

דרך קצרה

Brief summaries of cRc Kashrus Policies

DRYERS

The previous installment discussed the kashering of spray dryers; this installment considers other dryers.

Drum Dryer

A drum dryer is used to take a moist slurry, such as mashed potatoes, and remove its water so that it turns into a brittle, paper-thin, flake (e.g., instant potato flakes). The core of a drum dryer is a large, drum-like tube which lays in a horizontal position. The drum has relatively thick walls (e.g., 1 inch thick), is filled with steam, and rotates. As it rotates, a thin layer of the slurry is sprayed onto **the outside of** the drum, and the water boils out of the slurry as the drum rotates.

Just about every drum dryer is heated with steam (flowing inside the drum) and therefore it is clear that the proper method of *kashering* it is with *hag'alah*. *Hag'alah* is reasonably simple. It involves turning on the drum so that it is hot and rotating, and then continually spraying a relatively small amount of hot (near boiling) water onto each part of the drum. If done properly – with not too much water, and with water that is hot enough – the water will boil on the surface of the drum dryer and effect a *kashering*. The procedure must be meticulously done in a way that ensures that all surfaces come in contact with boiling water.

The spray nozzles, scraper blade, chutes, etc. are somewhat more difficult to *kasher* because they are hot during production and

absorb *ta'am* either through direct contact with hot product or through *zei'ah* from that product.

Rotary Dryer

Conceptually, a rotary dryer is the same as a drum dryer, except that in a rotary dryer the product is put **inside** the drum instead of on the outside. Product spends a few minutes inside the rotary dryer (as opposed to just a few seconds on a drum dryer) and as the dryer rotates the product slowly dries.

Rotary dryers can be divided into two categories – direct and indirect. A direct rotary dryer has an open flame inside the drying chamber, and a common example of this is a coffee roaster where the beans get roasted (rather than just dried) by the flame inside of the rotating roaster. This type of dryer requires *libun gamur* to be *kashered*, and therefore essentially cannot be *kashered*.

An indirect rotary dryer is one which is heated by steam coils placed inside the drying chamber, and it can be *kashered* with *hag'alah* since the drying is considered to be happening "off the fire". *Hag'alah* on an indirect dryer is relatively simple, since it is designed to heat products. The dryer should be turned on and filled partway with water, and with time the water will boil and the rotating of the dryer will bring boiling water in contact with all surfaces.



In this context it is worth noting that rotary dryers oftentimes rely on "back-mixing". This refers to a situation where the product entering the dryer is too moist, and the company therefore adds some already-dried product into the incoming product to obtain the necessary consistency. If the products are always kosher this does not pose a concern. But if the previous product was not kosher (or was dairy), then obviously we cannot allow back-mixing of that product into the kosher one, and the *Mashgiach* should be alert for that possibility. Sometimes this requires tracing of product lines to be sure that nothing unexpected is being added to the slurry just before drying.

Fluid Bed Dryer

A fluid bed dryer is used for products which are almost completely dry, either because that is their natural state (sesame seeds), or because they were previously dried (e.g., in a spray dryer) and need some last bits of moisture removed.

The dryer has a "deck" which is perforated and suspended across the middle of the dryer. Hot air is blown from the bottom of the dryer, up through the deck. Once hot

air is flowing through the deck, product is continuously introduced to one side of the deck, and the hot air causes the product to levitate above the deck. The rise and fall of the product above the deck makes it look like it is a pot of pasta which is at a rolling boil. This "fluidization" of the "bed" of solid product, is the reason why this is called a fluid bed dryer.

The hot air's contact with the product dries it out, and the flow of air is also designed to convey the product from one side of the dryer to the other. Thus, a continuous flow of product enters the dryer on one side and exits on the other side.

In most cases, the fluid bed dryer's heat source is (air blowing over) steam coils, and in that case, the dryer is considered "off the fire" and *libun gamur* is not required. *Hag'alah* can be accomplished by heating up the dryer and using spray balls to then spray hot water on all surfaces. In those cases where the dryer is heated by a flame, then the decision whether *libun gamur* is required will depend on how close the flame is to the drying deck (as discussed in previous installments).

מראה מקומות

שולחן ערוך סימן תנ"א סעיף ד'