

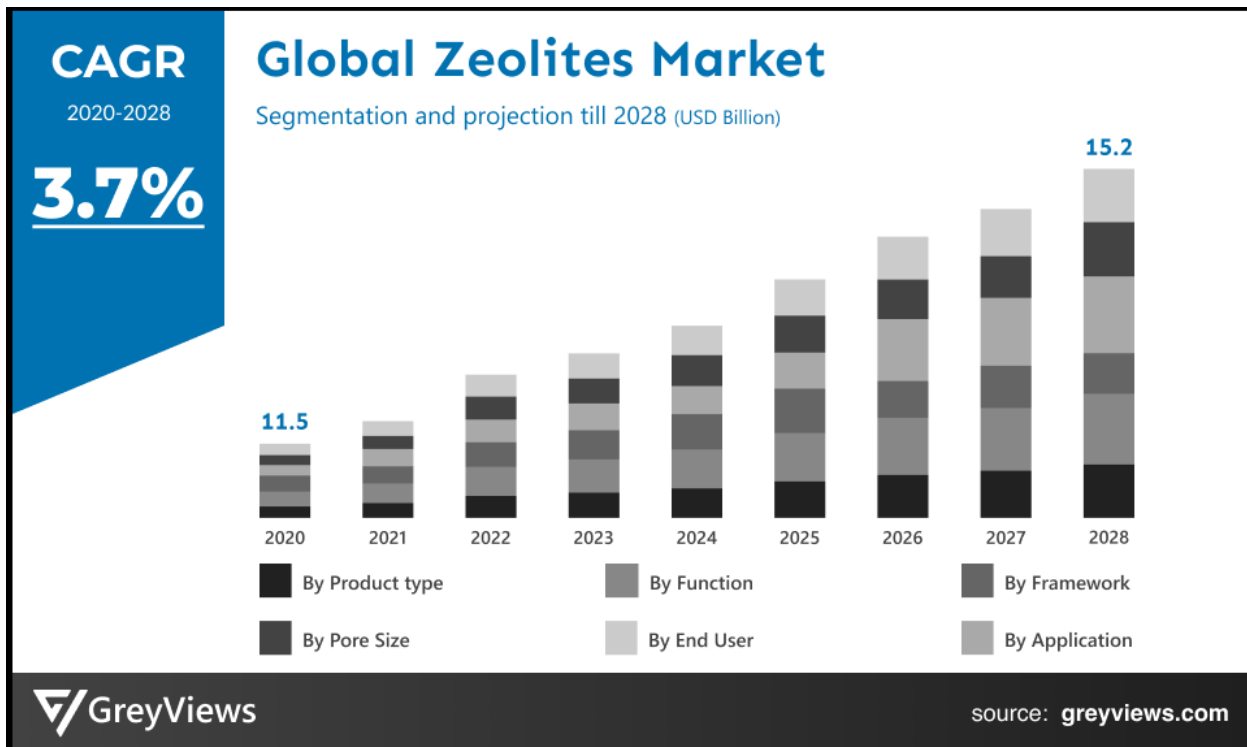
Global Zeolites Market- Market Overview

Description

The global Zeolites market is expected to grow from USD 11.5 Billion in 2020 to USD 15.2 Billion by 2028, at a CAGR of 3.7% during the Projection period 2021-2028. This growth of the zeolites market is significantly driven by extensive demand for zeolites in the detergent industry coupled with the rising concerns associated with hygiene.

Zeolites are crystalline solid structures that are made of silicon, aluminum, and oxygen. They are microporous, crystalline, hydrated aluminosilicates and are obtained from hydrothermal crystallization of aluminosilicate gels. They have a porous framework, making them suitable for employment in detergents, petrochemical, nuclear, refrigeration, and concrete among other end-user markets.

In addition, the Federal Drug Administration (FDA) has rated Zeolite as the Generally Regarded as Safe (GRAS) for human consumption and has been used commercially for water filtration for years. Moreover, it finds a range of usage in industrial applications for water and wastewater treatment, catalysis, agriculture, animal feed additives, nuclear waste, and biochemical applications.



Market Dynamics

Drivers:

The extensive demand for zeolites in the detergent industry

There is an extensive demand for synthetic zeolites in the detergent industry as they have exceptional ion-exchange properties. In addition, they are ideal for use as water softeners for the removal of calcium, magnesium, and other ions. Hence, the Zeolites are seeing huge growth in usage as the ion exchange builders replace the water hardness ions with sodium ions. Further, a number of regulations have been implemented in different countries to stop and restrict the phosphate builders' usage for the manufacture of detergents, resulting in demand for zeolites.

