



Jiangsu Yiming Biological Technology Co., Ltd.

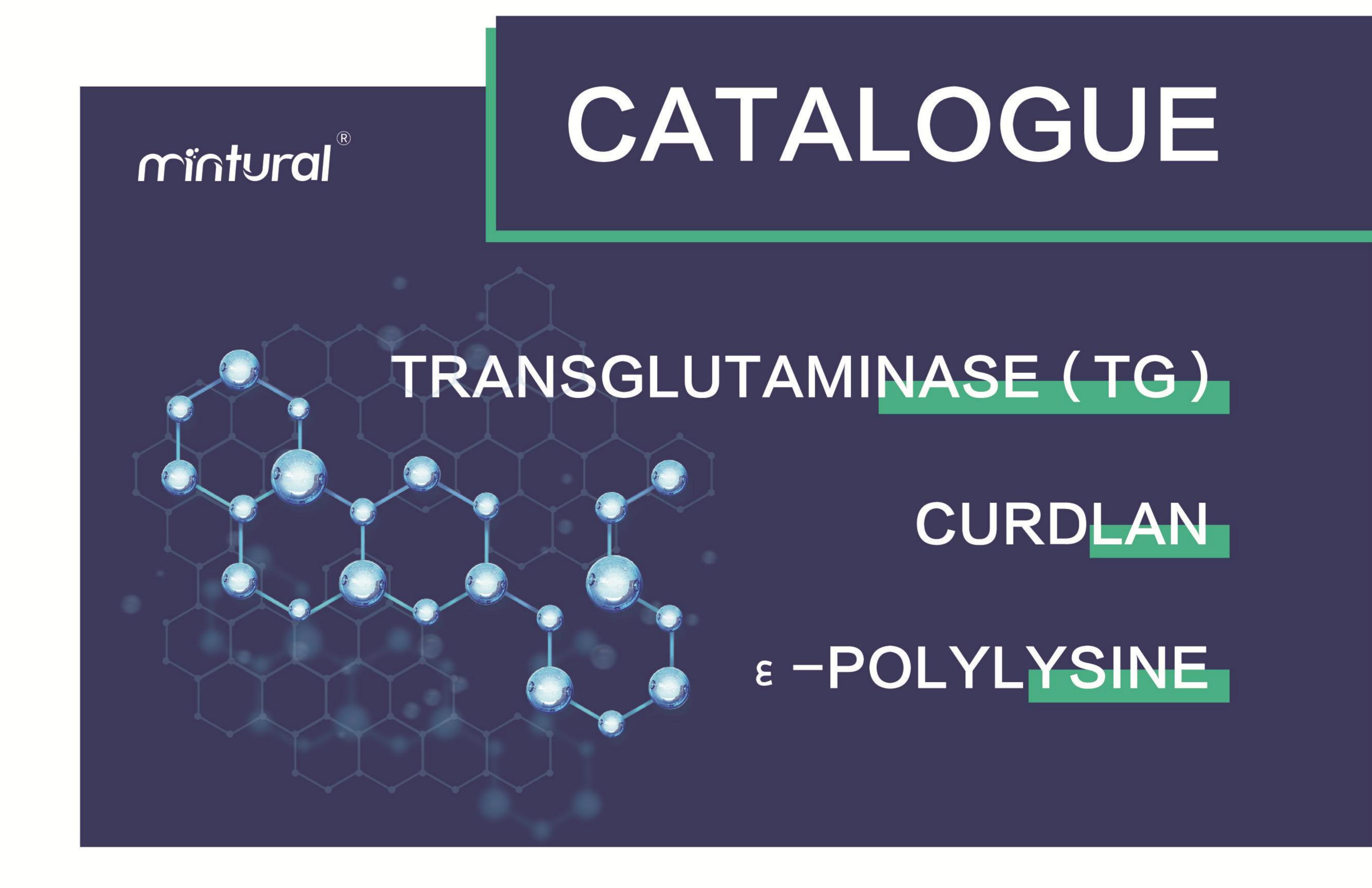
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JIANGSU YIMING BIOLOGICAL TECHNOLOGY CO., LTD

Company Introduction ____

Located in prosperous east China, Yiming Biotech is the leading high-tech enterprise specializing in fermentation of food-grade enzymes and other enhancers for the food industry for over 30 years. In the faith of consistently prodviding outstanding products and services, we continously improve our facilities to meet the highest standard in the industry. The company consists of three manufacturing plants and one advanced laboratory with over 30 researchers. Now we have an extensive sales network in China and look forward to collaborating new sales channels all over the globe.



World-leading Fermentation Technology and Facilities



The First Chinese Company Producing
Transglutaminase by Microbial
Fermentation





MUI HALAL



ARA HALAL









KOSHER

ISO9001

ISO22000

FSSC

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Yiming Biotech

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E-POLYLYSINE

INTRODUCTION AND APPLICATIONS	——————————————————————————————————————
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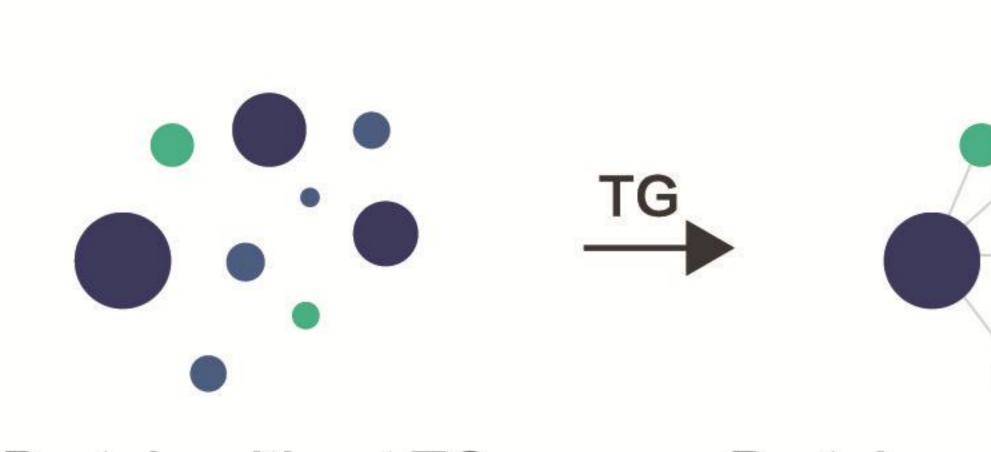
TRANSGLUTAMINASE

INTRODUCTION

Transglutaminase (TG) is a natural enzyme which can be found in humans, animals, plants and microbial sources in various forms. As a natural food additive produced by microbial fermentation, TG has no toxic substances and side effects to human health.

Mechanism

TG can improve protein's characteristics and functions by crosslinking proteins together. In this way, the nutrition, structure and taste of final products will be improved.



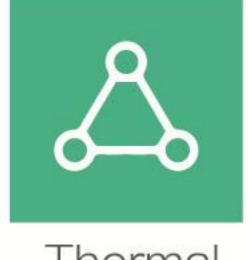
Protein without TG Protein crosslinked by TG

Conditions — Optimum pH and Temperature — — TGACTIVITY(%) TGACT

Advantanges



safe









Wide



Product Name: tranglutaminase (TG)
Category: food additive
Function: improve protein structure
Molecular Weight: 38kD
CAS No.: 80146-85-6
CNS No.: 18.013

Transglutaminase



TRANSGLUTAMINA

Product: transglutaminase (monomer or compound)

