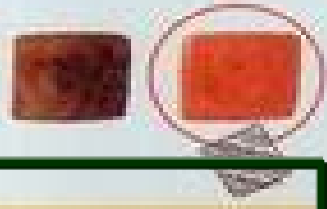
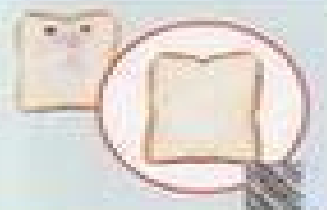
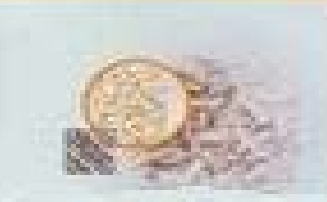
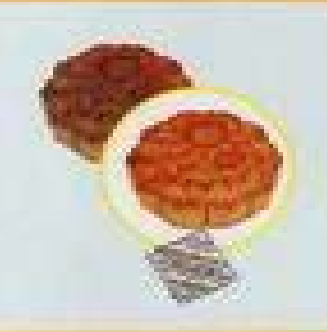


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# Oxygen Absorbers

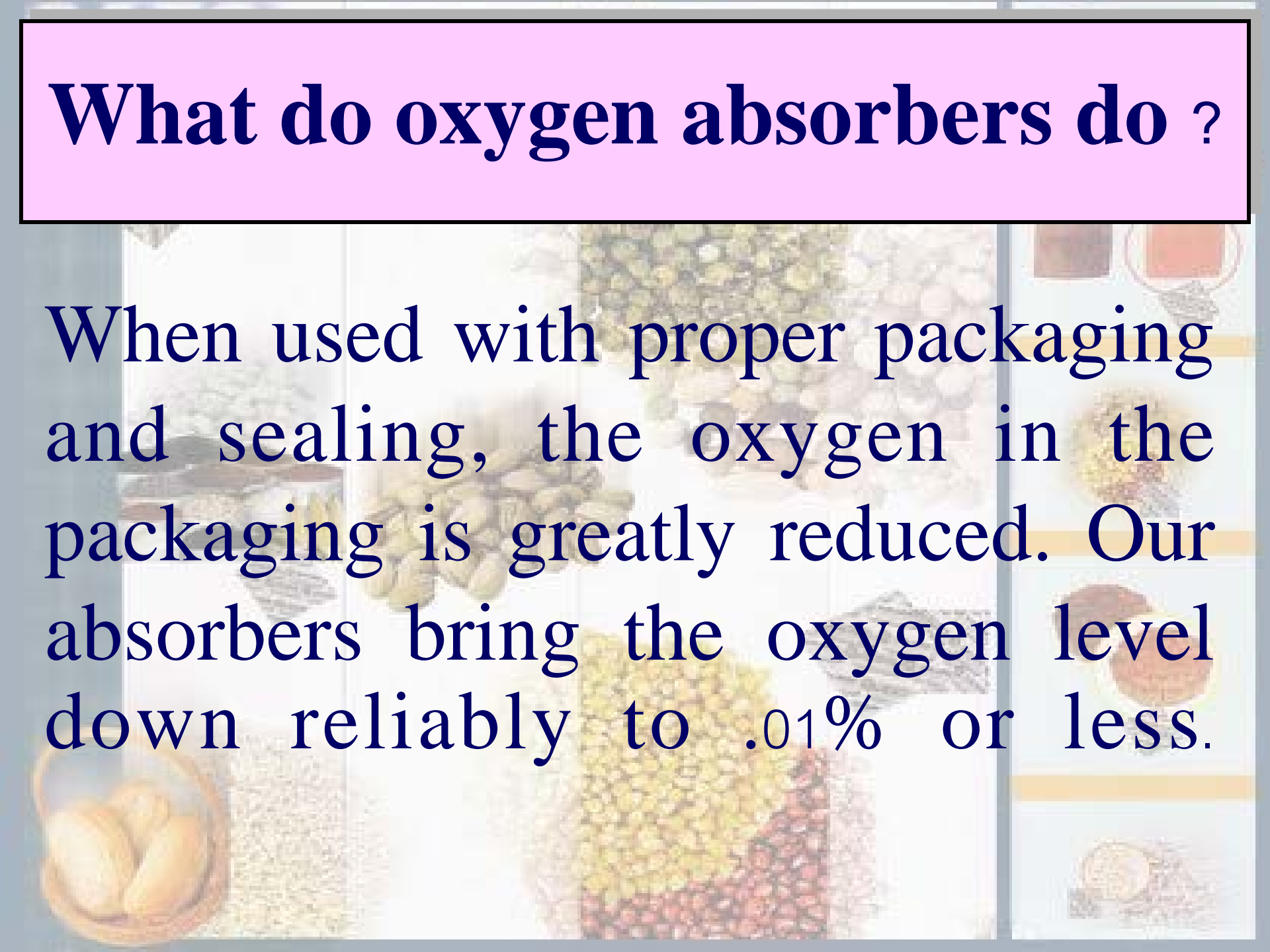


# What are oxygen absorbers ?

Oxygen absorbers are made of a chemical compound, the active ingredient of which is a powdered iron oxide. Our absorbers are completely safe. While they are not edible, they are not toxic. No harmful gases are created and the oxygen does not remove the fresh smell and taste of the product.

