

# Why the FDA Banned a Worldwide-Favored Soda Ingredient

## Description

This year heralded the definitive prohibition of a substance that was once ubiquitous in citrus-flavored sodas, employed to maintain the uniform tanginess throughout the effervescent beverage.

The FDA [revoked](#) the authorization of brominated vegetable oil (BVO), a modified vegetable oil, following [recent findings from toxicological studies](#).

"The proposed action exemplifies the agency's vigilant monitoring of emerging evidence, coupled with scientific inquiry to address safety concerns, culminating in regulatory measures when existing data fail to support the continued safe utilization of food additives," elucidated James Jones, FDA Deputy Commissioner for Human Foods, during the announcement of the proposal [in 2023](#).

BVO, which has functioned as an emulsifying agent since the 1930s, ensures the consistent dispersion of citrus flavoring agents, preventing them from ascending to the beverage's surface. The incorporation of bromine atoms into a triglyceride yields an oil of greater density, thus achieving uniformity in emulsification.

**BVO molecular structure**

Molecular structure of brominated vegetable oil. (Smokefoot/Wikimedia Commons/CC-BY-SA 3.0)

However, BVO's implications extend beyond mere emulsification. [Animal studies](#) suggest that the compound may gradually accumulate in adipose tissues, raising significant concerns about bromine's potential interference with iodine's critical role in thyroid function. Consequently, health authorities globally have harbored suspicions regarding the emulsifier's safety for decades.

In fact, BVO had already been prohibited in numerous countries, including India, Japan, and across the European Union. It faced an impending ban in California, slated to take effect in 2027, following legislation [passed in late 2022](#).

Despite its previous classification as [generally recognized as safe \(GRAS\)](#) by the FDA in the 1950s, this assessment was reconsidered in the subsequent decade amidst growing toxicity concerns. The FDA ultimately limited its usage to a mere 15 parts per million specifically in citrus-flavored beverages.

Data substantiating the risks of even these minute quantities has been elusive, largely reliant on extensive long-term studies. Nevertheless, accumulating evidence, including a [UK study from the 1970s](#) indicating bromine accumulation in human tissues and subsequent animal studies revealing associations with cardiac and behavioral issues, propelled the FDA towards this ban.

Fortunately, major soda companies such as PepsiCo and Coca-Cola have proactively phased out BVO from their formulations over the past decade.



"As beverage manufacturers transitioned to alternative ingredients, the presence of BVO in American soda has diminished significantly," communicated Jones.

With [viable substitutes](#) already in use worldwide to impart the characteristic zest to citrus beverages, the ingredient is unlikely to be missed.

*An earlier version of this article was published in November 2023 and has since been updated to reflect the FDA's decision in July 2024.*

## Vocabulary List:

1. **Prohibition** /ˌprɒʊ.hɪˈbɪʃ.ən/ (noun): The act of forbidding something especially by law.
2. **Emulsifying** /ɪˈmʌl.sɪ.faɪ.ɪŋ/ (verb): Mixing two or more unblendable liquids together often using a stabilizer.
3. **Toxicological** /ˌtɒk.sɪ.ˈkɒl.ə.dʒɪ.kəl/ (adjective): Relating to the study of the adverse effects of chemicals on living organisms.
4. **Consequently** /ˈkɒn.sɪ.kwənt.li/ (adverb): As a result; therefore.
5. **Accumulation** /əˌkjuː.mjʊˈleɪ.ʃən/ (noun): The process of gathering or collecting something over time.
6. **Substantiating** /səbˈstæɪ.n.ji.eɪ.tɪŋ/ (verb): Providing evidence to support or prove the truth of something.

## Vocabulary quizzes

### Multiple Choice ( Select the Correct answer for each question. )

1. What term describes the ability of a product to produce a desired effect?  
Option: Efficacy  
Option: Variant  
Option: Frailty  
Option: Eclipses
2. What word means a visual representation or description of something?  
Option: Mitigate  
Option: Deposition  
Option: Indispensable  
Option: Engaged
3. Which term is used to describe the action of fine-tuning or adjusting something for accuracy?  
Option: Calibrated  
Option: Robust  
Option: Prohibition



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Option: Extrusion

4. What term refers to a remarkable event or occurrence?

Option: Biocompatibility

Option: Ecological

Option: Phenomenon

Option: Pollination

5. Which term relates to the study of the adverse effects of chemical substances on living organisms?

Option: Sustainable

Option: Consequently

Option: Toxicological

Option: Accumulation

6. What term describes the process or means by which something operates or is achieved?

Option: Modifiability

Option: Prophylactic

Option: Mechanism

Option: Substantiating

7. What term refers to the act of forbidding or banning something?

Option: Nanosketti

Option: Eclipses

Option: Prohibition

Option: Emulsifying

8. Which term means to make something less severe serious or painful?

Option: Intriguing

Option: Mitigate

Option: Substantiating

Option: Deposition

9. What word describes something that can be maintained for a long time without exhausting resources?

Option: Sustainable

Option: Engaged

Option: Pollination

Option: Indispensable

10. Which term refers to the process of shaping or forming objects by forcing material through a die?



- Option: Extrusion
- Option: Robust
- Option: Variant
- Option: Elucidated

**Gap-Fill ( Fill in the blanks with the correct word from the vocabulary list. )**

11. A \_\_\_\_\_ security system is essential to protect sensitive information.
12. The flu vaccine is adjusted each year to target the most prevalent \_\_\_\_\_ of the virus.
13. Good communication skills are \_\_\_\_\_ in a customer service role.
14. The \_\_\_\_\_ of evidence led to the breakthrough in the case.
15. The employees were actively \_\_\_\_\_ in the team-building exercises.
16. Bees play a crucial role in the \_\_\_\_\_ of flowering plants.
17. The professor \_\_\_\_\_ the complex theory in a way that everyone could understand.
18. The software's \_\_\_\_\_ allows users to customize its features.
19. Materials used in medical implants must possess \_\_\_\_\_ to avoid rejection by the body.
20. The budget cuts led to a reduction in staff numbers; \_\_\_\_\_ workload increased for remaining employees.

**Matching Sentences ( Match each definition to the correct word from the vocabulary list. )**

21. Understanding the inner of a machine is crucial for its maintenance.
22. The old bridge collapsed due to the of its structure.
23. Researchers are exploring the applications of particles in advanced technologies.
24. The study provided ample evidence the hypothesis.



25. During a solar the moon passes between the sun and the earth.
26. agents are commonly used in food preparation to mix oil and water.
27. The study aimed to determine the between sleep patterns and cognitive function.
28. The new data is crucial for the previous research findings.
29. The mystery novel had a plot full of twists and turns that kept readers engaged.
30. The environmental organization focuses on promoting conservation practices.

## Answer

**Multiple Choice:** 1. Efficacy 2. Depiction 3. Calibrated 4. Phenomenon 5. Toxicological 6. Mechanism 7. Prohibition 8. Mitigate 9. Sustainable 10. Extrusion

**Gap-Fill:** 11. robust 12. variant 13. indispensable 14. accumulation 15. engaged 16. pollination 17. elucidated 18. modifiability 19. biocompatibility 20. consequently

**Matching sentence:** 1. mechanism 2. frailty 3. nanosketti 4. substantiating 5. eclipses 6. emulsifying 7. correlation 8. substantiating 9. intriguing 10. ecological

## CATEGORY

1. Health - LEVEL6

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