Model: TG-B, TG-Y, TG-CK, TG-FN and others

Appearance: light yellow powder or liquid

Specification: various enzyme activity

Packing: 1kg/bag, 1L/bottle

Storage: stored in dry and cool place

Method of Use: add directly or mix with water

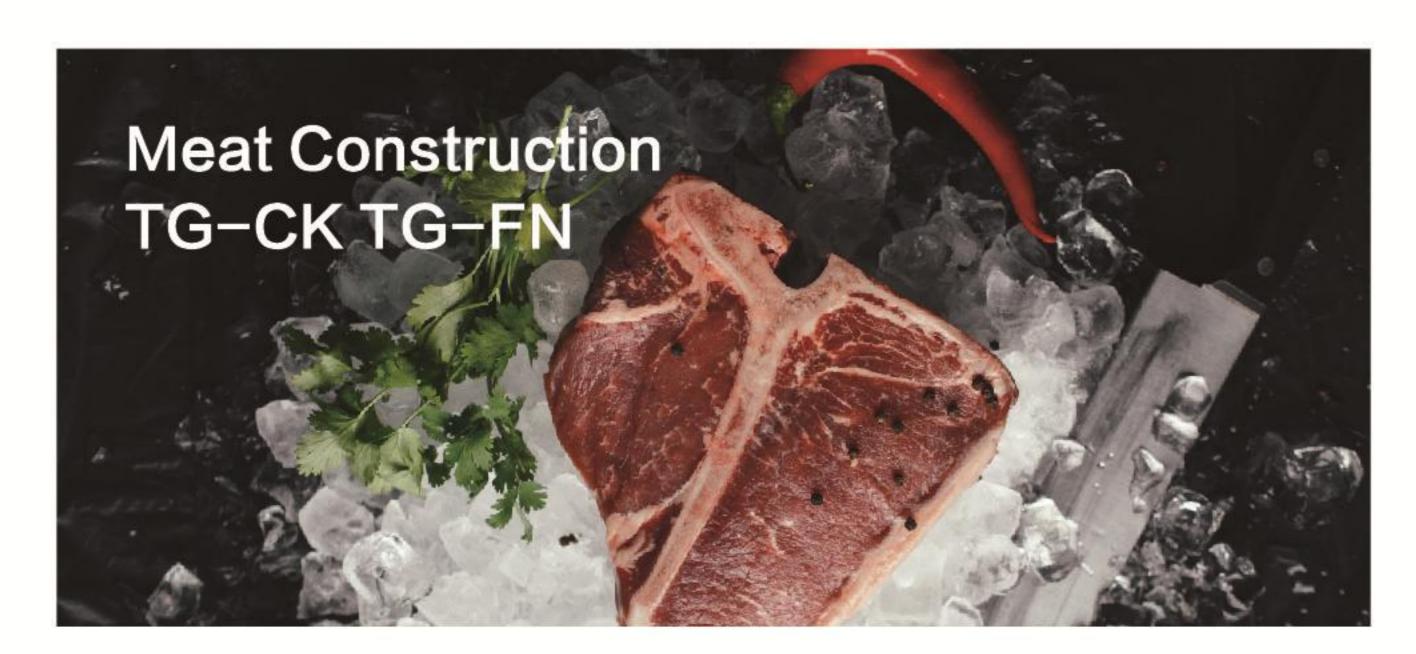
Shelf Life: 12 months

Compliance: GB26687, FSSC22000, ISO9001, ISO22000, HALAL, KOSHER

Category









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APPLICATIONS

— Texture Improvement



Sausage and meat ball Model: TG-B



Surimi products Model: TG-KR

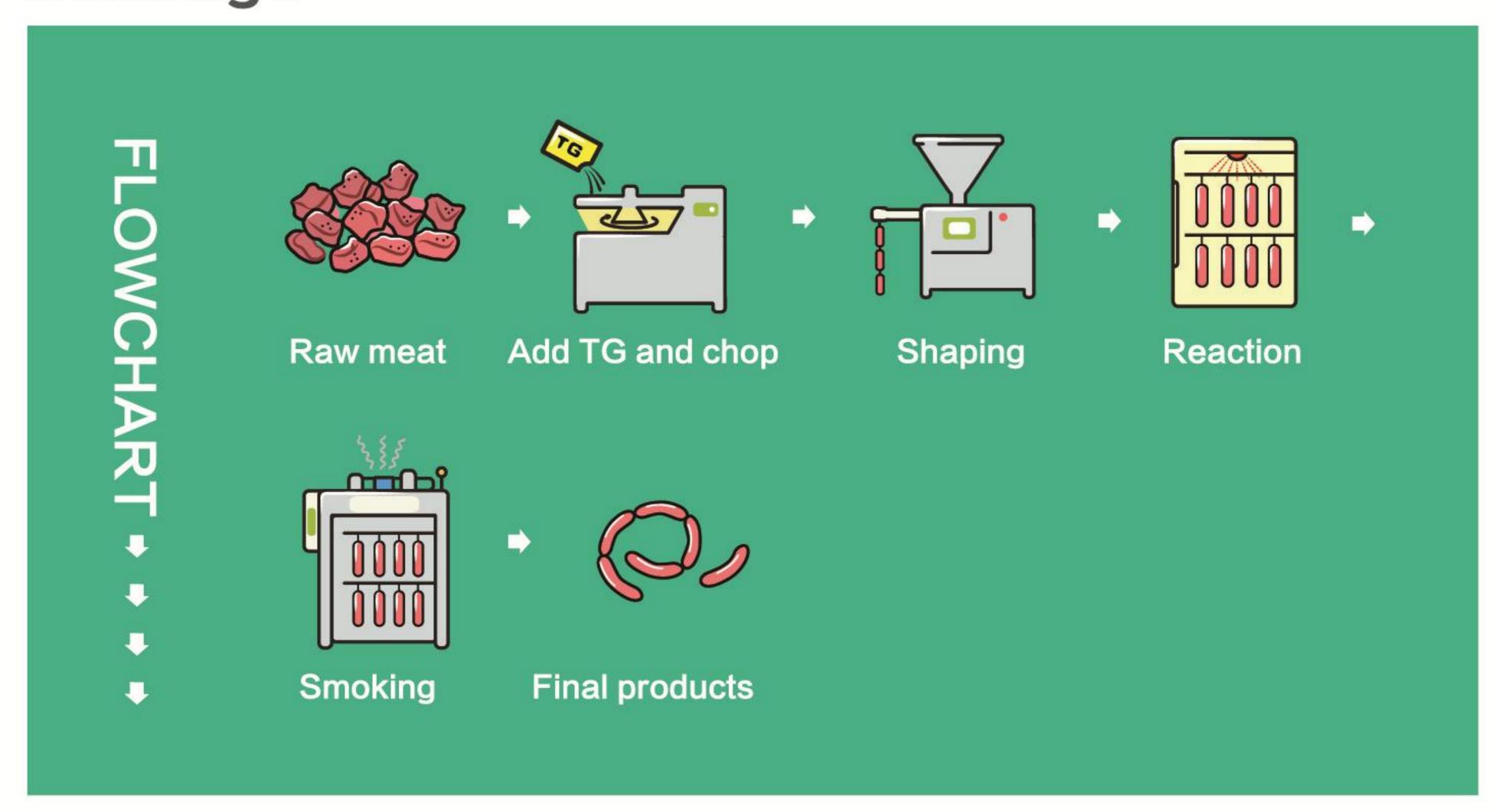


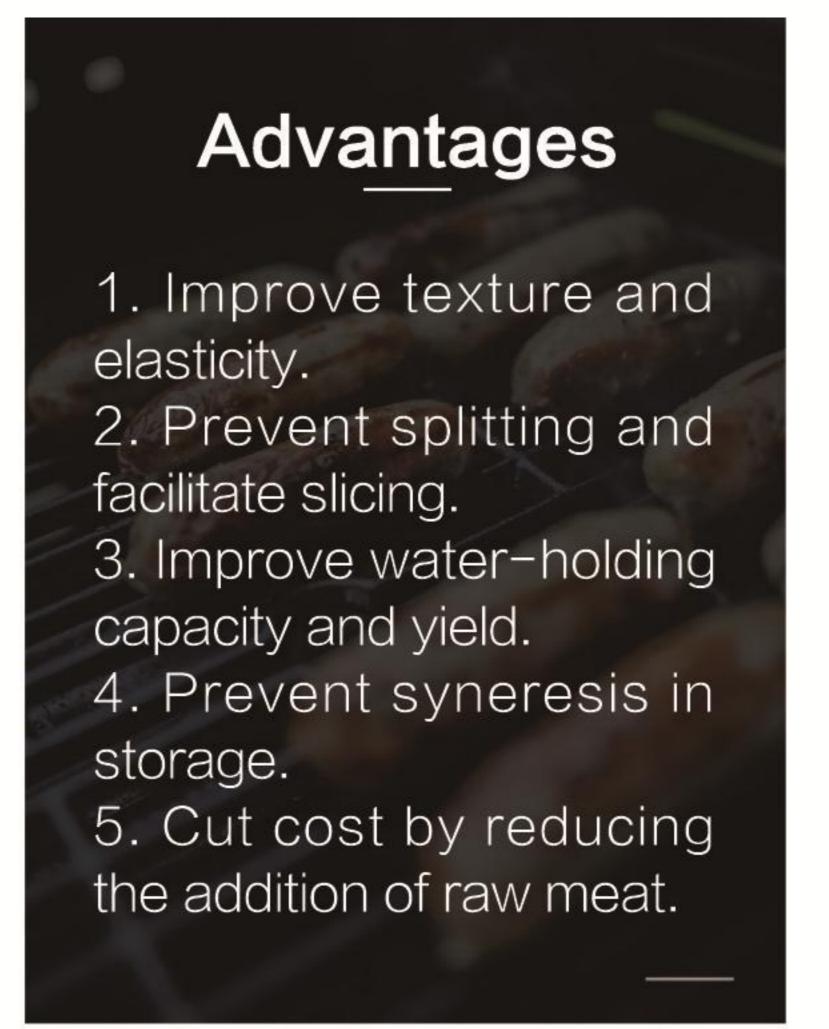
Dosage 0.1-0.2%



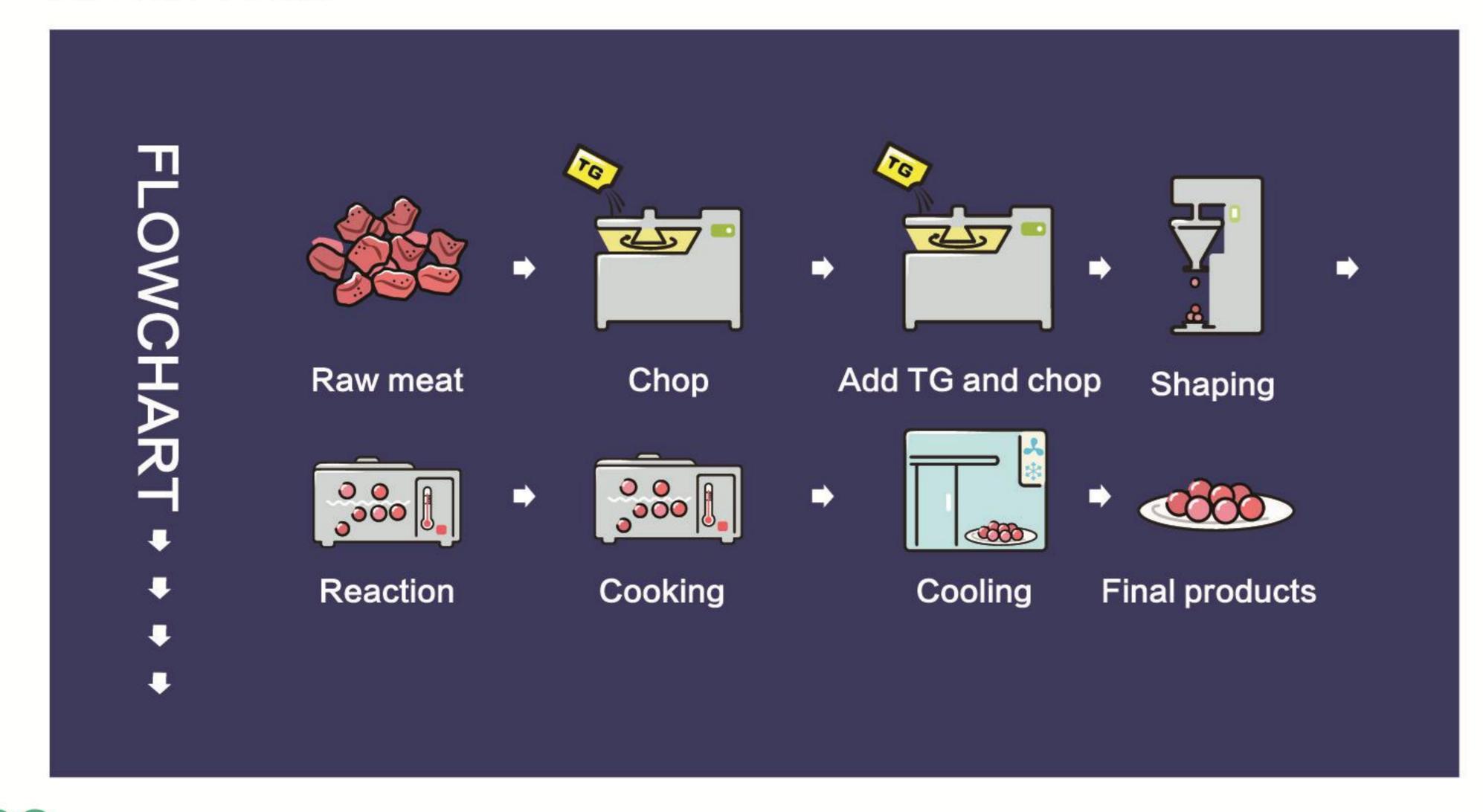
Caution
Two-phrase heating

