

## The Truth about Sodium Benzoate and LifeOne Formula

Many have heard of the beverage bottling companies are taking sodium benzoate out of their soft drinks. Many have also heard that sodium benzoate causes the production of benzene, a known carcinogen. What most people do not know is that you get more sodium benzoate from an organically grown apple than you do in double the daily dose of LifeOne Formula. Sodium benzoate is a natural metabolite in the human body and is found in many organic products. The truth is a little more complex than just stating sodium benzoate is an evil substance that will cause the formation of harmful levels of benzene.

Sodium benzoate is a type of salt that occurs naturally in some foods but is more likely to be chemically produced and added as a food preservative. When it used as a preservative, sodium benzoate is typically added to foods in small amounts only. The FDA allows a maximum concentration of 0.1% as a preservative. Food may take on a bitter taste if more is added.

Sodium benzoate has been the subject of extensive experimentation: it has been tested in long term and short-term feeding experiments in man, dogs, and rats and mice. In one experiment in Germany, four generations of rats were continuously exposed to 0.05 or 1 percent sodium benzoate in their diet. Scientists did not observe any harmful effects on growth, life span, or internal organs. No tumors were detected. All evidence points to sodium benzoate as a safe preservative, except for rare instances of allergic reaction. It also needs to be noted that this sodium benzoate was not combined with acidic food or ascorbic acid. It is this failure in experimentation that is causing such widespread concern of its use. Even in much longer term studies it has been found safe. That is because benzoate is a natural metabolite of the body. It is when the pH surrounding this preservative is low (acidic) that the production of benzene and other difficulties take place.

The reason sodium benzoate is listed in the ingredients of numerous foods is because it works well at killing a wide variety of bacteria, yeast and fungi. You will almost always see it used as a preservative in foods with a high acid content. This is because sodium benzoate will only work when the pH balance of the foods or drinks is less than 3.6. Because it becomes active only at a low pH it is most commonly used un foods such as most sodas, vinegar, fruit juice, and in mixed ingredients like salad dressing. It is also used to stop the fermentation process in wines.

Sodium benzoate naturally occurs in several natural fruits such as apples, plums and cranberries. A few sweet spices contain small amounts of sodium benzoate, including cloves and cinnamon. The presence of sodium benzoate in these foods does not necessarily act to preserve them. Many contain levels higher than the FDA recommended concentration of 0.1%.

The most common fear is that the use of sodium benzoate with citric acid or ascorbic acid, (vitamin C), can produce benzene which is highly carcinogenic, and may cause genetic mutations. This is true and I was one of the first to make the same complaint. It needs to be remembered however that this only occurs when the pH is below 3.8, which is acidic. In the LifeOne Formula it never reaches that pH nor anywhere near it. For this reason and others, no benzene is produced.

We are often asked why we do not use other preservatives like citric acid. The answer is simple, but the implications are too numerous and complicated to go into in this short article. We do not use citric acid and other like preservatives because it would change the pH of the LifeOne Formula and for several reasons that is unacceptable. LifeOne Formula is kept very close to the normal pH of blood at just over 7.

Since we use an extremely small amount of sodium benzoate in the LifeOne Formula, some have questioned its safety. Whether you believe the charges that are currently being thrown about concerning its safety, knowledge of the how and why it is used is a legitimate question.

1. Though the FDA sets the limit of sodium benzoate at 0.1%, LifeOne formula uses a minute fraction of that amount.
2. Since sodium benzoate is only activated at a pH of less than 3.8, it can never become active in LifeOne because LifeOne has a pH of over 7.
3. The sodium is released in the water phase and does not react with anti oxidants. Since it cannot react with the antioxidants it cannot produce benzene.
4. If you doubled the dose of the LifeOneFormula you would be getting less sodium benzoate than you would in an organic apple.
5. Since LifeOne is often stored for periods of times in warm climates without the benefit of refrigeration and because many USA users of LifeOne Formula may leave their bottles out on the counter for days at a time it is necessary to be as safe as possible to see that the bottles do not become contaminated by as wide a range of bacteria, molds, and fungi as possible. By being added in a miniscule amount in the water phase of production we are able to accomplish this without jeopardizing the users' health in any way.
6. It prevents oxidation that starts a chain reaction between glycerin and or oxidative B's into aldehydes like Octanal C<sub>8</sub> H<sub>16</sub> O, Decanal C<sub>11</sub> H<sub>22</sub> O which can be extremely dangerous aldehydes when ingested.
7. 1954 Dr. W.H. Stein reported in the *Journal of the American Chemical Society* that benzoate is a natural metabolite of the human body through endogenous formation of benzoate through the phenylalanine-tyrosine pathway. In other words we produce it naturally in our own bodies', so fear of the substance needs to be tempered with knowledge of its use and properties.
8. When compared to the possibility of contracting bacterium clostridium botulinum or other serious bacteria, molds or fungi it seems much safer than doing nothing, or ruining the product for the properties that make it so effective.
9. In long term studies, and there are many, it has been shown to be harmless. The problem with those studies is that they took sodium benzoate by itself and did not

measure the affects of the products it produces when mixed with an acidic substance. I will never say sodium benzoate is a completely safe substance, however, if used with knowledge and in small amounts at higher than acidic pH levels it can be used both safely and naturally.

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