# What do oxygen absorbers do ?

When used with proper packaging and sealing, the oxygen in the packaging is greatly reduced. Our absorbers bring the oxygen level down reliably to .01% or less.

The background of the slide is a collage of various food items and oxygen absorbers. On the left, there is a wooden bowl containing several round, golden-brown cookies. In the center, there are several clear plastic bags filled with different types of grains, including yellow cornmeal, white rice, and red lentils. On the right side, there are several small, round, brown oxygen absorbers, some of which are shown in their original packaging. The overall image is slightly faded and serves as a backdrop for the text.

# What are the benefits of using them ?

- Extends shelf life
- Prevents growth of aerobic pathogens and spoilage organisms, including molds
- Eliminates the need for additives such as BHA, BHT, sulfur dioxide, sorbates, benzoates, etc.
- Use with gas flushing/vacuum packaging to absorb virtually all oxygen and absorb any oxygen that may permeate the package.

# Benefits :

- Significantly improves keeping qualities of polyunsaturated fats and oils
- Helps retain fresh-roasted flavor of coffee and nuts
- Prevents oxidation of spice oleoresins present in spices themselves and in seasoned foods
- Prevents oxidation of vitamins A, C and E

- Extends life of pharmaceuticals
- Inhibits mold in natural cheeses and other fermented dairy products
- Delays non-enzymatic browning of fruits and some vegetables
- Inhibits oxidation and condensation of red pigment of most berries and sauces



# Typical applications :

- Breads, cookies, cakes, pastries
- Nuts and snacks
- Coffee and tea
- Dried fruits and vegetables
- Flour and grain items
- Fresh and precooked pasta and noodles
- Pharmaceuticals and vitamins
- Birdseed and pet food

# What type do I need?

The absorbers on this site are all suitable for long-term storage.

The most critical component for evaluation is the water activity level (AW). All dry grain, legumes, milk powder, pasta products and other dehydrated foods have very low water activity levels. Thus, they require absorbers which



# *Oxygen Absorbers : How to Use*

*You oxygen absorbers come in a vacuum sealed bag so that the activity of the absorber does not have a chance to work on any oxygen before you are ready to use them.*

*When packaging food for long-term storage, it would be most optimum for you to use the entire contents of one sealed vacuum packet bag within 30 to 60 minutes.*

# Before you open your bag of oxygen absorbers :

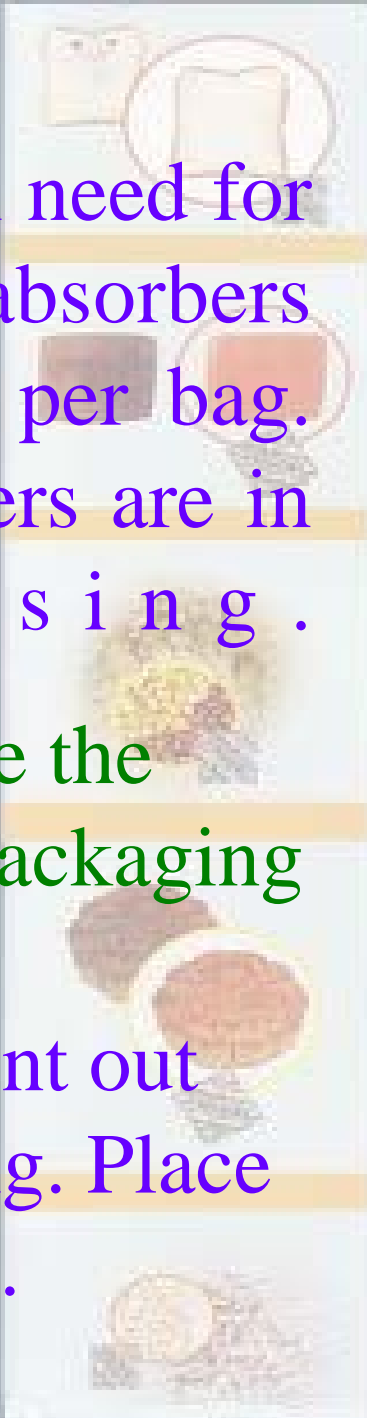
1. Assemble your containers of food and fill them with your food product.
2. If you need to determine the volume of your container, do this now.
3. Once you have the volume of your containers, you will know what size of oxygen absorber to use and how many absorbers you will need for the session.

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4. Determine how many absorbers you will need for this session. Note : Different sizes of absorbers come in different quantities of absorbers per bag. You will need to know how many absorbers are in the bag you will be using.

