



Oxino

NATURALLY PRESERVES TASTE AND EXTEND SHELF LIFE

*Naturally
preserves taste
and extends
shelf life*

TASTE
AND
SHELF
LIFE



Oxino[®] oxygen absorbers absorb all the oxygen within the packaging

- Oxygen is the main cause of deterioration
- Even the smallest quantities of oxygen in the packaging influence the speed of food deterioration
- The presence of Oxino[®] results in a completely oxygen free atmosphere

Oxino[®] prevents:

1. Mould & aerobic bacteria growth
2. Fat oxidation & rancidity
3. Discoloration
4. Insect growth



Oxino[®] helps food stay fresh for longer

BENEFITS FOR HEALTH AND TASTE

- **Reduction in use of both natural and artificial preservatives like salt, sugar, acids, antioxidants results in healthier food products**

And it is no longer necessary to balance sugar, salt or acid levels to slow down aerobic microbe growth.

- **Ability to use easily oxidizing ingredients such as unsaturated fats, fresh butter, vitamins etc, whilst maintaining shelf life**

Oxino[®] allows the use of healthy fats instead of saturated fats, thereby contributing to a healthier diet.

- **Healthier products with natural flavour and better taste**

Conventionally packed food products suffer from continuous oxidization, resulting in a deterioration of taste and flavour. Products packed with Oxino[®] maintain their original flavour and taste.

- **New claims and innovations**

New products and marketing claims can be introduced relating to natural taste, healthy nutrition, and use of less or no preservatives.

LONGER SHELF LIFE

- **Geographic & supply chain optimization**

A longer shelf life opens a window of opportunities for geographic expansion and supply chain optimization.

- **Reducing levels of product returns and wastage**

A longer shelf life can significantly reduce levels of product returns and wastage.

- **Increased production speed & efficiency**

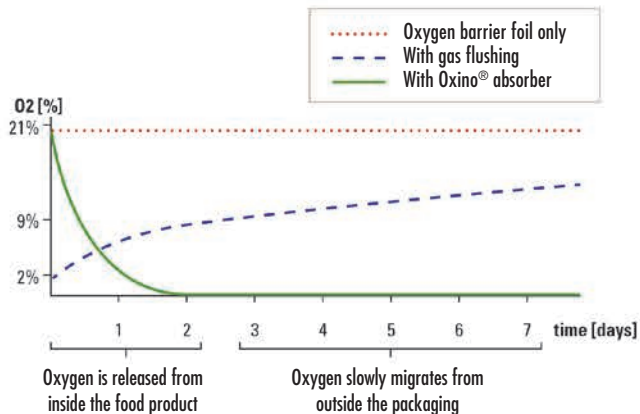
Oxino[®] can be applied at high speed during the production process. Gasflushing treatment and vacuum packing are no longer required. Oxino[®] and flow packing equipment work very well together and secure a constant level of oxygen of <0.1%. Oxino[®] can also be combined with gas flushing, maintaining a buffer of 0.1% oxygen guarantee in the distribution chain.



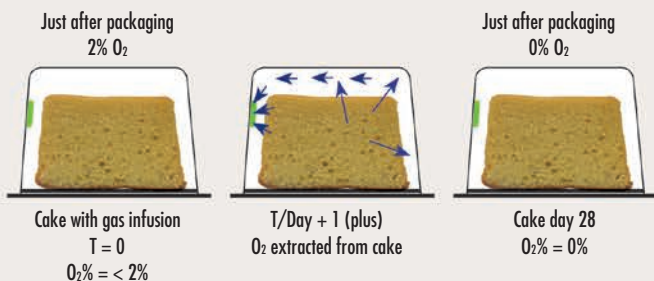
Why Oxino® is better than existing preserving techniques

Oxino® absorbs all the oxygen inside food packaging

While gas flushing brings O₂ levels down to a low % level, Oxino® will absorb all oxygen to <0,1% within a maximum of 48 hours¹



The residual oxygen is released after 24 hours and will be completely absorbed by Oxino®



Oxino® does not harm the integrity of the food product.

