

MODIFIED ATMOSPHERE AND INTELLIGENT PACKAGING OF FOOD

Wonder Packaging's

Visit Us: <http://www.wonderpackagings.com>



INTRODUCTION

- Progress in the packaging of foodstuffs will prove crucial over the next few years mainly because of new consumer patterns, demand creation and world population growth which is estimated to reach 15 billion by 2025.



MODIFIED ATMOSPHERE PACKAGING

MAP - An atmosphere with a gas composition different from that of air is created in the package. The gases mainly used are the following:

CO₂ – Antimicrobial effect;

O₂ – A reduced oxygen concentration in the head-space of a package below 1-2 %, even to 0.2 % by replacing oxygen with nitrogen and /or carbon dioxide;

- A high oxygen concentration, even 80 % or above is used in order to inhibit microbial growth through oxygen shock;

N₂ – Inert gas (equilibrium of atmospheric pressure).



PACKAGING MATERIALS REQUIREMENTS

Particularly with regard to gas packaging, the important factors are the following:

○ The Gas Barrier Properties Needed.

In most gas packaging applications, it is desirable to maintain the atmosphere initially injected into the package for as long a period as possible.

Polymers are normally used as laminated or co-extruded multilayer materials in order to have the barrier properties required.



PACKAGING MATERIALS REQUIREMENTS

As a rule, packaging materials with oxygen permeability lower than 1.00 cm³/m² 24 h 101.3 kpa are used in gas packaging. In the literature, on the other hand, very few reported investigations are available on the significance of oxygen permeability between 0-100 cm³/m² 24h 101.3 kpa for quality gas-packed products.

○ Mechanical Strength

Packaging materials for food one has to pay attention to how resistant to mechanical stresses (e.G. Puncture), humidity and temperature (frozen or chilled) the material needs to be. If a material is of poor mechanical strength, the mechanical stresses, humidity and low temperature during storage transport and handling can damage the package and cause leakage.

5

PACKAGING MATERIALS REQUIREMENTS

○ Integrity Of Sealing

The adequate integrity of the seal is important in order to maintain the correct atmosphere in the package.

○ Type of Package

The type of package to be used, rigid or semi-rigid, lidded tray or flexible film pouch has to be taken into consideration when choosing packaging materials.



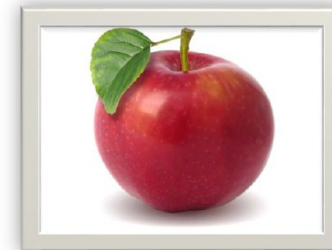
6

ADVANTAGES OF WONDER MAP FILMS

- Anti-fogging
- Microwaveable
- Puncture resistant
- Modulus and stiff just like other films
- Increased shelf life
- Reduction in retail waste
- Improved presentation-clear view of product and all round visibility
- Hygienic stackable pack, sealed and free from product drip and odor
- Little or no need of chemical preservatives
- Increased distribution area and reduced transport costs due to less frequent deliveries
- Reduction in production and storage costs due to better utilization of labor, space and equipment.



MAP FOR CUT FRUITS, VEGETABLES AND SPROUTS





THANK YOU
for your
ATTENTION!