

Foundry Binders Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Binder Type (Organic Binders, Inorganic Binders, Chemical Binders, Non Chemical Binders), By Application (Core Sand Casting, Mold Sand Casting, Others), By Chemical Binder Sub?Type (Phenolic resin binders, Furan resin binders, Polyurethane binders, Silicate binders, Others), By Region, and By Competition, 2020-2030F

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Abstracts

Market Overview

The Global Foundry Binders Market was valued at USD 3.16 billion in 2024 and is projected to reach USD 4.06 billion by 2030, growing at a CAGR of 4.11% during the forecast period. Foundry binders are critical components in metal casting processes, used to bond sand particles for mold and core production. They play a vital role in achieving dimensional accuracy, structural strength, and surface quality of cast products. The rising demand for metal cast components across automotive, aerospace, construction, and heavy machinery sectors is fueling market growth. Automotive manufacturers in countries like China, India, and Brazil are increasingly adopting advanced binder systems—such as cold-box and inorganic binders—to support lightweight design and high-performance applications. Additionally, demand from aerospace and defense sectors for thermally stable and low-emission casting materials is encouraging innovation in binder formulations to meet stringent performance requirements.

Key Market Drivers

Rising Demand from Automotive and Aerospace Industries

The growing demand for precision-cast components in the automotive and aerospace industries is a key factor driving the foundry binders market. Foundry binders enable the formation of intricate mold shapes essential for manufacturing critical automotive parts such as engine blocks, transmission cases, and cylinder heads. With nearly 75% of global OEMs incorporating aluminum castings to enhance vehicle fuel efficiency and reduce weight, binders such as cold-box and furan resins are witnessing increased usage. In aerospace, approximately 65% of aircraft turbine components are manufactured through casting processes that rely on high-performance binders. The rising use of cast aluminum and magnesium alloys, combined with the growing production of electric vehicles—exceeding 14 million units sold globally last year—continues to expand the need for reliable, thermally resistant foundry binder systems.

Key Market Challenges

Volatility in Feedstock Prices and Raw Material Supply

A major challenge impacting the foundry binders market is the fluctuation in prices and availability of key raw materials such as phenol, formaldehyde, urea, melamine, silicates, and specialty polymers. These materials are subject to market dynamics tied to crude oil prices and petrochemical supply chains. Over the past few years, feedstock prices have shown volatility of up to 30%, creating cost uncertainty for manufacturers. For example, in 2023, phenol prices surged over 25%, and formaldehyde and urea increased by 18–20%, impacting production budgets and operating margins. Additionally, global supply chain disruptions—such as those caused by geopolitical conflicts—have led to shortages, forcing binder manufacturers to reduce production capacity and delay deliveries.

Key Market Trends

Digital Foundries and Binder Tailoring for Automation

The trend toward digitalization and automation in foundry operations is reshaping the binder market. Advanced foundries are adopting automated core-making, 3D sand printing, and integrated molding control systems, requiring binders that can support high-

speed and precise processing. New-generation 'smart' binders are engineered with adaptive properties—such as temperature-sensitive curing and humidity-adjusted viscosity—to optimize performance in real-time production environments. These tailored binders enhance productivity by reducing cycle times and minimizing defects. In digital mold shops, binder-jet 3D printers demand ultra-clean burnout and zero-residue formulations, prompting manufacturers to develop specialized binders with narrow curing profiles and high reliability for next-generation casting technologies.

Key Market Players

ASK Chemicals GmbH

BASF SE

Höpfer Albertus

Imerys S.A.

