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Doing Business Involving Non-Kosher Food

Shulchan Aruch Y.D. 117 discusses the prohibition against doing business involving non-kosher food. Among the practical points noted there and in the *Poskim* are as follows:

1. The reason for the halachic prohibition is that if a Jew does business involving non-kosher food, he may inadvertently come to eat it.

Therefore, one is only restricted from selling non-kosher food (*Shulchan Aruch*), but it is permitted to sell pets that are from non-kosher species (e.g. gerbils, dogs) (*Shach* 117:1) since those animals are not usually eaten.

Furthermore, *Iggeros Moshe* (Y.D. II:37) rules that one may sell non-kosher pet food (assuming it is not *issurei hana'ah* – see *Sappirim* 7) even if technically the food is edible to humans, because there is no concern that someone will eat pet food.

2. Nonetheless, there are cases in which it is forbidden to do business involving non-kosher food even if it appears unlikely that the Jew will eat the food.

For example, one may not sell non-kosher food even if it is in a can or some other container that makes it somewhat difficult to access (*Iggeros Moshe* *ibid.*).

In addition, *Responsa Chasam Sofer* (Y.D. 104-106) says that the *issur* is structured to apply any time a Jew takes possession of non-kosher food for business purposes even if he never actually sees or comes into contact with the food (and therefore cannot possibly eat it). As such, *Chasam Sofer's* assumption is that a Jew may not serve as a broker for non-kosher food items, except in cases where he never takes halachic possession of the goods; the details of when that does and does not apply are quite intricate, and specific situations should be discussed with a Rav.

A Jewish-owned supermarket may not sell even the few non-kosher items necessary to round out their selection and attraction for non-Jewish customers (*Iggeros Moshe* Y.D. II:38).

Lastly, one may not buy non-kosher food specifically for his non-Jewish employees.¹

3. One is only forbidden from trading in food which is *assur mid'oraisah* (*Shulchan Aruch* 117:1).

Therefore, it is permitted for a Jew to own a non-kosher cheese company (that uses kosher rennet and cultures) since *gevinas akum* is only an *issur d'rabannan*.

The *Acharonim* debate whether one is forbidden from selling infested vegetables (see *Pri Megadim* Y.D. (S.D.) 84:18), with the lenient opinion arguing that the person is selling (kosher) vegetables and there is no "transaction" on the bugs. One could possibly argue that even the strict opinion is limited to the very few cases where the infested vegetables are forbidden *mid'oraisah*.² However, it is irresponsible to sell vegetables which most people are not aware are infested, or when most people do not know how to check for bugs, and/or cannot realistically clean; this is especially true in a kosher-certified supermarket where consumers trust that everything is kosher. Due to these concerns, the cRc does not allow kosher-certified supermarkets to sell frozen spinach, fresh or frozen broccoli or cauliflower (unless it bears acceptable certification). Furthermore, other vegetables requiring checking are only sold when bearing a sticker which reads "Caution, must be washed and checked for insects prior to use".

4. If a Jew unexpectedly received non-kosher food, he may sell it.

For example, *chailev*, *nevailos*, and *teraifos* found or created as part of a kosher *shechitah*, may be sold to non-Jews (*Shulchan Aruch*).

¹ *Rema* 117:1; see also *Shulchan Aruch* O.C. 450:6 and *Mishnah Berurah* ad loc.

² We have seen in the text that one is only forbidden from doing business with non-kosher foods which are *assur mid'oraisah*. Accordingly, one could argue that even the strict opinion is limited to cases where the specific batch of vegetables are known to be infested or this type of vegetable is typically so infested as to be "*muchzak b'tolaim*" and *assur* to eat *mid'oraisah* (see *Shach* 84:29). If so, since nowadays most vegetables are not infested beyond the level of *miut hamatzui* (see *Shach* *ibid.*), and are only *assur mid'rabannan*, a Jew would technically be permitted to sell such vegetables (if not for the rationale presented in the text). On the other hand, it may be that since bugs per se are *assur mid'oraisah*, (the strict opinion holds that) one is forbidden from selling anything in which there's a concern that the person might eat bugs, even if at this point the concern is a mere *d'rabannan*.



