS during floor stripping and waxing. PFAS emitted during this process could also enter wastewater.

To further illustrate the problem, the sponsors of the bill report that many manufacturers indicate, but do not state, that their cleaning products contain properties (water-repellant, long-lasting, high shine) that are indicative of PFAS chemicals. They say that many other product categories are known to contain PFAS including car waxes, dishwasher rinse aids, furniture polishes and textile cleaners and treatments. In addition, the sponsors argue that manufacturers are marketing a type of PFAS for use as propellants in air-borne cleaning products and air fresheners.

PFAS in cookware: While this bill prohibits PFAS in multiple consumer products, many stakeholder conversations have centered around the use of PFAS in cookware. Specifically, the conversations have focused on a specific PFAS known as polytetrafluoroethylene or PTFE,

which is a fluoropolymer. Following are some studies/articles that have looked at PTFE and fluoropolymers.

Toxicity concerns with PTFE-coated non-stick cookware: The article, "PTFE-coated non-stick cookware and toxicity concerns: a perspective, (Sajid, M., Ilyas, M.)," *Environmental Science and Pollution Research Environ Sci Pollut* (September 2017), provided the following summary,

"PTFE is used as an inner coating material in non-stick cookware. This unique polymer coating prevents food from sticking in the pans during the cooking process. Such cookware is also easy to wash. At normal cooking temperatures, PTFE-coated cookware releases various gases and chemicals that present mild to severe toxicity. Only few studies describe the toxicity of PTFE but without solid conclusions. The toxicity and fate of ingested PTFE coatings are also not understood. Moreover, the emerging, persistent, and well-known toxic environmental pollutant PFOA is also used in the synthesis of PTFA. There are some reports where PFOA was detected in the gas phase released from the cooking utensils under normal cooking temperatures. Due to toxicity concerns, PFOA has been replaced with other chemicals such as GenX, but these new alternatives are also suspected to have similar toxicity. Therefore, more extensive and systematic research efforts are required to respond the prevailing dogma about human exposure and toxic effects to PTFE, PFOA, and GenX and other alternatives."

Fluoropolymers and environmental and human health: According to the article, *Are Fluoropolymers Really of Low Concern for Human and Environmental Health and Separate from Other PFAS?*, Lohmann, et. al, *Environmental Science and Technology* (October 2020),

"The evidence reviewed in this analysis does not find a scientific rationale for concluding that fluoropolymers are of low concern for environmental and human health. Given fluoropolymers' extreme persistence; emissions associated with their production, use, and disposal; and a high likelihood for human exposure to PFAS, their production and uses should be curtailed except in cases of essential uses.

The class of per- and polyfluoroalkyl substances (PFAS) consists of polymers and nonpolymers. Fluoropolymers represent a distinct subset of fluorinated polymers, e.g., polytetrafluoroethylene (PTFE). In this analysis, we focus on fluoropolymers. The group of fluoropolymers is dominated by PTFE. Fluoropolymer-coated food contact materials (e.g., metal cookware), if not properly pretreated, could lead to the leaching of nonpolymeric PFAS residuals into food during the use phase.

The concerns we present suggest that there is no sufficient evidence to consider fluoropolymers as being of low concern for environmental and human health. The group of fluoropolymers is too diverse to warrant a blanket exemption from additional regulatory review. Their extreme persistence and the emissions associated with their production, use, and disposal result in a high likelihood for human exposure as long as uses are not restricted. Further, there is no scientific basis to separate and subsequently remove fluoropolymers from discussions of other PFAS as a class or in terms of their impacts on human or environmental health.

Our recommendation is to move toward the use of fluoropolymers in closed-loop mass flows in the technosphere and in limited essential-use categories, unless manufacturers and users can eliminate PFAS emissions from all parts of the life cycle of fluoropolymers."

Authorization of use of PFAS in food contact applications by the United States Food and Drug Administration (FDA): Since the 1960s, the FDA has authorized specific types of substances that contain PFAS for use in food contact applications. Substances that contain PFAS are used for their non-stick and grease, oil, and water-resistant properties. PFAS authorized for use in contact with food generally fall into four application categories: nonstick coating applications; sealing gaskets for food processing equipment; manufacturing aids; and grease-proof agents for paper food packaging. Of these uses, current data available to the FDA indicate that only paper and paperboard agents would result in dietary exposure to PFAS that may result in a potential safety concern.

