



INTERNATIONAL FEDERATION
FOR HOME ECONOMICS



IFHE Programme Committee
Household Technology & Sustainability –
the experts in household management

Best Practice FAQs in Refrigeration[©]

Frequently Asked Questions (FAQs):

1. What do I need to consider when buying a new refrigerator/freezer?

Today, the market offers refrigerators and freezers in several varieties: free-standing, undercounter or build-in appliances, side-by-side and French-door models, top-freezer and bottom-freezer units, all refrigerator models, upright and chest freezers. Since there is significant variation in energy efficiency, noise level and price of various models, it is advisable to consider the following aspects to ensure that it suits your family's needs:

- Measure the space you have available for your refrigerator and allow space for hinges and levelling.
- Measure how much space there is for the door to open and decide which is the most convenient door swing.
- Choose an appliance that suits your needs in size and features. Do not oversize but be aware that it is much more expensive to run two smaller units than a big one.
- Some available features may add to the operating costs, e.g. through-the-door water or ice dispensers and automatic defrosters. For that reason, think about what features do you really need and what add-ons you can do without.
- Since refrigerators and freezers operate constantly, you should pay attention to a low noise level, especially if it will be in an open plan kitchen-living room. The noise level of quite appliances is anything under 40 dB (decibels).

2. How to check door seals for leaks?

Leaking door seals will not only waste energy and raise your electricity bill, they will also force your refrigerator into working harder, shortening its useful life. Additionally, leaking gaskets can promote the growth of moulds inside the fridge. There are two different ways to check refrigerator door seals for leaks:

- Look for condensation around the door seals as that is an indication for leakage. If you notice any water droplets around its edges, you should replace the seal.
- Put a battery-operated lamp inside the refrigerator lighting towards the door. Close the door and look for light through the crack of the door. If you see light you need to replace the door seals.

3. What is the right time to replace a refrigerator/ freezer?

You can save both, energy and money by replacing your old refrigerator/freezer, even if it works. During the last 30 years, the energy consumption of cooling appliances decreased by more than 60 %. Therefore, if your refrigerator or freezer is 10 or more years old, it is time to consider replacing it.

4. What are the environmental concerns associated with the disposal of an old refrigerator?

In earlier days, chlorofluorocarbons (CFC's) and hydrochlorofluorocarbons (HCFC's) were used in refrigerators and freezers as refrigerants and foam-blowing agents. Both substances, if released to the environment, harm Earth's ozone layer. Moreover, they are greenhouse gases and so their release contributes to the global climate change. For this reason, the substances need to be handled carefully.

Since the mid-90's, CFC's and HCFC's were substituted by ozone-friendly refrigerants such as hydrofluorocarbons (HFC's). Nevertheless, these substances are greenhouse gases that need to be removed safely.

Especially older refrigerators and freezers may also contain hazardous and partly toxic components like used oil, mercury and polychlorinated biphenyl (PCB). So a professional disposal of the appliances is absolutely essential.

In order to identify the refrigerants in your appliance, check manufacturer's handbook or the data label stuck inside the refrigerator.

5. How to dispose of an old refrigerator/freezer properly?

Some retailers will pick-up your retired cold appliance when you buy a new one.

Moreover, the municipal waste management department may provide a pick-up and recycling service. The costs of the disposal vary. In some cases, old appliances are collected and recycled free of charge or a small fee will be charged for this service.

Some utilities and entities also offer bounty programs and you get paid for picking-up your retired refrigerators and freezers.

6. How to clean the inside of the refrigerator/freezer?

Before you begin cleaning your refrigerator/freezer, unplug it or switch off the fuse, remove all food from the appliance and store it in a cool location. Then remove all shelves, drawers and other removable parts. Clean all removable parts, the interior walls and the door of the refrigerator with lukewarm water and a small amount of a mild, pH-balanced dishwashing liquid using a soft cloth and wipe dry with a clean towel when finished. Do not use any abrasive cleaners. Wipe the rubber door seal with water and a soft cloth and dry it thoroughly. After cleaning, return all shelves and drawers to their proper location, reload the food and plug in the appliance or switch the fuse on.

