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Global Artificial Intelligence (AI) in Chemicals Market Size Study & Forecast, by Type, Application, End-use Industry and Regional Forecasts 2025-2035

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Abstracts

The Global Artificial Intelligence (AI) in Chemicals Market is valued at approximately USD 1.2 billion in 2024 and is anticipated to grow at a compound annual growth rate (CAGR) of 27.50% during the forecast period 2025–2035. In a rapidly digitizing industrial ecosystem, artificial intelligence is no longer a novel addition but a pivotal force reshaping the chemical industry's operational DNA. By embedding AI into core processes, chemical companies are streamlining complex workflows, accelerating the discovery of new compounds, and achieving predictive precision in areas like demand forecasting and pricing strategy. From raw material optimization to predictive maintenance of production facilities, AI is empowering chemical players to break away from traditional trial-and-error methodologies and move towards intelligent, data-driven decision-making.

This unprecedented transformation is driven by AI’s ability to simulate chemical reactions, identify performance anomalies in real-time, and unearth hidden patterns across manufacturing value chains. With AI-fueled platforms enabling virtual chemical modeling and real-time monitoring, companies can reduce R&D timelines, enhance sustainability through waste minimization, and unlock innovation in specialty chemical formulations. As global demand continues to surge for high-performance materials, agricultural chemicals, and cleaner alternatives, AI acts as a strategic enabler to scale production while ensuring cost-efficiency and regulatory compliance. Simultaneously, services and software ecosystems supporting AI infrastructure are becoming critical levers for market competitiveness.

Regionally, North America currently dominates the AI in Chemicals market owing to its robust investment in digital transformation, early adoption of AI-powered chemical

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informatics, and presence of leading global chemical giants and AI tech innovators. The region’s integration of AI spans from smart reactors and autonomous laboratories to AI-driven ESG compliance tracking. Meanwhile, Asia Pacific is projected to grow at the fastest pace, largely fueled by chemical manufacturing hubs in China, India, and Japan. These nations are increasingly turning to AI to solve productivity bottlenecks, mitigate environmental impact, and innovate with advanced material science. In Europe, sustainability-centric policies and significant R&D expenditure are fostering adoption, especially within specialty chemicals and green chemistry domains.

Major market player included in this report are:

BASF SE

Dow Inc.

SABIC

Clariant AG

DuPont de Nemours, Inc.

Huntsman Corporation

Evonik Industries AG

Solvay SA

Mitsubishi Chemical Group Corporation

Covestro AG

Eastman Chemical Company

W. R. Grace & Co.

Johnson Matthey PLC

Linde PLC

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IBM Corporation

Global Artificial Intelligence (AI) in Chemicals Market Report Scope:

Historical Data – 2023, 2024

Base Year for Estimation – 2024

Forecast period – 2025-2035

Report Coverage – Revenue forecast, Company Ranking, Competitive Landscape, Growth factors, and Trends

Regional Scope – North America; Europe; Asia Pacific; Latin America; Middle East & Africa

Customization Scope – Free report customization (equivalent up to 8 analysts' working hours) with purchase. Addition or alteration to country, regional & segment scope*

The objective of the study is to define market sizes of different segments & countries in recent years and to forecast the values for the coming years. The report is designed to incorporate both qualitative and quantitative aspects of the industry within the countries involved in the study. The report also provides detailed information about crucial aspects, such as driving factors and challenges, which will define the future growth of the market. Additionally, it incorporates potential opportunities in micro-markets for stakeholders to invest, along with a detailed analysis of the competitive landscape and product offerings of key players. The detailed segments and sub-segments of the market are explained below:

By Type:

Hardware

Software

Services

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By Application:

- Production Optimization
- New Material Innovation
- Operational Process Management
- Pricing Optimization
- Raw Material Demand Forecasting
- Others

By End-use:

- Base Chemicals & Petrochemicals
- Agricultural Chemicals
- Specialty Chemicals

By Region:

North America

- U.S.
- Canada

Europe

- UK

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- Germany
- France
- Spain
- Italy
- ROE

Asia Pacific

- China
- India
- Japan
- Australia
- South Korea
- RoAPAC

Latin America

- Brazil
- Mexico

Middle East & Africa

- UAE
- Saudi Arabia

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South Africa

Rest of Middle East & Africa

Key Takeaways:

Market Estimates & Forecast for 10 years from 2025 to 2035.

Annualized revenues and regional level analysis for each market segment.

Detailed analysis of geographical landscape with Country level analysis of major regions.

Competitive landscape with information on major players in the market.

Analysis of key business strategies and recommendations on future market approach.

Analysis of competitive structure of the market.

Demand side and supply side analysis of the market.

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