To obtain FDA authorization, manufacturers must submit data and information to the FDA demonstrating that there is a reasonable certainty of no harm from the intended use. Since 1999, these authorizations come to the FDA predominantly in the form of food contact notifications which are specific to each manufacturer or supplier. If another manufacturer wants to use the same substance, they must submit their own application to the FDA.

After a substance has been authorized, the FDA reviews new scientific information on the authorized uses of food contact substances to ensure that these uses continue to be safe. When the FDA identifies potential safety concerns, the agency ensures that these concerns are addressed or that these substances are no longer used in food contact applications.

On the FDA's website is a link to various studies by FDA scientists, one of those studies, "Perfluorochemicals: potential sources of and migration from food packaging," Food Additives and Contaminants, October 2005, includes the following:

"Perfluorochemicals are widely used in the manufacturing and processing of a vast array of consumer goods, including electrical wiring, clothing, household and automotive products. Furthermore, relatively small quantities of perfluorochemicals are also used in the manufacturing of food-contact substances that represent potential sources of oral exposure to these chemicals. The most recognizable products to consumers are the uses of perfluorochemicals in non-stick coatings (polytetrafluoroethylene (PTFE)) for cookware and also their use in paper coatings for oil and moisture resistance. Recent epidemiology studies have demonstrated the presence of two particular perfluorochemicals, perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) in human serum at very low part per billion levels. These perfluorochemicals are biopersistent and are the subject of numerous studies investigating the many possible sources of human exposure. Among the various uses of these two chemicals, PFOS is a residual impurity in some paper coatings used for food contact and PFOA is a processing aid in the manufacture of PTFE used for many purposes including non-stick cookware."

PFAS bans in other states: Below is a list of states that have banned PFAS in products that this bill is also proposing to ban. Please note, that this is not an exhaustive list, and some of these states and other states have banned PFAS in other products. The date in ()'s is the date the PFAS is banned.

- 1) Cleaning products: Colorado (2026), Connecticut (2028), Maine (2028);

- 2) Cookware: Colorado (2026), Connecticut (2028), Maine (2028);
- 3) Dental Floss: Colorado (2026), Connecticut (2028), Maine (2028);
- 4) Food packaging: California (2023), Colorado (2024), Connecticut (2023), Hawaii (2024), Maine (2022), Maryland (2024);
- 5) Juvenile products: California (2023), Colorado (2024), Connecticut (2028), Maine (2026); and,
- 6) Ski wax: Colorado (2026), Connecticut (2028), Maine (2028).

Please note that the Committee has asked stakeholders for a list of any of the above states bans on PFAS that exempt PTFE – as of the writing of this analysis, the Committee has not received that list.

This bill: SB 682, prohibits, on and after January 1, 2028, a person from distributing, selling, or offering for sale in the state a cleaning product, cookware, dental floss, juvenile product, food packaging, or ski wax, that contains intentionally added PFAS. Based upon DTSC's analysis that PFAS should be regulated as a class, the Legislature has banned PFAS (as a class, without any exemptions) in cosmetics, certain food packaging, certain juvenile products, menstrual products, and textiles. This bill expands on those prohibitions by adding several consumer products to the current prohibitions.

Key stakeholder dispute: While there are several different policy conversations continuing around this bill, the key dispute appears to center around a particular class of PFAS used in cookware. Manufacturers of cookware have claimed that this class of PFAS, referred to as PTFE (which is also a fluoropolymer), is safe, however proponents of the bill have disputed that claim. It's important to note that within DTSC's peer reviewed article recommending that PFAS be regulated as a class, this did include fluoropolymers within the recommendation of regulating PFAS as a class.

Ongoing stakeholder conversations: In addition to the various policy discussions around this bill, the author and stakeholders are continuing to look at further clarifying a few issues including if refrigerators are included within the definition of food packaging and looking at the internal components of cookware.