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Carbon Dioxide for Pesach

One of the amazing features that *Hashem* built into our ecosystem is the “oxygen cycle”, where animals and humans breathe in oxygen and exhale carbon dioxide, and plants and algae do exactly the opposite. About 100 years ago, someone realized that not only did carbon dioxide play an important role in the survival of plant life, but it could also add some “sparkle” to otherwise bland beverages, and so began the seltzer and soda industry. There is little in life that does not have a halachic implication, and this paper will discuss whether carbon dioxide can possibly be forbidden on *Pesach*. The cRc thanks Dan Gruber, Technical Manager, CO₂ System at Haffmans North America for providing considerable technical help in the preparation of this article.

There are three sources of carbon dioxide:

- A by-product of the fermentation of sugar into alcohol,³ which is what happens whenever one produces wine, beer, whisky, bread or ethanol. The carbon dioxide produced during this reaction is what provides the sparkle in champagne and beer. Further discussion on this follows below.
- A by-product of the combustion of organic materials.⁴ The carbon dioxide that escapes in flue gases is most famously blamed as the culprit for global warming, as it is suggested that this gas creates a “greenhouse effect” when it collects in the atmosphere and prevents heat from escaping Earth. [We will leave that discussion for the scientists and politicians].
- Minor sources including mines, petrochemicals, synthetic sources, and synthesis in a laboratory.

Carbon dioxide is a gas at room temperature, and typically, the gas recovered from fermentation (or combustion) is converted into a liquid or solid state for future use. If carbon dioxide is recovered from a *chametz* fermentation of bread, beer, or whisky, is it forbidden on *Pesach*? The earliest *teshuvos* on this topic are dated from when this industry was in its infancy, and all of the *teshuvos* assumed the carbon dioxide was in fact forbidden to the point that they did not even feel a need to explain the

³ The reaction is $C_6H_{12}O_6 \rightarrow 2CH_3CH_2OH + 2CO_2$ (or one glucose/sugar molecule creates two molecules of ethanol and two molecules of carbon dioxide).

⁴ When an organic (i.e. carbon-containing) material burns, the carbon combines with oxygen to create carbon dioxide. For example, the formula for methane gas is CH_4 and when methane gas is burned the reaction is $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$ (or one molecule of methane and two molecules of oxygen create one molecule of carbon dioxide and two molecules of water).

rationale for their ruling.⁵ In contrast, it is reported⁶ that when the question was posed to Rav Shlomo Zalman Auerbach, zt”l, approximately 30 years ago, he stated that the carbon dioxide is clearly permitted on *Pesach*. Why did the *Poskim* take positions that are so diametrically opposed to one another? We will see that a careful analysis of the relevant halachos shows that **אלו ואלו דברי אלקים חיים**, in fact both positions are correct!

Our discussion begins with the status of alcohol distilled from a non-kosher beverage.

Alcohol boils at about 173° F and water boils at 212° F. Therefore if one heats an alcoholic beverage to somewhere between 173° and 212°, the alcohol will boil out but the water will not. If the alcohol-laden vapors are captured and cooled, they will condense into a liquid which has a much higher concentration of alcohol than the original liquid did. The aforementioned process is known as distillation, which is the method used to create whisky.

What is the halacha if whisky is distilled from *stam yayin*? Is it forbidden since the whisky/brandy

⁵ The following are listed in approximate chronological order:

- *Responsa Riva* 2:101 (end) (Rabbi Yoel Unger of Rechnitz, *teshuvah* dated 5623/1863) says that he investigated and found no concerns of *chametz* mixed in (שאין שום חשש תערובת מדבר שיש בו חימוץ), except that the cylinder is used during *chametz* meals and should be *kashered*.
- *Da'as Torah*, addendum to *Hilchos Teralfos* ד”ה ברה”ז (Rabbi Shalom Mordechai Shwadron of Berezhn, Ukraine, *sefer* printed in 5651/1891) describes how to *kasher* seltzer equipment and justifies the need for *hag'alah* with a number of *chametz* concerns (i.e. *b'een* of *chametz* left in the equipment, *chametz* stored in the cylinders, and the equipment used to grind the raw materials) that appear unrelated to the question of vapors from a *chametz* reaction.
- *Ayalah Sheluchah* 75 (Rabbi Naftali Schwartz of Mod, Hungary, *teshuvah* dated 5655/1895) says that people who are more righteous only drink seltzer on the last day of *Pesach*, and gives no details on the process or the rationale for forbidding it.
- *Responsa Rashban* 182 (Rabbi Shlomo Tzvi Schick of Karczag, Hungary, *sefer* printed in 5660/1900) reports that they drank seltzer after his Rabbi made sure there were no issues, but he does not describe what those potential issues might be.
- *Arugas Habosem* O.C. 120-121 (Rabbi Moshe Greenwald of Chust, Hungary, *sefer* printed in 5672/1912). In the first *teshuvah*, he says that he was told the carbon dioxide for seltzer is collected from the “טעם וריח” of beer and whisky; based on that he forbade its consumption on *Pesach*. However, he spoke to experts who gave him a detailed report of how the carbon dioxide is made from burning limestone, coke or wood-coal, and the assumption is that he then permitted seltzer for those who could confirm it was made by these latter methods. In the second *teshuvah* he reports that the *Chasan Sofer* allowed people to use seltzer on *Pesach* if it was made from fast-running (liquid?) carbon dioxide (but it is not clear what that is referring to), and then he describes how to *kasher* the machinery (based on *Da'as Torah*).

In more recent years, the issue was discussed by:

- *Responsa Cheshev HaEfod* 2:74 (Rabbi Chanoch Dov Padwa of London, *sefer* printed in 5737/1977) who clearly describes the issue and suggests how it may be resolved based on *Rivash* (see text below). He tends to favor the lenient approach but concludes that due to the severity of consuming *chametz* one should be strict. He also suggests that one could possibly be lenient since the carbon dioxide remains a gas and never liquefies (as the whisky discussed by *Rivash* does), and – at least nowadays – this appears to be factually incorrect, as carbon dioxide is always sold in liquid or solid form.
- *Kochvei Yitzchok* 3:34 (Rabbi Yitzchok Sternhill of Baltimore, *sefer* printed in 5740/1980), cites some of the *Acharonim* noted above and concludes that since technology constantly changes one must be careful to purchase seltzer with a *Hechsher* for *Pesach*.
- *Hilchos Shlomo* (*Moadim, Nissan-Av*, 4:3 and there in footnote 14) & *Hagadah of Rav Auerbach* (page 309).

clearly came from *stam yayin* or does it lose its association with the *stam yayin* while it is in the invisible gaseous state? This is very similar to our original question, where the carbon dioxide begins in a liquid form (e.g. as beer), and then becomes a gas before being converted back into liquid or solid carbon dioxide.

In the seminal *teshuvah* on the topic of whisky *Rivash*⁷ establishes that liquid condensed from the heating/boiling of *stam yayin* is forbidden, because the condensation is halachically considered a product of the original liquid. One of *Rivash's* proofs is from the *Mishnayos* in *Machshirim* 2:1-2, which differentiate between condensation which forms as a result of heating (e.g. a bathhouse) versus that which is a result of a cool environment (e.g. a cave), with the former having the status of the liquid it comes from while the latter does not. A simple reading of this proof implies that the ruling is limited to distillation where the vapors escape as a result of heating the beverage, but would not apply to carbon dioxide which escape when the beer or whisky is at ambient temperature.

However upon further consideration, *Rivash* seems to understand that the significance of a hot process is not the heat per se, but rather that in a hot process the steady and considerable amount of vapor/condensation formed provides a clear halachic link between the original *stam yayin* and the end product (i.e. the whisky). Accordingly, since carbon dioxide recovered from a cold process also produces a steady and considerable stream of liquid (or solid) carbon dioxide, the liquid carbon dioxide should retain the status of the original *chametz* beverage.

