Super Absorbent Polymer Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Raw Material (Sodium Polyacrylate, Polyacrylamide Co-Polymer, Others), By Application (Disposable Diapers, Adult Incontinence, Female Hygiene, Others), By Region and Competition, 2020-2030F

Market Report | 2025-08-06 | 185 pages | TechSci Research

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Report description:

Market Overview
Super Absorbent Polymer Market was valued at USD 9.77 Billion in 2024 and is expected to reach USD 13.80 Billion by 2030 with a CAGR of 6.35%. Super Absorbent Polymers (SAPs) represent a vital class of hydrophilic materials known for their exceptional water retention capabilities. Engineered from chemically modified starch, cellulose, and polymers such as polyethylene oxide (PEO) and polyvinyl alcohol (PVA), SAPs feature a cross-linked structure that enables them to absorb and retain large volumes of water. This unique characteristic underpins their wide-ranging applications across sectors including personal care, healthcare, agriculture, horticulture, automotive, construction, packaging, and industrial water management. Sodium polyacrylate and polyacrylamide copolymers are the two most common types of SAPs. Their high absorbency, combined with hydrophilic properties, makes them particularly valuable in personal hygiene products such as baby diapers and adult incontinence products. The baby diaper segment remains the largest consumer of SAPs, with North America leading global production. However, increasing birth rates, rising disposable incomes, and heightened hygiene awareness in emerging markets, particularly in India, China, the Middle East, and Africa-are expected to drive substantial growth in demand.
Key Market Drivers
Growing Demand of Super Absorbent Polymer from Construction Industry
In the construction industry, Super Absorbent Polymers (SAPs) are gaining significant traction due to their outstanding water-retaining properties, which are crucial in improving the quality, strength, and longevity of concrete structures. SAPs are particularly instrumental in internal curing applications, where they absorb and gradually release water over time, thereby minimizing shrinkage, reducing cracking, and enhancing the overall hydration process of cementitious materials. This controlled

internal curing leads to stronger and more durable concrete, which is increasingly in demand as infrastructure projects grow in complexity and scale.

According to a study published in the Journal of Materials in Civil Engineering, the incorporation of SAPs in concrete can improve compressive strength by up to 15% and reduce autogenous shrinkage by nearly 70%, depending on the mix design. These performance benefits make SAPs highly attractive in the construction of bridges, high-rise buildings, tunnels, and precast elements, where long-term durability is a key requirement.

Beyond concrete production, SAPs are also widely utilized in geotechnical engineering applications, including soil stabilization, erosion control, and green roofing systems. Their high absorption capacity enables them to retain moisture within soil structures, promoting plant growth and maintaining soil integrity. This makes SAPs a valuable component in sustainable landscaping and environmental engineering projects. For instance, SAP-treated soil in slope stabilization projects has shown a 30% improvement in moisture retention, reducing the risk of erosion and structural failure in vulnerable terrain.

As the global construction industry shifts toward sustainable and high-performance materials, the demand for SAPs is expected to rise. Global construction output is projected to grow significantly, rising from USD 9.7 trillion in 2022 to USD 13.9 trillion by 2037. This growth is primarily driven by the robust expansion of major construction markets, including China, the United States, and India, which continue to invest heavily in infrastructure development and urbanization. Ongoing R&D is expected to further expand the utility of SAPs in construction. Innovations in bio-based and biodegradable SAPs offer opportunities for eco-friendly construction practices, aligning with green building certifications and regulatory standards. The construction sector's increasing demand for advanced, sustainable materials positions SAPs as a critical enabler of innovation and performance. Their role in enhancing concrete durability, soil stability, and moisture management underscores their growing importance and ensures a promising outlook for the global SAP market.

Key Market Challenges

Volatility in Availability of Raw Materials

Super absorbent polymers (SAPs) are fascinating materials known for their remarkable ability to absorb and retain significant amounts of liquid compared to their own mass. This unique characteristic makes them incredibly versatile and widely used across various industries. For instance, in personal care products, SAPs are employed to enhance the absorbency and leakage prevention of diapers and adult incontinence products. In the medical field, they play a crucial role in wound dressings and surgical pads, where they help to keep the wounded area dry and promote faster healing. Even in the construction industry, SAPs are utilized to improve the properties of concrete, such as its durability and resistance to cracking.

However, one of the main challenges faced by the SAP market is the volatility in the prices and availability of raw materials, particularly acrylic acid, which is the primary component used in the production of SAPs. The prices of acrylic acid tend to fluctuate due to various factors, including changes in the petroleum industry, as it is derived from petrochemicals. These price fluctuations can pose significant challenges to manufacturers, as they directly impact the cost of producing SAPs. Disruptions in the availability of raw materials, logistical challenges, and reduced production can further exacerbate this issue, potentially leading to increased costs for manufacturers. Ultimately, these increased costs may be passed on to consumers, which could potentially impact the overall growth and stability of the SAP market.

Key Market Trends

Increase in Efforts to Improve Absorption Speed

The absorption and release properties of superabsorbent polymers (SAPs) are influenced by various factors, including solution concentration, temperature, and ionic strength. Recent trends indicate a growing emphasis on research and development aimed at enhancing these properties, particularly the absorption speed.

By improving the absorption speed, SAPs can offer increased effectiveness in a wide range of applications. For example, in personal hygiene products, faster absorption can significantly enhance user comfort and protection. In the medical field, quicker absorption has the potential to facilitate wound healing processes by creating a clean and moist environment for optimal recovery.

The drive to enhance absorption speed is expected to have a positive impact on the SAP market. Not only does it improve the performance of existing products, but it also opens up new possibilities for innovative applications. This evolution in product quality and versatility is likely to stimulate the demand for SAPs, leading to further market growth. The pursuit of improving the

absorption speed of superabsorbent polymers is emerging as a significant trend in the global SAP market. As these efforts continue to progress and yield positive results, they are poised to drive the expansion of the market in the years to come.

Key Market Players

- BASF SE
- EVONIK INDUSTRIES AG
- KAO CORPORATION
- LG CHEM LTD.
- SANYO CHEMICAL INDUSTRIES, LTD.
- SUMITOMO SEIKA CHEMICALS CO., LTD.
- NIPPON SHOKUBAI CO., LTD.
- XITAO POLYMER CO., LTD.
- Yixing Danson Technology Co.
- ZHEJIANG SATELLITE PETROCHEMICAL CO., LTD

Report Scope:

In this report, the Global Super Absorbent Polymer Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

- Super Absorbent Polymer Market, By Raw Material:
  - Sodium Polyacrylate
  - Polyacrylamide Co-Polymer
  - Others
- Super Absorbent Polymer Market, By Application:
  - Disposable Diapers
  - Adult Incontinence
  - Female Hygiene
  - Others
- Super Absorbent Polymer Market, By Region:
  - North America
    - United States
    - Canada
    - Mexico
  - Europe
    - France
    - United Kingdom
    - Italy
    - Germany
    - Spain
  - Asia-Pacific
    - China
    - India
    - Japan
    - Australia
    - South Korea
  - South America
    - Brazil
    - Argentina
    - Colombia
  - Middle East & Africa

 South Africa
 Saudi Arabia
 UAE
 Egypt

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Super Absorbent Polymer Market.

Available Customizations:

Global Super Absorbent Polymer Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

-Detailed analysis and profiling of additional market players (up to five).

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