Arguments in support: According to Breast Cancer Prevention Partners, California Association of Sanitation Agencies, Clean Water Action, Environmental Working Group, and the Natural Resources Defense Council,

"PFAS are a class of approximately 14,000 man-made chemicals. California, as well as 23 other states define PFAS as " a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom". The European Union uses a scientifically aligned definition. Extensive independent science demonstrates that all PFAS, whether they be "long-chain", "short-chain", or polymers like PTFE, commonly known as Teflon®, persist and spread in the environment and can transform into other forms of PFAS that are well documented as being toxic. Health concerns linked with these chemicals include cancers, decreased fertility, hormone disruption, liver disease, developmental harm, and immune system suppression, including interference with the efficacy of vaccines. For this reason, all of California's PFAS restrictions regulate PFAS as a class, including polymers. The scientific community supports a strong science-based PFAS definition (for example, see this open letter from 160+ scientists from around the world that states, "any PFAS definition grounded in science must

include all PFAS polymers.") and the class-based management of PFAS. DTSC also regulates PFAS as a class and has published a scientific paper articulating the rationale for doing so.

The good news is that restricting PFAS use works. California (and other states) have demonstrated this by banning unnecessary PFAS use in many product categories, including textiles, fire-fighting foam, certain children's products, paper-based food-packaging, cosmetics, and more. SB 682 will build on that progress, and help in relieving the heavy economic burden on water agencies and their rate payers.

While cleanup of drinking water is essential for the 25 million Californians with PFAS detections in their water sources, the cost of continued PFAS use in consumer products will only exacerbate the costs to drinking and wastewater agencies, and ultimately ratepayers. More than \$500 million has already been spent addressing PFAS contamination in our state, with another \$1.13 billion in planned projects. Drinking water remediation for just a handful of PFAS alone could conservatively cost local utilities between \$161 million and \$217 million annually. Worse, the social costs extend far beyond water bills. PFAS-related healthcare burdens are staggering, again conservatively estimated to cost Californians between \$5.5 and \$8.7 billion annually (only a few of the many health impacts from the most well-known PFAS have been quantified). For these reasons, it is imperative that the state acts boldly and phases out unnecessary uses of PFAS.

SB 682 will serve the interests of the state by protecting public health, drinking water, and the environment, and reducing long term public costs and impacts to the state."

Arguments in opposition:

According to the California Manufacturers and Technology Association,

"We support targeted efforts to address harmful PFAS chemicals. However, SB 682 continues an overreach by banning broad categories of PFAS, including fluoropolymers used safely in cookware and by establishing unworkable standards for sectors like cleaning products, where reliable PFAS testing protocols are not yet fully developed or validated.

SB 682 fails to distinguish between harmful PFAS and inert, stable fluoropolymers like PTFE, which are FDA-approved for food contact and used in medical devices. These materials do not pose environmental or health risks and have been safely used for decades.

For cookware, SB 682 also threatens distribution and warehouse operations in California. Because the bill bans the distribution of affected products, even those entering through California ports for sale in other states could be blocked—pushing manufacturers to relocate logistics operations out of state, costing California jobs."

According to the Motorcycle Industry Council (MIC), the Specialty Vehicle Institute of America (SVIA), and the Recreational Off-Highway Vehicle Association (ROHVA),

"[We] are opposed to SB 682 in its current form and strongly urge that you amend the bill to exclude youth off-highway vehicles (OHV), replacement parts for OHVs and protective gear.

We urge the definition of "juvenile product" be amended to align with the current "juvenile product" definition in [Health and Safety Code] Section 108945. Without an explicit exemption, these provisions could have the unintended effect of banning all youth model ATVs, off-highway motorcycles, and youth protective riding apparel and equipment from the marketplace."

According to the Cookware Sustainability Alliance (CSA),

"The Cookware Sustainability Alliance (the CSA) was created to express strong concern about the policy and scientific misinterpretations behind legislative proposals to ban products containing per- and polyfluoroalkyl substances (PFAS). Importantly, fluoropolymers and nonstick cookware are approved for use in food preparation by the U.S. Food & Drug Administration (U.S. FDA), European regulatory bodies, as well as decades of sound scientific research. The CSA is made up of companies with a significant stake in the nonstick cookware category, aimed at setting the record straight and emphasizing the science that underpins fluoropolymer cookware safety.

Non-stick cookware contains a specific subfamily of PFAS called fluoropolymers. The fluoropolymers used by our industry, primarily polytetrafluoroethylene (PTFE), do not have the same characteristics of nonpolymeric PFAS of concern, which should be the focus of environmental and public health policy. Fluoropolymers are extremely large and stable compounds.

