

# FOOD PRESERVATION

Innovation Solution for Food Packaging

[www.anti-moldchip.com](http://www.anti-moldchip.com)  
Fujian//China



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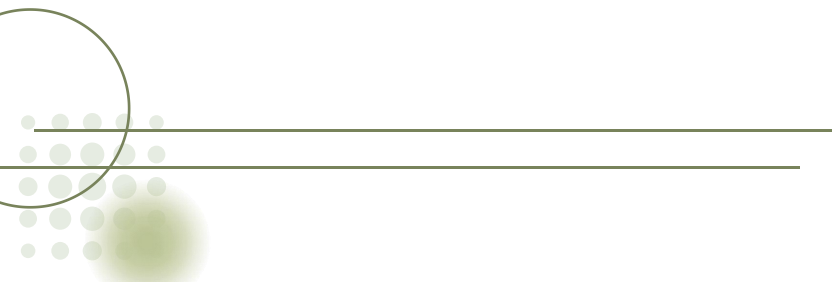
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TECHNICAL SERVICE  
AND SUPPORT



# 01 COMPANY PROFILE

PART ONE About Us | History of Enterprise Development





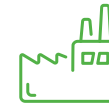
# COMPANY OVERVIEW

## ABOUT US

Jinjiang TOPONE Anti-mold Material Co., Ltd. was established in 1995, the main products of external control fresh-keeping products, such as food oxygen absorber, food desiccants, and multi-effect fresh-keeping bags. It is a manufacturer integrating R&D, production, sales, and service. It insists on "quality service" as the center and "healthy&natural" as the purpose, aiming to provide customers with comprehensive solutions in the field of food preservation to reduce the losses caused by moisture, mildew, and spoilage.



