



Phosphoric Acid Market Report 2024 - 2032

Phosphoric Acid Market Snapshot



GLOBAL STATISTICS

Market Value (2023) **\$61,649.62 Mn**
 CAGR (2024-2032) **3.9%**
 Market Value (2032) **\$ 87,454.39 Mn**



SEGMENT VALUATION

Technical Grade

Market Size (2023)

\$ 60,035.13 Mn

Fertilizer

Market Share (2023)

78.3%



REGIONAL ANALYSIS



Asia Pacific

Market Size (2023)

\$ 31,661.92 Mn



KEY COMPANIES COVERED

- 1) Innophos
- 2) Chuandong Chemical Co., Ltd
- 3) Hydrite Chemical Co
- 4) Aditya Birla Chemicals
- 5) Haifa Group
- 6) Nutrien
- 7) Chuanlin Chemical
- 8) ArrMaz Products, Inc
- 9) Univar Solutions Inc
- 10) Shifang Sundia Chemical Industry
- 11) Prayon
- 12) Gujarat Alkalies and Chemicals Limited
- 13) ICL Group Ltd.



SCOPE AND COVERAGE

Market Segment	Scope
By Grade	<input type="checkbox"/> Technical Grade <input type="checkbox"/> Food Grade
By Concentration	<input type="checkbox"/> Phosphoric acid 75% <input type="checkbox"/> Phosphoric acid 85% <input type="checkbox"/> Phosphoric acid 92% <input type="checkbox"/> Others
By Application	<input type="checkbox"/> Fertilizer <input type="checkbox"/> Metal Treatment <input type="checkbox"/> Cleaning & Sanitizing agent <input type="checkbox"/> Catalyst <input type="checkbox"/> Food Additive <input type="checkbox"/> pH regulator <input type="checkbox"/> Cleaners <input type="checkbox"/> Additive <input type="checkbox"/> Emulsifying agent <input type="checkbox"/> Others <input type="checkbox"/> Others
By End Use	<input type="checkbox"/> Agriculture <input type="checkbox"/> Energy <input type="checkbox"/> Industrial Cleaning <input type="checkbox"/> General Industrial <input type="checkbox"/> Construction <input type="checkbox"/> Water Treatment <input type="checkbox"/> Beverage <input type="checkbox"/> Carbonated beverages <input type="checkbox"/> Sports Drinks <input type="checkbox"/> Juices <input type="checkbox"/> Others <input type="checkbox"/> Nutritional supplement <input type="checkbox"/> Processed foods <input type="checkbox"/> Dairy products <input type="checkbox"/> Others

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- 10.13. ICL Group Ltd.

The above list of companies is only partial and will be revised as research progresses. We will profile all key companies in the market, and will add to this list.