Vesuvius plc

Kao Corporation

Mitsubishi Chemical Corporation

Wacker Chemie AG

Huntsman Corporation

Henkel

Report Scope:

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

Foundry Binders Market, By Binder Type:

Organic Binders

Inorganic Binders

Chemical Binders

Non Chemical Binders

Foundry Binders Market, By Application:

Core Sand Casting

Mold Sand Casting

Others

Foundry Binders Market, By Chemical Binder Sub Type:

Phenolic resin binders

Furan resin binders

Polyurethane binders

Silicate binders

Others

Foundry Binders Market, By Region:

North America

United States

Canada

Mexico

Europe

Germany

France

United Kingdom

Italy

Spain

South America

Brazil

Argentina

Colombia

Asia-Pacific

China

India

Japan

South Korea

Australia

Middle East & Africa

Saudi Arabia

UAE

South Africa

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Foundry Binders Market.

Available Customizations:

Global Foundry Binders 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).

Contents

1. PRODUCT OVERVIEW

- 1.1. Market Definition
- 1.2. Scope of the Market
 - 1.2.1. Markets Covered
 - 1.2.2. Years Considered for Study
 - 1.2.3. Key Market Segmentations

2. RESEARCH METHODOLOGY

- 2.1. Objective of the Study
- 2.2. Baseline Methodology
- 2.3. Key Industry Partners
- 2.4. Major Association and Secondary Sources
- 2.5. Forecasting Methodology
- 2.6. Data Triangulation & Validation
- 2.7. Assumptions and Limitations

3. EXECUTIVE SUMMARY

- 3.1. Overview of the Market
- 3.2. Overview of Key Market Segmentations
- 3.3. Overview of Key Market Players
- 3.4. Overview of Key Regions/Countries
- 3.5. Overview of Market Drivers, Challenges, and Trends

4. VOICE OF CUSTOMER

5. GLOBAL FOUNDRY BINDERS MARKET OUTLOOK

- 5.1. Market Size & Forecast
 - 5.1.1. By Value
- 5.2. Market Share & Forecast
 - 5.2.1. By Binder Type (Organic Binders, Inorganic Binders, Chemical Binders, Non Chemical Binders)
 - 5.2.2. By Application (Core Sand Casting, Mold Sand Casting, Others)
 - 5.2.3. By Chemical Binder Sub Type (Phenolic resin binders, Furan resin binders,

Polyurethane binders, Silicate binders, Others)

