

# Agar-Agar/Carrageenan Konjac gum/Solutions

## GREEN FUTURE FOOD HYDROCOLLOID MARINE SCIENCE COMPANY LIMITED

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### OUR SUBSIDIARIES

GREENFRESH(FUJIAN)FOODSTUFF CO., LTD.

FUJIAN PROVINCE LVQI FOOD COLLOID CO., LTD.

LVBAO(QUANZHOU)BIOCHEMISTRY CO., LTD.

SHIYAN HAIYI KONJAC PRODUCTS CO., LTD.

LONGHAI DONGHAIWAN SEAWEED BREEDING COMPREHENSIVE  
DEVELOPMENT CO., LTD.

LVQI(XIAMEN) MARINE BIOTECHNOLOGY CO., LTD.

LVQI BIOTECHNOLOGY (SHANGHAI) CO., LTD.

PT HONGXIN ALGAE INTERNATIONAL



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## ABOUT US

### A WELL-KNOWN AGAR AGAR AND CARRAGEENAN MANUFACTURER

Green Fresh Group is a hydrocolloid R&D and production enterprise invested by Hong Kong Green Future Food Hydrocolloid Marine Science Co., Ltd. in mainland China, specializing in the development of food colloids - carrageenan, agar, konjac gum and solutions. It was public listed on the main board of the Hong Kong Stock Exchange (Stock Code "01084HK").

The mainland headquarters of the group is located in Anshan Industrial Park, Zini Town, Longhai, Zhangzhou City, Fujian Province. It is a high-tech enterprise in the production and research of food colloids in China. For more than 20 years, in order to meet different levels of market demand, Green Fresh has actively integrated the production technology of hydrophilic colloids, introduced and developed advanced production equipment, and established a scientific and rigorous quality control system. According to reports from professional authoritative institutions, both our agar agar and Carrageenan ranked the top 1 manufacturer in the global market. The group selects high-quality seaweeds from pollution-free sea areas in the Philippines, Indonesia and Malaysia, through advanced processing technology and extraction. Our products meet the China national standard, the EU, the FDA and other standards.

Our instant agar, a deep-processed agar, with different Gel Strength and low dissolving temperature, is widely applied in different products including yoghurt, bakeries, confectionaries and etc. We are one of the instant agar manufacturers in the industry with a full industrial chain. From seaweed extraction to instant processing, with full traceability.



## EXPERIENCED TECHNICAL R&D TEAM PROVIDE CUSTOMIZED TEXTURE SOLUTIONS

Green Fresh has accumulated more than 20 years of technology and knowhow since was found, by cooperating with domestic and foreign universities and scientific research institutes, the group sustain its efforts in innovation and optimizing the utilization of seaweed.

Aside from providing high quality products, Green Fresh Group also provide onsite technical support to our customers, from recipe to end products, Green Fresh is ready for you.

## SOLUTIONS

Green Fresh Group has an experienced technical team and an independent R&D center, by using premium natural seaweed extracts and other high quality ingredients, with core values of providing high quality and safe products to the market, we provide different high end solutions to the food industry. Green Fresh Group has developed a series of solutions, covering different industries including meat, dairy, confectionary, frozen food, beverages, baking, sauces and other fields. We also provide customized solutions to customers.



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**OUR  
SUBSIDIARIES**





# 01.

## AGAR-AGAR ✓

The scientific name Agar is a hydrophilic colloid, which is available in powder and strips. It is insoluble in cold water and easily soluble in hot water. The agar color ranges from white to light yellow, with a gel texture, odorless or slightly marine odor. The US Food and Drug Administration lists agar as a generally recognized as safe product (GRAS). As one of the strong gelling agents, agar is widely used in the food industry, such as suspending agents, thickeners, stabilizers and clarifiers. Soft candies made from agar have a refreshing taste and high transparency that is better than normal jelly. In biomedicine, it can be used as a carrier, a laxative and a microorganism culture medium.

Green Fresh Group's agar is made from selected high-quality natural seaweed Gracilaria, and Gelidium, and uses scientific methods to extract the natural polysaccharides. Agar is widely used in food industry, pharmaceutical industry, personal care industry, biological engineering and other fields.

### Green Fresh Agar Products

1. Q series (high strength agar): gel strength 700-1300
2. QS series (low strength agar): gel strength 50-600



# 02.

## INSTANT AGAR ✓



### Features:

1. From Gracilaria cultivation to agar extraction then to instant agar, quality is well controlled and the product is traceable as we involved in the whole industrial chain.
2. Broad product portfolio, gel strength from 100-800 (g/cm<sup>2</sup>).
3. Easy to disperse in cold water, suitable for the cold process, saving energy and reducing costs.
4. The dissolution temperature is low and the dissolving speed is fast. Dissolve quickly after shearing at 70°C for 5 minutes.
5. Good stability, strong water retention, refreshing and delicate, excellent flavor release.
6. Non-GMO, HALAL certification, Kosher certification, no allergens.
7. Natural from seaweed, high-quality dietary fiber, clean label.



