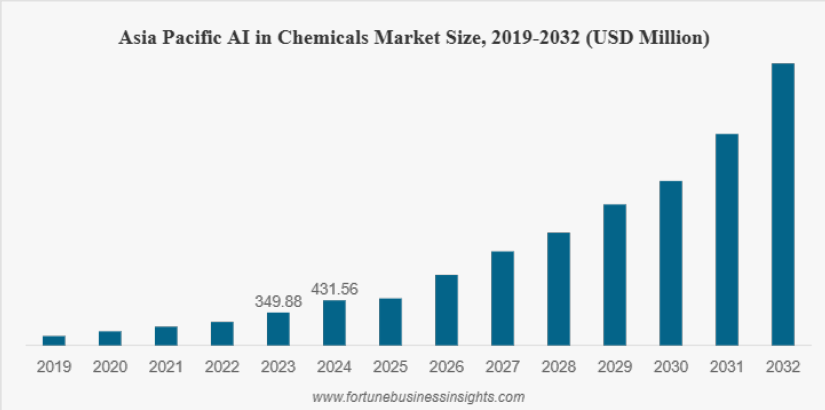
AI in Chemicals Market Overview: Digital Transformation & Process Optimization Driving Growth

Key companies covered in the AI in Chemicals Market are IBM Corporation, Microsoft, Google LLC, SAP SE, and Amazon Web Services, Inc.



AI in Chemicals Market Size

PUNE, MAHARASHTRA, INDIA, February 10, 2026 /EINPresswire.com/ -- The AI in Chemicals Market Size highlights a rapidly evolving sector where artificial intelligence technologies are ushering in new efficiencies, innovation, and sustainability across chemical production, research, and supply chain functions. According to the latest report by Fortune Business Insights, the global AI in chemicals market size was valued at USD 1,106.58 million in 2024, and is projected to grow from USD 1,358.99 million in 2025 to USD 6,937.86 million by 2032, exhibiting a Compound Annual Growth Rate (CAGR) of 26.2% during the forecast period.

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>
> *Fortune Business Insights*

Market Growth Factors

Several Market Growth Factors are driving the ascent of the AI in chemicals market. A central growth driver is the urgent digital transformation across global chemical manufacturing, where companies are shifting from traditional process automation to data-intensive AI-driven platforms. These technologies allow organizations to continuously adapt, improve processes, and forecast outcomes with higher precision — leading to more competitive chemical production.

Another crucial factor is the growing industry focus on sustainability and cleaner manufacturing practices. AI plays a vital role in improving energy efficiency, reducing emissions, and enabling greener production workflows by analyzing operational data and recommending optimal parameters for energy usage, chemical reactions, and waste management — especially critical

under regulatory pressures for environmental compliance and reduced carbon footprints.

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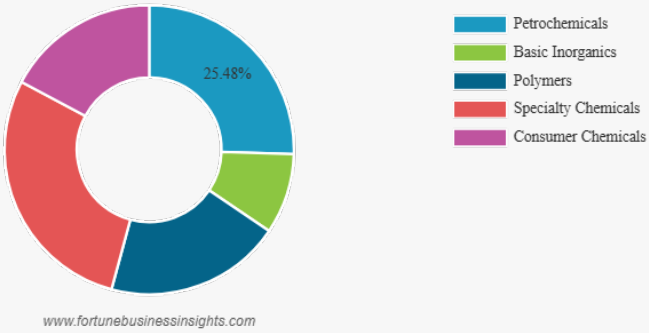

AI in Chemicals Market

Top Companies in Market
The Top Companies in Market competitive landscape features major technology and software providers that are at the forefront of the AI in chemicals transformation. Leading players profiled in the report include:

- IBM Corporation
- Nvidia Corporation
- Microsoft Corporation
- Schneider Electric
- Google LLC
- C3.ai
- SAP SE
- Siemens AG
- Amazon Web Services, Inc.
- Revvity Signals Software, Inc.

Market Trends
The Market Trends section reveals how businesses are increasingly adopting AI to drive chemical industry transformation. One notable trend is the broad deployment of AI for predictive maintenance and quality assurance across process lines. Instead of relying on reactive maintenance, chemical plants are leveraging AI models to anticipate equipment failures and optimize maintenance schedules, minimizing unplanned downtime and ensuring operational continuity.
Furthermore, the use of AI in supply chain optimization is emerging as a key trend. By analyzing historical demand data, production constraints, logistics performance, and external variables, AI-powered systems help chemical producers streamline sourcing, manufacturing scheduling, and product delivery — resulting in reduced costs and shorter lead times.

Market Segmentation Analysis
The Market Segmentation Analysis in the AI in chemicals market covers multiple dimensions such as offering and solution, application, and chemical industry segment, each illuminating distinct adoption patterns and technological needs.
By offering/solution, the market includes segments such as AI software, AI services, and others. AI software leads the market due to the increasing dependency on analytic frameworks, machine

learning models, and AI-enabled platforms that deliver insights, forecast outcomes, and automate critical tasks. Software investments remain central to enterprise transformation agendas in chemical companies.

By application, AI's role spans process optimization and control, predictive maintenance, R&D/molecule discovery, supply chain optimization, and other strategic use cases. These AI applications help chemical organisations optimize operations from plant floors to boardrooms, reinforcing AI as a strategic enabler of performance, safety, and profitability.

By chemical industry segment, the adoption of AI technologies cuts across traditional petrochemicals, basic inorganics, polymers, specialty chemicals, and consumer chemicals sectors. Each segment benefits differently: specialty chemicals and polymer producers often use AI to refine formulations and reduce product development timelines, while basic chemical sectors leverage AI for production efficiency and yield improvement.

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Regional Insights

In Asia Pacific, the region held the dominant market share in 2023 and continued in 2024 with the largest valuation, supported by rapid industrial digitalization, expanding chemical production capacity, and government-backed smart manufacturing initiatives in markets such as China, Japan, South Korea, and India. The region's focus on integrating AI for process optimization, predictive maintenance, and sustainable operations makes it a key hub for market expansion.

North America is projected as the second-largest market during the forecast period, owing to robust digital infrastructure, early AI adoption in process automation, and high R&D investment levels in advanced materials and specialty chemicals. Regulatory emphasis on efficiency and safety further supports AI uptake in the United States and Canada.

In Europe, rapid AI integration is propelled by a strong presence of specialty chemical producers and sustainability goals aligned with the European Green Deal and digital transformation frameworks like Horizon Europe. This drives AI adoption for energy efficiency, production improvement, and reduced emissions.

Latin America and the Middle East & Africa are poised for moderate growth. In Latin America, markets such as Brazil and Mexico are gradually adopting AI for process optimization, while the GCC in the Middle East is leveraging AI to enhance operational efficiency and diversify industrial applications beyond traditional petrochemicals.

Key Industry Developments

- November 2024: SAP SE released SAP Business AI for Chemicals, a solution aimed at chemical companies to predict market demand, plant equipment failures, quality deviations, and safety hazards, helping optimize materials use and reduce emissions in chemical manufacturing.
- June 2024: Siemens AG launched generative-AI-driven plant engineering tools (Hydrogen Plant Configurator, Comos AI) to design and optimize hydrogen/chemical process plants rapidly, enabling industrial chemical and process-manufacturing applications.

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