Obtaining Kosher Certification
The Engineering Implications for Food Processing

By Lisa Morris, Jim Hays, P.E., and Elaine York

With the Kosher food market growing at 15% annually, many companies realize it is time to expand their market and invest in Kosher certification. But obtaining Kosher certification is not as simple as separating meats and dairy products. There are many intricacies to Jewish dietary laws that can affect everything from lighting plant boilers to the materials used for manufacturing equipment. It is important to understand these laws and their implications before determining if Kosher certification is a reasonable goal.

Although these guidelines have been reviewed by an orthodox rabbinical authority, the organization you choose for certification and the local rabbinical inspector must be consulted, as they are the final authority.

Kosher Experts
Certifying experts fall into two categories:

- National organizations that specialize in Kosher certification services are most commonly used by large manufacturers. These groups stay current with the food processing industry and understand how changes relate to Kosher standards. Some of the most widely recognized agencies and their symbols are shown in Table 2.
- Individual rabbis associated with local Jewish communities and rabbis who operate independently provide certification for local businesses. This certification is often not widely known.

Cost is always a factor in a food manufacturer’s decision to obtain (or not obtain) Kosher certification. Many certifying agencies are nonprofit and only charge for on-site work and supervision. The Kosher supervisor is paid per visit by the certifying agency, and he typically makes less per visit than an auto mechanic does per hour. But necessary changes to the manufacturing process can be quite costly.

General Kosher Guidelines
The word “Kosher” translated literally means “fit or proper.” Kosher laws are not based on health or nutrition, though many of the laws do have health benefits. Jewish dietary laws determine what is fit or proper for consumption based on what is written in the Torah (the five books of Moses). The general rules of kashruth (the state of being Kosher) include:

- Meat and dairy must not be mixed.
- Certain animals are forbidden.
- Allowed animals must be slaughtered in accordance with Halacha (Jewish Law).
- Nearly all fruits and vegetables are allowed.

A human being must have occupation if he or she is not to become a nuisance to the world.

Dorothy L. Sayers

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There are several circumstances in which the concept of b’lios ( Absorbed Flavors) another food. A key concept in complying with these laws is that of koshering a surface from meat to dairy or dairy to meat can be transferred through that wall.

There are three koshering processes: hag’olah, libun, and cleaning with caustic/soap and water. Which process is appropriate depends on the temperature of the food product when it contacts the equipment, what material the equipment is made of, and if it is a wet or dry process. Koshering processes always require the supervision of a mashgiach if changing from dairy to meat or meat to dairy.

If a product comes into contact with a utensil or piece of equipment at less than “cooking” temperature, then the utensil or equipment may be koshered through a thorough cleaning with caustic/soap and water.

Hag’olah (A Koshering Process)
B’lios are commonly purged from equipment that has a wet cooking process through hag’olah. This method involves cleaning the equipment.

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Process</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>120°F</td>
<td>Yad soledes bo</td>
<td>Threshold temperature for food contacting a surface that must be koshered.</td>
</tr>
<tr>
<td>160°F</td>
<td>Libun kal</td>
<td>Koshering of a surface may be done with a direct flame to the top of the</td>
</tr>
<tr>
<td>176°F</td>
<td>Bishul or pas</td>
<td>Minimum temperature required to maintain cooking or baking status.</td>
</tr>
<tr>
<td>212°F</td>
<td>Hag’olah</td>
<td>Required temperature of water used to wash equipment before it can be given</td>
</tr>
<tr>
<td>450°F</td>
<td>Libun kal</td>
<td>Temperature the equipment must reach for 1 1/2 hours to be koshered when a</td>
</tr>
<tr>
<td>550°F</td>
<td>Libun kal</td>
<td>Temperature the equipment must reach for 1 hour to be koshered when a direct</td>
</tr>
<tr>
<td>900°F</td>
<td>Libun gamur</td>
<td>Temperature at which a dry piece of equipment must be heated to become koshered.</td>
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</tbody>
</table>
with “boiling” water, defined as water at or above 212°F (Table 1). *Hag’olah* is a three-step process:

- The equipment or utensil must be cleaned with caustic/soap and water and free of residue.
- The equipment must sit clean for 24 hours. Sometimes a bittering agent known as *pogem* can be used in lieu of the 24-hour wait.
- The equipment or utensil is then washed with boiling water. Vessels are filled with water and then heated to a boil. Utensils are to be soaked in boiling water. There are differing opinions on whether *hag’olah* can be performed by washing equipment in water above 212°F.

Not all materials can be koshered by *hag’olah*. The criteria is based on the materials’ ability to release the flavors trapped in them during food processing.

**Libun**

A process that uses dry heat to cook food, such as an oven, may use a koshering process known as *libun*. This procedure purges the equipment from *b’lios* through an intense heating process. There are two levels of *libun*. *Libun gamur* is the treatment of the equipment at such an extreme temperature that all *b’lios* are destroyed (Table 1). The amount of time the equipment must be at this temperature varies with the type of equipment. In most cases the equipment is held at 900°F for an extended period. The advantage of koshering by *libun gamur* is it is effective for all types of foods on all types of equipment. Materials that cannot be koshered through *hag’olah* are not excluded from *libun gamur*. This process also does not require prior cleaning or the 24-hour wait.

*Libun kal* (or literally “lesser *libun*”) is a method of koshering in which surfaces are heated to lower temperatures for a longer period of time. This process does not require the 24-hour wait period. If a direct flame is used, *libun kal* can be performed at 160°F by placing the direct flame on the backside of the surface. Without using a direct flame, the temperature the equipment must reach varies with the time that temperature is maintained (Table 1).

**Utility Concerns**

The concept of *b’lios* can also affect the hot water and steam systems in a plant. Hot water or steam directly added to food would pass along its status to the food product. Hot water and steam can also transfer *b’lios* through a wall when it is used for heating a food product. Therefore, careful attention must be paid to the Kosher status of the systems.

**Summary**

A basic understanding of Jewish dietary laws is just the beginning step in the process of gaining a Kosher certification for a food product. Grasping how these laws will affect the engineering aspect of your plant is key. Kosher law is not black and white, and there will be questions about what is acceptable. Once a preliminary analysis has been made, it is important to get the *mashgiach* involved. He is the expert and has had extensive training in how Jewish law will affect a food process. He is the ultimate authority on the certification of your product.

<table>
<thead>
<tr>
<th>Table 2. Some National Kashruth Agencies and Symbols</th>
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<tbody>
<tr>
<td><img src="logo.png" alt="Organized Kashruth Laboratories (Circle K)" /></td>
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<tr>
<td><img src="logo.png" alt="The Union of Orthodox Jewish Congregations (OU)" /></td>
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<td><img src="logo.png" alt="“Star-K” Kosher Certification (STAR-K)" /></td>
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<tr>
<td><img src="logo.png" alt="“KOF-K” Kosher Supervision (KOF-K)" /></td>
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