Low cost and non-toxicity associated with the zeolites

The Federal Drug Administration (FDA) has rated natural Zeolite as the Generally Regarded As Safe (GRAS) for human consumption. Also, they are effective in cleaning up the contaminated water from heavy metals as well as other toxins. This feature of non-toxicity created a demand for zeolites in various applications. In addition to this, natural zeolites are cheaper and have advantages over other cation exchange materials. This factor is further projected to fuel the growth of the zeolites market.

Restraints:

Toxicity associated with the synthetic zeolites

Some of the synthetic zeolite dusts are considered nuisance dust owing to their toxicity. The accidental inhaling of such particles raises health and safety concerns. For instance, as zeolites are a complex group of silicates, they can cause pulmonary diseases if inhaled. Hence, such scenarios of toxicity may limit adoption of the synthetic zeolites, hampering the global market.

Opportunities:

Upsurge in demand for adsorbents

Volatile Organic Compounds (VOCs) emissions caused by petrochemical reactions have become a significant concern and hazard for human health and the environment. For instance, such emissions can lead to damage to the central nervous system and difficulty in breathing. However, a number of environmental protection organizations such as Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH) and Environmental Protection Agency (EPA) are formulating strict regulations to control VOC emissions. While on the other hand, the demand for Zeolites is growing due to such environmental concerns as they are proven to be efficient adsorbents for removing VOCs. This factor is expected to provide lucrative growth opportunities for the growth of the market during the Projection period.

Challenges:

Disruptions due to COVID-19

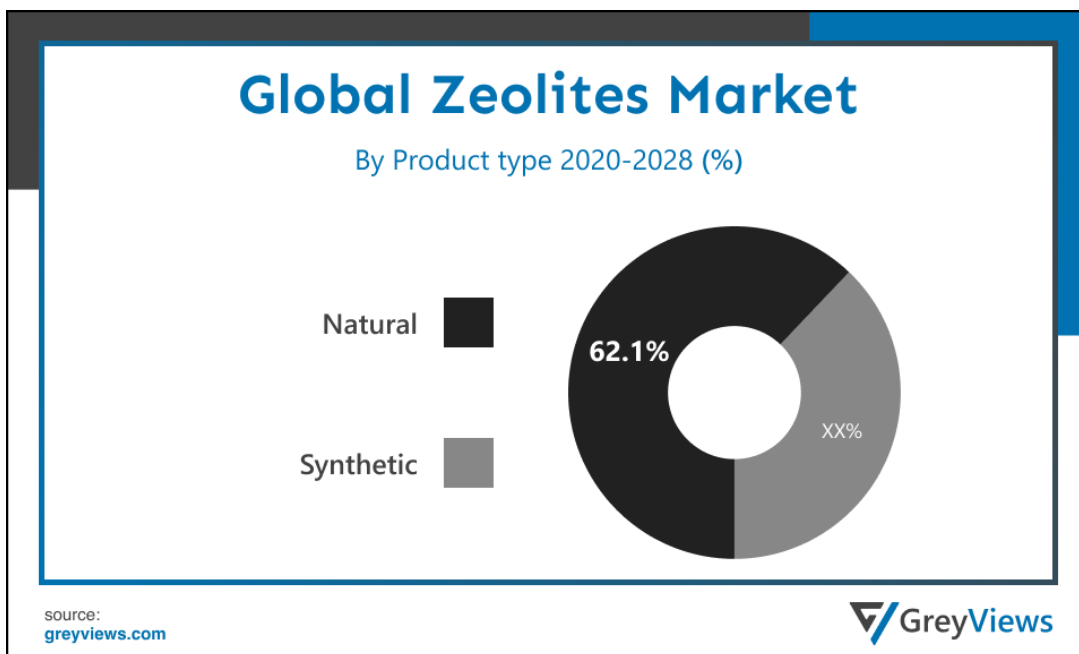
Owing to the unprecedented crisis of COVID-19, a number of countries have employed nationwide lockdowns. However, as they are reopening, safety measures such as social distancing are still being applied. This has caused significant economic downturns across the globe. Due to the slowdown in industrial and commercial activities, the demand for Zeolites has been hampered along with the fluctuations in the raw material prices. Hence, the emergence of the COVID-19 pandemic has posed challenges to the global Zeolites market.

