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North America Synthetic Gypsum Market By Product Type (Flue Gas Desulfurization (FGD) gypsum, Phosphogypsum, Fluorogypsum, Citrogypsum, Others), By Product Form (Powdered, Granular), By Application (Residential, Commercial, Others), By Country, Competition, Forecast and Opportunities, 2020-2030F

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Abstracts

Market Overview

North America Synthetic Gypsum Market was valued at USD 589.91 Million in 2024 and is expected to reach USD 780.93 Million by 2030 with a CAGR of 4.63% during the forecast period.

The North America synthetic gypsum market is characterized by its integration across multiple sectors, including construction, agriculture, energy, and waste management. Synthetic gypsum, predominantly produced as a by-product of flue gas desulfurization (FGD) in coal-fired power plants, has become an essential substitute for natural gypsum due to its chemical consistency and environmental advantages. Its widespread adoption across the U.S. and Canada is fueled by sustainability goals, stable material supply, and cost efficiencies.

One of the market's primary consumers is the construction industry, where synthetic gypsum is widely used in wallboards, plasters, ceiling panels, and cement. The consistent quality, low moisture content, and fire-resistant properties of synthetic gypsum make it ideal for modern drywall systems. Manufacturing plants across North America collectively produce over 28 billion square feet of wallboard annually, with a

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majority utilizing synthetic gypsum as a raw material. This allows manufacturers to maintain uniform product standards and reduce dependence on natural gypsum mines.

Environmental regulations have accelerated the market's growth by encouraging the reuse of FGD by-products instead of landfilling. Power plants equipped with desulfurization systems now generate between 12–15 million tons of synthetic gypsum annually. Industrial symbiosis—where energy by-products are transformed into construction feedstock—has reduced industrial landfill volumes by nearly half over the past decade.

Beyond construction, the market is also expanding into agriculture, where synthetic gypsum improves soil structure, enhances water infiltration, and helps manage salinity and pH. Its consistent sulfur and calcium content makes it a reliable soil amendment, especially in regions with high sodium levels or intensive farming practices.

Innovation is another driver. Manufacturers are developing ultra-pure synthetic gypsum for specialized applications, such as dental plasters and medical-grade materials. Improvements in drying technology and particle control have further enhanced processing efficiency.

Despite a long-term decline in coal-fired power generation, synthetic gypsum remains viable due to its cost benefits, environmental compliance, and technological adaptability. In addition, recycling infrastructure and closed-loop systems are gaining traction, allowing reclaimed gypsum to supplement FGD-based material.

Key Market Drivers

Regulatory Pressure and Environmental Compliance

One of the strongest forces driving synthetic gypsum adoption is environmental regulation. Government mandates focused on reducing sulfur dioxide emissions have led to widespread installation of flue gas desulfurization (FGD) systems in coal-fired power plants, generating large quantities of synthetic gypsum as a usable by-product.

> Approximately 80% of coal-fired plants in the U.S. are equipped with FGD units, contributing significantly to synthetic gypsum supply.
>
> Between 12–15 million tons of synthetic gypsum are generated annually in North

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America as a result of emissions control technologies.

Industrial landfill volumes for coal by-products have declined by nearly 45% in the last 10 years, driven by reuse mandates.

Over 30 states have enacted guidelines encouraging beneficial reuse of FGD materials in construction.

More than 60 wallboard manufacturing plants across the region are designed to use synthetic gypsum as a primary input.

Compliance with environmental laws, such as the Clean Air Act and the Coal Combustion Residuals Rule, ensures the continued production of synthetic gypsum. These policies not only reduce atmospheric pollutants but also encourage closed-loop material usage. Furthermore, government incentives for industrial by-product recycling have bolstered demand, making synthetic gypsum a model for sustainable industrial waste management. As pressure mounts to decarbonize industry and reduce waste, synthetic gypsum fits well within evolving policy frameworks.

Key Market Challenges

Decline of Coal-Fired Power Plants

The production of synthetic gypsum is heavily reliant on coal-fired power plants equipped with flue gas desulfurization (FGD) systems. However, as North America continues its transition toward renewable and cleaner energy sources, coal plants are being retired at a rapid pace. This trend significantly threatens the supply chain of synthetic gypsum. The reduction in coal power generation leads to a decline in FGD by-products, potentially causing a shortage in raw material for industries like wallboard manufacturing. Although current reserves are sufficient in many areas, future projections raise concerns. The dwindling number of operational coal plants may eventually limit regional availability, leading manufacturers to revert to natural gypsum or imported alternatives. In addition, as utilities shift to gas or renewable energy, new FGD systems are not being installed, which further limits future production of synthetic gypsum. This structural decline poses long-term risks for industries dependent on a steady stream of by-product gypsum.

Key Market Trends

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Increased Investment in Recycling Infrastructure

Recycling infrastructure for gypsum products is rapidly evolving, enabling synthetic gypsum to be supplemented by reclaimed wallboard and construction waste. Regional recycling facilities have grown significantly, with more than a dozen new plants opening in the last five years. Wallboard manufacturers are investing in closed-loop systems, where production waste and post-consumer material are processed and reintegrated into new board production. The integration of recycled and synthetic gypsum reduces the need for virgin materials and helps manufacturers achieve sustainability goals. Additionally, government mandates on construction waste diversion are driving innovation in gypsum recycling. Municipalities are offering incentives for drywall recycling, and some regions are imposing bans on gypsum landfill disposal. This shift supports synthetic gypsum indirectly by creating a blended, circular raw material supply chain, reinforcing the material's sustainability credentials and reducing overall environmental impact.

Key Market Players

- USG Corporation
- Knauf Group
- American Gypsum Company, LLC
- Georgia Pacific Gypsum LLC
- National Gypsum Company
- Holcim Group
- Saint Gobain
- PABCO Building Products, LLC
- FEECO International, Inc.
- Synthetic Materials, LLC

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Report Scope:

In this report, the North America Synthetic Gypsum Market has been segmented into the following categories, in addition to the Application trends which have also been detailed below:

North America Synthetic Gypsum Market, By Product Type:

Flue Gas Desulfurization (FGD) gypsum

Phosphogypsum

Fluorogypsum

Citrogypsum

Others

North America Synthetic Gypsum Market, By Product Form:

Powdered

Granular

North America Synthetic Gypsum Market, By Application:

Residential

Commercial

Others

North America Synthetic Gypsum Market, By Country:

United States

Mexico

Canada

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Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the North America Synthetic Gypsum Market.

Available Customizations:

North America Synthetic Gypsum Market report with the given market data, Tech Sci 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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