

*Purely
Sea Weeds*



Prasmo Agri
(A Unit of Skywin)



www.prasmoagri.com

CARRAGEENAN





Prasmo Agri is engaged in promoting the sea plant farming through fisher communities currently in Tamil Nadu. The promoter has signed an MOU with CSMCRI(CSIR), Bhavnagar, Gujarat for a patented technical knowhow for Kappaphycus cultivation and process of value added products that have application in a variety of industries such as Food and non-food Processing, Agriculture etc...

Carrageenans are a family of linear sulphated polysaccharides that are extracted from red edible seaweeds (Kappaphycus alvarezii). They are widely used in the food industry, for their gelling, thickening, and stabilizing properties. Their main application is in dairy and meat products, due to their strong binding to food proteins. Carrageenan is also a vegetarian and vegan alternative to gelatin in some applications, in some instances it is used to replace gelatine in confectionery. In the meantime, carrageenan is considered a dietary fibre technically.

There are three main varieties of carrageenan, which differ in their degree of sulphation.

- 1) Kappa-carrageenan has one sulphate group per disaccharide.
- 2) Iota-carrageenan has two sulphates per disaccharide.
- 3) Lambda carrageenan has three sulphates per disaccharide.

As for properties, Kappa forms strong, rigid gels in the presence of potassium ions; it reacts with dairy proteins. It is sourced mainly from Kappaphycus alvarezii. Iota forms soft gels in the presence of calcium ions. It is produced mainly from Eucheuma denticulatum. Lambda does not gel, and is used to thicken dairy products. All of them are soluble in hot water, but in cold water, only the lambda form (and the sodium salts of the other two) are soluble. When used in food products, carrageenan has the EU additive E-number E407 or E407a when present as "processed eucheuma seaweed".

Depending on the mode of production we can obtain refined or semi-refined (PES) carrageenan. Kappa Semi Refined Carrageenan obtained through mild alkali treatment of dried Kappaphycus alvarezii and followed by repeated fresh water washing. The processed wet product is dried thro fluidized bed dryer for getting quality product.

It is an yellowish or tan to white, coarse to fine powder that is practically odourless and is a palatable mucilage material. It has the unique ability to form an almost infinite variety of gels at room temperature, rigid or compliant, tough or tender with high or low melting point.

There is no one universal product in the form of pure carrageenan or carrageenan blend suitable for all products. Carrageenan should be selected for a particular type of product based on its recipe composition ,especially protein content, productivity, expected sensory qualities such as hardness, brittleness, slice binding, etc.

Commercial carrageenan products are frequently standardized for obtaining optimal gelling and thickening properties. In addition to offering standard types, Prasmo Agri works in conjunction with customers to develop new products and formulations for specific applications.

We have a team of experienced and competent specialists who continuously develop and create ways of expanding in various applications that truly live up to its aim of exploring a world of possibilities.

TYPICAL MILK (DAIRY) APPLICATIONS OF CARRAGEENAN

Use	Function
Ice cream, ice milk	Whey prevention Control meltdown
Chocolate, eggnog, fruit-flavored	Suspension, bodying
Fluid skim milk	Bodying
Filled milk	Emulsion stabilization bodying
Creaming mixture for cottage cheese	Cling
Chocolate, etc.	Suspension, bodying
Controlled calorie	Suspension, bodying
Evaporated	Emulsion stabilization
Infant formulations	Fat and protein stabilization
Cooked flans or custards	Gelation
Cold prepared custards (with added TSPP)	Thickening, gelation
Pudding and pie fillings (starch base)	
Dry mix cooked with milk	Level search gelatinization
Ready-to-eat	Syneresis control, bodying
Whipped cream	Stabilize overrun
Aerosol whipped cream	Stabilize overrun stabilize emulsion
Instant breakfast	Suspension, bodying
Shakes	Suspension, bodying, stabilize overrun
Yogurt	Bodying, fruit suspension

TYPICAL WATER APPLICATIONS OF CARRAGEENAN

Use	Function
Dessert gels	Gel Formation
Low-calorie Jellies	Gel Formation
Pet-foods (canned)	Fat stabilization, thickening, suspending gelation
Fish gels	Gel Formation
Syrups	Suspension, bodying
Fruit drink powders and frozen concentrates	Bodying Pulping effects
Relishes, pizza, barbecue sauces	Bodying
Imitation milk	Bodying, fat stabilization
Imitation coffee creams	Emulsion stabilization
Whipped toppings (artificial)	Stabilize emulsion, overrun
Puddings (nondairy)	Emulsion stabilization
Air-treatment gels	Gel Formation
Toothpastes	Binding Agent
Lotions	Bodying, emollient
Suspensions (industrial)	Suspension
Dispersions	Suspension, dispersion
Water-based paints	Suspension, flow control emulsion stabilization
Beverages	Clarifying Agent

List of Applications

- Beverages
- Capsules
- Cosmetics
- Confectioneries
- Chocolate
- Dairies
- Ice Creams
- Pet Foods
- Processed Meat
- Toothpaste



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Kappaphycus technology patented by : (CSMCRI)
(US Patent No. 6893, 479 /
EP Patent No. 1534757 IND Patent No. 224938)