Sausage





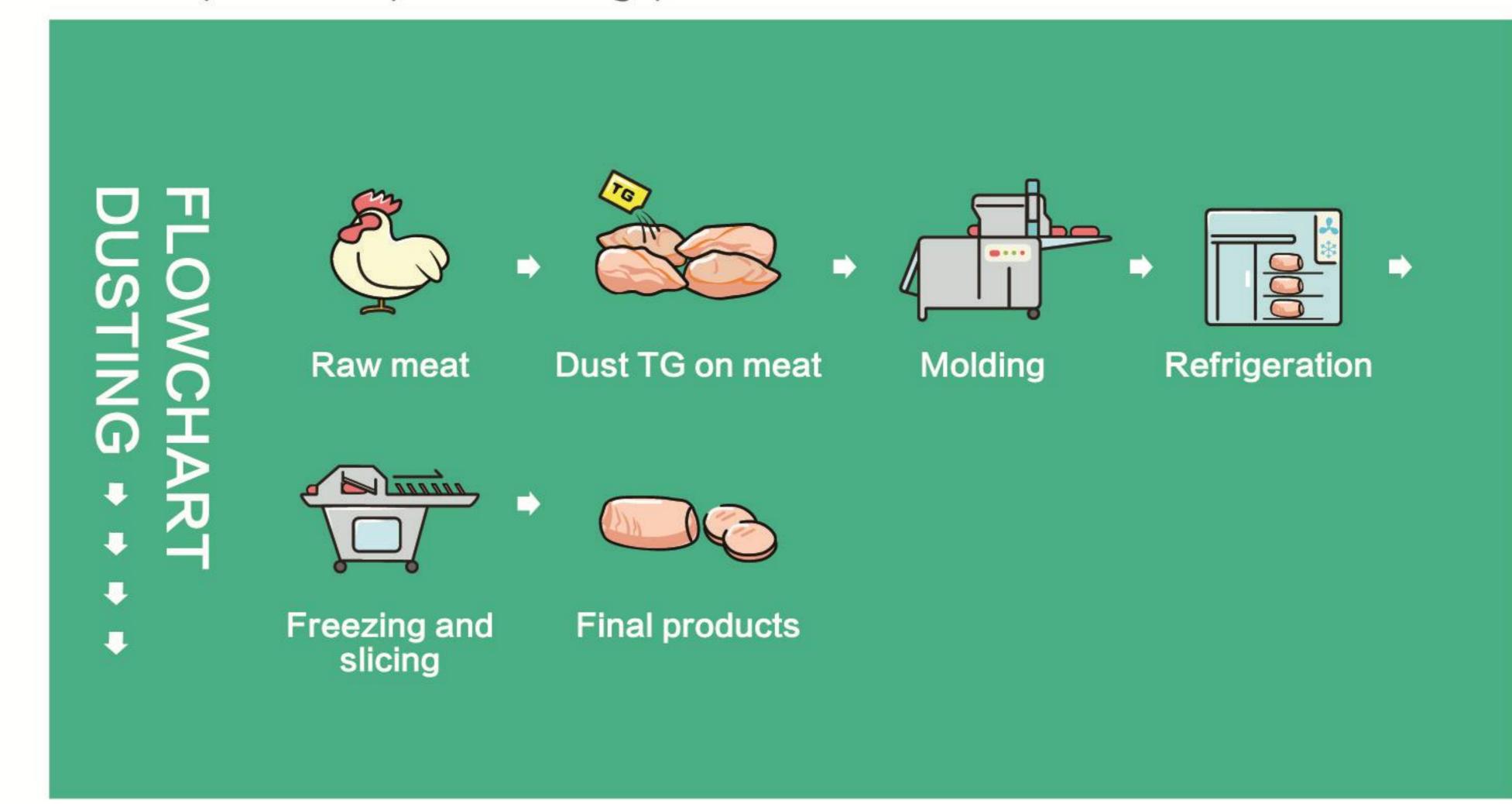
Meat Ball

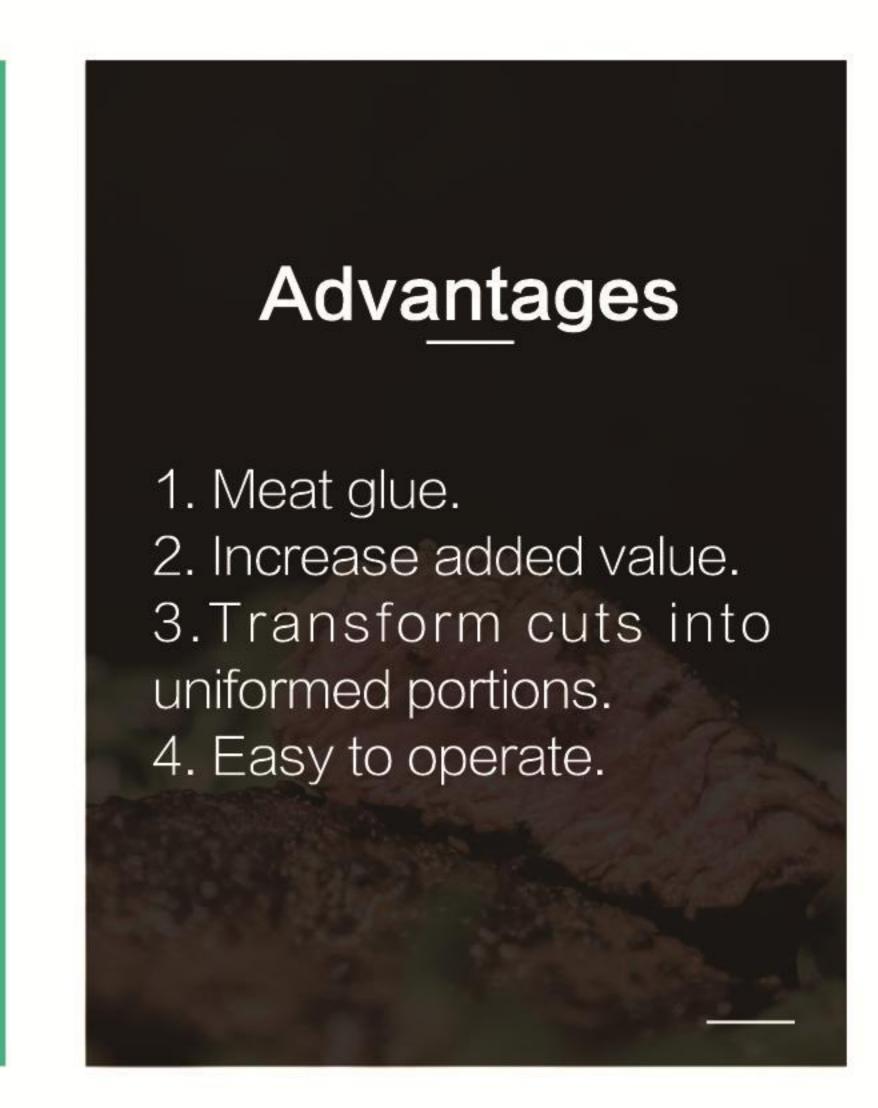




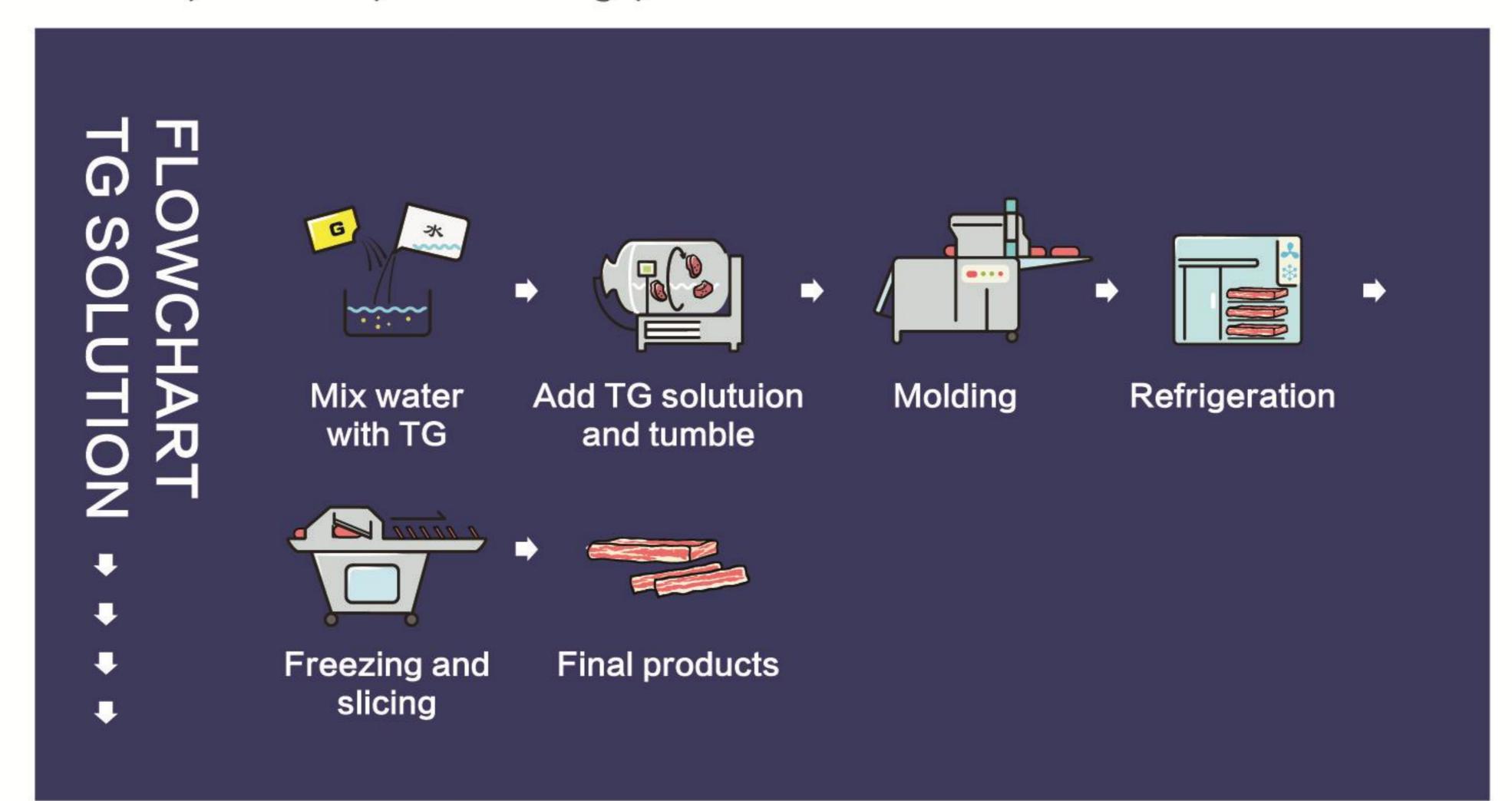
— Meat Recombination

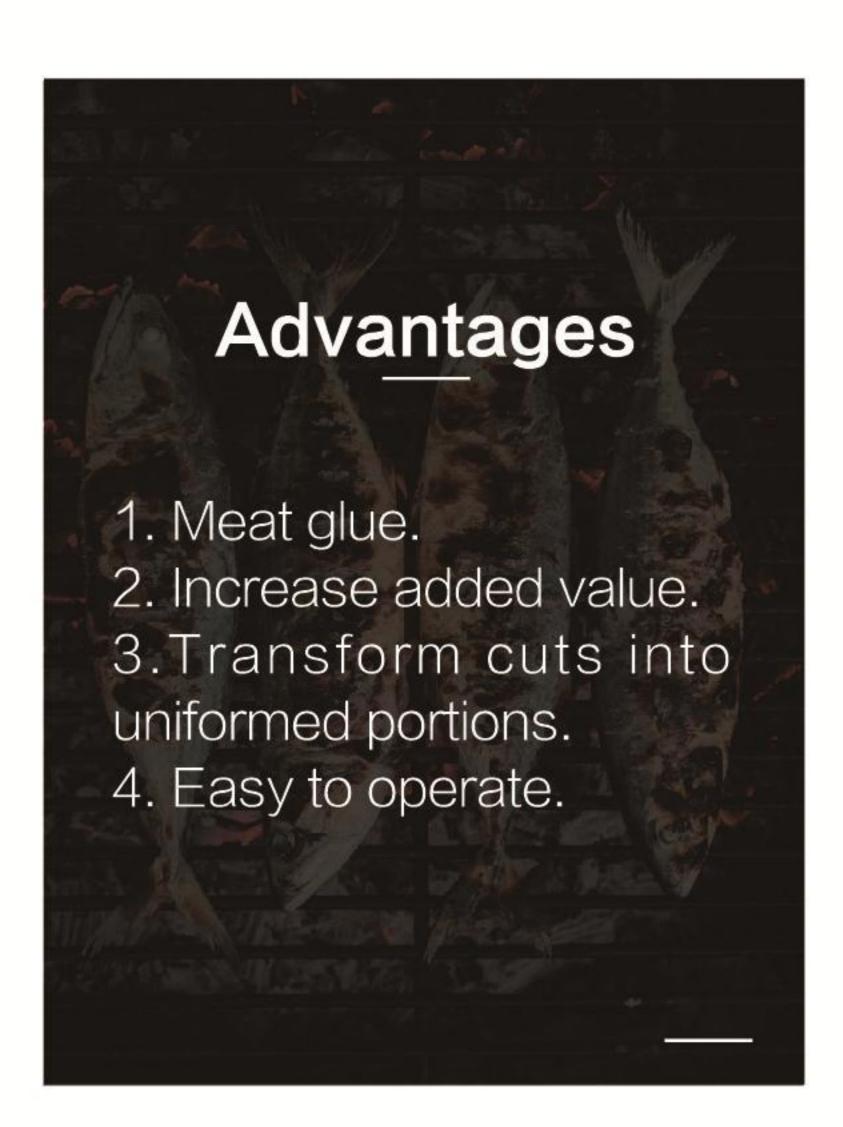
Beef, Pork, Poultry, Seafood





Beef, Pork, Poultry, Seafood





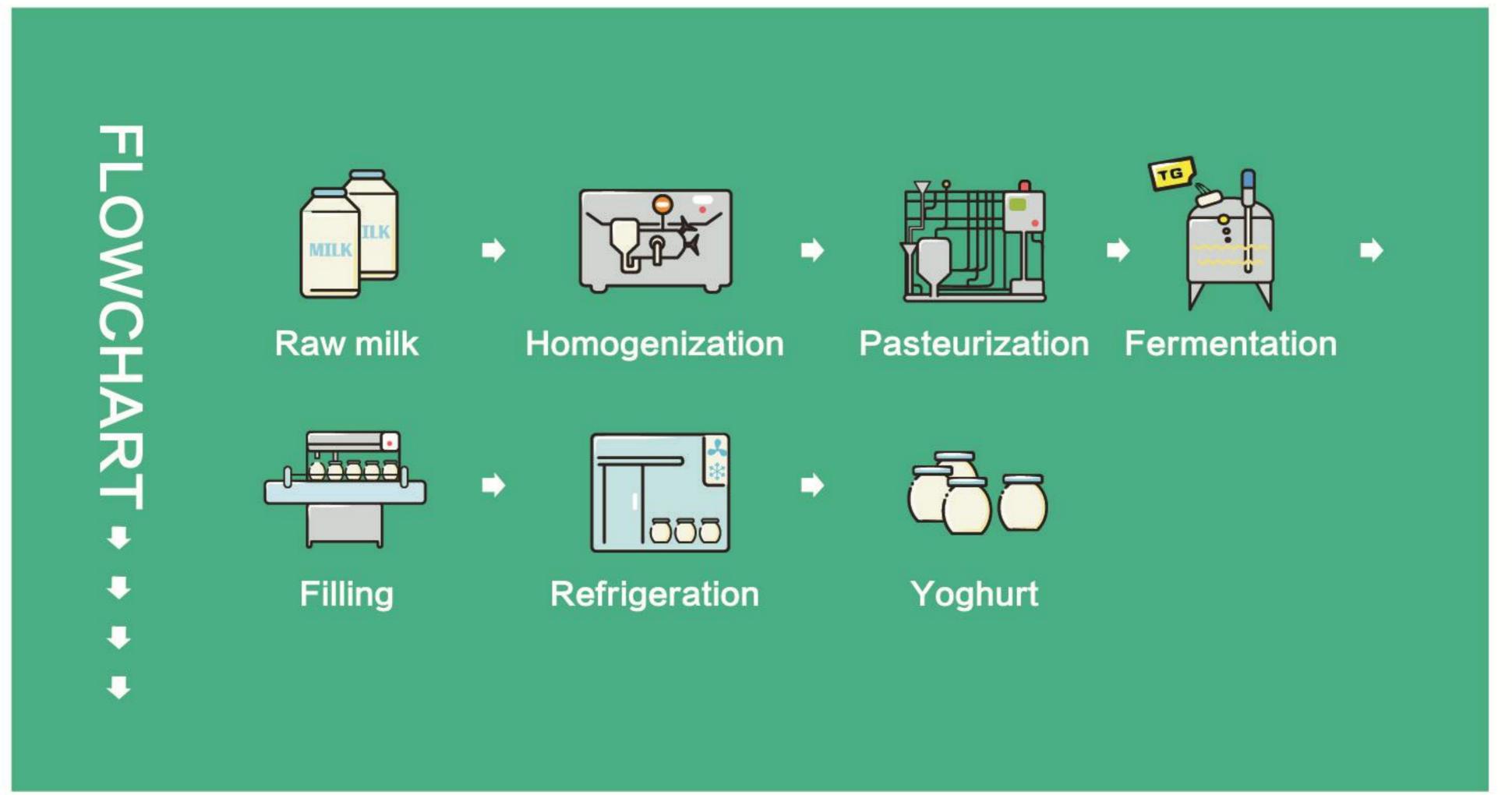
	Dosage	Process	Reaction Time
Deep-sea fish	0.5-1.0%	Dust TG directly	Refrigerate for 4 hrs
Beef/mutton roll	0.8-1.2%	Mix TG with water (1:5)	Refrigerate for 3 hrs
Beef/pork steak	0.8-1.2%	Mix TG with water (1:4)	Refrigerate for 3 hrs
Beef/mutton roll (high water retention)	1.0-1.4%	Mix TG with water (1:5)	Refrigerate for 2 hrs
Chicken/pork roll	2.0-2.5%	Mix TG with water (1:5)	Refrigerate for 3 hrs

