

Sanitation in Soft-Serve Frozen Dessert Operations

Storage and Handling of Mixes

Most frozen dessert mixes are not sterile, but generally have a low bacteria count if fresh. To prevent growth of spoilage and harmful bacteria, mixes must always be stored under refrigeration at 41°F or less. Storage temperatures as close to 32°F without freezing are recommended. The mixes should be rotated using the “first in – first out” method and should not be used beyond their code or use-by date.



Mixes stored in a frozen state should be thawed in a refrigerator and should not be warmed above 41°F. In an emergency, running cold water over the package can be used to thaw if the temperature does not exceed 41°F. Never place mixes in hot water, sunlight, or room temperature to thaw. Transferring mix to freezer supply tanks should be done in a way that prevents contamination; wear gloves, use sanitized utensils, and do not recover spilled product. Hoses used to transfer mixes should be as short as possible, kept under refrigeration, and washed and sanitized immediately after use.

Care of Holdover Mix

Holdover mix is one of the major sources of bacterial contamination in soft-serve operations. The following should help reduce the risk of high bacteria counts from use of holdover mixes:

- Use all remaining mix to make frozen ice cream pies, sandwiches, and other frozen novelties at the end of each day.
- Regulate the addition of new mix at the end of the day to minimize the amount of holdover.
- Transfer holdover in a sanitary manner into sanitized containers and store as close to 32°F as possible.
- Always recharge the freezer in the morning with new mix. Use holdover during high volume periods.
- Discard the holdover mix at least twice a week to break the chain of bacterial contamination.



Cleaning and Sanitation Program

All soft-serve freezers should be completely disassembled, washed, and sanitized daily. The washed parts should be allowed to air dry before they are sanitized and reassembled. Only properly formulated dairy type cleaners and approved sanitizers should be used. Common house detergents are not satisfactory for cleaning ice cream freezers.



The ten steps of cleaning and sanitizing are:

1. Drain leftover mix from the freezer into a clean, sanitized, sealed container. Refrigerate immediately.
2. Rinse the freezer barrel and supply with cold water, drain, rinse again with lukewarm water, drain.
3. Disassemble all removable parts, rinse with warm water, and wash with hot detergent solution, made according to manufacture's instructions. Using appropriately sized brushes, brush all parts including the barrel, dasher, valves, freezer head, supply tank, lid, and hoses. Brushes used should be designated for ice cream freezer only; not for non-food items.
4. Rinse with warm water. **Note:** Rinse with a commercial acid rinse at least twice per week or more if the water is hard and is leaving mineral deposits.
5. Allow all parts to air dry, preventing contamination with dust, hands, etc.
6. Immediately before assembling, prepare at least 2 gallons of sanitizer solution. Chlorine at 200 parts per million (ppm) is recommended. Other approved sanitizers can be used at equivalent concentrations, as recommended.
7. Submerge all disassembled parts in the sanitizer for at least one minute.
8. Assemble freezer wearing sanitary gloves. Use food grade lubricants applied in a sanitary manner, only as needed.
9. Add the sanitizer to the tank and sanitize all surfaces or the tank and lid with a designated brush.
10. Drain the sanitizer into the barrel while running the dasher to sanitize the dasher, barrel, and scraper blades. Do not run for longer than 30 seconds or follow recommendations of the freezer manufacturer. **Drain thoroughly.**

DO NOT RINSE WITH TAP WATER AFTER THE SYSTEM IS SANITIZED/DRAINED.

Want more information on [frozen dessert sanitation](#) and the MQIP? Contact Nicole Martin (nicole.martin@cornell.edu) in the Milk Quality Improvement Program or visit our website

<https://foodsafety.foodscience.cornell.edu/mqip/>

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