Environmentally  
Friendly



Natural

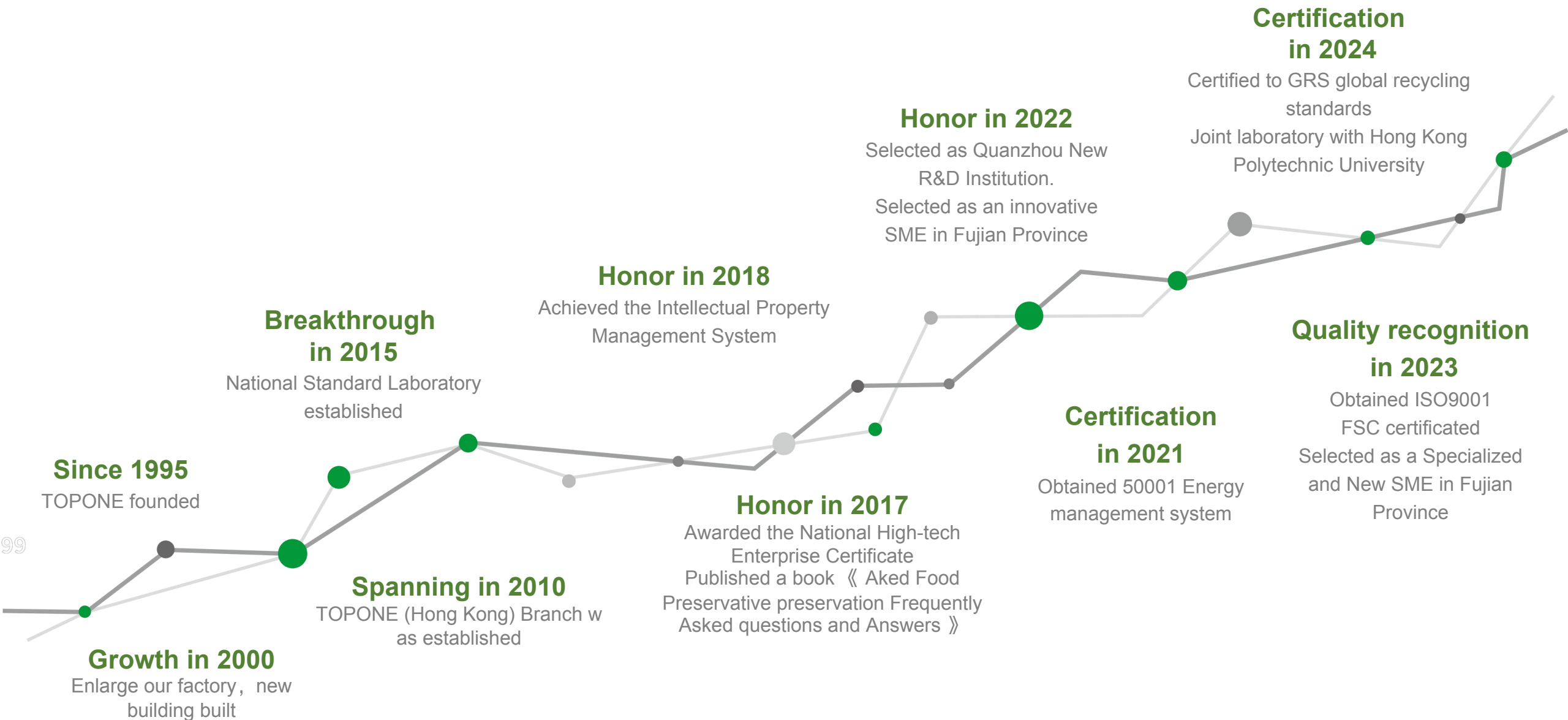


High Quality





# History of Enterprise Development





# 02 PRODUCT INTRODUCTION

Typical Case of Damp Food | Product Series

PART TWO

- Oxygen Absorber
- Organic Deoxidizer
- Multi-Fresh Keeping Pak
- Fresh Pak
- Food Desiccant



## Causes of food spoilage

Oxygen is the living condition of aerobic microorganisms and the root cause of food oxidation and deterioration. If food is not properly stored during storage, it will come into contact with oxygen in the air, causing mold, insects, discoloration, taste change, and fat oxidation, thus causing the food to deteriorate.



01

### Chemical deterioration

- Oxidative rancidity of fats
- Oxidative browning
- Nutrient loss

02

### Deterioration of physical properties

- Deterioration of taste
- Appearance changes



03

### Microbial growth

- Mold contamination
- Bacterial reproduction
- Yeast fermentation



# Typical Case of Damp Food

Food categories	Moisture performance	Potential risks
Biscuits,puffed food	Soften&lose brittleness	Bad taste,may be moldy
Milk powder,protein powder	Agglomeration, difficult to dissolve	Nutrient loss, bacterial contamination
Dried seafood,mushroom	Sticky,mildew	Production of mycotoxins (such as aflatoxins)
Salt,seasoning	Agglomeration poor fluidity	Inconvenient to use,may absorb moisture&deteriorate
Candy,chocolate	Surface “sweating”&frosting precipitation	Flavor deterioration easy to breed yeast





## Fresh-keeping series

(Ordinary oxygen absorber, Organic Deoxidizer, Fresh Pak)


## Multi-effect fresh-keeping Pak

## Food desiccant series

(Silica gel, Calcium oxide, Mineral desiccant)

# Oxygen absorber

Advocate Comprehensive Fresh Keeping for Food



The oxygen absorber can react with the free oxygen in the packaging container under sealed conditions to absorb the oxygen in the packaging container, thereby making the packaging container relatively anaerobic, inhibiting the growth and reproduction of microorganisms such as mold, and maintaining the nutritional content and flavor of food.



# Oxygen absorber



## Dosage :

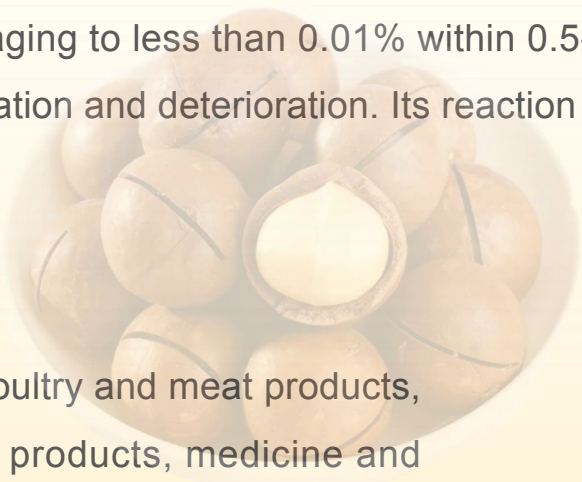
Product model	TPW-15	TPW-20	TPW-30	TPW-50	TPW-100
SIZE (CM)	3*3.5	3.5*3.5	3.5*3.9	3.5*4.3	4.0*4.6
Applicable food weight (for reference only)	Less than 30g	30g-80g	80g-100g	180g-300g	300g-600g