# 03.

## CARRAGEENAN



It is mainly obtained from the seaweeds of the red algae, such as the Chondrus ocellatus, Kappahycus Alvarez and Eucheuma cottonii. The color is generally of white or light yellow powder, odorless and tasteless. Carrageenan has good water solubility, and can be completely dissolved at 80°C to form a thermally reversible gel, that is, the gel is heated to melt into a solution, and the gel can be formed when the solution is cooled.

Carrageenan has a long history as a natural food additive. It is a harmless plant soluble fiber that will not be digested by the human body. It has excellent characteristics such as gelation, thickening, emulsification, film formation, and stable decomposition. When carrageenan is used together with other food gums (locust bean gum, konjac gum, etc.), it can have a significant synergistic effect, improve its gel properties, and increase its elasticity and water retention.

As a gelling agent, thickener or suspending agent, carrageenan is widely used in soft candy, jelly, beverages, meat products, dairy products, bakery and sauce products. Because its total dietary fiber content is nearly 70%, it is also commonly used in functional foods.

Green Fresh Group selects high-quality seaweed from the natural and non-polluted seas such as the Philippines, Indonesia and Malaysia, and produces high quality products through advanced processing technology and extraction technology. The quality fully meets the requirements of national standards, EU standards and other domestic and foreign standards.

### Green Fresh Carrageenan Products:

1. Kappa refined
2. Kappa semi-refined
3. Iota refined
4. Iota semi-refined
5. MZ semi-refined granule (wort clarificant)



# 04.

## KONJAC GUM

Konjac is derived from plants and is usually used in food products such as vegetarian and meat substitutes, dairy products, beverages, noodles, jellies, puddings, desserts, and meat products. Because of its thickening, gelling, water-holding and water-retaining properties, it can prevent the loss of juice in meat products, make the meat texture firm, and extend the shelf life; in jelly products it can form elastic texture when combined with carrageenan. Konjac products include konjac gum and konjac flour (with different transparency and purity).

### Green Fresh Konjac Products:

1. MJ Konjac fine flour series
2. HW Konjac superfine flour series
3. HJ Konjac gum Series
4. Low viscosity Konjac gum superfine flour Series







# 05.

## VEGAN SOFT CANDY ✓

### Features:

1. Good fluidity, easy pouring for molding and demolding, good transparency.
2. Refreshing and non-sticky to teeth, different products have a different texture.
3. Product with elasticity (Q), toughness, fleshy, fruity and others are unique and cost-effective.
4. Product has good infusion with starch and can decrease the setback of starch.
5. Suitable for various types of innovative soft candy. For example, soft candy with a large center filling, soft candy on a stick, soft candy with functional ingredients, etc.

### Product Type:

1. General soft candy powder, suitable for machine and manual operation, with good elasticity and high transparency.
2. Acid stable soft candy powder, contributes a different mouthfeel, with acid stability and good water retention.
3. Neutral fruit and vegetable soft candy powder.
4. Crystal soft candy powder contributes to a unique juicy mouthfeel and high water retention, which is deformation resistant under high temperatures.

# 06.

## JELLY / PUDDING ✓



### Features:

1. Good elasticity and transparency, good water retention.
2. Easy to handle, cost-effective, suitable for various processes.
3. The jelly powder melts in the mouth, with no synaeresis, and has a unique taste.
4. The pudding is soft and smooth, with no synaeresis, delicate taste and long shelf life.

### Product Type:

1. Instant jelly.
2. High transparency, high elasticity jelly.
3. High elasticity jelly.
4. Suckable jelly.
5. Pudding powder, two-layer jelly.
6. Tender jelly.





# 07.

## MEAT PRODUCTS ✓

### Products:

Injection products attributes

1. Low viscosity in solution.
2. Fine particles (smaller than 100  $\mu\text{m}$ ).
3. Easily dispersed in solution.
4. Low thermal viscosity.
5. Forms a hard and elastic gel, low syneresis.

### Tumbling and chopping products attributes

1. Appropriate for thickening, gelling and emulsifying.
2. Synergy with meat protein, starch and soy protein isolate.
3. Contributes to better product texture and water retention, reduces water loss in cooking.

### Thermal irreversible products attributes

1. Better thickening and emulsifying properties.
2. Forms elastic thermal irreversible gel.
3. Synergy with meat protein and starch.
4. Contributes to chewy, elastic and crispy products with better mouthfeel and slicing performance.
5. Prevents starch retrogradation, increases cooking resistance.
6. Improves product quality, saves cost.

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# 08.

## DAIRY PRODUCTS ✓

### Features:

1. Refreshing mouthfeel, smooth and delicate, thick but not sticky, good flavor releasing.
2. Improves thermal stability.
3. Prevents whey separation.
4. Extends product shelf life.

