

# Alginates for Food Packaging Applications

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## **Abstract**

Food packaging plays a key role in protecting the quality and safety of food in the food supply chain. Packaging helps to protect food from physical, chemical, biological, and environmental contaminants. The choice of packaging material and design plays a vital role in product's shelf life also. In recent years, biopolymers are being used as edible food packaging material aiming to address issues of petroleum-based packaging materials and their recalcitrant nature. Several biopolymers, namely chitosan, alginate, carrageenan, pectin, cellulose, gellan, etc. are used for food packaging applications. Among these, alginates are most favored, that are natural hydrophilic polysaccharide biopolymers extracted from marine brown algae (*Phaeophyceae* sp.). They have good film-forming property and help to retain moisture, reduce shrinkage, and improve the sensory characteristics of food products. Alginate coatings can reduce microbial counts, and retard oxidative off-flavors; it can enhance sensory acceptance, and minimize cooking losses. This chapter presents the application of alginates in food packaging, highlighting recent advancements in research and commercialization.

**Keywords:** Alginates, biopolymer, food packaging, biodegradable, edible coating, eco-friendly

## **11.1 Introduction**

Today, packaging is one of the most important aspects in ensuring food's acceptance, safety, portability, storability, and shelf stability, besides gaining

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