5.2.4. By Region (North America, Europe, South America, Middle East & Africa, Asia Pacific)

5.3. By Company (2024)

5.4. Market Map

6. NORTH AMERICA FOUNDRY BINDERS MARKET OUTLOOK

6.1. Market Size & Forecast

6.1.1. By Value

6.2. Market Share & Forecast

6.2.1. By Binder Type

6.2.2. By Application

6.2.3. By Chemical Binder Sub Type

6.2.4. By Country

6.3. North America: Country Analysis

6.3.1. United States Foundry Binders Market Outlook

6.3.1.1. Market Size & Forecast

6.3.1.1.1. By Value

6.3.1.2. Market Share & Forecast

6.3.1.2.1. By Binder Type

6.3.1.2.2. By Application

6.3.1.2.3. By Chemical Binder Sub Type

6.3.2. Canada Foundry Binders Market Outlook

6.3.2.1. Market Size & Forecast

6.3.2.1.1. By Value

6.3.2.2. Market Share & Forecast

6.3.2.2.1. By Binder Type

6.3.2.2.2. By Application

6.3.2.2.3. By Chemical Binder Sub Type

6.3.3. Mexico Foundry Binders Market Outlook

6.3.3.1. Market Size & Forecast

6.3.3.1.1. By Value

6.3.3.2. Market Share & Forecast

6.3.3.2.1. By Binder Type

6.3.3.2.2. By Application

6.3.3.2.3. By Chemical Binder Sub Type

7. EUROPE FOUNDRY BINDERS MARKET OUTLOOK

- 7.1. Market Size & Forecast
 - 7.1.1. By Value
- 7.2. Market Share & Forecast
 - 7.2.1. By Binder Type
 - 7.2.2. By Application
 - 7.2.3. By Chemical Binder Sub Type
 - 7.2.4. By Country
- 7.3. Europe: Country Analysis
 - 7.3.1. Germany Foundry Binders Market Outlook
 - 7.3.1.1. Market Size & Forecast
 - 7.3.1.1.1. By Value
 - 7.3.1.2. Market Share & Forecast
 - 7.3.1.2.1. By Binder Type
 - 7.3.1.2.2. By Application
 - 7.3.1.2.3. By Chemical Binder Sub Type
 - 7.3.2. France Foundry Binders Market Outlook
 - 7.3.2.1. Market Size & Forecast
 - 7.3.2.1.1. By Value
 - 7.3.2.2. Market Share & Forecast
 - 7.3.2.2.1. By Binder Type
 - 7.3.2.2.2. By Application
 - 7.3.2.2.3. By Chemical Binder Sub Type
 - 7.3.3. United Kingdom Foundry Binders Market Outlook
 - 7.3.3.1. Market Size & Forecast
 - 7.3.3.1.1. By Value
 - 7.3.3.2. Market Share & Forecast
 - 7.3.3.2.1. By Binder Type
 - 7.3.3.2.2. By Application
 - 7.3.3.2.3. By Chemical Binder Sub Type
 - 7.3.4. Italy Foundry Binders Market Outlook
 - 7.3.4.1. Market Size & Forecast
 - 7.3.4.1.1. By Value
 - 7.3.4.2. Market Share & Forecast
 - 7.3.4.2.1. By Binder Type
 - 7.3.4.2.2. By Application
 - 7.3.4.2.3. By Chemical Binder Sub Type
 - 7.3.5. Spain Foundry Binders Market Outlook
 - 7.3.5.1. Market Size & Forecast

7.3.5.1.1. By Value

7.3.5.2. Market Share & Forecast

7.3.5.2.1. By Binder Type

7.3.5.2.2. By Application

7.3.5.2.3. By Chemical Binder Sub Type

8. ASIA PACIFIC FOUNDRY BINDERS MARKET OUTLOOK

8.1. Market Size & Forecast

8.1.1. By Value

8.2. Market Share & Forecast

8.2.1. By Binder Type

8.2.2. By Application

8.2.3. By Chemical Binder Sub Type

8.2.4. By Country

8.3. Asia Pacific: Country Analysis

8.3.1. China Foundry Binders Market Outlook

8.3.1.1. Market Size & Forecast

8.3.1.1.1. By Value

8.3.1.2. Market Share & Forecast

8.3.1.2.1. By Binder Type

8.3.1.2.2. By Application

8.3.1.2.3. By Chemical Binder Sub Type

8.3.2. India Foundry Binders Market Outlook

8.3.2.1. Market Size & Forecast

8.3.2.1.1. By Value

8.3.2.2. Market Share & Forecast

8.3.2.2.1. By Binder Type

8.3.2.2.2. By Application

8.3.2.2.3. By Chemical Binder Sub Type

8.3.3. Japan Foundry Binders Market Outlook

8.3.3.1. Market Size & Forecast

8.3.3.1.1. By Value

8.3.3.2. Market Share & Forecast

8.3.3.2.1. By Binder Type

8.3.3.2.2. By Application

8.3.3.2.3. By Chemical Binder Sub Type

8.3.4. South Korea Foundry Binders Market Outlook

8.3.4.1. Market Size & Forecast

- 8.3.4.1.1. By Value
- 8.3.4.2. Market Share & Forecast
 - 8.3.4.2.1. By Binder Type
 - 8.3.4.2.2. By Application
 - 8.3.4.2.3. By Chemical Binder Sub Type
- 8.3.5. Australia Foundry Binders Market Outlook
 - 8.3.5.1. Market Size & Forecast
 - 8.3.5.1.1. By Value
 - 8.3.5.2. Market Share & Forecast
 - 8.3.5.2.1. By Binder Type
 - 8.3.5.2.2. By Application
 - 8.3.5.2.3. By Chemical Binder Sub Type

