Global Chitosan - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The Global Chitosan Market size is estimated at USD 2.09 billion in 2024, and is expected to reach USD 3.67 billion by 2029, growing at a CAGR of 11.93% during the forecast period (2024-2029).

Globally, researchers are showing interest in the use of chitosan in the pharmaceutical and biomedical fields as a potential agent for the prevention and treatment of infectious diseases. In December 2019, China became the epicenter of the SARS-CoV-2 outbreak, which has since spread internationally. In 2020, the World Health Organization (WHO) declared COVID-19 to be a global health emergency. Countering the impacts of viral disease outbreaks such as COVID-19 required R&D activities by researchers across the globe. Thus, the COVID-19 outbreak is likely to show a positive impact on the market growth as the application of chitosan polymers as viral inhibitors would generate key growth opportunities in the near future.

Furthermore, biopolymers such as chitosan have intrinsic antiviral properties. Nanostructured drug-delivery systems (NDDS)-based carbohydrate-binding agents, such as the sulfated polymers, can also change the virus entry process, blocking the viral cationic surface receptors and avoiding its interaction with heparan sulfate proteoglycan on the host cell surface. However, there are no reports of NDDS as COVID-19 treatment so far. It can be a new approach for COVID-19 treatment in the near future.

The other factors driving the market growth include growing product applications in biomedical, cosmetics, and food and beverage industries, rising water treatment activities worldwide, and strong advancements in the healthcare/medical industry in developed countries.

Chitosan composed systems utilize the characteristics of chitosan to achieve great therapeutic effects. For instance, the adhesiveness of chitosan can be used for non-invasive mucosal vaccine vectors. Therefore, chitosan-composed systems have

great potential in the therapy of infectious diseases.

Chitosan is a natural polysaccharide that exhibits properties such as biodegradability, non-toxicity, biocompatibility, hemostatic and bio-adhesiveness, and penetration-enhancing properties. Moreover, it has anti-microbial properties.

As per National Center for Biotechnology Information (NCBI), deacetylated chitosan is a vital additive in filtration and water treatment, which eliminates 99% of turbidity. Moreover, chitosan is an easily available product extracted from a waste product in the fishery industry with several uses in other industries such as wound care material in pharmaceutical industries, acts as a natural flavor, and used to control moisture in food industries leading to the high demand for these polymer and further boost the overall market.

Furthermore, stringent government regulations are forcing manufactures to reduce plastic bags, resulting in the growing demand for biodegradable plastic where chitin is being widely used. This led to the increasing adoption of chitosan and further drive the market growth over the forecast period.

Chitosan Market Trends

Under Application, Water Treatment is Expected to Witness a Healthy Growth Rate Over the Forecast Period

Water treatment is expected to witness healthy growth in the future, attributing to the growing demand for chitosan in industries, commercial, and municipal water treatment plants. Several advantages, such as the ability to remove pesticides, surfactants, and phenol from water, make it highly preferable in water treatment plants. Increasing demand for chitosan as a water cleaner because of its non-toxic, non-allergic biodegradable nature will also be leading to propel the segment growth.

The presence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in water and wastewater has recently been reported. The stools and masks of COVID-19 patients were considered as the primary route of coronavirus transmission into water and wastewater.

For instance, according to a research article by Hai Nguyen Tran et al. published in the Environmental Research Journal 2021, the study confirmed that SARS-CoV-2 RNA was detected in inflow wastewater. Although, the existence of SARS-CoV-2 in water influents has been confirmed. Therefore, in the future, studies should focus on the survival of SARS-CoV-2 in water and wastewater under different operational conditions and whether the transmission from COVID-19-contaminated water to humans is an emerging concern. Thus, the use of chitosan for water treatment in the near future is expected to encourage the prevention of viral diseases like COVID-19.

Furthermore, chitosan is a good flocculant for tap water treatment due to properties such as faster deposition rate and higher removal efficiency for COD (organic matter), metal ions, and SS (suspended solids). Moreover, as countries around the globe emphasize wastewater treatment to minimize pollution, chitosan's demand is likely to continue increasing in the coming years.

Depleting groundwater levels and the rapidly growing urban population in the Asia-Pacific countries have resulted in the acute scarcity of usable freshwater. This has led to investments by governments and private players in water treatments, mainly in India, China, and Malaysia.

For instance, in India, during 2012-2017, the Indian planning commission had budgeted around USD 26.5 billion to provide safe water to all urban and rural Indians. Treatment of sewage, wastewater treatment, solid, liquid, and chemical waste, water technology, environmental services, desalination companies, consulting, and engineering are some services that India will require to tackle the water problem.

In addition, in 2019, the Government of India, with the Bhabha Atomic Research Centre (BARC), planned to install water filtration plants in villages. The government targets to provide clean drinking water to everyone by 2024. Thus, owing to the above-mentioned factors, it is expected to drive the segment's growth over the forecast period.

North America is Expected to Hold a Significant Share in the Market Over the Forecast Period

North America is expected to hold a significant market share in the Global Chitosan Market, due to increasing awareness regarding water treatment and the growing demand for cosmetics in the United States, along with the presence of major players. Furthermore, increasing healthcare expenditure and the presence of well-established healthcare infrastructure are also fueling the growth of the overall regional market to a large extent.

The COVID-19 pandemic has shown a positive response toward the Chitosan Market as chitosan-based research and development has been increasing in the development of therapeutics or protective equipment in the management of the disease. In 2021, clinical studies are being conducted to investigate the protective effect of a new type of respirator with a filter element containing chitosan nanoparticles, which show a positive impact on the market.

Increasing obesity and overweight issues in the region and rising health awareness among people act as significant opportunities for the chitosan market. For instance, obesity is one of the major population health issues in Canada, affecting one in five Canadian adults as per the Canadian Institute for Health Information. Seven million Canadians were living with obesity, according to a 2017 Canadian Obesity Network report.

Asia-Pacific is also expected to grow at a healthy growth in the forecast period due to the rapid development of end-user industries in Japan, China, India, and South Korea. The increasing demand for biobased products, coupled with a supportive government, and initiatives would also boost the chitosan market.

One of the key factors driving the chitosan demand in the Asia-Pacific region is the easy availability of its raw material, obtained as a waste product from the fishery industry. For instance, according to the Food and Agriculture Organization of the United Nations, during the first half of 2019, China imported 285,900 tons of shrimp, mainly from Ecuador, India, and Saudi Arabia, which was 186% more compared to 100,000 tons imported in 2018. Thus, owing to the above-mentioned factors, the market is likely to grow.

Chitosan Industry Overview

The Chitosan Market is fragmented, competitive, and consists of several major players. In terms of market share, a few of the major players are currently dominating the market. Some companies currently dominating the market include Panvo Organics Pvt Ltd, GTC Bio Corporation, Dupont Corporation, KitoZyme SA, KIMICA Corporation, Dainichiseika Color & Chemicals Mfg Co. Ltd, Heppe Medical Chitosan GmbH, Meron Biopolymers, Qingdao Yunzhou, and Biophrame Technologies.

Additional Benefits:

  The market estimate (ME) sheet in Excel format
 3 months of analyst support

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