

# **gamma-Polyglutamic Acid (PGA) Market by Product (Cosmetic Grade PGA, Agricultural Grade PGA, Other Grade PGA), by Application (Agriculture, Personal Care & Cosmetics, Water Treatment, Healthcare & Pharmaceuticals, Food Additives) and by Region, Trend, Forecast, Competitive Analysis, and Growth Opportunity 2019-2024**

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## **Abstracts**

Polyglutamic acid (PGA) is a polymer of the amino acid glutamic acid (GA) produced by bacterial fermentation. Gamma polyglutamic acid has a wide number of potential uses ranging from food, medicine and agriculture to water treatment. The other isomer poly- $\gamma$ -glutamic acid is being used as a drug delivery system in cancer treatment. The analysts forecast the global gamma-polyglutamic acid market to exhibit a CAGR of 7.6% during the period 2019-2024. The report covers the present scenario and the growth prospects of the global gamma-polyglutamic acid for 2019-2024. To calculate the market size, the report considers the gamma-polyglutamic acid sales volume and revenue.

The projections featured in the report have been derived using proven research methodologies and assumptions. By doing so, the research report serves as a repository of analysis and information for every facet of the market, including but not limited to: regional markets, product, and application.

Geographically, the global gamma-polyglutamic acid market is segmented into North America, Asia Pacific, Europe, Middle East & Africa and South America. This report forecasts revenue growth at a global, regional & country level, and provides an analysis of the market trends in each of the sub-segments from 2019 to 2024.

North America (U.S., Canada, Mexico, etc.)

Asia-Pacific (China, Japan, India, Korea, Australia, Indonesia, Taiwan, Thailand, etc.)

Europe (Germany, UK, France, Italy, Russia, Spain, etc.)

Middle East & Africa (Turkey, Saudi Arabia, Iran, Egypt, Nigeria, UAE, Israel, South Africa, etc.)

South America (Brazil, Argentina, Colombia, Chile, Venezuela, Peru, etc.)

On the basis of product, the global gamma-polyglutamic acid market is segmented into:

Cosmetic Grade PGA

Agricultural Grade PGA

Other Grade PGA

Based on application, the gamma-polyglutamic acid market is segmented into:

Agriculture

Personal Care & Cosmetics

Water Treatment

Healthcare & Pharmaceuticals

Food Additives

The report also includes a discussion of the key vendors operating in this market. Some of the leading players in the global gamma-polyglutamic acid market are:

Ajinomoto Co., Inc.

BioLeaders Corporation

Bloomage Biotechnology Co., Ltd. (Bloomage Freda Biopharm Co., Ltd.)

Chengdu Jin Kai Biological Engineering Co., Ltd.

Guangdong Demay New Materials Technology Co., Ltd.

Nanjing Sai Taisi Biotechnology Co., Ltd.

Nanjing Shineking Biological Technology Co., Ltd.

Qinhuangdao Lingxian Biological Agriculture Co., Ltd.

Tianjin Peiyang Biotrans Co., Ltd.

Toyobo Co., Ltd.

Vedan International (Holdings) Ltd.

Wuhan Guanghua Era Biological Technology Co., Ltd.

Wuhan Junan Biological Technology Co., Ltd.

Zhangshu City Lion Biotechnology Co., Ltd.

Zytex Biotech Pvt. Ltd.

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#### Objective of the study:

To analyze and forecast the market size of global gamma-polyglutamic acid market.

To classify and forecast global gamma-polyglutamic acid market based on region, product, and application.

To identify drivers and challenges for global gamma-polyglutamic acid market.

To examine competitive developments such as expansions, mergers & acquisitions, etc., in global gamma-polyglutamic acid market.

To conduct pricing analysis for global gamma-polyglutamic acid market.

To identify and analyze the profile of leading players operating in global gamma-polyglutamic acid market.

The report is useful in providing answers to several critical questions that are important for the industry stakeholders such as manufacturers and partners, end users, etc., besides allowing them in strategizing investments and capitalizing on market opportunities. Key target audience are:

Manufacturers of gamma-polyglutamic acid

Raw material suppliers

Market research and consulting firms

Government bodies such as regulating authorities and policy makers

Organizations, forums and alliances related to gamma-polyglutamic acid

The information contained in this report is based upon both primary and secondary sources. Primary research included interviews with gamma-polyglutamic acid suppliers and industry experts. Secondary research included an exhaustive search of relevant publications like company annual reports, financial reports, and proprietary databases.

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