5. Prepare a clean, small sealable jar to store the absorbers you will not be needing for this packaging session.

6. Now open your bag of absorbers and count out how many absorbers you will not be needing. Place these in your sealable jar and tighten the lid.

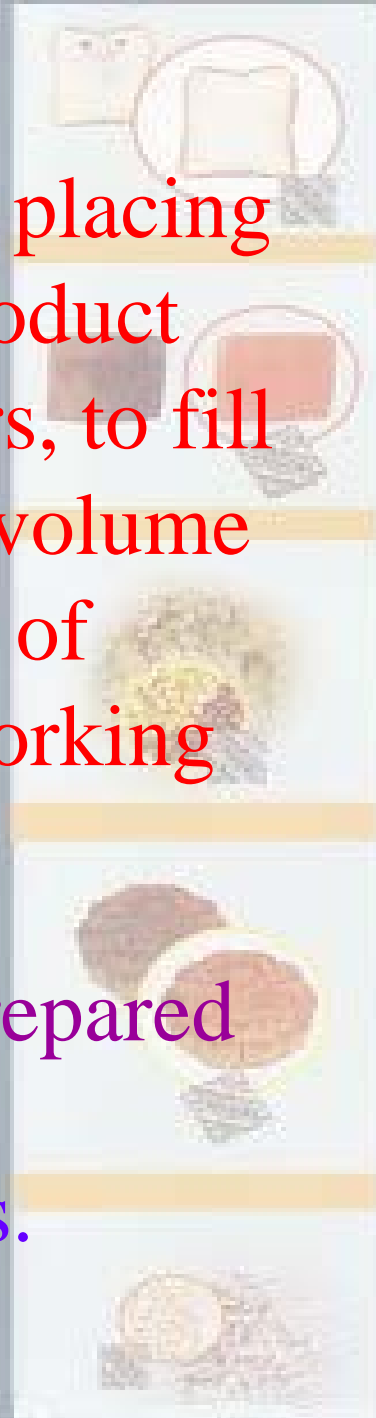


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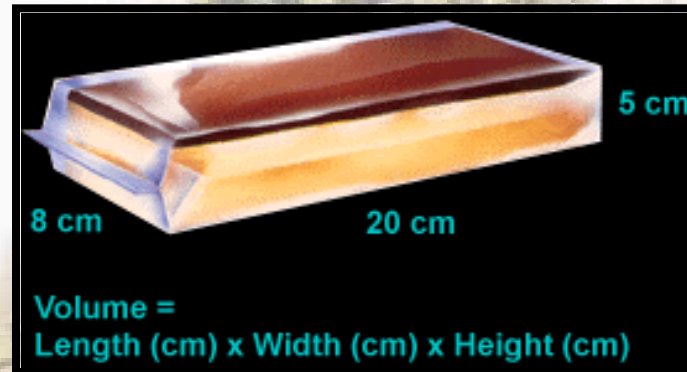
Tip : If your jar is a little too large, after placing your absorbers in the jar, pour a food product such as a small grain over your absorbers, to fill the jar. This will reduce the residual air volume in the jar, and will minimize the amount of oxygen you're your absorbers will be working on.

7. Place your oxygen absorbers in the prepared food containers.

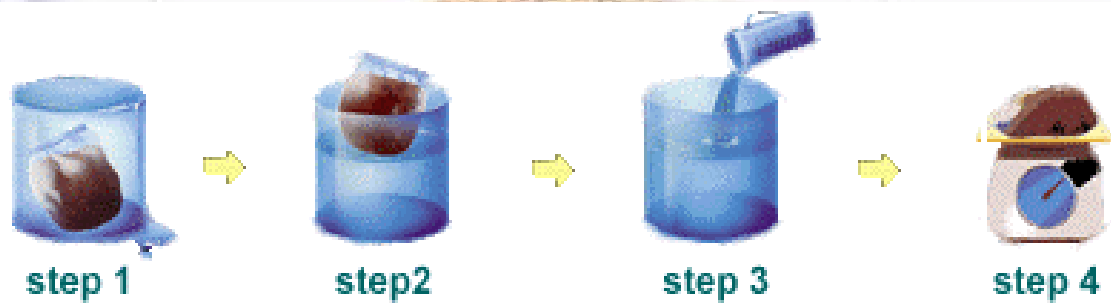
8. Seal your container within 30 minutes.



# Example :



1. Products weight : 500 g.
2. Products Packaging size : 8x20x5 cm.
3. Volume :  $(8 \times 20 \times 5) - 500 \times 21\% = 63$  cc.
4. Reccoment size of Oxygen Absorbers is 70 cc.



For purpose of this calculation, we are going to assume that the specific gravity of the product has a value of



1. Fill a vessel with water. Place your product container (containing the food) into the vessel and let the water overflow.

2. Remove your container from the vessel.

3. Measure how much water it takes to fill the vessel back up with water. The water is measured in milliliters (ml). There are 29.57 ml in one fluid ounce.

4. Measure the weight of the product container in grams (g). There are 28.35 grams in an ounce.