



## Using Oxygen Absorbers for Frozen Food

*Important: Oxygen Absorbers can greatly increase the storage times and fresh quality of shelf-stable food, but they are not a substitute for refrigeration. Food that normally requires refrigeration needs to be frozen for long-term storage. More info: [LTFS Food types](#)*

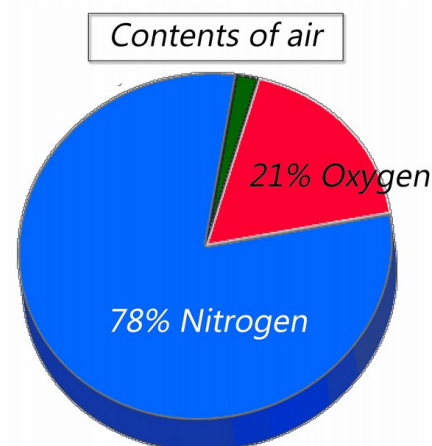
## How To Use Oxygen Absorbers For Cold Storage

Oxygen absorbers are not a substitute for refrigeration or freezing. For long-term food storage they should either be used with dry, shelf-stable items (they should have a moisture content of less than 15%) or with frozen food. Food items that we are used to refrigerating are subject to anaerobic bacteria, which are the only organisms that oxygen absorbers won't prevent.

Oxygen absorbers CAN be used in conjunction with refrigeration or freezing - with a few minor changes – and you can greatly improve the quality of your refrigerated or frozen food. They can prevent mold on cheese, keep bread items fresh, keep guacamole green, and save meat from freezer burn (see below).

The things to keep in mind when using Oxygen Absorbers in cold storage are:

1. Temperature greatly affects the rate at which oxygen is absorbed. For every decrease of 15° F (-9°C), it takes about twice as long for oxygen to be absorbed. Because it can take over 5 times longer to deoxidise a container in a freezer it may sometimes be appropriate to place it in the refrigerator for 24 to 48 hours before moving it to the freezer if it is safe to let it be at that temperature for that period.
2. Vacuum sealer bags are good to use if you will be using the product within a few months. Mylar is far superior for longevity, but quality vacuum sealer bags like those from PackFreshUSA can keep an oxygen free environment for several months.
3. Do not use oxygen absorbers to extend storage time in the refrigerator. Also limit the amount of time food spends in the "Danger Zone" between 40° F (4.4°C) and 140° F (60°C), always cook raw meat to an internal temperature of 165° F (74°C), and practice good hygiene and food safety guidelines.



Only oxygen is absorbed so it is normal to still see air in the bag

## What Is Freezer Burn?

Freezer Burn Is A Problem We Are All Familiar With... But What Exactly Is It?

Over time, the texture of food stored in the freezer becomes dry, brittle, or leathery, vivid colors turn to shades of brown, and flavors become bland or downright detestable. There are two things going on that cause these changes to frozen food: Sublimation and oxidation.

Water can turn to vapor inside the freezer just as it does outside. Just as a puddle of water evaporates into water vapor, a similar process called sublimation will happen where frozen water will transition to vapor – completely skipping the liquid phase!

This water vapor transition occurs on the surface of the food stored in your freezer. Water molecules migrate to the surface where they either remain as a frosty covering on your food or they become water vapor that escapes into your freezer, traveling to the coldest areas such as the walls. Here, sublimation often creates a brilliant ice cave out of the water from your food leaving your food dry.

Oxygen is also very destructive. Oxidation is the process that turns a freshly cut apple brown and iron into rust. It is responsible for the stale taste in old food as well as loss of nutritive value and color changes. Fats within food oxidize and become rancid. Oxidation will occur even when sublimation does not, and will happen throughout your food, not just on the parts that dry out.

The longer something is in the freezer, the more it is subject to the processes that cause freezer burn.

## What Can Be Done?

In order to keep water from leaving your food to travel around your freezer, you need to create a closed system – or at least get as close as possible – so that the water vapor leaving your food is equal to the water vapor absorbed by your food. Vacuum sealing is a pretty good choice. Freezer bags and carefully wrapping in plastic wrap will offer a fair amount of protection too, but none of the plastic products available at your local store will completely keep water vapor in, or keep oxygen out.

Preventing oxidation is even more difficult. (or at least it used to be) Oxygen is very sneaky and the only complete barriers to it are glass and metal. Plastics vary greatly in their Oxygen Transmission Rates, with plastic wrap being almost useless to HDPE or PETE plastic that can keep oxygen at bay for a few years if properly sealed.

If you have any questions or concerns please Survival Supplies Australia:

[T 61 8 6118 6369](tel:61861186369)

[E Orders@survivalsuppliesaustralia.com.au](mailto:Orders@survivalsuppliesaustralia.com.au)

[www.SurvivalSuppliesAustralia.com.au](http://www.SurvivalSuppliesAustralia.com.au)