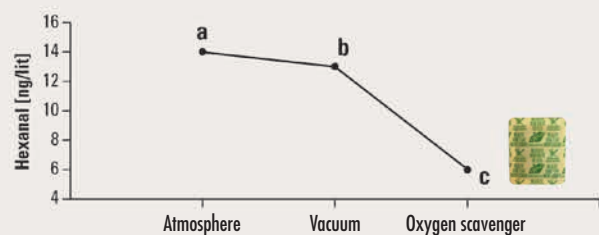
- Source: internal lab data, confirmed in various industry tests, packaging with oxygen barrier foil
- Source: Anders Leufven^a, Nasser Sedaghar and Mohammed B. Habib^b
 - SIK, the Swedish Institute for Food and Biotechnology, PO BOX 5401, S-402 29, Gothenburg, Sweden;
 - Department of Food Science & Technology, Ferdowsi University, Mashhad, Iran
- Source: ainia Technological Center Spain, "Análisis de la eficacia de absorbedores de oxígeno sobre fiambre envasado", 2010
- The CIELab coordinates: each color is represented using three coordinates, L = luminosity
a = amount of red-green, b = amount of yellow-blue

Positive effects of a complete reduction of oxygen for food products

Stops mould growth which can happen even with as little as 0,2% O₂



Stops fat oxidation²



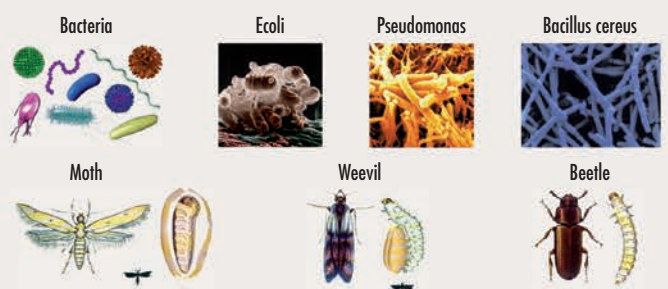
A test of the stability of raw dried pistachio nuts with different packaging systems shows that only an oxygen absorber will prevent a noticeable level of rancidity

Prevents the photocatalytic process of discolouration which can be triggered by the smallest amounts of residual oxygen³



- The color was measured in the most discolored parts of the product. A total of 10 zones per slice were taken to obtain a representative average.
- Fixed parameters of the measurements: Observer 10°/ Illuminant D65.

Stops aerobic microorganisms and insect growth



Only Oxino[®] keeps oxygen level below <0.1% without the disadvantages of conventional methods

In contrast to Oxino[®], conventional methods will never completely remove oxygen. In addition to that, they have the following disadvantages that can be avoided with Oxino[®].

Vacuum	Gas flushing with nitrogen (N ₂)	Gas flushing with carbon dioxide (CO ₂)
May change the texture or shape of food products	Does not inhibit mould effectively.	May cause an acidic taste and smell.

Oxino[®] can be easily applied during the production process

Oxino[®] can be used in combination with all standard gas flushing techniques, flow-wrapping, thermoforming etc. The only prerequisite is a film with oxygen barrier properties and an airtight sealing. A standard labelling machine can be used to apply the labels. With our packaging industry partners, we will work with you to implement Oxino[®] within your current production process.









Oxino[®] brings benefit to a variety of foods including:



Oxino[®] is safe

The use of Oxino[®] is approved in EU, US, Japan, Asia and NZ/AUS. The content is non-toxic and harmless if accidentally consumed. Just for your information, table salt is more toxic for the human body than the content of Oxino[®].

Oxino[®] improves the quality of your product

Using Oxino [®]	Convetional Packing without Oxino [®]
	
No mould	Mould
	
No mould, better taste	Mould, bad taste
	
No discoloration	Discoloration
	
No fat oxidation	Fat oxidation

In order to arrange a free trial so that you can verify the benefits of including Oxino[®] please contact us at:

 **Oxino**
WWW.OXINO.EU

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