9. MIDDLE EAST & AFRICA FOUNDRY BINDERS MARKET OUTLOOK

- 9.1. Market Size & Forecast
 - 9.1.1. By Value
- 9.2. Market Share & Forecast
 - 9.2.1. By Binder Type
 - 9.2.2. By Application
 - 9.2.3. By Chemical Binder Sub Type
 - 9.2.4. By Country
- 9.3. Middle East & Africa: Country Analysis
 - 9.3.1. Saudi Arabia Foundry Binders Market Outlook
 - 9.3.1.1. Market Size & Forecast
 - 9.3.1.1.1. By Value
 - 9.3.1.2. Market Share & Forecast
 - 9.3.1.2.1. By Binder Type
 - 9.3.1.2.2. By Application
 - 9.3.1.2.3. By Chemical Binder Sub Type
 - 9.3.2. UAE Foundry Binders Market Outlook
 - 9.3.2.1. Market Size & Forecast
 - 9.3.2.1.1. By Value
 - 9.3.2.2. Market Share & Forecast
 - 9.3.2.2.1. By Binder Type
 - 9.3.2.2.2. By Application
 - 9.3.2.2.3. By Chemical Binder Sub Type
 - 9.3.3. South Africa Foundry Binders Market Outlook
 - 9.3.3.1. Market Size & Forecast

- 9.3.3.1.1. By Value
- 9.3.3.2. Market Share & Forecast
 - 9.3.3.2.1. By Binder Type
 - 9.3.3.2.2. By Application
 - 9.3.3.2.3. By Chemical Binder Sub Type

10. SOUTH AMERICA FOUNDRY BINDERS MARKET OUTLOOK

- 10.1. Market Size & Forecast
 - 10.1.1. By Value
- 10.2. Market Share & Forecast
 - 10.2.1. By Binder Type
 - 10.2.2. By Application
 - 10.2.3. By Chemical Binder Sub Type
 - 10.2.4. By Country
- 10.3. South America: Country Analysis
 - 10.3.1. Brazil Foundry Binders Market Outlook
 - 10.3.1.1. Market Size & Forecast
 - 10.3.1.1.1. By Value
 - 10.3.1.2. Market Share & Forecast
 - 10.3.1.2.1. By Binder Type
 - 10.3.1.2.2. By Application
 - 10.3.1.2.3. By Chemical Binder Sub Type
 - 10.3.2. Colombia Foundry Binders Market Outlook
 - 10.3.2.1. Market Size & Forecast
 - 10.3.2.1.1. By Value
 - 10.3.2.2. Market Share & Forecast
 - 10.3.2.2.1. By Binder Type
 - 10.3.2.2.2. By Application
 - 10.3.2.2.3. By Chemical Binder Sub Type
 - 10.3.3. Argentina Foundry Binders Market Outlook
 - 10.3.3.1. Market Size & Forecast
 - 10.3.3.1.1. By Value
 - 10.3.3.2. Market Share & Forecast
 - 10.3.3.2.1. By Binder Type
 - 10.3.3.2.2. By Application
 - 10.3.3.2.3. By Chemical Binder Sub Type

11. MARKET DYNAMICS

- 11.1. Drivers
- 11.2. Challenges

12. MARKET TRENDS AND DEVELOPMENTS

- 12.1. Merger & Acquisition (If Any)
- 12.2. Product Launches (If Any)
- 12.3. Recent Developments

13. COMPANY PROFILES

- 13.1. ASK Chemicals GmbH
 - 13.1.1. Business Overview
 - 13.1.2. Key Revenue and Financials
 - 13.1.3. Recent Developments
 - 13.1.4. Key Personnel
 - 13.1.5. Key Product/Services Offered
- 13.2. BASF SE
- 13.3. Hüttenes Albertus
- 13.4. Imerys S.A.
- 13.5. Vesuvius plc
- 13.6. Kao Corporation
- 13.7. Mitsubishi Chemical Corporation
- 13.8. Wacker Chemie AG
- 13.9. Huntsman Corporation
- 13.10. Henkel

14. STRATEGIC RECOMMENDATIONS

15. ABOUT US & DISCLAIMER

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