



Marinalg Statement on the Safety of Carrageenan in Food

“Carrageenan is a widely tested food additive that has been safely used in foods for hundreds of years. Carrageenan has numerous functional benefits including protecting the structure and stability of food, thickening foods to ensure a desired consistency and texture that consumers have come to expect, aiding in fat removal, and adding to shelf-life” according to Nicholas Gardner, General Manager of Marinalg International.

Carrageenan is a soluble fiber that comes from red seaweed and is a natural food ingredient. It is used in many common foods, and can be a replacement for animal-based products, like gelatin, which is extracted from animal byproducts. Carrageenan is an accepted ingredient for vegan, Halal and Kosher diets and is approved for use in organic foods. With its long history of safe use, there is no credible evidence that food-grade carrageenan causes harm to human health.

Misunderstandings about the safety of carrageenan are a result of a number of factors. Some have mischaracterized carrageenan as another substance, poligeenan, which, unlike carrageenan, is produced using an aggressive process and strong acids. Poligeenan is a distinct substance from carrageenan and is never used in food.ⁱ Other studies have used quantities of carrageenan many times the amount a person would ever consume. To accurately understand risk from dietary consumption, studies must closely replicate the conditions under which a substance could be consumed in food because many common substances, even water, can be harmful in large enough amounts. Lastly, and perhaps most importantly, there is a misconception that carrageenan is absorbed into the body during digestion. Scientific evidence shows that carrageenan is excreted from the body without being absorbed,ⁱⁱ and that there is no risk it will cause inflammation of the digestive tract or other negative health effects.

While these misconceptions have led some to question the safety of carrageenan, the overwhelming weight of the scientific evidence confirms the safety of carrageenan used in food. All dietary studies intended to simulate the conditions of actual human consumption of carrageenan have found carrageenan to be safe. Long-term studies of rodents and primates fed carrageenan (including infant baboons) found no indication of harm, carcinogenicity, or negative effects from carrageenan on the intestinal tract or other organ systems in test animals.ⁱⁱⁱ Regulatory bodies around the world, including those in the United States, Europe, China, Japan and Brazil, have reviewed the studies on carrageenan and have determined that carrageenan is safe for use in food.

The Joint FAO/WHO Expert Committee on Food Additives (JECFA), the expert body that evaluates food additives used around the world, has continually upheld the safety of carrageenan

for use in food. At its most recent meeting in June 2014, JECFA undertook a review of carrageenan for use in infant formula as specific data is needed to demonstrate the safety of a substance when it is used in products intended for infants under 12 weeks. According to the JECFA “Summary and Conclusions” document, **“The Committee concluded that the use of carrageenan in infant formula or formula for special medical purposes at concentrations up to 1000 mg/L is not of concern”** (emphasis theirs). The document also stated that the “Committee also took account of the previous toxicological database on carrageenan, which did not indicate other toxicological concerns,” indicating the safety of carrageenan in all foods.^{iv}

Marinalg member companies produce the highest quality carrageenan for use in foods, and consumers can be assured of the safety of food-grade carrageenan in the products they consume.

About Marinalg:

Marinalg International is a global organization supporting the interests of seaweed farmers, consumers and the hydrocolloids industry. Marinalg supports the dissemination of sound science and technical expertise related to the safety and efficacy in the production and use of hydrocolloids from seaweed farms to family tables. Marinalg represents the regulatory interests of the seaweed-processing industry before various international bodies such as Codex Alimentarius, and national regulatory authorities including the European Food Safety Authority, the U.S Food and Drug Administration and the U.S. Department of Agriculture. More information is available at www.Marinalg.org.

ⁱ Cohen SM, Ito N. A critical review of the toxicological effects of carrageenan and processed Eucheuma seaweed on the gastrointestinal tract. *Crit Rev Toxicol* 2002;32:413-44.

ⁱⁱ Uno Y, Omoto T, Goto Y, et al., (2001) Molecular weight and fecal excreted quantity of carrageenan administered to rats in blended feed. *Japanese Journal of Food Chemistry* 45(1):98-106;

ⁱⁱⁱ McGill HC, Jr., McMahan CA, Wigodsky HS, Sprinz H. (1977) Carrageenan in formula and infant baboon development. *Gastroenterology* 73:512-517; Rustia M, Shubik P, Patil K. Lifespan carcinogenicity tests with native carrageenan in rats and hamsters. *Cancer Lett* 1980;11:1-10 ; Cohen SM, Ito N. A critical review of the toxicological effects of carrageenan and processed Eucheuma seaweed on the gastrointestinal tract. *Crit Rev Toxicol* 2002;32:413-44.

^{iv} Joint Expert committee on Food Additives (JECFA) 2014. Seventy-ninth meeting Geneva, 17–26 June 2014 Summary and Conclusions. <http://www.who.int/foodsafety/publications/Summary79.pdf?ua=1>