## Technology Principle

Oxygen acsorber is an external control fresh-keeping agent, which absorbs oxygen in the packaging container through the principle of iron powder oxidation, and rapidly reduces the concentration of oxygen in food packaging to less than 0.01% within 0.5-2 working days. So as to protect the goods from oxidation and deterioration. Its reaction is stable, no harmful gas generation, no side effects.


## Common Uses

It is often used in Chinese and western pastries, poultry and meat products, roasted nuts, dried aquatic products, agricultural products, medicine and health care, animal feed and other non-food products etc.



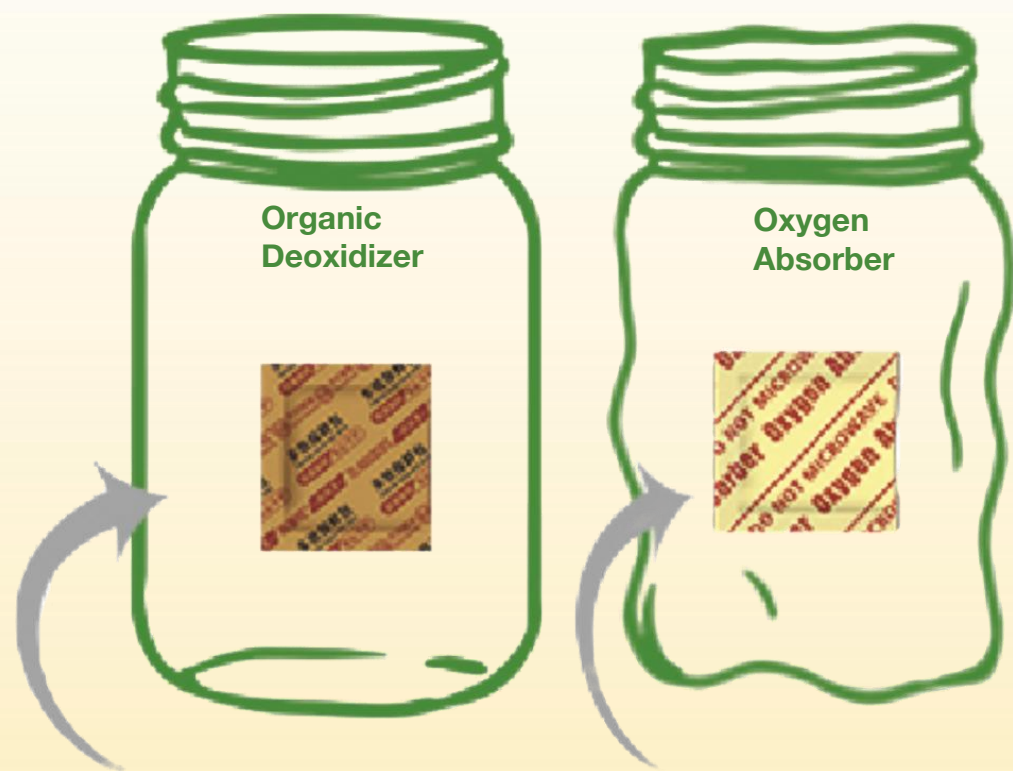
# Organic Deoxidizer

Advocate Comprehensive Fresh Keeping for Food



Organic Deoxidizer solves the problem of food packaging containers being sucked flat, effectively solve the problems of mildew, grease rancidity and so on, and maintain the beauty of food packaging.

