

# Chitosan Market is Estimated to be Worth USD 4,698.7 Mn by 2027, Research Study by The Insight Partners

Chitosan Market is Expected to Grow at a Rapid CAGR of 11.5% from 2019 to 2027

NEW YORK, NEW YORK, UNITED STATES, April 6, 2023 /EINPresswire.com/ -- In 2018, the Global Chitosan Market was valued at US\$ 1,764.26 million, and it is expected to grow at a CAGR of 11.5% from 2019 to 2027, reaching US\$ 4,698.7 million by 2027. The report identifies key factors driving market growth and highlights prominent players and their developments in the market.

Chitosan is a fibrous material derived from chitin, a substance found in the outer shells of shellfish like crabs, lobsters, and shrimps. Shrimp is a major source of chitosan as it contains 25% to 40% chitin content. Although some fungi also produce low amounts of chitin in their cell walls, the lack of an optimal extraction procedure on a commercial scale makes it a less common source for obtaining chitosan.

Chitosan is a rich source of fiber, and it is increasingly used in dietary supplements to promote weight loss. It blocks the absorption of cholesterol and dietary fats, making it useful in treating diseases such as high cholesterol, obesity, and Crohn's disease. Additionally, chitosan can be directly applied to gums to reduce inflammation.

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Chitosan is a natural material extracted from the outer skeletons of shrimp, crabs, and lobsters. It is a versatile biomaterial recognized for its non-toxicity, low allergenicity, biodegradability, and biocompatibility. Due to these properties, it is used in various applications, such as food and beverages, water treatment, medical and pharmaceuticals, cosmetics, and agrochemicals.

Chitosan's unique property of adsorption has made it useful in water treatment applications, where it can adsorb metals, iron, toxic substances, and other impurities from wastewater. It is an effective, economical, and environmentally friendly method for water treatment.

In medical and pharmaceutical applications, chitosan's properties, such as antimicrobial activity, bioactivity, and anti-oxidative activity, make it beneficial. It is used in wound ointments and for coating medical devices. In the pharmaceutical industry, it acts as a drug delivery agent and is

used in contact lenses. In the food and beverage industry, it is used as a preservative, dietary supplement, and anti-cholesterol additive. Chitosan has also found a place in the cosmetic industry, where it is used in hair and skincare products.

### Impact of COVID-19 Pandemic on Chitosan Market

COVID-19 outbreak first began in Wuhan (China) in December 2019, and since then it has spread across the globe at a fast pace. China, Italy, Iran, Spain, the Republic of Korea, France, Germany, and the US are among the worst affected countries in terms of positive cases and reported deaths as of March 2020. The COVID-19 outbreak has affected economies and industries in various countries due to lockdowns, travel bans, and business shutdowns. The global food and beverage and chemical industry is one of the major industries suffering serious disruptions such as supply chain breaks, technology events cancellations, and office shutdowns as a result of this outbreak.

#### **Grade Insights**

Based on grade, the global chitosan market is segmented into industrial grade, food grade, and pharmaceutical grade. The industrial grade segment accounted for the largest share of the global chitosan market in 2018; however, the food grade segment is expected to register the fastest growth rate during the forecast period. Industrial-grade chitosan is widely utilized in water treatment, agrochemicals, and other applications. It is basically a low-cost grade of chitosan. The growing demand for non-chemical products/technologies, including membranes & UV disinfection in water treatment and agrochemical applications is propelling the growth of the industrial-grade chitosan market.

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# Source Insights

The chitosan market, based on source, is segmented into shrimp, prawns, insects, crab, and others. The shrimp segment accounted for the largest share of the global chitosan market in 2018; however, the crab segment is expected to register the fastest growth rate during the forecast period. Chitosan is mainly extracted from shrimps, particularly the pacific shrimp. For the production of chitosan, shrimps are dried under the sun for two days, which turns the shrimp shells crispy. The crisped shrimp cells are grounded into a powder. The dried powder shrimp shells were placed in opaque plastic bottles and are stored at ambient temperatures. Dried chitosan is dissolved in hydrochloric acid and de-ionized water. The solution is stirred, and the next portion of de-ionized water is added. The dissolved solution is then titrated with sodium hydroxide solution. The small number of treated shrimp shells are reacted with HCL that shows no bubble generation, implying that the demineralization of shrimp shells is complete.

## **Application Insights**

The chitosan market, based on application, is segmented into water treatment, food and beverages, biomedical and pharmaceuticals, cosmetics, and others. The water treatment segment accounted for the largest share of the global chitosan market in 2018and food and beverages segment is expected to grow at a higher CAGR during the forecast period. Chitosan is known as a natural fiber. Due to its biodegradability, bioactivity, non-toxicity, biocompatibility, fiber grade properties, and adsorption, it is utilized in a wide range of applications such as water treatment, as coagulants & flocculants in water treatment.

Advanced Biopolymers AS, Kitosano SL, FMC Corporation, GTC Bio corporation, Golden-Shell Pharmaceutical Co. Ltd., Heppe Medical Chitosan GmbH., Kitozyme LLC., Panvo Organics Pvt Ltd., Primex EHF, and Qingdao Yunzhou Biochemistry Co., Ltdare some of the well-established players present in the global chitosan market.

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