

FOOD ADDITIVE		2009/5/14
QUALITY SPECIFICATION		
Product	CARRAGEENAN HGE-I	
Manufacturer	MSC CO.,LTD.(KOREA)	
Importer	MARINE SCIENCE CO.,LTD.	
Summary	<p>HGE-I is Kappa-type fine particle size refined carrageenan extracted from red algae (Kappaphycus alvarezii).</p> <p>It is taste-less and no-smell natural polymeric hydrocolloid.</p> <p>HGE-I is classified to Potassium type carrageenan which has high gel strength and protein reactions.</p>	
Characteristics	<p>①HGE-I is fine mesh product for stabilizer of meat products.</p> <p>②HGE-I have high water solubility, it better to use cold water, or mix with solid material like sugar for safety dispersion.</p> <p>③HGE-I have strong reaction of positive ions, gel strength is easy to control by minerals as K⁺, Ca⁺⁺, Mg⁺, Na⁺.</p> <p>④HGE-I have synergistic effect with carob beangum which can be produce elasticated high gel strength gel with low syneresis.</p> <p>⑤HGE-I also have reaction with water soluble protein, it is available to make gel by lower usage HGE-I with protein.</p> <p>⑥HGE-I is good for injection to meat products.</p>	
Expiration Date	unopened	24 months from date of manufacture (Storage at dry and cool room)
	opened	30 days(Storage at dry and cool room)
Package	Outer	Woven cloth laminated paper bag
	Inner	Low-density Polyethylene bag for food (20 kg × 1 bag)
Ingredients labeling	Carrageenan	
Information of Material		
GMO material	No use the GMO materials and their processed.	
Allergen material	No use the materials of rice, crustacean and the product origin including the 25 items is assigned by Japan	
Bovine original	No use the materials origin livestock meats including brain, eye, spinal cord, and around bowel	
Agricultural chemical residual	Never used agrichemicals. or We would ensure standard value based of the Food hygiene law	
Unapproved Ingredient	No use the unapproved Ingredient in Japan.	
Product specifications		
Standardize Items	Specifications	Analysis method
Type of Carrageenan	Kappa type	
Appearance	White or Light gray powder	Japanese standard of Food additive 'Refined carrageenan'
Particle size	Pass 200 mesh more than 98 %	Passed JIS Standard sieve
Loss on dry	Less than 12.0 %	Japanese standard of Food additive 'Refined carrageenan'
pH	8.0 ~ 10.0	1.5% sol. at 60°C, pH meter
Viscosity	40 ~ 80 mPa·s	1.5% sol. at 75°C
Water gel strength	200 ~ 400 g/cm ²	1.5% sol. at 20°C, Rheo meter
Salt gel strength	900 ~ 1,200 g/cm ²	1.5% + 0.2% KCL sol. at 20°C, Rheo meter
Milk gel strength	200 ~ 300 g/cm ²	0.5% + 10% skimmed milk 20°C, Rheo meter
Plate coliform count	Less than 3,000 cfu/g	Japanese standard of Food additive 'Refined carrageenan'
Coliform	Negative	Japanese standard of Food additive 'Refined carrageenan'
E.coli	Negative	Japanese standard of Food additive 'Refined carrageenan'
Yeast & Mold	Less than 100 cfu/g	Japanese standard of Food additive 'Refined carrageenan'
Sulfate	18.0 ~ 24.0 %	Japanese standard of Food additive 'Refined carrageenan'
Acid insoluble	Less than 2.0 %	Japanese standard of Food additive 'Refined carrageenan'
Ash	15.0 ~ 40.0 %	Japanese standard of Food additive 'Refined carrageenan'
Ash acid-insoluble	Less than 1.0 %	Japanese standard of Food additive 'Refined carrageenan'
Lead(as AS ₂ O ₃)	Less than 5.0 μ g/g	Japanese standard of Food additive 'Refined carrageenan'
Arsenic(as AS ₂ O ₃)	Less than 2.0 μ g/g	Japanese standard of Food additive 'Refined carrageenan'
Heavy metal(as Pb)	Less than 20.0 μ g/g	Japanese standard of Food additive 'Refined carrageenan'