# FOOD FREEZERS: GUIDE FOR SHOPPERS

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## Styles

Two styles of freezers are available, the upright and the chest type. The style you choose depends upon:

Location and Space Available. The upright requires about half the floor space needed for the chest type. This may be important if your freezer is located in the kitchen but probably not so important if located in some other part of the house. The height of the upright is about the same as the height of the chest type with the lid open.

Convenience. The upright is considered more convenient to load and unload packages and it is easier for anyone who has difficulty stooping. Chest freezers are available with baskets; some baskets are on rollers for easier moving. Large, bulky, or irregular shaped items can be stored more easily in the chest-type freezer. Usually more food can be stored in a chest freezer than in an upright with the same capacity.

Method of Defrosting. Most chest freezers are manual defrost. Many uprights are automatic defrost, a few are manual defrost.

## OPERATING COST

Increasingly, the purchase price is only part of the cost to be considered when shopping for a freezer. As electricity costs continue to rise, it pays to consider operating cost as well as the initial cost. When shopping for a freezer look for the yellow and black EnergyGuide labels to help compare operating costs. The label will provide you with an estimated average cost of operation and allows you to compare it to the energy cost of competing brands and models with similar features and of a similar size.

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OPERATING COST (Cont'd)

Operating cost varies with freezer style, defrost method and user practices. In general, the larger the freezer, the more electricity it uses. Upright freezers usually cost more to operate than chest freezers. Also models with automatic defrost cost more to operate than models with manual defrost. The operating costs also will be affected by the temperature of the room where you locate the freezer, and the frequency of door openings. A cool area--but not below 40°F. -- is preferred. The fewer the door openings, the lower the operating cost.

CAPACITY

Freezer net volume is rated in cubic feet and ranges from about 3 to 32 cubic feet. One cubic foot holds about 35 pounds of frozen food. Light-weight items or irregularly-shaped packages require more space per pound.

To compare capacities as you shop, look for the AHAM Certification Seal on freezers. This seal certifies the total volume for all types of freezers and the square feet of shelf areas for upright models.

In deciding what size freezer to buy for your family, it pays to consider the energy costs in terms of the amount of food you plan to freeze.

Most of the energy consumed by a freezer is used to maintain its 0°F. temperature. The initial freezing of food uses only a small amount of energy. Because the energy usage remains fairly constant regardless of the number of times you use the stored food and restock the supply, the energy cost to freeze the food per pound is reduced if stored food is used and replaced with new food items. Conversely, allowing food to stay in the freezer for longer periods of time increases the energy cost per pound. The chart below shows a comparison of the cost of energy per pound of food at various turnover rates.

ENERGY COST OF FREEZING AND MAINTAINING ONE POUND OF FOOD

| Freezer Size | Restocking Rate Per Year | Total Pounds Stored Per Year | Estimated Energy Cost Per Pound * |
|---|---|---|---|
| 6 cubic feet | 1.0 | 210 | 11.9¢ |
| | 1.5 | 315 | 7.8¢ |
| | 2.0 | 420 | 5.6¢ |
| 12 cubic feet | 1.0 | 420 | 10.2¢ |
| | 1.5 | 630 | 6.8¢ |
| | 2.0 | 840 | 5.1¢ |
| 18 cubic feet | 1.0 | 630 | 8.3¢ |
| | 1.5 | 945 | 5.5¢ |
| | 2.0 | 1260 | 4.1¢ |

*Estimated energy cost is based on a new manual defrost freezer and an electric rate of 5 cents/kWh. Your actual cost may be different since local utility rates vary and new freezers are more energy efficient, thus they use less energy than previous models.

Note the comparison of energy costs for the same amount of food in freezers of different sizes. For example, 4.6 cents less energy per pound is needed to freeze 420 pounds of food in a 6 cubic foot freezer filled twice than in a 12 cubic foot freezer filled once.

Of course, energy cost per pound is not the only factor to be considered in determining the size freezer you need. Family size and behavior patterns must be considered. A rule of thumb is to allow 3 to 6 cubic feet per person. More space will be needed if shopping trips are infrequent or if a good bit of the food supply is homegrown and preserved.

However, it is more economical both in the cost of the appliance and energy consumption to select a smaller freezer and fill it more than once. It, however, will take work to fill a freezer twice and may not be feasible for every family. It means including foods other than homegrown fruits and vegetables. Families who slaughter meat or purchase a quarter of beef will find it easier to do. Foods with large volume for weight--bread, cakes, corn-on-the cob, whole green peppers--fill the space but are not the most economical choices of food for the freezer.

A freezer is also a convenience for anyone wishing to purchase quantities of frozen foods or make more extensive use of foods prepared ahead of time.

METHOD OF DEFROSTING

Automatic defrost (often called no-frost or frostless). When this feature is available, no manual defrosting is necessary. The forced air circulation which is part of the no-frost or frostless method makes proper wrapping and packaging of food to be frozen more essential than ever to prevent dryness or freezer-burn on the food.

Manual defrost (sometimes called conventional defrost). The freezing coils in the upright manual defrost freezer are located in the shelves. Shelves may be solid or of open grid construction to allow the cold air to circulate. Some models have one shelf without coils which can be adjusted to several positions.

The freezing coils in a chest freezer are usually not visible but are part of the wall construction. There may be a separate section for quick freezing.

Frequency of defrosting depends on the use of the freezer, but once or twice a year is usually sufficient. Some models may have a drain for convenience in removing the water which accumulates during the defrosting.

CONSTRUCTION FEATURES

Finishes. Exteriors of freezers are acrylic enamel or baked enamel. Acrylic enamel is more durable and weather resistant. Liners are aluminum, painted steel, painted aluminum, porcelain enamel, or plastic. Porcelain liners are the most stain and scratch resistant and the least likely to retain odors from spills. Since frost must be removed from the majority of freezers, scratch resistance is important.

Insulation. Urethane foam plastic and fiberglass are the two most frequently used insulation materials. Both materials may be used; for example, in a chest type freezer the walls may have urethane foam plastic and the lid may have fiberglass insulation. The efficiency of the two materials is about the same when the urethane foam plastic is one-half of the thickness of the fiberglass. Manufacturers are incorporating various improvements in insulation which contribute to lower energy consumption.

SOME OTHER FEATURES FOR CONVENIENCE INCLUDE:

Cantilever shelves (which allow you to select the spacing between the shelves), baskets on rollers, key lock, freezer alarm or signal light (which indicates the power to the freezer is off or that the interior temperature is too high), interior light, flush hinged door, magnetic door closure.

INSTALLATION

A freezer is equipped with a 3-pronged grounding plug and therefore, requires a three-prong wall outlet. Wattage ratings vary from 300-650 watts. An individual 15 ampere, 110/120 volt circuit is recommended.

A freezer should be located in a dry area. The manufacturer's installation requirements indicate specific amounts of space of air circulation needed around the freezer. Also measure your doorways and stairways to see if the freezer will pass through. For large freezers, be sure that the floor will support the weight of the loaded freezer.