

Investigations by the **Center for Disease Control (CDC)** determined that ice may become contaminated from use of impure water, contaminations of ice-making machines, or from the improper storage or handling of ice.

The following procedures should be followed to reduce the likelihood of contamination of ice chests (ice-storage compartments) and ice machines:

1. Ice machines that dispense ice directly into portable containers at the touch of a control provide a more sanitary method to store and obtain ice than use of ice chests, but such ice machines may be more expensive to purchase and to operate.
2. All ice handlers should be taught the following precautions:
 - a) Wash hands frequently,
 - b) Hold scoop used with ice chest by handle; do not touch bowl surface with hands,
 - c) Do **NOT** handle ice with hands,
 - d) Do **NOT** return unused ice to an ice storage chest,
 - e) Keep access doors to chests closed except when removing ice.
3. Ice scoops used should be smooth and impervious and kept on a keeper chain short enough so the scoop cannot touch the floor. Scoops should be kept on an uncovered stainless-steel, impervious plastic, or fiberglass tray on top of the chest when not in use. The tray and the scoop should be run through a dishwasher or sterilized daily.
4. Remove all extraneous equipment and items from around or on the ice chests and machines; if possible, limit access to ice chests.
5. Clean ice-storage compartments on a preset schedule; weekly to monthly cleaning of open chests is suggested; less frequent cleaning may be possible with ice dispensing machines. Cleaning should be carried out with a fresh soap or detergent solution after disconnecting the unit, removing and discarding all ice, and allowing the chest to warm to room temperature. Use **clean** rags or disposable wipes to scrub all surfaces. Pay particular attention to door tracks, guides and gaskets. After cleaning, rinse all surfaces of the compartment with potable water, rinse it again with a 100- ppm (mg/l) solution of hypochlorite, allow it to dry, and then return the unit to service.
6. On a regular schedule, perhaps monthly to quarterly, disconnect ice-making machines, discard all ice, and disassemble removable parts of the machine. Thoroughly clean the machine and the parts. Check for the need of possible repair of any portion of the machine. Insure the presence of an air gap at all drain outlets. Inspect for insect or rodent infestation under the unit, and treat, if necessary. Check the gasket around the ice chest door (open compartment models) for cleanliness and evidence of possible leakage or dripping of contaminants into the ice chest. Clean the ice storage compartment as in 5 above. Place a 50-ppm solution of hypochlorite in the ice machine for at least 4 hours or a 200-ppm solution for at least 2 hours. Circulate the solution throughout the Entire ice-making and storing system according to the manufacturer's recommended cleaning and sanitizing procedures. Remove the disinfecting solution, flush the system with potable water, allow the ice compartment to dry, and then return the unit to service.

It is a
common misconception
that the cold temperature
of ice kills bacteria.

Ice has been
found to contain a wide
variety of bacteria, from
Salmonella and E. coli to
hepatitis A.

Make sure all
ice-making machines are
cleaned once a week. Otherwise,
slime and mold can build up inside,
allowing bacteria to grow and conta-
minate the ice, despite the cold
temperatures.

According to the Centers for Disease Control and Prevention, 5,000 deaths, 325,000 hospitalizations and 76 million illnesses are caused by food poisoning every year. Ice is a food and illnesses resulting from contaminated ice can contribute largely to those numbers.



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Sanitary Care AND Maintenance OF Ice Chests AND Ice Machines

**Prepared and presented by your local
International Packaged Ice Association
Member Company**

The Basics of Ice Making Sanitation

Background

Ice has become a necessity for most of the US population. However, it is a food product that is often assumed to be “pure” with no concern for transmitting food borne pathogens. *Recent research studies have shown that more than one-third of individual, free-standing ice makers produced ice contaminated with coliform bacteria, and these were in machines which we consider as being in relatively safe environments (i.e., hospitals, schools).* What about the thousands of icemakers in retail stores, hotels, retirement homes, etc.?

The International Packaged Ice Association has taken major precautionary steps to implement the latest preventative methods to assure that ice produced in member factories is safe. Since regulatory agencies have not generally placed the preparation of ice in individual free-standing makers as a high priority in the food inspection realm, the following points are recommended for the sanitary control of ice making.

Location – Environmental Control

Ice Makers must be located in an area that can be easily and frequently cleaned. This should be an area that has low traffic and is free of airborne contamination, enclosed systems such as cafeteria lines excepted.

Source Water

Ice must be made from chemical, biological and bacterial free (i.e., treated) water. If municipally treated water is not available, water that meets all EPA and FDA regulations must be used. In addition, a filter must be placed on the incoming water source before transfer to the icemaker. At a minimum, the filter should remove large particulate matter (i.e., to provide low turbidity levels). Even a visual check of the filtered water can avoid problems. Bacterial contamination is more difficult to eliminate in highly turbid water.

Sanitary Operations

- Employee Training
 - Simple, clearly stated procedures for sanitary operation of an icemaker must be written and made available to all employees operating or using the unit. Post these procedures for employee use.
- All exterior components of the icemaker must be clean at all times.
 - Compressors need to be free of debris and the air filter cleaned/changed on a regular schedule.
 - The ice discharge area must be cleaned and sanitized, usually several times per day for direct discharge units in high use facilities.
 - Open bin units (i.e., hoppers which allow hand removal of ice) need a clean, sanitary method to remove the ice without contamination. The hopper must be inspected, cleaned and sanitized frequently, usually weekly or more frequently.
 - Employees removing ice for customer service must avoid hand contact with the ice.
 - Prominent signage must be placed on the ice delivery section of the icemaker indicating how the customer is to sanitarilly obtain ice.

Ice Maker Maintenance

- Internal components of ice making machines require regular maintenance as specified by the manufacturer. These must be accomplished with a record log completed. Follow-up inspections on regular intervals are required.
- At least quarterly, the unit should be cleaned, defrosted and sanitized by circulating a mild detergent, followed by rinsing with potable water. A sanitizer (e.g., 200 ppm available chlorine) is then circulated for at least 10 minutes, followed by a thorough potable water rinse. Restart the ice making process.
- At least annually, descale the evaporator as specified by the manufacturer. Always follow descaling by cleaning and sanitizing as above.

Verification of Safe Ice Making

- A daily sanitation inspection of the icemaker must be made by a responsible individual, recorded, and initialed.
- It is recommended that a sample of finished ice be aseptically taken and analyzed for:
 - Total hydrophilic bacteria: Standard ≤ 500 cfu/g.
 - Total fecal coliform bacteria: Standard = Zero.

Packaging

- Ice packaged from an icemaker should be packaged in an FDA approved polyethylene bag and the bag sealed properly to prevent product contamination, i.e. no drawstring bags.
- The ice package must be properly labeled according to state laws, but at a minimum to include identification of the product, net weight and the physical location and phone number of the place of manufacture.