Segmentation Analysis

The global zeolites market has been segmented based on product type, function, framework, pore size, end-use, application, and regions.

By Product type

The product type segment includes natural and synthetic. The natural segment led the Zeolites market with a market share of around 62.1% in 2020. This is due to the huge adoption of natural zeolites in different end-user industries such as wastewater cleanup, pet litter, and odor control along with the number of horticulture applications such as desiccant, wastewater cleanup, animal feed, aquaculture, gas absorbents, and catalysts. The growth of the aforementioned industries in India, China, and Brazil creates lucrative growth opportunities for the natural Zeolites segment growth in upcoming years. However, synthetic is projected to grow at the highest CAGR due to the wide usage of flocculants in water treatment to remove solids in water.



By Function

The function segment includes Ion-exchange, molecular sieve, and catalyst. The catalyst segment led the zeolites market with a market share of around 52% in 2020. The growth of the segment is mainly driven by increasing demand for zeolites as catalysts in hydrocarbon cracking (HC) and fluid catalytic cracking (FCC) applications. However, the molecular sieve segment is expected to witness a significant growth rate during the Projection period.

By Framework

The framework segment includes Linde Type A, Faujasite, and MFI. The Linde Type A segment held the largest market share of 37.6% in 2020. The Linde Type A is an alumino-silicate zeolite. Its rapid usage in the ion exchange-based application primarily drives the growth of the segment. However, the faujasite segment is expected to witness the highest growth during the Projection period.

By Pore Size

The pore size segment includes 3A - 7A and 7A - 10A. The 7A - 10A segment held the largest market share of 56.2% in 2020. 7A - 10A pore-sized zeolites are majorly used in industries as it enables greater absorption and better separation during any industrial application. This factor primarily drives the growth of the segment. However, 3A - 7A segment is expected to witness the highest growth rate during the Projection period.

By End User

The end-user segment includes construction & building materials, animal feed, wastewater treatment, soil remediation, and others. The construction & building materials segment held the largest market share of 38.6% in 2020. Ongoing demand for lightweight concrete material across the construction industry is projected to boost demand for natural zeolites, fueling the growth of the market. However, the soil remediation segment is expected to witness the highest growth rate during the Projection period.

By Application

The application segment includes adsorbents, catalysts, detergent builders, and others. The detergent builders segment held the largest market share of 53.2% in 2020. Improved cleaning characteristics of the zeolites primarily promote zeolites as builders in detergents. In addition to this, Zeolites have become a prominent substitute for phosphorus in detergent production owing to their high level of efficiency in dirt removal. Such factors boost the growth of the segment. However, the catalysts segment is expected to witness the highest growth rate during the Projection period.

By Regional Analysis

The regions analyzed for the zeolites market include North America, Europe, South America, Asia Pacific, and the Middle East, and Africa. The Asia-Pacific region dominated the Zeolites market and held the 32.1% share of the market revenue in 2020.

The growth of the Asia-Pacific Zeolites market is driven by a number of factors government's focus on environmental protection and ongoing emphasis on the development of bio-based products. In addition to this, ongoing government infrastructure spending across countries such as India and China fuels demand zeolite for the production of lightweight construction materials.

The European region is likely to register significant growth during the Projection period owing to the strict government regulations for greenhouse gas emissions coupled with the huge production of detergents and refrigerants in countries including the Netherlands, France, Belgium, and Germany.

Key Industry Players Analysis

The key players are now concentrating on implementing strategies such as adopting new mineral types, product innovations, mergers & acquisitions, joint ventures, alliances, and partnerships to improve their market position in the global Zeolites industry.

For instance, in July 2021, BASF, a German multinational chemical company expanded its chemical catalyst recycling capability and capacity with the acquisition of Zodiac Enterprises LLC in Caldwell, Texas.

In April 2021, Clariant, a specialty chemical company announced the opening of a new production facility for process and light stabilizers. The facility is cooperatively owned by Clariant and Beijing Tiangang Auxiliary Co., Ltd. (Tiangang), a producer and supplier of light stabilizers in China.

- Albemarle Corporation
- BASF SE
- TOSOH Corporation
- Arkema
- Honeywell International Inc.
- Union Showa KK,
- Zeochem AG
- KNT Group
- Clariant
- R. Grace & Co.
- Zeolyst International
- Huiying Chemical Industry(Xiamen) Co., Ltd.
- Chemiewerk Bad Köstritz GmbH
- NALCO India
- PQ

Latest Development

November 2021- Albemarle Corp., a global specialty chemicals company announced the commercial availability of its KF 774 PULSAR™ hydrotreating catalyst. It is the new clean fuels catalyst.