### Products:

1. Set yoghurt
2. Stirred yoghurt



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# 09.

## MILK BEVERAGE

### Features:

1. Improves thermal stability.
2. Prevents synaeresis effect.
3. Prevents separation and precipitation, extends shelf life.
4. Contributes to a fresh flavor, moderate viscosity and a rich mouthfeel.

### Products:

1. Formulated milk beverage
2. Fermented milk beverage

# 10.

## DRINKS

### Features:

1. Pleasant mouthfeel, refreshing not sticky, and strong flavor releasing properties.
2. Good suspension properties, strong thermal and emulsion stability, no separation, and longer shelf life.
3. Applicable to UHT or two-step sterilization.

### Products:

1. Plant protein drink
2. Fruit juice drink
3. Fruit flavor drink
4. Suspension beverage

# 11.

## SAUCE

### Features:

1. Jam powder contributes to a good mouthfeel, while not sticking to the mouth.
2. Ketchup powder is acid stable, has a longer shelf life and no synaeresis effect.
3. Baking jam is stable during for high temperature baking, is spreadable, easy to spread, and is suitable for various processes.

### Products:

1. Jam
2. Tomato ketchup
3. Baking jam



# 12.

## KANTEN PEARL BEADS

### Features:

1. Provide firm, chewy and elastic texture.
2. Good transparency.
3. Heat stable under pasteurization.





# 13.

## ICE-CREAM

### Features:

1. High emulsifying performance, high dispersion of oil, high stability, prevents whey separation.
2. Contributes to a good puffing effect, high aeration rate, and increased yield.
3. It defers the formation of ice crystals, has good anti-freezing performance, extends shelf life.
4. High viscosity, smooth structures, delicate and soft texture.

### Products:

1. Ice pop 2. Ice cream 3. Ice lolly



# 14.

## POPPING BEADS

### Features:

1. Acid stable.
2. Heat stable under pasteurization.
3. Suitable for fruits.
4. Excellent mouthfeel.



# 15.

## KONJAC ENHANCING PRODUCTS

### Features:

1. It has a strong synergistic thickening and gel effect with konjac gum.
2. It can enhance the hardness, elasticity and water retention of konjac products, and improve the yield.
3. It can reduce production cost by replacing part of konjac gum, and improve the quality of konjac products.





# 16.

## BAKING PRODUCTS ✓

### Features:

1. Functions of water retention, emulsification, shaping and taste improvement.
2. Provide a soft texture and enhance mouthfeel.
3. Extend product aging and hence extend product shelf life.
4. Improve product quality and cost effective.

# 17.

## PET FOOD SOLUTIONS ✓

### Features:

1. High gel strength, high water retention and good transparency.
2. Improve the product thermostability, water holding ability and shape holding ability.
3. Good adhesive ability, easy for animals to lick, good palatability.

### Application:

1. Gel-type canned pet food.
2. Pet pudding and etc.



# 18.

## BIOTECH AND MEDICINE

### LOW EEO AGAROSE

### Features:

1. Selected raw materials to ensure high quality.
2. Low soluble temperature, easily dissolved, easily recycled.
3. High gel strength, easy to use.
4. High resolution, clear bands and easy to separate.
5. Professional service.
6. High quality, cost effective.



# 19.

## MICROBIOLOGICAL AGAR ✓

### Features:

1. Stable source.
2. Low turbidity, easy to observe.
3. High gel strength, easy to use.
4. Low soluble temperature, easy to dissolve.
5. Provide customization.

### Application:

Biochemistry, micro-organism culturing.





# 20.

## INNOVATIVE PRODUCTS KA80LM CARRAGEENAN

### Description:

KA80LM carrageenan is a new type of high-grade hydrophilic colloidal product developed by using seaweed and konjac as raw materials through “one-pot” extraction, molecular reorganization, and synergistic co-precipitation. This product overcomes the barrier of product transparency caused by the use of konjac gum, at the same time, the molecular reorganization technology also maximizes the synergy between carrageenan and konjac gum, resulting in high water retention and high gel Strength; also solves the problem that konjac gum is easy to agglomerate and insoluble in aqueous solution.

### Features:

1. High gel strength.
2. High water retention.
3. High transparency.
4. Quick dissolve.
5. Different product grades (viscosity, strength optional) tailor-made products according to customer needs, creating unique competitive advantages for customers' products.

### Application:

1. Jelly
2. Soft Candy
3. Beverages
4. Medicines and health products
5. Meat products
6. Substitute to blends of LBG and carrageenan



## PG GUM BLENDS

# 21.

### Description:

1. Use as a gelling agent. It is Seaweed Active Polysaccharide, a natural skin care ingredient.
2. High transparency, high elasticity.
3. It is a mild and non-irritating product for the skin.

### Products:

Hydrogel Mask, Amino Acid Jelly Soap and etc.