03

— Dairy Products

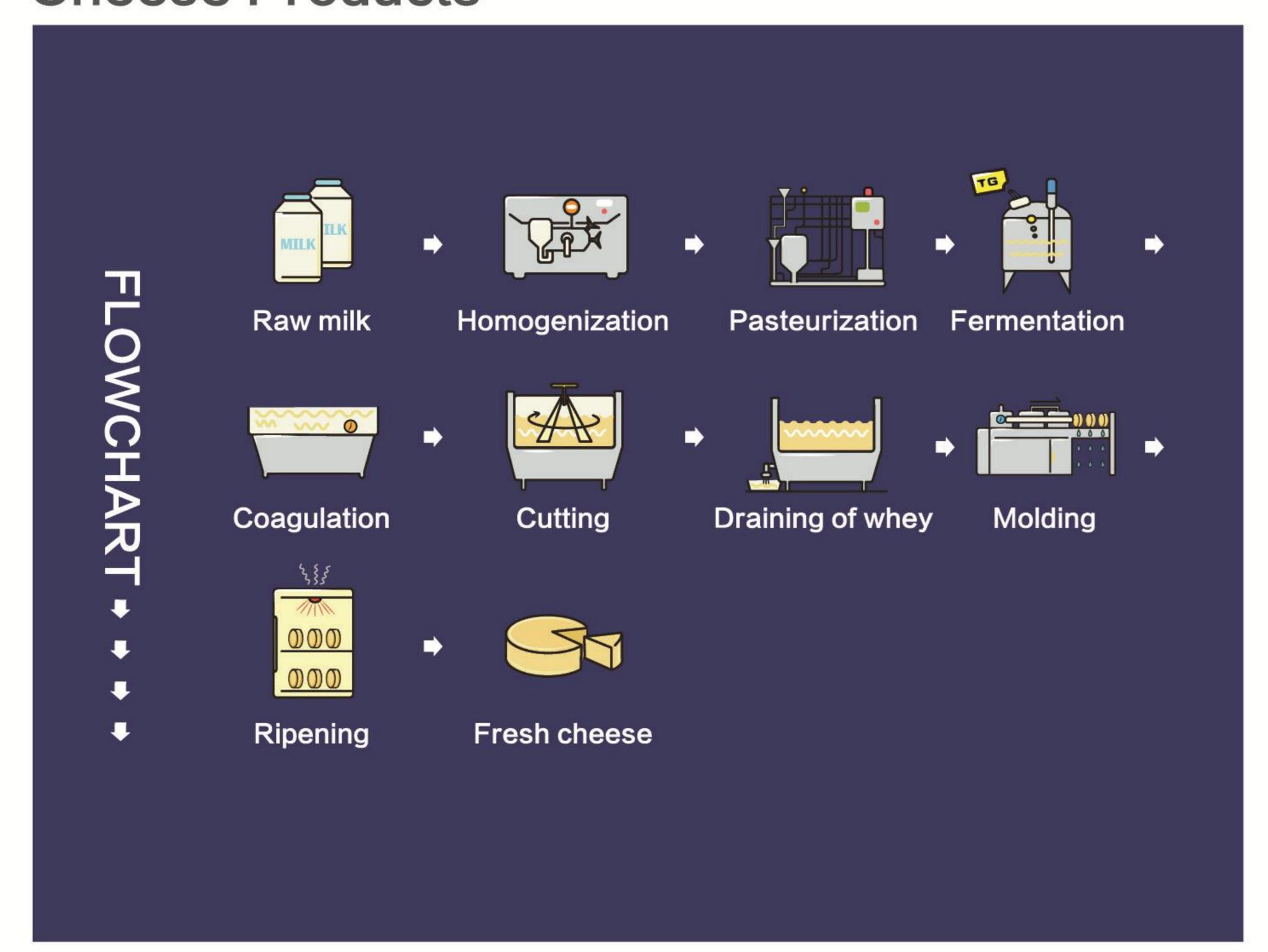
Applications	Model	Dosage	Process
Yoghurt	TG-N	0.01-0.03%	Add directly during fermentation
Cheese	TG-N	0.03-0.1%	Add directly during fermentation

Yogurt products



Advantages 1. Reduce syneresis. 2. Enhance gel strength. 3. Improve viscosity and consistency. 4. Reduce or replace emulsifiers or stabilizers. 5. Cut costs by reducing the addition of proteins or other additives.

Cheese Products



 Reduce syneresis. Increase yield by 10%-20%. Facilitate slicing process. Provide a better structure. Cut costs by reducing the addition of proteins or other additives. 	Advantages
	 2. Increase yield by 10%-20%. 3. Facilitate slicing process. 4. Provide a better structure. 5. Cut costs by reducing the addition of proteins or