This position – that vapors/condensate from a cold process can also retain the status of the original liquid – is borne out in another halacha, which is based on *Gemara, Avodah Zara* 66b-67a and cited in *Shulchan Aruch* Y.D. 108:4-5. The halacha discusses dough or bread which is on a barrel of *yayin nesech*, and gives detailed directions as to when the bread does or does not absorb taste from vapors of the wine stored in the barrel. Although the wine is at ambient temperature and has no direct contact with the bread, there are cases where the bread is forbidden, based on the invisible gaseous carryover of taste from the wine into the bread. This demonstrates that if the taste of the forbidden food/liquid is perceptible in the final product, that final product is forbidden even if the transfer

happened through the medium of a temporary gaseous state.

With this understanding, we can now address the question of whether carbon dioxide recovered from a *chametz* fermentation should be forbidden on *Pesach*. It turns out that the technology of recovering carbon dioxide has steadily progressed over the past 100 years. At first scientists figured out how to liquefy the carbon dioxide escaping from these reactions but had no effective method of purifying these vapors. As such, in those days, the liquid carbon dioxide likely did have a carryover of taste from the beer or whisky it was made from, and for that reason, the *Poskim* of that era concluded that the carbon dioxide was forbidden on *Pesach*.

However, in the past 50 years, the industry has developed 5 different methods of purifying the carbon dioxide⁸ – four while it is in the gaseous state, and a fifth after it is liquefied – to the point that nowadays carbon dioxide recovered from beer or whisky bears absolutely no taste of the original liquid it was created from. We can surmise that that this change of facts is why when the question was presented to Rav Auerbach, he ruled that it is surely permitted! Rav Auerbach appears to have held that a vapor/condensate only retains the status of the original liquid if it also retains the taste of that liquid, and since nowadays the carbon dioxide has absolutely no taste of the original beverage, it is not forbidden as *chametz*. [See the footnote for an alternate explanation of these halachos.]⁹

⁸ Dan Gruber described the methods as follows:

- Gas washing (scrubbing) to clean the gas of water soluble impurities including ethanol, acetaldehyde, ethyl acetate, ketones etc.
- Gas compression and cooling which compacts gas to high pressure for further processing to liquid form and reduces water vapor levels in the saturated gas for more efficient gas drying.
- Gas carbon purifying (deodorizing) to clean gas of non-water-soluble impurities or organics including residual ethanol, hydrogen sulfide (H₂S), dimethylsulfide (DMS), sulphur, esters, etc.
- Gas drying (dehydrating) to remove water vapor in the gas to an effective dew point for CO₂ gas condensing and remove any residual levels of DMS.
- Gas liquefying (condensing) to remove by liquid-gas separation, the non-condensable gases such as oxygen and nitrogen to achieve a CO₂ purity of 99.7% or greater.

Companies began using most of these methods in the 1950s, except for condensing which began in the 1960s.

⁹ Of the different factors noted above, which is the crucial one or ones that determine whether condensed vapors maintain the identity of the original forbidden liquid? It would appear that there are two possibilities: [See *Responsa Chesheve HaEfo*d ibid. who presents a somewhat similar approach].

- A steady and considerable amount of vapor/condensate forms during the process, and the condensate does not have to carry the taste of the original liquid.

This is implied by the wording of *Rivash's* question which uses the words "והלך טעמו ריחו וממנו" to describe the whisky's lack-of-wine taste. Accordingly, in the case of bread on a wine barrel, knowing whether the bread tastes like wine is merely a method of determining whether there is a steady and considerable flow of vapor.

- The condensate must taste like the original liquid. This is typically the way the presence of *Issur* is established and allows for a simple reading of the halacha of bread on a wine barrel. It is also in line with the wording of *Rivash's* answer where he clarifies that the whisky does

⁷ *Responsa Rivash* 255, cited widely in the *Poskim*, including *Shulchan Aruch* 123:24.

Of the *kashrus* agencies we conferred with, we found that many chose to take a strict approach and not allow carbon dioxide from *chametz* or even *kitnios* (but they took varying approaches to verifying the source of the carbon dioxide)¹⁰ but others came to the conclusion outlined above that one may be lenient nowadays.¹¹ Due to the (commendable) strictness with which people traditionally treat questions of *chametz*, the cRc only certifies seltzer or soda after verifying that the carbon dioxide is not recovered from *chametz* (but does accept it from *kitnios* sources). While this may not be required on strict halachic grounds, it is within the spirit of **חומרא דפסח** to be *machmir* on this matter.