It is important to acknowledge that since the mid-20th century, PTFE has played a vital role in the technological advancements of many industrial and consumer products. Moreover, over the past several years, chemical manufacturers that supply the cookware industry with PTFE have implemented significant changes to their manufacturing processes. Technologies now exist and are implemented to manufacture PTFE without the use of fluorosurfactant processing aids. Also, those manufacturers who may continue to make fluoropolymers via the use of fluorosurfactant processing aids now include additional steps to ensure negligible remaining non-polymer PFAS are entrained in the final fluoropolymer product. These recent developments in the manufacturing process for PTFE and other fluoropolymer cookware ensure that they are not a health effects concern to humans or the environment."

Related legislation:

1. AB 2515 (Papan, Chapter 1008, Statutes of 2024). Prohibits a person from manufacturing, distributing, selling, or offering for sale a menstrual product that contains regulated PFAS) as defined.
2. AB 2761 (Hart). Prohibits, beginning January 1, 2026, the sale, use, and manufacture of plastic packaging that contains PFAS or polyvinyl chloride (PVC), inclusive of polyvinylidene chloride (PVDC). This bill was not heard in the Senate Environmental Quality Committee.
3. SB 903 (Skinner). Prohibits, commencing January 1, 2030, a person from distributing, selling, or offering for sale in the state a product that contains intentionall- added PFAS. Authorizes DTSC to establish regulations to administer the prohibition. This bill was held on the suspense file in the Senate Appropriations Committee.

4. AB 347 (Ting, Chapter 932, Statutes of 2024). Requires DTSC to take a number of actions regarding implementation of existing laws dealing with PFAS in food packaging and cookware, including adopting and publishing guidance and testing products.
5. AB 246 (Papan, 2023). Would have prohibited, commencing January 1, 2025, a person from manufacturing, distributing, selling, or offering for sale in the state menstrual products that contain PFAS at or above 10 ppm. This bill was vetoed by Governor Gavin Newsom.
6. AB 727 (Weber, 2023). Would have prohibited, beginning January 1, 2025, a person from manufacturing, selling, delivering, distributing, holding, or offering for sale, a cleaning product that contains intentionally-added PFAS or PFAS at or above 50 ppm, and on January 1, 2027, a cleaning product that contains PFAS at or above 25 ppm. This bill was vetoed by Governor Gavin Newsom.
7. AB 1423 (Schiavo, 2023). Would have prohibited, commencing January 1, 2025, a person or entity from manufacturing, distributing, selling, or offering for sale in the state any covered surface that contains PFAS at or above 20 ppm, and, commencing January 1, 2024, a public entity, a public or private school, or a public or private institution of higher learning, as specified, from purchasing or installing a covered surface that contains PFAS at or above 20 ppm. This bill was vetoed by Governor Gavin Newsom.
8. AB 1817 (Ting, Chapter 762, Statutes of 2022). Prohibits, beginning January 1, 2024, a person from distributing, selling, or offering for sale in the state a textile article, as defined, that contains regulated PFAS, and requires a manufacturer to use the least toxic alternative when removing regulated PFAS in textile articles to comply with the provisions of the bill.
9. AB 2771 (Friedman, Chapter 804, Statutes of 2022). Prohibits, commencing January 1, 2025, a person or entity from manufacturing, selling, delivering, holding, or offering for sale in commerce any cosmetic product that contains intentionally added PFAS.
10. AB 1200 (Ting, Chapter 503, Statutes of 2021). Prohibits, commencing January 1, 2023, the sale of food packaging that contains PFAS; requires, commencing January 1, 2024, cookware manufacturers to label their product if it contains an intentionally added chemical on specified lists; and prohibits, commencing January 1, 2023, for the internet and January 1, 2024, for the cookware package, a cookware manufacturer from making a claim that cookware is free of a chemical, unless no chemical from that chemical class is intentionally added to the cookware.
11. AB 652 (Freidman, Chapter 500, Statutes of 2021). Prohibits, on or after July 1, 2023, a person from selling or distributing in commerce any new juvenile products that contain PFAS.
12. SB 1044 (Allen, Chapter 308, Statutes of 2020). Prohibits the manufacture, sale, distribution, and use of firefighting foam containing PFAS chemicals by January 1, 2022, with some exceptions, and requires notification of the presence of PFAS in the protective equipment of firefighters.

