



DEPARTMENT OF ENVIRONMENTAL HEALTH County of Riverside

INFORMATIONAL BULLETIN NO. 79-12-DES

DISTRICT ENVIRONMENTAL SERVICES

REDUCED OXYGEN PACKAGING - ROP

What is Reduced Oxygen Packaging (ROP)?

ROP is a process where the amount of oxygen in a package is reduced to a level below that normally found in the surrounding atmosphere. This can be done several ways:

- Vacuum Packaging - Mechanically evacuating the oxygen from a container of food. An example would include use of a vacuum sealing device for storage of potentially hazardous foods.
- Sous Vide - Food is placed in a bag, the air is mechanically evacuated and the food is cooked in a water bath, usually at low temperatures over several hours.
- Cook Chill - Oxygen is driven off by boiling or heating followed by sealing the hot food product in an air-tight container. Food is then cooled in an ice bath or refrigerator.
- Canning or Jarring - Oxygen is driven off by boiling or heating; the can or jar is then capped and as the food product cools an air-tight vacuum seal, is created within the lid of the can or jar.
- Modified Atmospheric Packing (MAP) and Controlled Atmospheric Packaging (CAP) - Oxygen in the package is displaced or modified with another gas or combination of gases (mostly done at the wholesale packaging level).

Why use ROP at the retail food level?

ROP has several advantages at the retail food facility level:

- Extends the shelf life of perishable food by creating an atmosphere unfavorable for the growth of spoilage bacteria.
- Reduces both preparation and clean-up times by allowing foods to be prepared in advance.
- Creates a tender and/or flavorful food product, such as with sous vide.

What are the hazards associated with ROP?

Using ROP improperly can be quite serious due to the hazards associated with the processes. The lack of oxygen creates an anaerobic environment, which favors the growth of two very dangerous pathogens: *Clostridium botulinum* and *Listeria monocytogenes*.

- *Clostridium botulinum* is responsible for the deadly botulism toxin. This is a rare but serious condition that has a high fatality rate.
- *Listeria monocytogenes* can cause still births in pregnant women and is particularly deadly for babies and small children.
- Both of these bacteria can grow even when food is properly refrigerated.
- Eliminating the bacteria that causes spoilage actually gives these deadly bacteria an advantage to grow and reproduce with no competition.

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- Raw fresh fish presents an even greater hazard due to the presence of naturally occurring bacteria on and inside of the fish. For that reason, raw, fresh fish may only be packaged using ROP at the wholesale level with a HACCP plan under FDA guidelines and inspection. Fish **cannot** be packaged using ROP at the retail level unless it is frozen before, during and after the packaging process and must still meet the requirements listed below.

What is required to conduct ROP safely and legally at my establishment?

Any retail food facility processing potentially hazardous foods using ROP is required to have an approved Hazardous Analysis Critical Control Point (HACCP) plan approved by the California Department of Public Health (CDPH).

- If you do not currently have an approved plan, you must cease and desist the ROP of food at your facility. You are in violation of the California Retail Food Code (Cal Code) Section 114419(b)(2).
- Submit your HACCP plan to Jean Marie Weathers with California Department of Public Health. For information on submitting a HACCP plan for approval, please contact Jean Marie Weathers with the California Department of Public Health at (916) 650-6500 or by email, Jeanne-Marie.Weathers@cdph.ca.gov.
- Once you have received an approval letter from CDPH, please notify the County of Riverside Department of Environmental Health, Special Processes Committee at (951) 358-5172 so your facility information can be updated.

What are the consequences of continuing to process Reduced Oxygen Packaged food without an approved HACCP plan?

Apart from potentially endangering your customers' health and safety, continued operation of a ROP procedure after being given a cease and desist order from this Department could result in any or all of the following legal actions:

- Condemnation of all ROP food product.
- Impoundment of any equipment used for ROP.
- Suspension or revocation of your permit to operate.
- Citations or other fines.
- Other legal actions.

Where can I get more information on ROP?

- California Retail Food Code (Sections: 113799, 113801, 113883, 114057, 114419)
 - <http://www.cdph.ca.gov/services/Documents/fdbRFC.pdf>
- FDA
 - www.fda.gov/Food/FoodSafety/RetailFoodProtection/IndustryandRegulatoryAssistanceandTrainingResources/ucm095507.htm

*Document available in an alternate format upon request.

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