7. What is the right place to install a refrigerator?

Ideally, you choose a dry and cool place with a nearby electric socket and avoid any direct sunlight or heat sources such as ovens, stoves and dishwashers. Heat will cause the appliance to work harder to maintain the internal temperature. On the other hand, you should also avoid locations with low temperatures such as cellars, balconies or garages. If the temperature drops below a certain point, the appliance will either operate less efficient or will stop working completely, causing the internal temperature to rise.

In order to ensure proper function of your refrigerator/freezer unit, please follow manufacturer's instructions for recommended temperature ranges. These recommended temperature ranges are normally given as climate class ratings. Essentially, there are four different classes, which can be combined with each other to widen the temperature range:

Climate class	Minimum temperature	Maximum temperature
SN (extended temperate)	+10 °C	+32 °C
SN (temperate)	+16 °C	+32 °C
ST (subtropical)	+16 °C	+38 °C
T (tropical)	+16 °C	+43 °C

8. Where and how to store certain foods correctly?

Different locations inside your refrigerator may vary in temperature. The correct storage place of food helps you extending its shelf life.

- Most perishable food like fish, seafood, poultry and raw meat has to be stored in the coldest part of your refrigerator, which is usually on the bottom shelf above the vegetable drawers. Place these foods in plastic bags or containers in order to prevent their juices dripping onto other food.
- Keep pasteurised milk and dairy products on the middle shelf of your refrigerator.
- The top shelf is intended for leftovers, cheese, cakes and smoked meat products.
- Except for cold-sensitive kinds, fruits and vegetables should be stored inside the vegetable drawers at the bottom. Perforated or air-permeable plastic bags are best to bag vegetables that lose moisture quickly.
- The compartments inside the door are the warmest part of the refrigerator. This place is intended for food that only need light refrigeration like beverages, butter, condiments and products in jars.
- Don't use the egg tray on the inside of the refrigerator door to store eggs but rather keep them in the original carton on the top shelf.
- Always store food that will not receive any further cooking above raw meat in order to avoid cross-contamination.

9. What is the purpose of “energy efficiency labels” and what do they tell me?

Energy efficiency labels are stickers affixed to products or products' packaging. At the point of sale, they provide necessary information on energy efficiency, energy consumption or performance of an appliance allowing consumers to make a well-informed purchase decision. However, the actual energy consumption and costs may vary from the declaration depending on usage.

Worldwide, there are many different designs and types of labels. A rough distinction is made between comparison labels and endorsement labels. Comparative labels facilitate the comparison of different products within a given category with regard to energy efficiency or performance. Endorsement labels are a “seal of approval” showing that a product meets designated standards.

10. What is freezer burn and how can I prevent it?

Freezer burn occurs when dehydration or oxidation damages frozen food. It appears as gray-brown leathery spots on the surface tissues of the food. Although it is not harmful, it causes off-flavour and dries the food out. Cut affected areas away either before or after cooking the food. In order to avoid freezer burn completely, wrap the food tightly and ensure that there are no punctures in the bag allowing air to enter.

11. How to store leftover cooked dishes?

Because most harmful bacteria multiply quickly in the range of temperatures between 7 °C and 65 °C, the time a food is in this “danger zone” should be minimal (at the most 2 hours). In order to accelerate the cooling process, leftovers can be divided into small portions or chilled in an ice or cold water bath before refrigerating. You should eat refrigerated leftovers within a period of 2 to 3 days. Before eating, reheat them until the internal temperature is at least 70 C.

12. What is the correct temperature setting?

The main purpose of a refrigerator is to slow down growth of bacteria, the main purpose of a freezer is to stop their growth completely. Most harmful bacteria can multiply most rapidly between 7°C and 65°C. A refrigerator set at 4°C to 5°C will be appropriate for most kinds of food. Freezers should be kept at -18°C. Keeping refrigerators and freezers any colder will waste energy. It is advisable to check the compartment temperature regularly using either a built-in or a separate appliance thermometer.

If a refrigerator is used only to cool non-perishable food (e.g. drinks) a higher temperature setting may save energy.

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