## Organic Deoxidizer



Comparasion of Organic Deoxidizer  
&  
Commom Oxygen Absorber

### Advantage :

When the ordinary oxygen absorber removes 21% of the oxygen in the package, it will produce a certain volume shrinkage, resulting in easy deformation of the can, affecting the appearance of beauty. The organic Deoxidizer releases the same amount of carbon dioxide gas while removing oxygen, maintaining the balance of the environmental volume in the package, ensuring the quality of the product and not affecting sales.



# Organic Deoxidizer



## Product application

Organic Deoxidizer is often used in canned food, such as dried meat and fish products, snack food, meat products, dried fruits and vegetables, medicinal materials, etc.

## Specifications and Dosage

Product model	TPW-15	TPW-20	TPW-30	TPW-50	TPW-100
SIZE (CM)	3*3.5	3.5*3.5	3.5*3.9	3.5*4.3	4.0*4.6
Applicable food weight (for reference only)	< 30g	30g-80g	80g-100g	180g-300g	300g-600g

# Multi-fresh Keeping Pak

Advocate Comprehensive Fresh Keeping for Food



Multi-fresh Keeping Pak is a multi-functional and efficient external control fresh-keeping product with targeted inhibition of mold, alcohol sterilization, deoxidation. The addition of plant extract ingredients is an important supplement to the dehydrogenation alternative, which has a wider range of action and more functions than ordinary oxygen absorber, and can better meet the different needs of customers, and is suitable for a variety of food types.



## Features

- ✓ Anti-mold: The plant extracts act as a targeted anti-mildew agent
- ✓ Alcohol sterilization: With edible alcohol as the main raw material, gas phase protection is formed, which is not affected by the PH of the product
- ✓ Deoxidized fresh-keeping: Efficient deoxidation, inhibit microbial growth and reproduction

## Product Usage:

pastry foods, snack foods, dried fruit foods, dried vegetable foods, dried aquatic products, dried meat products, etc., and has a good effect of deoxidation and preservation.



# Testing Comparison---Total Plate Count (TPC) Anti-mold Testing

Subject	Multi-Fresh Keeping Pak ( Fe )	Other brand from market	Controlled
Total Plate Count (TPC) 36℃ ,6Days	25 30 20	30 20 2.4x10 <sup>2</sup>	4.5x10 <sup>4</sup> 2.1x10 <sup>4</sup> 1.2x10 <sup>5</sup>
Total Plate Count (TPC) 36℃ ,15Days	<10 <10 15	15 20 20	2.5x10 <sup>6</sup> 4.4x10 <sup>6</sup> 6.8x10 <sup>6</sup>
Anti-mold Testing	none fungi	full of fungi ( 2days )	full of fungi ( 2days )
Photo			



## Fresh Pak(alcohol)

Advocate Comprehensive Fresh Keeping for Food

The fresh pak is a compound of fresh-keeping factors and edible alcohol, which are attached to a highly absorbent food-grade cotton sheet and packaged in a food-grade film.

Super absorbent material



Food grade alcohol



- ✓ Freshness: Effectively inhibits a variety of microorganisms.
- ✓ Safety: Avoid accidental ingestion and eliminate the risk of powder leakage.
- ✓ Original flavor: Uses sustained-release technology to keep food fresh.
- ✓ Dehydrogenation substitution: Strong preservation, as an effective supplementary solution for dehydrogenation replacement.

**Product Usage:** It is widely used in pastries, dried aquatic products, dried meat products, dried fruit foods, etc



## Technology Principle

When using fresh pak, the alcohol liquid and fresh-keeping factors loaded on the cotton sheet are slowly released, forming a certain concentration of weather protection layer around the preserved product and is not affected by the PH of the protected food.

