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**SENATE COMMITTEE ON ENVIRONMENTAL QUALITY**

**Senator Allen, Chair**

**2021 - 2022 Regular**

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**Bill No:** AB 1793  
**Author:** Quirk  
**Version:** 5/19/2022  
**Urgency:** No  
**Consultant:** Gabrielle Meindl  
**Hearing Date:** 6/16/2022  
**Fiscal:** Yes

**SUBJECT:** Hazardous waste: identification: acute aquatic toxicity criterion

**DIGEST:** Requires the Department of Toxic Substances Control (DTSC), subject to an appropriation by the Legislature in the Budget Act of 2022 that implements a proposal by DTSC to review and evaluate its hazardous waste criteria, to include a review of its acute aquatic toxicity criterion.

**ANALYSIS:**

Existing law:

- 1) Establishes the Resource Conservation and Recovery Act (RCRA) to authorize the United States Environmental Protection Agency (US EPA) to manage hazardous and non-hazardous wastes throughout its life cycle. (42 United States Code (U.S.C.) § 6901 et seq.)
- 2) Establishes the Hazardous Waste Control Law (HWCL) to authorize DTSC to regulate the management of hazardous wastes in California. (Health and Safety Code (HSC) § 25100 et seq.)
- 3) Requires DTSC to develop and adopt regulatory criteria and guidelines for the identification of hazardous wastes and extremely hazardous wastes. (HSC § 25141(a))

This bill:

- 1) Requires DTSC, upon appropriation in the Budget Act of 2022 that implements a proposal to review the department's hazardous waste criteria, and as part of the department's comprehensive evaluation of its criteria and guidelines for the identification of hazardous wastes and extremely hazardous wastes, to review its acute toxicity criteria.

- 2) Requires DTSC's evaluation consider the continued value and necessity of the aquatic toxicity criterion, the threshold at which wastes are considered hazardous using the aquatic toxicity criterion, and the available test methods, including, but not limited to, calculation-based methods, with which a waste can be tested to determine whether it exhibits the criterion.
- 3) Requires DTSC, once the review is completed, to submit a report to the Legislature and the Board of Environmental Safety that includes, among other things, recommendations on next steps to consider related to the aquatic toxicity criterion, threshold, and test methods.

## Background

- 1) *Hazardous waste management.* In California, DTSC is authorized by the US EPA to implement the RCRA requirements and its associated regulations. In addition to implementing RCRA, California implements additional state law hazardous waste requirements that are more stringent than those established under RCRA. There are more than 100,000 entities that generate hazardous waste in California. Waste generators are responsible for determining whether a waste is hazardous or non-hazardous and disposing of the waste accordingly.
- 2) *Identification of hazardous waste in California.* In California, a waste is classified as hazardous due to toxic properties if it is identified as having one or more of eight types of toxicity, which includes acute oral toxicity, acute dermal toxicity, acute inhalation toxicity, acute aquatic toxicity, or carcinogenicity. All of these types of toxicity can be determined using knowledge about the toxicity of constituent components of the waste, except for acute aquatic toxicity.

A waste is defined as having "acute aquatic toxicity" when less than 500 milligrams (mg) per liter (L) kill 50% of the population (LC50) of fathead minnows, rainbow trout or golden shiners in 96 hours. This test is most commonly performed on fathead minnows and is colloquially referred to as the "fish test" or "minnow test".

- 3) *Fish test protocol.* The fish test protocol for hazardous waste identification was developed as a special protocol for "materials that do not readily lend themselves to standard toxicity testing," such as oily samples and samples containing sediment, and draws from previously developed wastewater protocols.

In concept, a waste fails the acute aquatic toxicity test if, in a tank containing the test organism and 500 mg of waste/L, half of the fish in the tank are dead

within 96 hours. In order to produce reliable results, this procedure must be performed multiple times at the 500 mg/L concentration, and at concentrations above and below 500 mg/L, each time using a minimum of twenty fish. Along with wastes containing intuitively toxic substances, such as arsenic, based on data from the Draft Retail Waste Aquatic Toxicity Project available on DTSC's website, many household products fail this test as well, including ginkgo, ginger, zinc, and most, if not all, soaps and shampoos tested.

- 4) *Excessive fish use and animal welfare concerns.* Fish have pain receptors (nociceptors), which are a prerequisite for pain sensation. It is unclear if apparent pain responses are unexperienced and reflexive, or a more conscious experience. Notably, at the conclusion of the aquatic toxicity test, all fish must be euthanized. According to the National Toxicology Program (NTP), administered by the US Department of Health and Human Services, testing of a single chemical can require up to 260 fish, depending on the specific test design. To address the need to reduce or replace animal use for ecotoxicity testing, the NTP's Scientific Advisory Committee on Alternative Toxicological Methods has scheduled a meeting for September 2022.

While there is no legal definition of "Cruelty Free" and "Not Tested on Animals," many companies only use these labels if their products' toxicity has not been evaluated using the fish test. Companies that do not test products using the fish test treat their waste as hazardous by default, or risk liability. Violations of the HWCL can lead to penalties up to \$70,000 per day for each violation. This adds to an over-classification of waste as hazardous in the state.

- 5) *Alternative test methods.* Alternative test methods to the fish test have been studied by various entities with some promising results. For example, the National Toxicology Program Interagency Center for the Evaluation of Alternative Toxicological Methods (NICEATM) and US EPA are conducting a retrospective evaluation of existing data to explore the potential for relying on fewer fish species tests. The goal is to support a protective ecological risk assessment. Results from the study will be used to determine whether all three fish species currently in use are necessary to assess acute lethal risks to fish, and explore if reduced species testing could be combined with an adjustment factor to meet risk protection goals.