— Rice and Flour Products





Recommendations

	Model	Dosage	Process
Frozen croissant HB-02		0.01%	Mix TG with flour
Frozen dough	HB-03	0.01%	Mix TG with flour
Noodles	GM-02	0.1-0.3%	Mix with salt or soda
Rice noodles GM-03		0.8-1%	Mix with salt or soda



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CURDLAN

INTRODUCTION





Curdlan is a kind of neutral and water-insoluble microbial exopolysaccharide with thermal-gelation property. It can be widely applied as a gelling agent in the food industry.

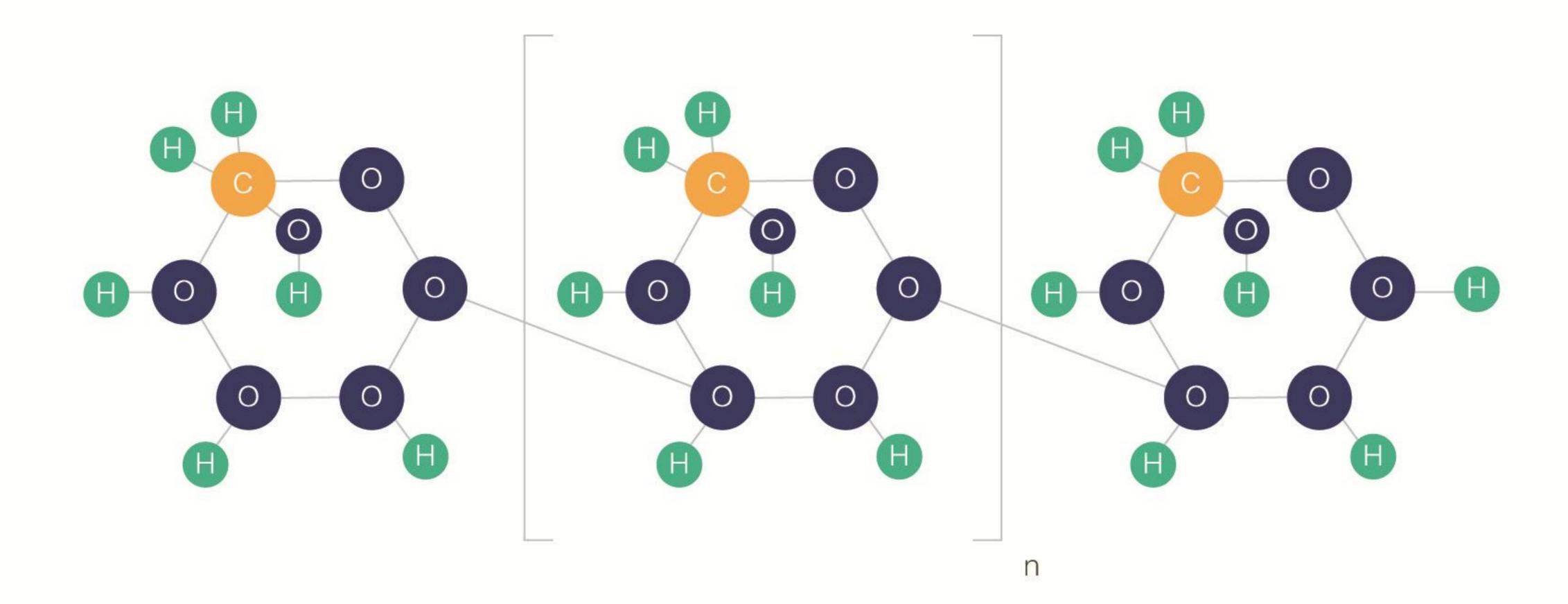


In 1996, FDA approved and allowed curdlan to be added directly in food as a food additive.