## Specifications and dosage

Product model	TPW-20	TPW-30	TPW-50	TPW-100	TPW-150
SIZE ( CM )	2.5*2.5	3.0*3.0	3.5*3.5	4.0*4.0	4.5*4.5
Applicable food weight ( for reference only )	Less than 30g	30g-50g	50g-100g	100g-150g	150g-200g

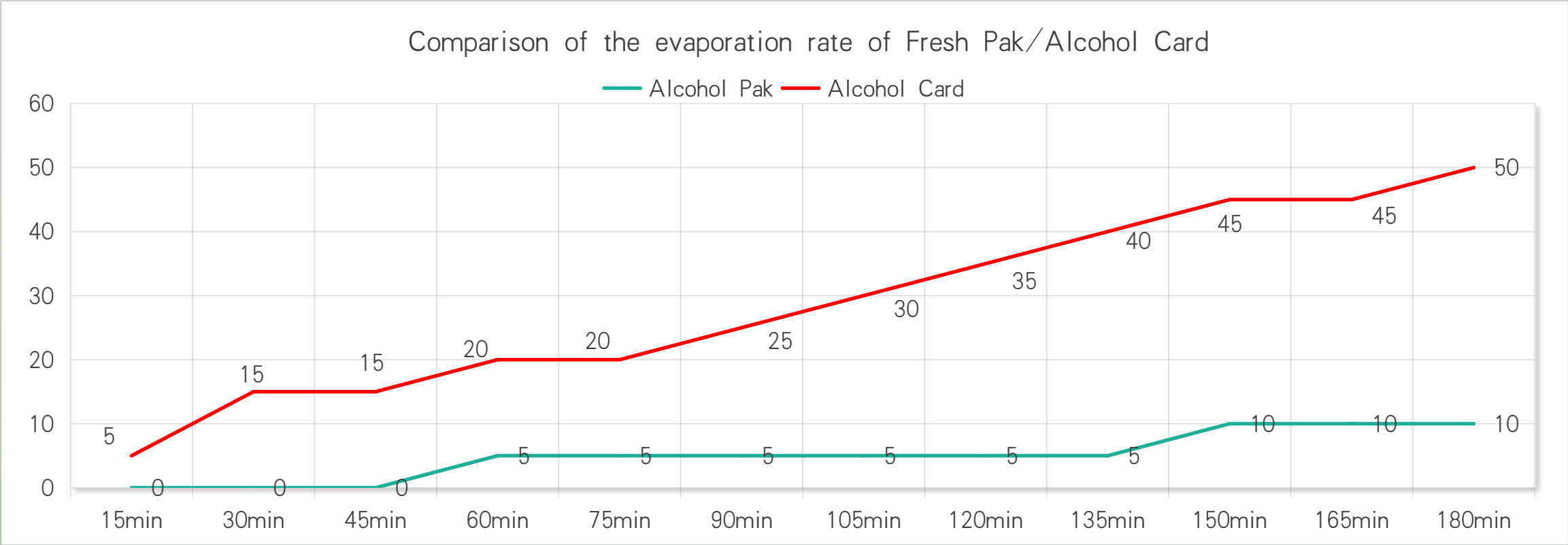




Fresh Pak(alcohol)



Alcohol Card



# Food Desiccant

Advocate Comprehensive Fresh Keeping for Food






Desiccant is a dehumidifier that absorbs moisture from the air. Its drying principle is to physically adsorb water molecules into its own structure or to chemically absorb water molecules and change its chemical structure. The saturated moisture absorption rate can reach 20% of its own weight.

# Why should desiccant be used in food?

The moisture in food will quickly promote the oxidation of food fat, resulting in rancidity and deterioration; For food with low water content, it is easy to absorb moisture in the air and become damp and soft, which can lead to mildew and insects.