Further, Calculation-based methods, or computational toxicology, is an actively developing area of research that leverages existing toxicity data, applies machine learning models and attempts to build mathematical models of biological systems via computer simulation.

- 6) *DTSC to review its hazardous waste criteria*: SB 158 (Senate Committee on Budget and Fiscal Review, Chapter 73, Statutes of 2021) requires DTSC to develop and regularly update a report and a Hazardous Waste Management (HWM) Plan that must be presented to the newly established Board of Environmental Safety (Board) for approval. The statute requires DTSC to analyze the criteria used to identify wastes as hazardous waste in California. The analysis must include an assessment of the existing hazardous waste identification criteria and whether the additional safeguards provided are necessary to protect public health and the environment, whether they reflect current science, technology, or analytical methods, and whether additional contaminants, chemical constituents, or hazard characteristics or traits should be added to the hazardous waste identification criteria.

Based on the analysis included in the report, the statute requires DTSC to provide recommendations regarding the hazardous waste identification criteria. The recommendations are to include whether any wastes currently identified as hazardous waste in California could be managed under less stringent requirements; whether the California hazardous waste identification criteria should be updated to reflect advances in science, technology, or analytical methods; and whether additional contaminants, chemical constituents, or hazard characteristics or traits should be included in the hazardous waste identification criteria to be protective of public health and the environment.

As part of the Governor's proposed 2022-2023 budget, DTSC has submitted a Budget Change Proposal (BCP) requesting 8 positions and \$1.5 million annually to evaluate all existing California hazardous waste criteria, recommend modifications to those criteria, assist in the adoption of any approved recommendations, and provide waste classification determination and recycling exclusion interpretations and technical support.

- 7) *Proper identification of hazardous waste*. The goal of AB 1793 is to ensure that DTSC uses an acute aquatic toxicity test, if the criterion is deemed to be of value in the protection of human health and the environment, that accurately captures toxicity, while also mitigating the over-classification of hazardous waste in California. As noted by DTSC's BCP, current hazardous waste identification testing methods are over 30 years old and have not been reviewed or updated. Given that DTSC is undertaking a review of its hazardous waste classification, AB 1793 is consistent with that effort and directs the department to review newer physical test and calculation-based alternatives.

## Comments

- 1) *Purpose of Bill.* According to the author , "California has over 100,000 generators of hazardous waste, including many businesses and retailers. The state requires these waste generators to separate hazardous from nonhazardous waste and dispose of it in a manner that protects public health and the environment. In determining whether a waste is hazardous, its toxicity in various contexts is measured, including acute toxicity to aquatic life. This test, commonly referred to as the "fish test", was developed in the 1980s and has not been refined since, despite significant scientific advances. When waste generators decide not to perform animal testing for their products, including the "fish test", they must treat their waste as hazardous by default. This leads to over-classification of waste as hazardous despite potentially being harmless to aquatic life. Retailers at times also choose not to undergo toxicity testing due to its complexities, over-classifying more waste as hazardous. AB 1793 tackles this problem by requiring DTSC to evaluate alternative test methods or calculation-based methods and to allow such an alternative, if identified, to be used by waste generators."
- 2) *Consolidation of reporting mechanisms.* The bill requires DTSC to submit a report to the Legislature and the Board of Environmental Safety that includes recommendations on next steps to consider related to the aquatic toxicity criterion, threshold, and test methods. Since the task for evaluating the hazardous waste identification is also part of DTSC's HWM Planning effort, instead of establishing a separate reporting mechanism, **the committee may wish to consider amending the bill to instead require that any recommendations related to the aquatic toxicity criterion be integrated into the HWM Plan recommendations.** The first HWM Plan is scheduled to be produced by March 1, 2025 (and every 3 years after).
- 3) *Committee amendments.* **Staff recommends that committee adopt the bolded amendments in comment #2 above.**

### **Related/Prior Legislation**

AB 733 (Quirk, 2019) would have required DTSC to evaluate the existence of an alternative test method to the acute toxicity test that avoids the use of live vertebrate fish and, if such a method were identified, to adopt it as an option for hazardous waste identification. This bill was vetoed.

AB 2474 (Quirk, 2018) would have required DTSC to evaluate, and adopt as optional tests if suitable, the fish embryo test and daphnid test as alternatives to the fish test used in hazardous waste identification. This bill was vetoed.

**SOURCE:** National Stewardship Action Council

**SUPPORT:**

Personal Care Products Council

**OPPOSITION:**

None received

**ARGUMENTS IN SUPPORT:** According to the National Stewardship Action Council, "Regulated state waste identification remains a persistent and costly problem. Retailers must understand both federal and state toxicity regulations to sell and manage consumer products compliantly or are subject to hefty fines and brand risk. When faced with onerous or complicated state hazardous criteria, many retailers will skip the hazardous evaluation process altogether. [...] Brands that do not test their products on animals are automatically deemed hazardous and specific and expensive waste handling procedures are required, mainly hazardous waste incineration. AB 1793 would update California processes to eliminate unnecessary and costly hazardous waste management of non-toxic products."

The Personal Care Products Council writes, "California's use of the aquatic toxicity test is grossly out of alignment with more modernized testing methods, and over classifies as "hazardous waste" products that would not otherwise be captured under more modern tests. [...] The cosmetic and personal care products industry has taken a strong stand against animal testing; consequently, our members do not conduct this test on finished products and we do not believe that a California State Agency should either."

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