In 2006, curdlan got approval from Chinese government as a new food additive.

— — Molecular Structure — —



——Specification — —

Product Name: curdlan

CNS No.: 20.042

INS No.: 424

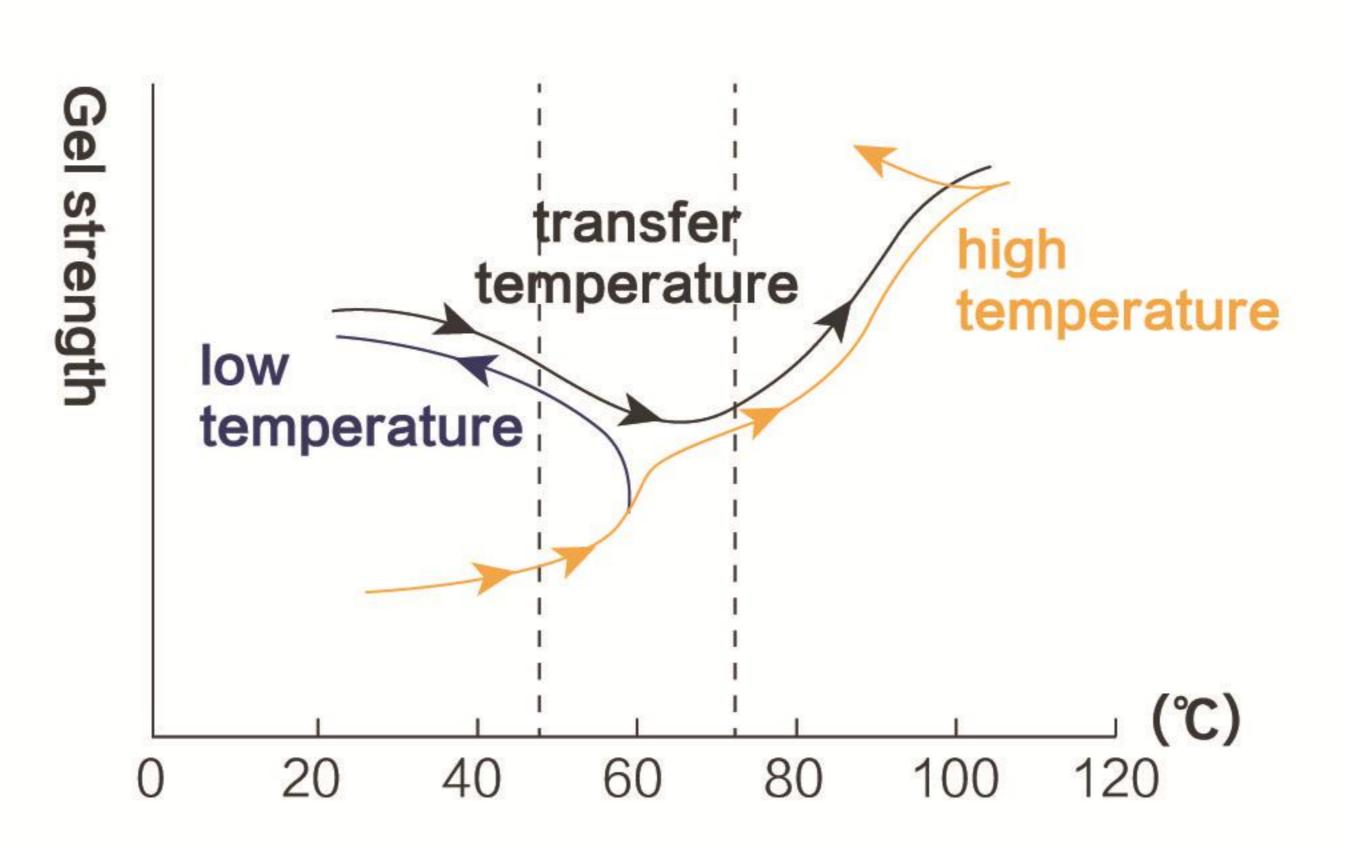
Function: stablizing agent, coagulating agent, thickening agent

JECFA Specification: curdlan (Beta-1,3-Glucan; INS No. 424)





— — Gelling Ability — —

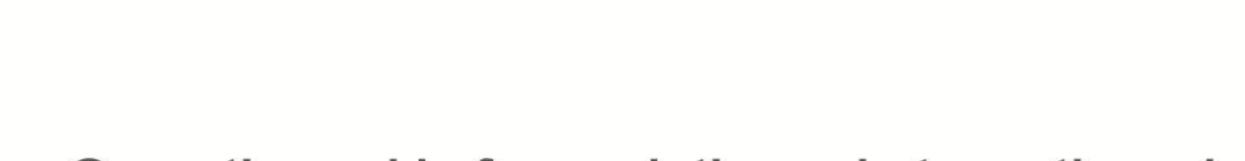


Curdlan can be transformed into various forms under different conditions.

- 1. Thermal-reversible gel (low gel strength): cool the curdlan suspension after heating it to 55°C
- 2. Thermal-reversible and pH-reversible gel (medium gel strength): add acid after dissolving curdlan in alkalinous solution
- 3. Thermal-irreversible gel (high gel strength): cool the curdlan suspension after heating it to 85℃

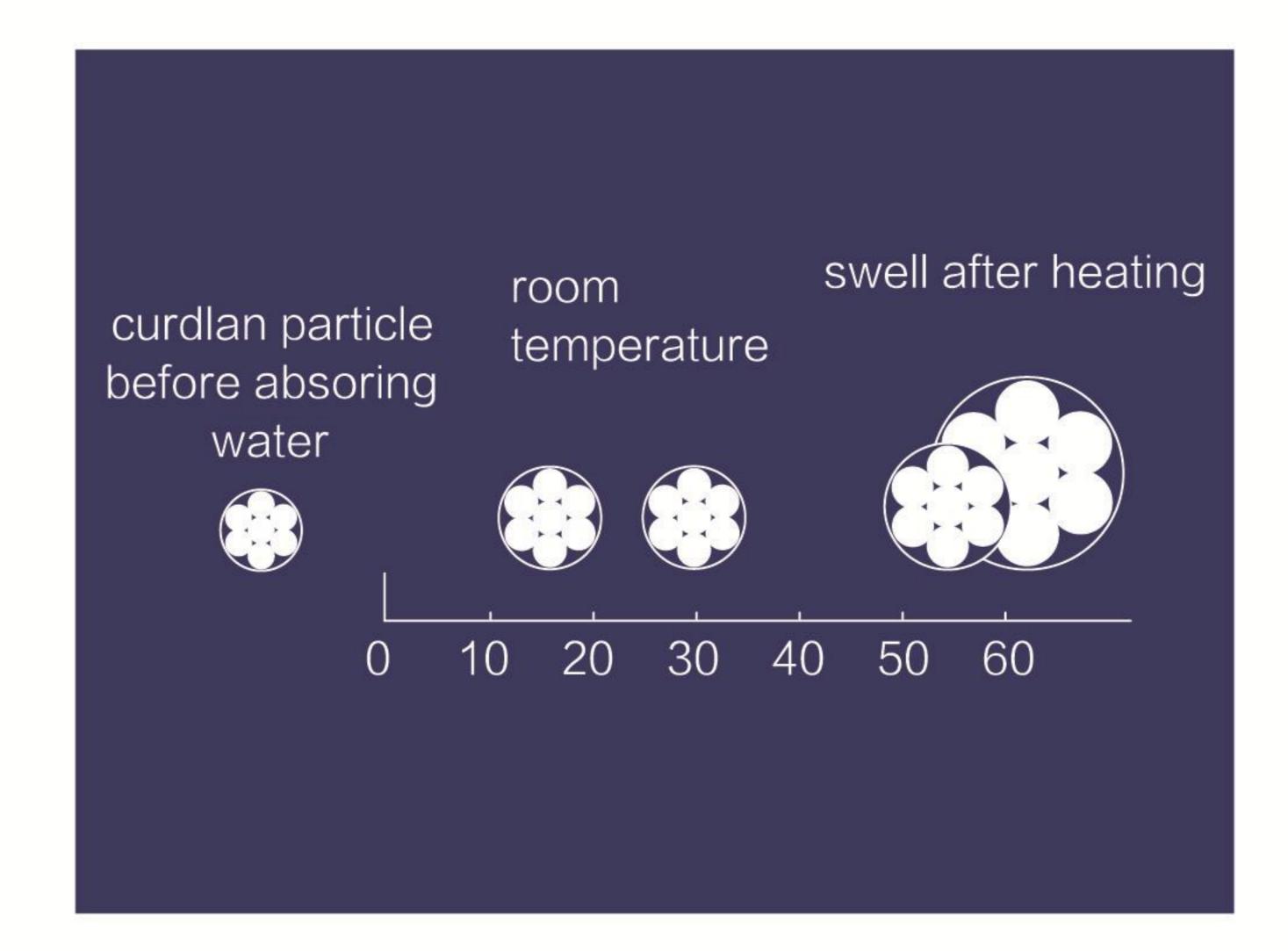
—— Strong Water-holding —— Capacity

The unique molecular structure can contain water molecules.



