



Rabbi Dovid Oppenheimer cRc Rabbinic Coordinator,
Industrial Bakeries, Juice and Soda, Candy and Nuts

SELTZER: A BIG TO-DO ABOUT BUBBLES

If you or your children (or both) grew up listening to Shmuel Kunda's *When Zaidy Was Young*, you are undoubtedly familiar with the children's statement that, "Shabbos without seltzer is like Chanukah without latkes, Pesach without *charoses*, and Purim without sneakers." And you are probably just as familiar with Mama's rejoinder, "Seltzer is water with some explosions going on inside the glass, and I don't have to pay good money to have my water exploding in a glass."

But what exactly makes seltzer "explode in the glass," and why are you reading about it in a publication that focuses on the laws of Pesach?

The bubbles that continuously form, as well as seltzer's mildly abrasive taste, are due to the water having been injected with carbon dioxide and kept under pressure. But what is carbon dioxide and where does it come from? Scientifically known as CO₂, it occurs naturally in many ways. We expel it when we breathe, and it is a natural by-product of combustion of wood and other organic materials and fossil fuels. Some carbonated water, such as Perrier, is naturally carbonated under the earth as cooled magma of volcanic mass releases carbonic acid, which then permeates the natural mineral water. This presents no *halachic* issue.

However, historically, the first laboratory-created fizzy drinks were made with carbon dioxide released by fermenting beers. Indeed, the process of fermentation produces both carbon dioxide and alcohol. The production of CO₂, a gas heavier than air, explains why yeast causes dough to rise and why beer and champagne have bubbles. (All wines produce bubbly foam during fermentation, but champagne is produced in a way that the gas is trapped in the bottle until the cork is popped.)

Does carbon dioxide harvested from beer or bread present a *chametz* issue? The same question could be asked regarding



carbon dioxide which formed from non-kosher wine. Would that be a year-round problem? Rabbi Moshe Greenwald of Chust (1853–1910) in his *sefer*, *Arugas Habosem*, writes¹ that that since he was advised that the carbon dioxide was created "from the flavor and aroma" of *chametz*, it is similarly forbidden. Indeed, he was accurate in what he wrote, since as at that time there were no methods to purify the carbon dioxide, it was likely that it did retain some taste from its source. However, in a subsequent responsum he reports that Rabbi Shmuel Ehrenfeld (1835–1883), a grandson of the *Chasam Sofer*, known as the *Chasan Sofer*, permitted it.

More recently, the question was raised before Hagoon Rav Shlomo Zalman Auerbach, and he answered that this is no concern since "there is nothing to it."² It is uncertain, however, whether he meant that there is no taste in the carbon dioxide or that the gas itself does not have any substance. Indeed, while carbon dioxide is easily liquefied by compressing it at room temperature, and this is how it is added to the water, when the pressure is released, it turns back into gas. Since the sensation people enjoy is simply gas, which is invisible and tasteless, it may not be a substance that is forbidden. This may also be the reason why *Chasan Sofer* permitted it.

Now, there are instances in *halachah* where we find that inhaling an aroma is akin to drinking; however, there is no precedent to suggest that a gas derived from a prohibited substance is considered forbidden. It is also worthwhile to note that over the years, significant technological advances have been made, and the carbon dioxide that is used is completely scrubbed of any residue of flavor that it may have retained from its original source. For these reasons, there is a strong argument to permit all carbon dioxide, regardless of the source, both year-round and during Pesach.

Some *hashgachos* which accept this lenient approach and will allow the use of carbon dioxide which comes from

kitnios, nonetheless choose to be specifically *machmir* and avoid carbon dioxide which comes from *chametz*. This is because of the general concept of “*chumrah d’pischah*”, which includes abstaining from items which might even remotely be *chametz*. This middle ground – avoiding *chametz* carbon dioxide but using carbon dioxide from *kitnios* – is very relevant in the United States, where a lot of the carbon dioxide is a by-product of ethanol made from corn/*kitnios*. Since the prohibition of *kitnios* is based on *minhag*, *chumrah d’pischah* does not apply to it. Other *hashgachos* take the more extreme positions to either allow all carbon dioxide (even if it is from *chametz*) or avoid any which comes from *chametz* or *kitnios*.

Now, how is that for something to think about as you sip your seltzer?

ENDNOTES

- 1 Arugas Habosem 120.
- 2 Halichos Shlomo (Moadim, Nissan-Av, 4:3).