Postscript

The following are some relevant facts about the current carbon dioxide market:

- Nowadays, beer companies typically do collect the carbon dioxide vapors escaping from their fermenters for reuse in their products, and it is very rare for them to sell the carbon dioxide to others.
- Most whisky and ethanol produced in the United States is *kitnios*, not *chametz*.
- Due to an overabundance of carbon dioxide byproduct, it is uncommon for a producer (e.g. a whisky or ethanol plant) to recover the carbon dioxide unless they have a specific buyer in mind. In fact, typically the carbon dioxide resellers are the ones who install the collection equipment in the producer of their choice, and then remain with that producer for many years. As such, although many new ethanol plants have opened up in the USA in recent years, it may take many years before the carbon dioxide produced in those plants is ever used in seltzer.



¹⁰ (וגם טעם היין וריחו נשאר בו קצת, which of course is well established by anyone who has tasted brandy).

Rav Auerbach appears to have held like the second explanation of *Rivash* given above, that a vapor/condensate only retains the status of the original liquid if it also retains the taste of that liquid. Since nowadays the carbon dioxide has absolutely no taste of the original beverage, it is not forbidden as *chametz*. According to the first explanation of *Rivash*, carbon dioxide recovered from *chametz* would be forbidden even if has no taste of *chametz* because it is produced in a steady and considerable flow from the original liquid.

¹¹ The OU, *Eidah HaChareidus* and *Hischdus HaRabbonim* do not allow carbon dioxide from *chametz* or *kitnios*. In conversations with representatives of these *hashgochos*, it was not clear if their decisions were based on formal rulings of their *Poskim*, what the basis for such a ruling might be, and whether they hold that such a stance is halachically required or just a *chumrah*. The OU verifies the source of carbon dioxide via a letter from the supplier, and the *Hischdus HaRabbonim* says that they research the suppliers before approving them for *Pesach* (but did not provide details on what that research entails).

¹² This is the formal ruling of Rav Moshe Heinemann for the Star-K.

INGREDIENTS Polysorbates

Polysorbates are made of 2 components, ethylene oxide and sorbitan esters. Ethylene oxide is a petroleum-derived molecule consisting of one oxygen bonded to two carbons which are in turn double-bonded to one another. Long chains¹² (known as polymers) of ethylene oxide are the backbone of all polysorbates. [The process of creating the polymer is known as ethoxylation, and we will discuss this in more detail in a future issue]. The other ingredient, sorbitan esters, is made of sorbitol molecules bound to fatty acids.

When one causes a reaction between polymers of ethylene oxide and sorbitan esters, the two parts of the ester attach to different ends of the ethylene oxide polymer,¹³ creating a new molecule known as a “polysorbate” or “TWEEN”, or more formally as a polyoxyethylene sorbitan ester. The difference between one polysorbate and the next is which fatty acid the sorbitan ester is made from. The most common polysorbates are Polysorbate 20, Polysorbate 60 and Polysorbate 80, which are respectively made with lauric, stearic and oleic acid.¹⁴

All three of these fatty acids are kosher-sensitive and therefore all polysorbates require proper kosher certification. However, there is a difference between these polysorbates regarding cases where an uncertified polysorbate was mistakenly used in an otherwise kosher product.

- Uncertified stearic and oleic acid may come from non-kosher animal fat, and therefore if an uncertified polysorbate 60 or 80 was used in a product, the product would be *assur b'dieved*. Although the polysorbate typically comprises a tiny percentage of the finished product, it arguably serves a critical role in the food which qualifies it as a *davar hama'amid*, which cannot be *batel*.
- On the other hand, lauric acid is never isolated from animal products and is only kosher-sensitive because it may be produced on the same equipment as non-kosher animal products. Therefore, even if the polysorbate is a *davar hama'amid*, the absorbed non-kosher taste plays no role in the *ha'amadah*, and the polysorbate is *batel*.¹⁵

¹² In creating the polymer, the ethylene oxide molecules lose their double bonds, and the carbons from the different molecules bind to one another.

