

Does Trader Joe Understand the Trade-Offs?



[Steven Hentges, Ph.D](#)

Friday, January 19, 2018 [SAFETY](#)

According to the headline of a recent [Bloomberg story](#), “Trader Joe’s to Remove Controversial Chemicals From Receipts.” In particular, as noted in [its announcement](#), Trader Joe’s is “now pursuing receipt paper that is free of phenol chemicals (including BPA and BPS).”

As background, BPA (bisphenol A) and BPS (bisphenol S) have long been used as key components of the thermally reactive coating present on most receipt paper. Almost like magic, white paper runs through a thermal printer and quickly comes out in the form of a printed receipt.

What happens inside the printer is not magic but chemistry. Triggered by heat that is applied to the paper from a printing head, a chemical reaction occurs in the coating to produce a printed image with no ink involved.



What is involved are three chemicals in the coating, each of which plays a critical role. One is a **dye** that is normally colorless but can be converted into a different and colorful chemical structure by reaction with a **developer**. Both BPA and BPS have

commonly been used as developers. The chemical reaction is facilitated by a third chemical, known as a **sensitizer**. Although the functional descriptions are commonly used in this technology, all three are chemicals.

What is conspicuously missing from the announcement and story is what will be used to replace BPA and BPS in receipt paper. Unless Trader Joe's is resorting to magic instead of chemistry, BPA and BPS will be replaced with, you guessed it, another chemical.

Just a few years ago, the U.S. Environmental Protection Agency (EPA) released a [report](#) titled "Bisphenol A Alternatives in Thermal Paper." As described in this lengthy report, EPA scientists evaluated the health and environmental attributes of 19 potential alternatives to BPA in thermal paper.

In spite of searching far and wide for a safer alternative, EPA came up empty handed. They concluded that "[n]o clearly safer alternatives to BPA were identified in this report – most alternatives have Moderate or High hazard designations for human health or aquatic toxicity endpoints."

Subsequent to release of the EPA report, two studies on human exposure to BPA from handling receipt paper were published in the scientific literature. One [study](#), from the U.S. National Toxicology Program, examined exposure to cashiers handling receipts throughout their work shift, which is far beyond any typical consumer exposure.

The other [study](#), from the Finnish Institute of Occupational Health, examined exposure in a group of volunteers simulating the work of a cashier. The results from both studies indicate that even cashiers are not exposed to significant levels of BPA and support the safe use of BPA in thermal paper.

Trader Joe's choice to move away from BPA and BPS, while not supported by the science, is likely an effort to respond to popular market place trends. But as with any trade-off, it's important to understand what is the value, the benefit – and the safety – of what you have traded for.