



Latest News

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Food Safety

Dispute Over Benzene In Drinks

Compound is created by reaction between benzoate and vitamin C in beverages

[Bette Hileman](#)

A dispute has erupted between [FDA](#) and the [Environmental Working Group \(EWG\)](#) over whether some bottled and canned beverages contain [unhealthy levels of benzene](#), a carcinogen.

Only one issue is clear: Some drinks contain ascorbic acid (vitamin C) and the preservative sodium benzoate. In the presence of ascorbic acid under certain conditions, benzene is formed through the decarboxylation of benzoic acid (*J. Agric. Food Chem.* **1993**, 41 693).



Photo By Susan
Morrissey

Under Scrutiny

Benzene precursors are found in a wide variety of beverages.

FDA first became aware of the problem in 1990 and asked manufacturers to reformulate their beverages. Between 1995 and 2001, FDA tested 24 samples of diet soda for benzene. Nineteen (79%) contained benzene at levels above the U.S. tap water standard of 5 ppb. The agency posted its analyses on a very difficult-to-access part of its website. In February of this year, EWG discovered these data and wrote to FDA expressing its concern.

"These results confirm our suspicions that there are highly elevated benzene levels in some very popular drinks," says Richard Wiles, EWG's senior vice president.

In late 2005, FDA began analyzing beverages containing benzoate and ascorbic acid. The majority of samples contained either no detectable benzene or levels below 5 ppb, says Robert E. Brackett, director of [FDA's Center for Food Safety & Applied Nutrition](#).

FDA's results are preliminary. After its survey is complete, the agency will determine what, if any, additional action is necessary, Brackett wrote to EWG.

Changes in FDA's analytical procedures may account for the differences in results. To collect benzene in the earlier tests, FDA used a purge-and-trap method, in which the samples were heated to 100 °C for 30 minutes. Recently, the agency has been using a static-headspace methodology, which does not involve much heat. In the earlier tests, the high heat was probably creating benzene, says an FDA source who asked not to be identified.

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