

# Oxygen Absorbers

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Oxygen absorbers are small packets of iron powder and salt used to prolong the shelf life of food. They are used in food packaging to prevent color change, inhibit oils from becoming rancid, help to retard the growth of microorganisms such as fungi, and prevent infestation. These packets absorb oxygen and effectively reduce the aerobic environment to 0.01% oxygen.

An oxygen absorber works as the available moisture in the food and air causes the iron in the absorber to turn to rust, which then reduces the presence of oxygen, called “oxidation.” This transition in oxygen content creates a higher concentration of nitrogen, which is better for long term shelf life.



Advantages of oxygen absorbers:

- Extend the shelf life of products
- Prevent oxidation
- Prevent food damage from infestation of insects
- Inhibit growth of aerobic pathogens such as: molds, mildew and bacteria.
- Significantly improve keeping qualities of polyunsaturated fats and oils
- Delay the discoloration in foods
- Eliminate the need for additives such as sulfur dioxide, BHA, BHT, sorbates, etc.
- Foods are not crushed or squeezed

- Prevent oxidation of vitamins A, C and E
- Easy to use

Oxygen absorbers are used with baked goods, nuts, coffee, processed food, seasonings, flour, grains, pharmaceuticals, vitamins, pet foods, dehydrated fruits, vegetables and meats. The goal is to reduce oxygen to .01% or less. This is achieved through the number of packets and the size of the container.

Oxygen absorbers come in sizes from 20cc to 2000cc in individual packets and strips. (The “cc” stands for cubic centimeters as it relates to amount of oxygen absorbing capacity.) A quart container will need one 50cc, a gallon container and #10 can will need 300cc for oxygen absorption and a 5 gallon container will need three of the 500cc packets. Simply put the food, along with appropriate number of absorber packets, in the storage container and seal.

Products that are low in moisture and oil are best for use with the absorbers. Foods should be below 10% moisture content for storing with absorbers. Storing foods with high moisture content in reduced oxygen packaging may result in botulism poisoning. Some foods are not oxygen sensitive and the absorbers will not make a difference. These products include wheat, beans, corn and peas.

Use absorbers with metal cans, foil pouches, PETE plastic bottles and glass canning jars. Oxygen will permeate plastic over a period of time. Lining PETE

buckets with mylar will decrease this oxygen exchange. Mylar bags create an oxygen barrier and protect food during extended long term storage.

Packaged oxygen absorbers will last from 6 months to about 1 year before opening and using. Once the package is open the shelf life of an absorber is very short, use within 15 minutes. Store the unused packets in an airtight glass jar or PETE container for up to 6 months.

Oxygen absorbers are not harmful, but do not eat them. Discard them when opening and using your storage. A “spent” (used) absorber will be brown

and clumped together compared to a fresh pink or gray powder of a new absorber.

## Resources

Department of Food Science and Nutrition Brigham Young University, Provo, Utah

Wikipedia [www.wikipedia.org](http://www.wikipedia.org)

Korn, Denis Food Storage Packing - Do-it-yourself Facts & Myths <http://learntoprepare.com/>

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