**Desiccant Type**

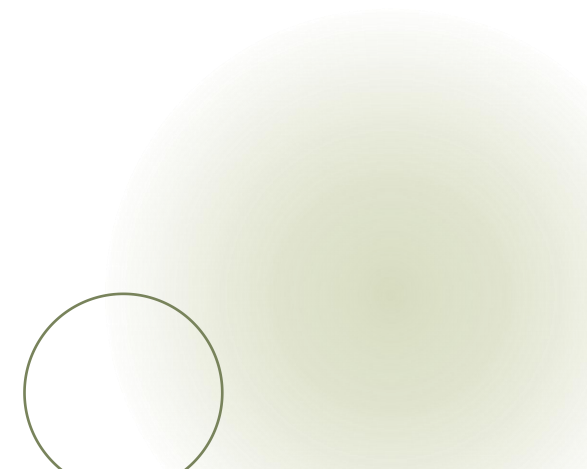
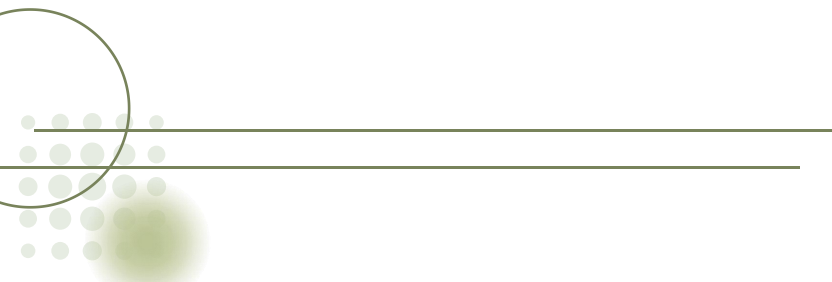
Product Name	Composition	Features	Picture
Silica Gel Desiccant	SiO <sub>2</sub>	Healthy&natural, safe, reusable (renewable after heating), often used in medicine, snack packaging.	
Calcium Oxide Desiccant	Calcium oxide	Strong hygroscopical, but in case of water heat, may burn the mouth, need to be used with caution (used in seaweed, tea, etc.).	
Mineral Desiccant	Natural mineral	Healthy&natural, safe, often used in snacks and pets food packaging.	
Product Usage	<div><div>✓ Foods that are easily affected by moisture, such as pressed candy, popcorn, biscuits, wolfberry, seaweed, seaweed, tea, etc.</div><div>✓ Fireworks, Chinese herbal medicines, electronic components, instruments and meters</div></div>		





# 03 TECHNICAL SERVICE

PART THREE Biotechnology Reach Center | Product Test Reports | Company Certificate | Technical Support



TOPONE focuses on talent cultivation and the improvement of scientific and technological strength. In 2024, it co-established the "Hong Kong Polytechnic University JINJIANG Research Institute-TOPONE Joint Laboratory" with the JINJIANG Research Institute of the Hong Kong Polytechnic University, and reached a number of technical development cooperation.



# Test Reports



- ✓ Intellectual Property Management System
- ✓ ISO 9001 Quality Management System
- ✓ FSC Forest Management System
- ✓ GRS Global Recycling Standard
- ✓ SGS, TUV and INTERTEK

- ✓ National High-tech Enterprise
- ✓ Fujian Province Specialized and New Small and Medium Enterprises
- ✓ Quanzhou New R&D Institution
- ✓ Provincial Science and Technology Little Giant Leading Enterprise
- ✓ Fujian Province Innovative Small and Medium Enterprises

Product	Test item	Testable item
Packaged food	GB 4789.15-2016 Mold and Yeast Count	Mold count, yeast count
Packaged food	GB 4789.2-2022 Aerobic plate count	Clump count
Packaged food	GB 4789.3-2016 Enumeration of coliformsv	Number of coliform bacteria
Packaged food	GB 5009. 237—2016 National Food Safety Standard -- Determination of pH value of food	PH
Packaged food	GB 5009.229-2016 National Food Safety Standard -- Determination of Acid Value in Foods	Acid value
Packaged food	GB 5009.227-2023 National Food Safety Standard -- Determination of Peroxide Value in Foods	Peroxide value
Packaged food	Residual oxygen content test in package (Headspace gas analysis - puncture the package to extract the top gas and use a sensor to measure oxygen)	Residual oxygen
Desiccant	GB/T 41897-2022 Quality requirements of desiccant for foods	Moisture absorption rate, drop resistance, right Angle tearing strength, thermal bonding strength, tensile strength
Desiccant	BB/T 0049-2021 Desiccant for packaging	Moisture absorption rate, PH value, drying weight loss
Oxygen absorber	GB/T 41896-2022 Quality requirements of oxygen absorber for food	Maximum oxygen absorption, oxygen absorption speed, oil resistance, water resistance, drop resistance, right Angle tearing load, thermal sealing strength
Oxygen absorber	SB/T10514-2008 Oxygen absorber for foods	Total oxygen intake, nominal deoxygenation time, total number of colonies, coliform group



# Customer we served





THANKS

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