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Safety of Carrageenan

Carrageenan, as a food additive, is regulated by the U.S. Food and Drug Administration (FDA).

It is used in food manufacturing as a thickener, stabilizer, and emulsifier. It is commonly used in chocolate milk, infant formula, dairy products, noodles, beer, processed meats, diet sodas, pudding, and pie filling. Carrageenan is naturally occurring gum derived from red seaweed (21 CFR Sec. 172.620, <https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?fr=172.620>). It may also be combined with naturally occurring salts such as sodium and potassium and used as a food additive as a salt of carrageenan (21 CFR Sec. 172.626, <https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?fr=172.626>). Carrageenan is

on the U.S. Food and Drug Administration (FDA) list of “Generally Recognized as Safe” (GRAS) food additives. GRAS substances are generally recognized as having been adequately shown to be safe under the conditions of intended use. Additionally, the World Health Organization Food and Agriculture Organization of the United Nations Expert Committee on Food Additives reviewed scientific studies on carrageenan in 2014 (see the World Health Organization website, http://apps.who.int/iris/bitstream/10665/150883/1/9789241209908_eng.pdf#page=26) and found that its use in infant formula at concentrations up to 1,000 mg/L is “not of concern.”

It is important to note the difference between degraded carrageenan (also known as poligeenan) and undegraded food-grade carrageenan. While degraded carrageenan causes hemorrhage and ulceration in the large intestines of some animal species, the undegraded food-grade carrageenan, discussed in this publication, does not (see the Cyber Colloids, Ltd., website, <http://www.cybercolloids.net/sites/default/files/EU-carrageenan-opinion.pdf>).

CONTROVERSY

In November 2016, the National Organic Standards Board (NOSB), a citizen advisory group that makes recommendations to USDA on issues related to organic products, voted to remove carrageenan from the list of substances approved for use in foods labeled “USDA Organic.” FDA evaluates all food additives for safety, including those on the USDA Organic list. In the past, concerns were raised regarding pesticide residues in carrageenan manufactured in the Philippines if the seaweed used to produce carrageenan had been previously exposed to pesticides. The FDA determined that carrageenan is a GRAS food additive and also evaluated pesticide residue levels in imported carrageenan. The controversy surrounding the removal of carrageenan from the USDA Organic list is not due to any ill health effects caused by carrageenan itself (see the U.S. Government Accountability Office website, <http://www.gao.gov/assets/230/220011.pdf>). As recently as April 2018, the FDA reviewed and confirmed that “the food additive carrageenan may be safely used in food (21 CFR 172.620, <https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcr/CFRSearch.cfm?fr=172.620>).

CONCLUSION

Carrageenan has not been associated with ill health effects and is a GRAS food additive.

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