13. SB 1056 (Portantino, 2020). Would have required the State Water Board to establish an analytical laboratory method that can be used as a tool to assess the extent of PFAS contamination in drinking water, surface water, groundwater, and wastewater. This bill was held in the Senate Environmental Quality Committee.
14. AB 1989 (C. Garcia, Chapter 272, Statutes of 2020). Requires a package or box containing menstrual products that was manufactured on or after January 1, 2023, for sale or distribution in this state to have printed on the label a plain and conspicuous list of all intentionally added ingredients, as defined.
15. AB 756 (C. Garcia, Chapter 162, Statutes of 2019). Authorizes the State Water Board to order one or more public water systems to monitor for PFAS and requires municipalities to notify consumers for PFAS detected above notification levels.
16. AB 841 (Ting, Chapter 372, Statutes of 2019). As heard by the Assembly, would have required OEHHA to assess PFAS substances, especially as they might be found in drinking water, to determine which might pose a potential risk to human health. The contents of this bill were deleted in the Senate and amended with unrelated content.
17. AB 958 (Ting, 2018). Would have required a manufacturer of food packaging or cookware sold in the state to visibly disclose on an exterior location of the food packaging or cookware packaging a specified statement relating to the presence of PFAS in the product. This bill was held on the Senate Floor.
18. SB 1313 (Corbett, 2008). Would have prohibited the manufacture, sale, or distribution of any food contact substance, as defined, which contains perfluorinated compounds, as defined, in any concentration exceeding 10 parts per billion. This bill was vetoed by Governor Arnold Schwarzenegger.

REGISTERED SUPPORT / OPPOSITION:

Support

350 Bay Area Action
A Voice for Choice Advocacy
AGC America
Alliance of Nurses for Healthy Environments
American College of OB-GYN's District IX
American Nurses Association California
American Society of Civil Engineers Region 9
Azul
Bay Area Clean Water Agencies
Black Women for Wellness Action Project
Breast Cancer Prevention Partners
California Association of Sanitation Agencies
California Black Health Network
California Contract Cities Association
California Health Coalition Advocacy
California Municipal Utilities Association
California Nurses for Environmental Health & Justice

California Product Stewardship Council
California Professional Firefighters
California Safe Schools
California Special Districts Association
California Stormwater Quality Association
Californians Against Waste
CALPIRG
Central Contra Costa Sanitary District
Center for Community Action and Environmental Justice
Center for Environmental Health
Center for Public Environmental Oversight
Children Now
City of Camarillo
City of Lomita
City of Norwalk
City of Roseville
City of Sacramento
City of San Jose
City of Thousand Oaks
Clean Water Action
Clean Water SoCal
Coalition for Clean Air
Community Water Center
Dublin San Ramon Services District
East Bay Dischargers Authority
East Bay Leadership Council
East Bay Municipal Utility District
East Valley Water District
Eastern Municipal Water District
El Granada Advocates
Elsinore Valley Municipal Water District
Environmental Defense Fund
Environmental Investigation Agency
Environmental Working Group
Erin Brockovich Foundation
Families Advocating for Chemical and Toxics Safety
Fairfield-Suisun Sewer District
Gladfelty Government Relations
Go Green Initiative
Green Policy Initiative
Green Science Policy Institute
Immaculate Heart Community Environmental Commission
Inland Empire Utilities Agency
Integrated Resource Management
Jurupa Community Services District
Keen Footwear
Las Virgenes Municipal Water District
Latinas Contra Cancer
Leadership Counsel Action

League of California Cities
Learning Disabilities Association of America
Los Angeles County Sanitation Districts
Los Angeles Waterkeeper
Mamavation - Non-toxic Products for Healthy Families
Monterey One Water
National Stewardship Action Council
Non-toxic Neighborhoods
NRDC
Olivenhain Municipal Water District
Orange County Sanitation District
Physicians for Social Responsibility Los Angeles
Rancho California Water District
Recolte Energy
Resource Renewal Institute
Responsible Purchasing Network
Rethink Disposable
San Francisco Bay Area Physicians for Social Responsibility
San Francisco Baykeeper
Save the Bay
Sierra Club California
Silicon Valley Clean Water
SoCal 350 Climate Action
StopWaste
Story of Stuff
Swana California Chapters Legislative Task Force
Sweetwater Authority
Vallejo Flood and Wastewater District
Valley Sanitary District
Water Replenishment District
WateReuse
Western Municipal Water District

Opposition

Association of Home Appliance Manufacturers
California Chamber of Commerce
California Manufacturers and Technology Association
Cookware Sustainability Alliance
Groupe SEB
Household and Commercial Products Association
Meyer Corporation US
Motorcycle Industry Council
Range Kleen
Sur La Table

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