— Freeze-thaw Resistence — —

Once the gel is formed, the gel strength and dehydration rate will not be affected by freezing and thawing process.



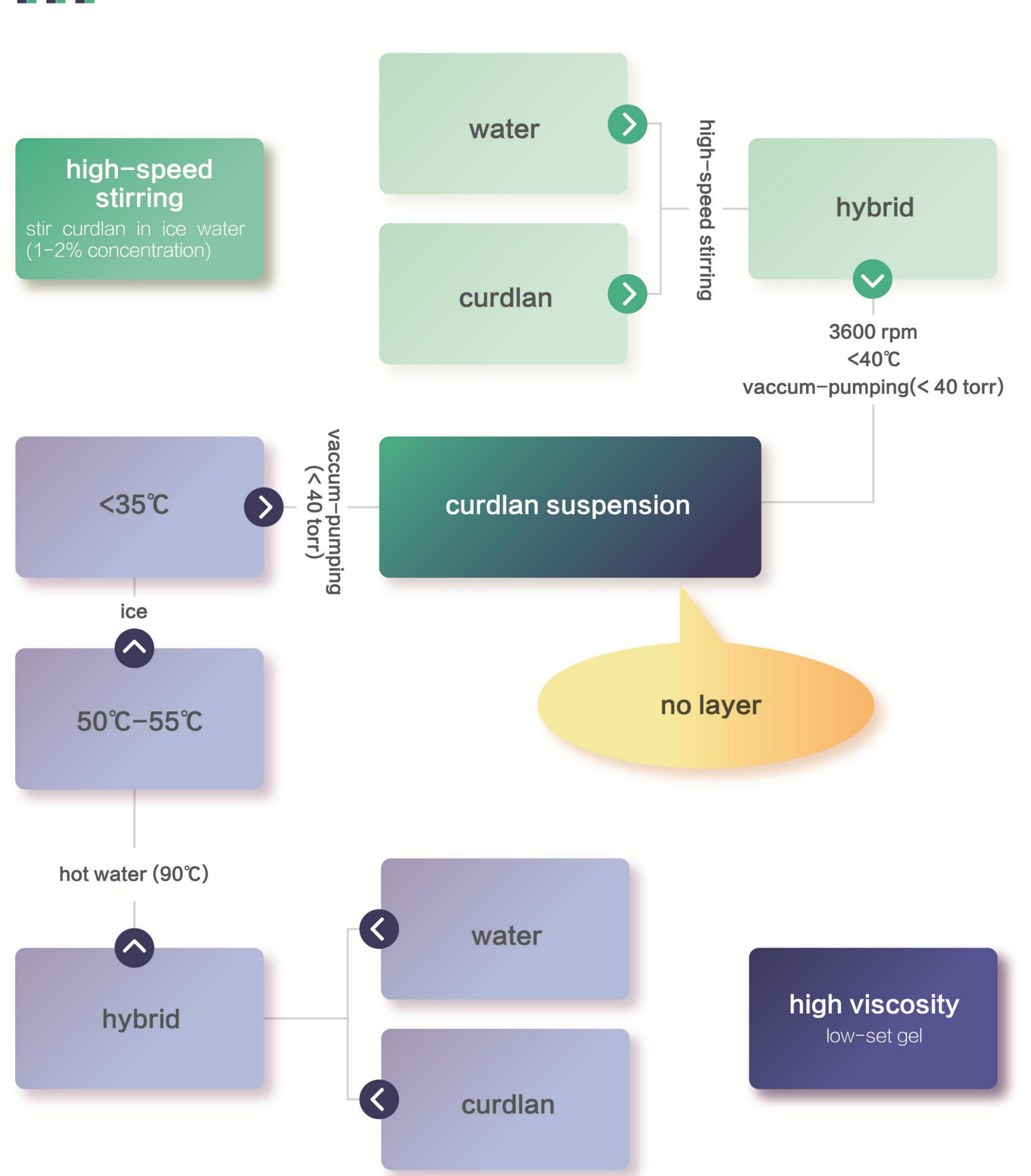


SUSPENSION

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Curdlan

PREPARATION



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Curdlan

COMPARISON AND APPLICATIONS

Comparison——

	Water -solubility		Conditions of forming gel			
		heating only	heating and cooling	adding ion	PH	Reversibility
curdlan	×				2-10	both
1- cbrrageenan	V				5-8	√
k-cbrrageenan	V		1)		>3.2	√
agar	V				5-8	V
high methoxyl pectin	V				2.7-3.2	V
low methoxyl pectin	V			● Ca ^{+*}	3.2-6.8	V
sodium alginate	V			● Ca ⁺ *	>4.3	V
gellan gum	V		2)		3.5-8	V
gelatin	V				5-8	V
albumen powder	V				6-8	×
whey protein	V				7-8	×
soy protein isolate	V				6-8	×
konjac flour	V				10-13	×

* soluable in cold water

1) add sugar

2) add ion (Na*, K*, Ca+* or Mg+*)

— — Application — —











Meat Products

Aquatic Products Wheaten Food

Snacks

Vegetarian Food

	Advantages	Dosage	Method
sausage	improve taste and prevent burst	0.3-0.5%	add directly
meat ball	improve taste	0.3-0.5%	add directly
ham	improve taste and yield	0.5-0.8%	inject
plant-based meat	improve taste	0.5-0.8%	add directly
rice and flour products	improve boiling resistance	0.1-0.3%	stir curdlan in raw material
instant coffee	improve stability of milk foam	2%	stir curdlan in raw material



E-POLYLYSINE

ε-POLYLYSINE

--- Introduction and Applications ---

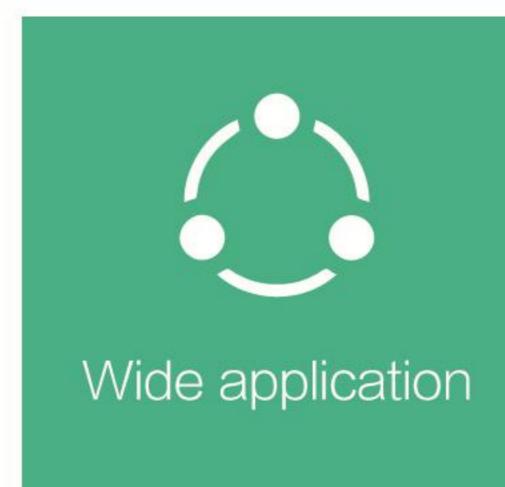
ε -Polylysine is a natural and safe antibacterial food preservative produced from microbial fermentation. It can inhibit gram-positive bacteria and gram-negative bacteria and yeasts.

— — Molecular Formula — —

— Advantages — —











— Product Category — —

ε -Polylysine (PL-00)

ε -Polylysine · citrate (PL-L0)

ε -Poly-L-lysine · HCl (PL-01)