¹³ The sorbitol molecule has 5 sides. Ethylene oxide polymers will attach to some of those “sides”, and the fatty acid will bond to the other end of one of the polymer chains.

¹⁴ For this reason, the technical names for polysorbate 20, 60 and 80 are polyoxyethylene sorbitan monolaurate, polyoxyethylene sorbitan monostearate, and polyoxyethylene sorbitan monooleate respectively. Polysorbate 40 is made with palmitic acid to create polyoxyethylene sorbitan monopalmitate, but is not as common as the others.

¹⁵ This is an example of the principle that a **מלה הבלוע מדם** is not considered a *milseh d'avidah ill'amah* and can be *batel b'shishim* (see *Shulchan Aruch* Y.D. 105:14).

Kashering Knives and Grinders

Typically, if a utensil is used with cold, non-kosher food, the utensil may be used for kosher food after it is thoroughly cleaned. However, when a knife or other utensil is used to cut, chop, grate, or grind a non-kosher food, a residue of that non-kosher food remains on the knife even after the knife is "cleaned".¹⁶ This principle, known as *duchka d'sakinah*, is discussed in the *Gemara* and *Shulchan Aruch*,¹⁷ where it states that the knife may only be used for kosher food if it either undergoes a process known as נעיצה or is filed down (i.e. sharpened). נעיצה involves thrusting the knife into semi-solid earth 10 times, and it is generally understood that this process is effective, because the earth serves as an abrasive cleaner for the knife's blade.

If we take these halachos at face value, any grinder, chopper, grater or blades used for cutting non-kosher food in a factory would require נעיצה before it could be used for kosher food. However, in just about every factory situation, נעיצה is impossible for halachic or practical reasons. A grinder and cheese-cutting wires are good examples of this issue; even if the grinder's blades were physically able to be removed from the machinery, they would likely not be suitable for נעיצה on halachic grounds (see *Shulchan Aruch* 121:7), and the wires are not firm enough to be "thrust" into dirt.

Is there some other way to clean a non-kosher knife instead of נעיצה (or sharpening) that accomplishes the same goals? [The simple reading of *Shulchan Aruch* OC 451:3 implies that *hag'alah* may be done in place of נעיצה, and the question here is whether there is some form of heat-free cleaning which can replace נעיצה]. There are a number of indications that other forms of cleaning are not sufficient including (a) the manner in which the *Gemara* gives such fine details as to how the נעיצה must be done, (b) a subsequent halacha in *Shulchan Aruch* (10:3 as per *Taz* 10:15) which notes a few other seemingly-thorough methods of cleaning knives which are only acceptable in special cases, and (c) *Acharonim* cited in *Darhei Teshuvah*¹⁸ who discuss whether other thorough cleanings are acceptable b'dieved.

¹⁶ See, for example, *Toras Chattas* 23:7.

¹⁷ See *Gemara*, *Avodah Zara* 75b & 76b, and *Shulchan Aruch* 10:1, 96:1 & 121:7.

¹⁸ The fact that *Shulchan Aruch* 96:1 uses the words "אינו מקונה" implies that after a thorough cleaning one may assume a knife is free of residue. Those same words are found in *Toras Chattas (Rema)* 61:4. *Darhei Teshuvah* 96:14 and R' Akiva Eiger to *Shach* 96:3 cite *Minchas Yaakov* (in his commentary to *Toras Chattas*, 61:15) and *Tevuos Shor* (10:18) who (a) give details of what such cleanings include, (b) agree that they are not acceptable *l'chatchilah*, and (c) disagree as to whether they may be relied upon *b'dieved*.

Nonetheless, it is generally accepted in the *kashrus* world that modern methods of cleaning industrial plant equipment via detergents, solvents, and similar methods, are so effective at removing residue from equipment that they may be used in cases where נעיצה is required. Therefore, the grinder and cheese wire used in a plant for ambient-temperature cheese do not require a hot *kashering* and may be used for kosher after an industrial cleaning.