In June 2021- Honeywell partnered with the Defense Research Development Organization (DRDO) and the Council of Scientific and Industrial Research-Indian Institute of Petroleum (CSIR-IIP), Government of India, to supply zeolites to accelerate the setting up of Medical Oxygen Plants (MOP) in the country for addressing the ongoing pandemic.

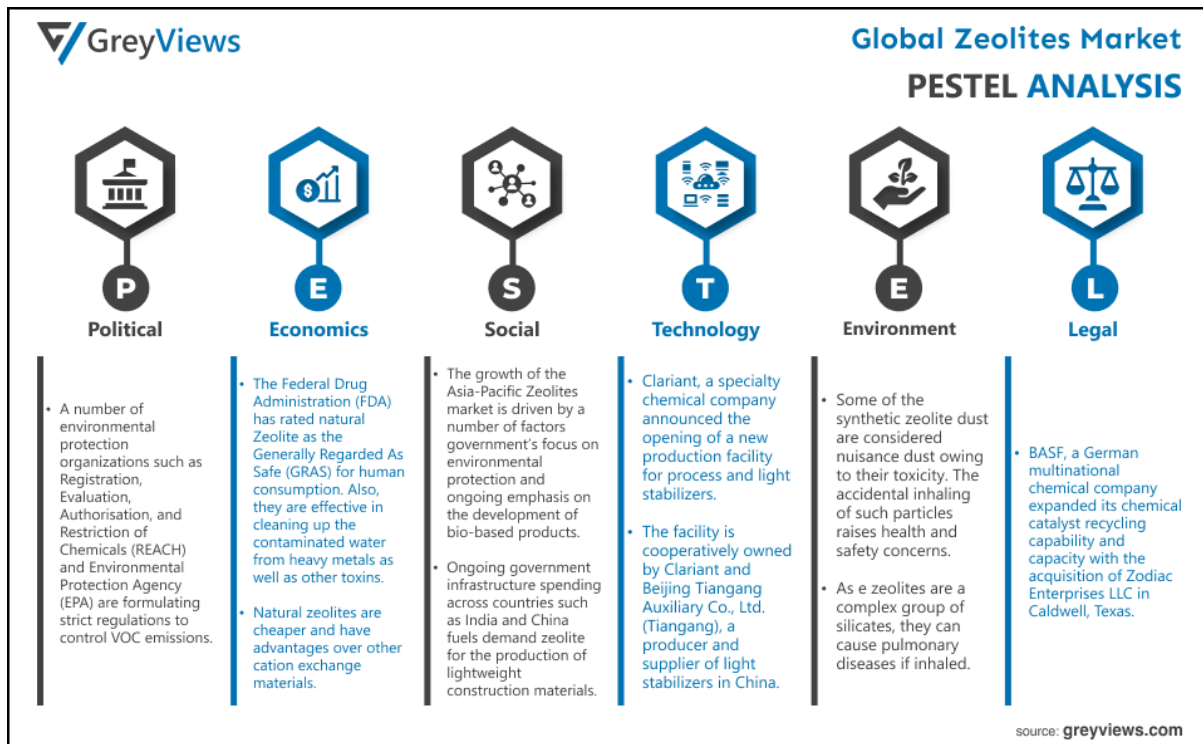
Report Metrics

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Political- A number of environmental protection organizations such as Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH) and Environmental Protection Agency (EPA) are formulating strict regulations to control VOC emissions. While on the other hand, the demand for Zeolites is growing due to such environmental concerns as they are proven to be efficient adsorbents for removing VOCs. This factor is expected to provide lucrative growth opportunities for the growth of the market during the Projection period.

Economic- The Federal Drug Administration (FDA) has rated natural Zeolite as the Generally Regarded as Safe (GRAS) for human consumption. Also, they are effective in cleaning up the contaminated water from heavy metals as well as other toxins. This feature of non-toxicity created a demand for zeolites in various applications. In addition to this, natural zeolites are cheaper and have advantages over other cation exchange materials. This factor is further projected to fuel the growth of the zeolites market.

Social- The growth of the Asia-Pacific Zeolites market is driven by a number of factors government's focus on environmental protection and ongoing emphasis on the development of bio-based products. In addition to this, ongoing government infrastructure spending across countries such as India and China fuels demand zeolite for the production of lightweight construction materials.



