Thanksgiving at Panera Bread Is Wasteful and Could Kill You

By Alex Berezow, PhD — November 27, 2019

In his book *Letters to Malcolm: Chiefly on Prayer* [2], C.S. Lewis writes about experiencing God in the simple pleasures of life, such as buttered bread. What he fails to mention is that these simple pleasures, according to activists and chemophobic scaremongers, have been totally ruined by Big Food companies.

One of the chemicals that is commonly added to many foods, including bread, is *sodium benzoate* [3]. It is added as a preservative because companies want to reduce waste and prefer that their customers don’t get sick from food poisoning. Panera Bread scoffs at these fools! Sodium benzoate is on their no-no list [4].
Kids meals reimagined

Ingredients like sodium benzoate and the others on our No-No List aren't so easy to picture. And kids shouldn't have to imagine what's in their food.

Try your hand at drawing below.

Draw a tomato.

Tomatoes suck!!!

Challenge accepted!

Now draw sodium benzoate.

Now all the food on our Panera Kids™ menu is clean. Explore our Kids Food Promise at PaneraKids.com.
The image (courtesy of "In Scientio, Veritas [5]" and modified by yours truly) was once handed out in brochures by Panera to parents and children. Apparently, it's never too early to start scaring kids about chemistry.

The first thing to know about sodium benzoate is that it's everywhere. It's naturally found in several fruits and spices. The second thing to know is that it would take an awful lot to kill a person. So, just for fun, let's calculate how much bread you would have to eat before you died from sodium benzoate poisoning.

The FDA allows food to contain up to 0.1% sodium benzoate [6]. That means something that is 100 grams (about 3.5 ounces) is legally allowed to have 0.1 grams of sodium benzoate. A dinner roll that you might eat at Thanksgiving could be roughly 2 ounces (about 57 grams), which means each roll can legally have 0.057 grams of sodium benzoate.

How much sodium benzoate is lethal? That's hard to say. Scientists have killed mice, rats, and fluffy bunnies to answer this question, and the dose that kills half of these critters [7] (known as the LD50) ranges from 1.6 grams per kilogram of body weight to over 4 grams per kg of body weight. Let's be conservative and pick the lower number, 1.6 g/kg. (Note that it's not really proper to apply animal toxicity data to humans, but we use the data we've got.)

The average adult human might have a mass of 70 kg (154 pounds). The lethal dose that would kill half of these people is calculated as follows:

$$70 \text{ kg} \times 1.6 \text{ g/kg} = 112 \text{ grams}$$

In other words, if there were 100 people, each of whom weighed 70 kg, a 112-gram dose of sodium benzoate would kill 50 of them. How many dinner rolls would a person have to eat to get a 112-gram dose of sodium benzoate? Here's the calculation:

$$112 \text{ g} / 0.057 \text{ g per roll} = 1965 \text{ rolls}$$

To get a potentially lethal dose of sodium benzoate, a person would need to eat 1,965 rolls. That's 245 pounds of bread. You would explode first.

It's safe to conclude that the only real threat from sodium benzoate is if you happen to get hit by a truck hauling it over the interstate highway. Keep this in mind when you inevitably read about all the scary chemicals in your Thanksgiving dinner.

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[2] https://gutenberg.ca/ebooks/lewiscs-letterstomalcolm/lewiscs-letterstomalcolm-00-h.html