



## HOME FREEZING EQUIPMENT

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The type of freezer to purchase will depend on family size, whether fresh produce or large quantities of meat will be frozen, available floor space, and efficiency and defrosting features preferred. The standard capacity of a freezer is about 35 pounds of frozen food per cubic foot of useable space. Families that freeze garden produce should allow six cubic feet of freezer space per person. If other methods of food preservation are used, allow three cubic feet per person. Additional space is needed if large amounts of meat are kept in the freezer.

### Types of Freezers Available

There are three types of freezers on the market: upright, chest and refrigerator-freezer combinations. The upright and refrigerator-freezer are available as manual-defrost or frost-free models. Though less convenient, manual-defrost freezers are more cost-efficient. They also maintain higher quality food than frostless models because they don't have a fan running to remove the moisture that would turn to frost. The constant removal of moisture from the freezer could cause freezer burn in improperly wrapped food. Frost-free chest freezers are not available, but frost builds up in them less readily.

**Upright Freezers:** These appliances have the same general shape and appearance as home refrigerators. They have one or two outside doors and from three to seven shelves for storing food. Freezers of this type are popular due to their convenience, the small floor space they require and the ease with which food may be put in or removed. However, more cold air escapes each time the door is opened.

**Chest Freezers:** Freezers of this type require more floor area than the uprights but are more economical to buy and operate. These freezers lose less cold air each time they're opened. Make sure this type of freezer is equipped with sliding or lift-out baskets to permit easy loading and removal of food.

**Refrigerator-Freezer Combination:** This is a single appliance with one or two doors. It has one compartment for frozen foods and another for refrigerated foods. The freezing compartments may be above, below or to one side of the refrigerated area. If selecting this type, be certain that the freezer is a true freezer (will maintain 0 °F or less) and not just a freezing compartment.

### Care of the Freezer

Regardless of the type of freezer selected, it should be placed in a convenient, cool, dry and well-ventilated place; never place it by the stove, water heater or in the sun. This would make it more difficult to maintain a temperature of 0 °F or lower. Do not push the freezer flush against a wall. Leave space for air circulation and cleaning. Be sure the freezer sits level.

**Defrosting Freezers:** Manual-defrost freezers need defrosting at least once a year or when there is more than one-fourth inch of frost over a large area of the freezer. Accumulated freezer frost reduces storage space and increases operating costs. Defrosting should be scheduled when the food inventory is relatively low and defrosting can be completed within one to two hours.

A manual-defrost model should be disconnected from the electrical supply before defrosting. Frozen packages should then be placed in large cardboard cartons or insulated ice chests. With a cardboard carton, several layers of newspapers may be used for extra insulation.

Clean the freezer as quickly as possible, following your manufacturer's instructions. A few manufacturers recommend placing pans of hot water in the freezer and closing it. Then, remove the frost as it loosens and replace the water as it cools. Make sure the freezer is completely cool before restarting it. Other manufacturers do not recommend using pans of hot water because in their freezers, refrigerator pressure could build up in the evaporator, making restarting the freezer difficult. These manufacturers recommend allowing the frost to thaw naturally or with the aid of a fan.

Place towels in the bottom of the freezer to catch water and frost. The loose frost can be removed using a wooden or plastic scraper. When all the frost has been removed, sponge out the interior with a cleaning solution made of one tablespoon of baking soda per quart of water. Sponge with clean water and dry with an absorbent cloth. Turn the freezer on and close the door to allow the freezer to become chilled (15 to 30 minutes) before returning the food. If food packages are frosty, scrape or wipe them to remove frost or moisture before placing the food back in the freezer in an organized manner. Mark these packages for first use.

**Care of Frost-Free Freezers:** A frost-free freezer does not need defrosting. However, it should be cleaned out once a year or more often if dirt or food residues are visible. In cleaning the freezer, follow the procedure described above. Turn off the power source. Empty the freezer, wipe it with a baking soda solution, rinse, towel it dry and then replace the food.

## Removing Odors

If food has spoiled in a freezer because of a power failure or some other reason, undesirable odors can develop. To eliminate the odor, remove the food and wash the inside of the freezer with one tablespoon of baking soda in a quart of tap water or with one cup of vinegar in a gallon of tap water. Let surface dry.

If the odor still persists, use activated charcoal. This type of charcoal is extra dry and absorbs odors more quickly than cooking-type charcoal. It can be purchased at a drug store or pet supply store. To use it, unplug the freezer. Put the charcoal in pans or on paper in the bottom of the freezer for several days. If the odor remains, put in new charcoal. When the odor is gone, rinse and dry the inside of the freezer. Turn on the freezer and it is ready for food.

When odor gets into the freezer's insulation, write the company for any suggestions it may have for solving the problem. However, sometimes, there is nothing that can be done.

## Containers for Freezing

Foods for your freezer must have proper packaging materials to protect flavor, color, moisture content and nutritive value from the dry climate of the freezer.

Do not freeze fruits and vegetables in containers with a capacity over one-half gallon. Foods in larger containers freeze too slowly to result in a satisfactory product. Packaging materials must have certain characteristics:

- Resistant to moisture and vapors.
- Durable, leakproof, easy to seal and mark
- Not become brittle and crack at low temperatures
- Resistant to oil, grease or water
- Protective against absorption of off-flavors or odors
- There are two types of packaging materials for home use: rigid containers and flexible bags or wrappings.

**Rigid Containers:** These are made of plastic or glass, are suitable for all packs and especially good for liquid packs. Straight sides on rigid containers make the frozen food much easier to get out. Rigid containers are often reusable and make the stacking of foods in the freezer easier. Cardboard cartons from cottage cheese, ice cream and milk are not sufficiently moisture and vapor resistant to be suitable for long-term freezer storage, unless they are lined with a freezer bag or wrap.

Regular glass jars break easily at freezer temperature. If using glass jars, choose wide-mouth dual-purpose jars made for freezing and canning. These jars have been tempered to withstand extremes in temperatures. The wide mouth allows easy removal of partially thawed foods. If standard canning jars (those with narrow mouths) are used for freezing, leave extra headspace to allow for expansion of foods during freezing. Expansion of the liquid could cause the jars to break at the neck. Some foods will need to be thawed completely before removal from the jar.

Covers for rigid containers should fit tightly. If they do not, reinforce the seal with freezer tape. Freezer tape is especially designed to stick at freezing temperatures.

**Flexible Bags or Wrappings:** Bags and sheets of moisture- and vapor-resistant materials, laminated freezer papers, and heavy duty aluminum foil are suitable for dry-packed vegetables and fruits, meats, fish, or poultry. Bags can also be used for liquid packs. Protective cardboard cartons may be used to protect bags and sheets against tearing and to make stacking easier. Laminated papers are also used as protective overwraps.

Plastic freezer bags are available in a variety of sizes. There are two types of closures. One type is twisted at the top, folded over and wrapped with twist ties included in the package. The other is zipped or pressed to seal a plastic channel. Regardless of type, press to remove as much air as possible before closing.

**Vacuum Packaging:** Vacuum packaging also works best for dry packs. Vacuum packaging removes more air from the packages than can be pressed out and seals the air out. Vacuuming packaging can help prevent oxidation which can lead to off-flavors and can save space in the freezer. Follow the directions that come with the vacuum packages carefully. To avoid the risk of botulism from some vacuum-packaged foods, keep foods frozen until ready to use.

If this document didn't answer your questions, please contact HGIC at [hgic@clemson.edu](mailto:hgic@clemson.edu) or 1-888-656-9988.

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