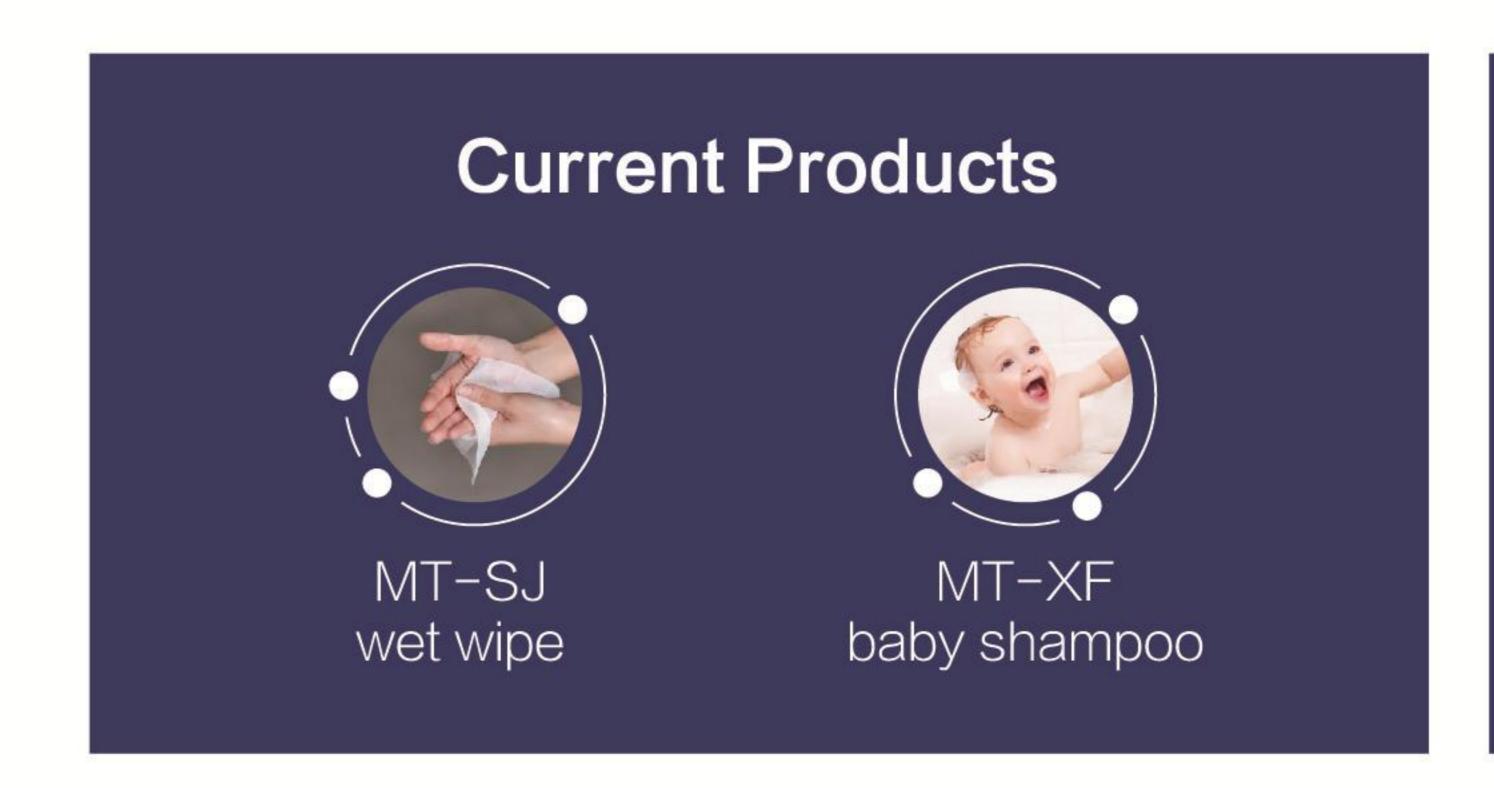
ε -Polylysine compound (PL-02, PL-03) (PL-04, PL-05)

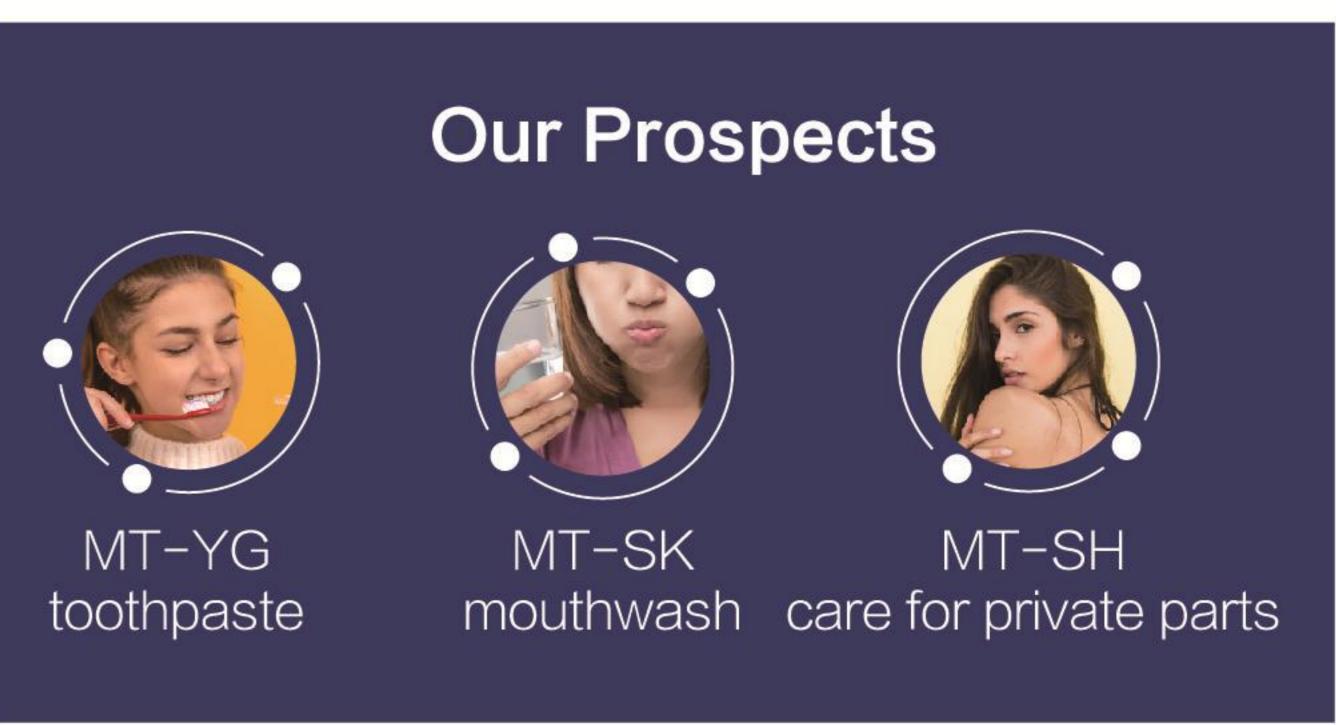
——PH Parameter Table——

	International Standard	PH
ε -Polylysine	International standard	9
ε -Poly-L-lysine · HCl	2.5-5.5	subject to COA
ε -Polylysine · citrate	2.5-5.5	subject to COA

— — Application — —

As a natural preservative, ε-polylysine gains attention in the field of chemicals for daily use. For now, Yiming Biotech's bacteriostatic solutions covering baby wipes and shampoo have entered the market and gained recognition.





Catalogue of Cosmetic Raw Materials Released — by Chinese Medical Products Administration — —

No.	Name	INCI Name	Highest Dosage for Rinsing Products	Highest Dosage for Products Lingering on Skin
03964	ε -Polylysine	POLYLYSINE	0.435	0.05

DATA SHEET

—— Products and Applications——

Applications	Model	Appearance	Ingredients	Method	Shelf Life	Effective on
sauce storage	PL-03	light-yellow powder	ε -Poly-L-lysine · HCI, natamycin, glycine	add directly		bacteria, yeast, mold
chilled meat fresh-keeping	R-02	light-brown liquid	ε -Poly-L-lysine · HCl, nisin, rosemary extract	spray and soak		bacteria, yeast, mold
marinated meat fresh-keep- ing	PL-04	creamy-white liquid	ε -Poly-L-lysine · HCl, flavoring essence	spray	12 months	bacteria, yeast, mold
	R-01	light-yellow liquid	ε -Poly-L-lysine · HCl, nisin, calcium lactate	spray	12 months	bacteria, mold
fruit and vegetable	PL-05	light-yellow powder	ε -Poly-L-lysine · HCl, potassium sorbate	add directly		bacteria, mold
fresh-keeping	R-03	transparent	ε -Poly-L-lysine · HCl, calcium propionate, glycine	spray		bacteria, mold

—— MIC of E-Poly-L-lysine · HCI——

Microbes	Strains	MIC (mg/kg)
	Staphylococcus aureus	78
gram-positive bacteria	Micrococcus luteus	2.5
	Bacillus subtilis	2.5
gram-negtive bacteria	Escherichia coli	10
grann neglive bacteria	Pseudomonas aeruginosa	39
yeast	Saccharomyces cerevisiae	10
mold	Aspergillus nige	250

——Comparison——

Preservatives	Effective on	Stability	Application
nisin	bacillus subtilis, gram-positive bacteria	stable under acidic conditions	baking, dairy and meat products, condiments, pickles
natamycin	mold, yeast, fungi	take effective between pH 3-9	sauce, juice, cheese, baking and meat products
ε -Polylysine	broad-spectrum bacteriostasis	resistence to heat and pH	resistence to heat and pH baking, meat and rice products, beverage, condiments, fruits and vegetables, chemical products for daily use



YIMING BIOTECH

—— GB2760 Standard for Use of E-Poly-L-lysine · HCI——

No.	Food Name	Maxmium Usage (g/kg)
04.0	beans, edible fungi, algae, nuts, seeds	0.3
4.01	fruits	0.3
4.02	vegetables	0.3
4.03	edible fungi, algae	0.3
4.04	bean products	0.3
4.05	nuts, seeds	0.3
6.02	rice, rice products	0.25
6.03	wheat flour, flour products	0.3
6.04	miscellaneous grain products	0.4
08.0	meat products	0.3
8.02	processed meat	0.3
8.03	cooked meat	0.3
8.04	edible animal casings	0.3
10.02	marinated eggs	0.5
12.0	condiments	0.5
12.02	flavor enhancer	0.5
12.03	vinegar	0.5
12.04	soy sauce	0.5
12.05	sauce	0.5
12.07	cooking wine	0.5
12.10	compound condiment	0.5
14.0	beverages	
14.04	carbonated drinks	0.2
14.05	tea, coffee, plant-based drinks	0.2
14.06	solid drinks	0.2
14.07	beverage for special purpose	0.2
14.08	flavor drinks	0.2
14.09	other beverages	0.2

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