Technological- Clariant, a specialty chemical company announced the opening of a new production facility for process and light stabilizers. The facility is cooperatively owned by Clariant and Beijing Tiangang Auxiliary Co., Ltd. (Tiangang), a producer and supplier of light stabilizers in China.

Environmental- Some of the synthetic zeolite dusts are considered nuisance dust owing to their toxicity. The accidental inhaling of such particles raises health and safety concerns. For instance, as zeolites are a complex group of silicates, they can cause pulmonary diseases if inhaled. Hence, such scenarios of toxicity may limit adoption of the synthetic zeolites, hampering the global market. Volatile Organic Compounds (VOCs) emissions caused by petrochemical reactions have become a significant concern and hazard for human health and the environment. For instance, such emissions can lead to damage to the central nervous system and difficulty in breathing.

Legal- BASF, a German multinational chemical company expanded its chemical catalyst recycling capability and capacity with the acquisition of Zodiac Enterprises LLC in Caldwell, Texas.

Global Zeolites Market

\$ 11.5 Billion
2020

\$ 15.2 Billion
2028

CAGR **3.7%**

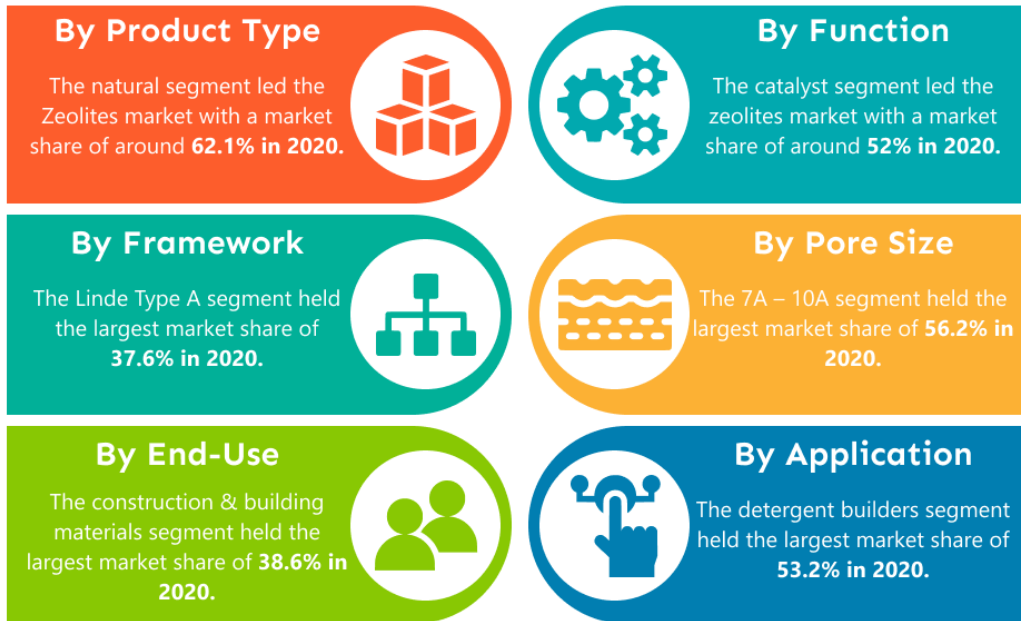


Market Dynamics

Drivers	Restraints	Opportunities	Challenges
<ul style="list-style-type: none">• The extensive demand for zeolites in the detergent industry• Low cost and non-toxicity associated with the zeolites	<ul style="list-style-type: none">• Toxicity associated with the synthetic zeolites	<ul style="list-style-type: none">• Upsurge in demand for adsorbents	<ul style="list-style-type: none">• Disruptions due to COVID-19



Segmentation Analysis



By Regional Analysis

The Asia-Pacific region dominated the Zeolites market and held the **32.1% share of the market revenue in 2020.**



Key Industry Players

 ALBEMARLE® Albemarle Corporation	 BASF The Chemical Company BASF SE	 TOSOH TOSOH Corporation	 ARKEMA Arkema	 Honeywell Honeywell International Inc
 SHOWA DENKO Union Showa KK	 ZEOCHEM ® Zeochem AG	 KNT GROUP KNT Group	 CLARIANT Clariant	 GRACE <small>Talent Technology Trust</small> W.R. Grace & Co

Latest Development

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