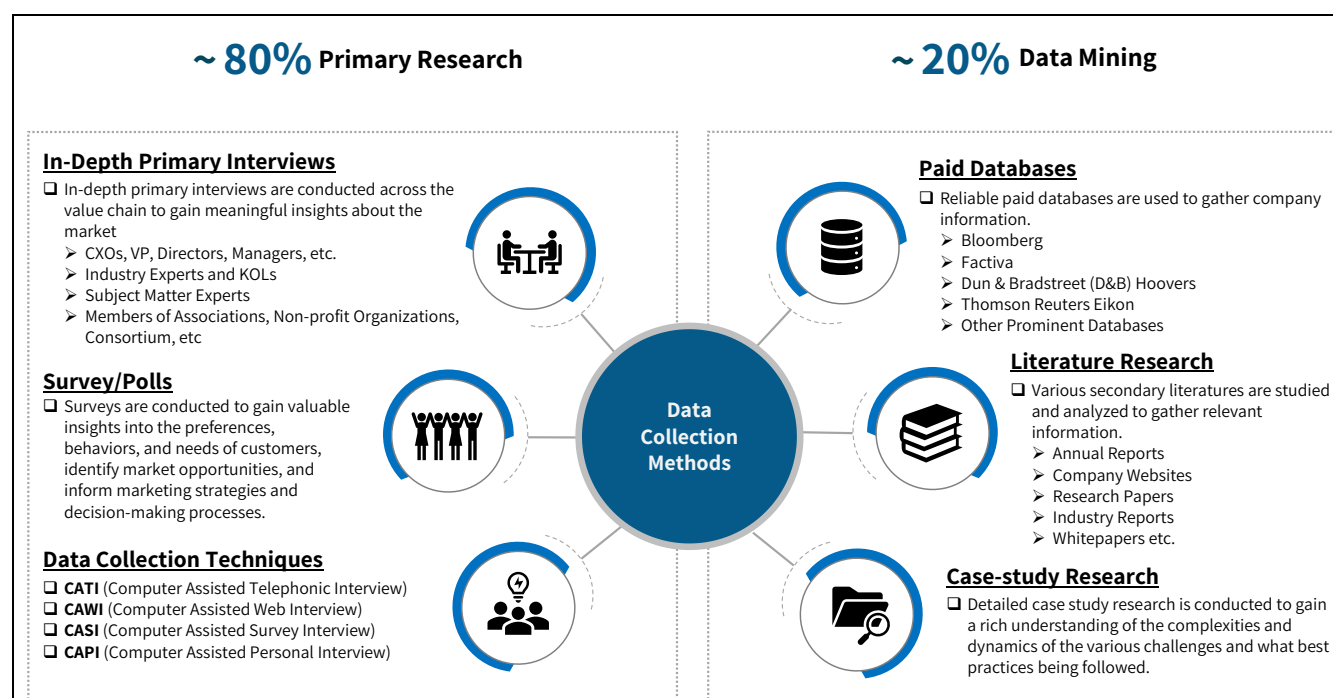
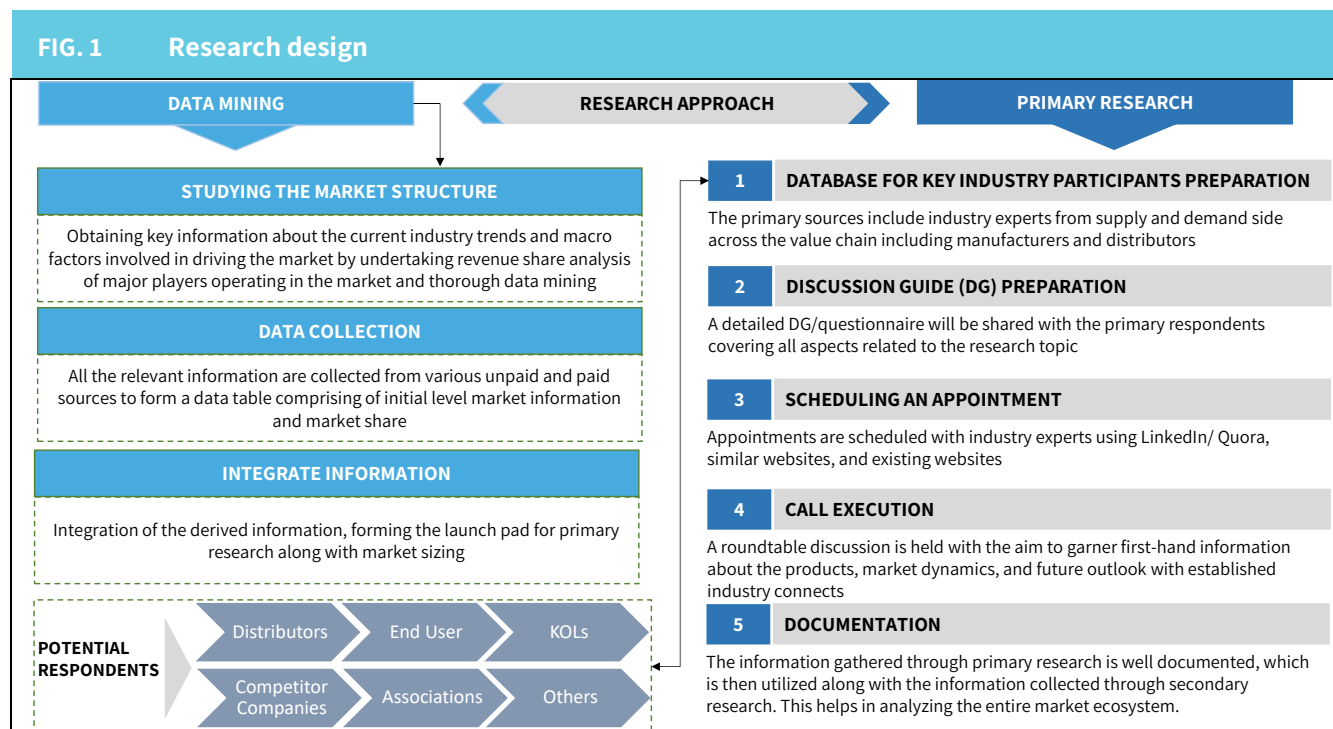
Note: The above companies will be profiles based on following parameters:

- Business overview
- Financial data
- Temperature landscape
- Strategic outlook
- SWOT analysis

Chapter 1 Research Methodology

1.1 Research design

At GMI, a proprietary, rigorous and comprehensive research methodology helps us ensure that we deliver the most relevant, accurate, authentic, and validated data to our clients. Given below is a snapshot of our research process.



1.2 Base estimates and calculations

The market size was arrived at after the data triangulation from various approaches, as enlisted below. By combining multiple approaches based on a weighted average model, we ensured a robust and reliable calculation of the market size, providing our client with a comprehensive understanding of the market's magnitude and potential.

1.1.1 Market calculation working

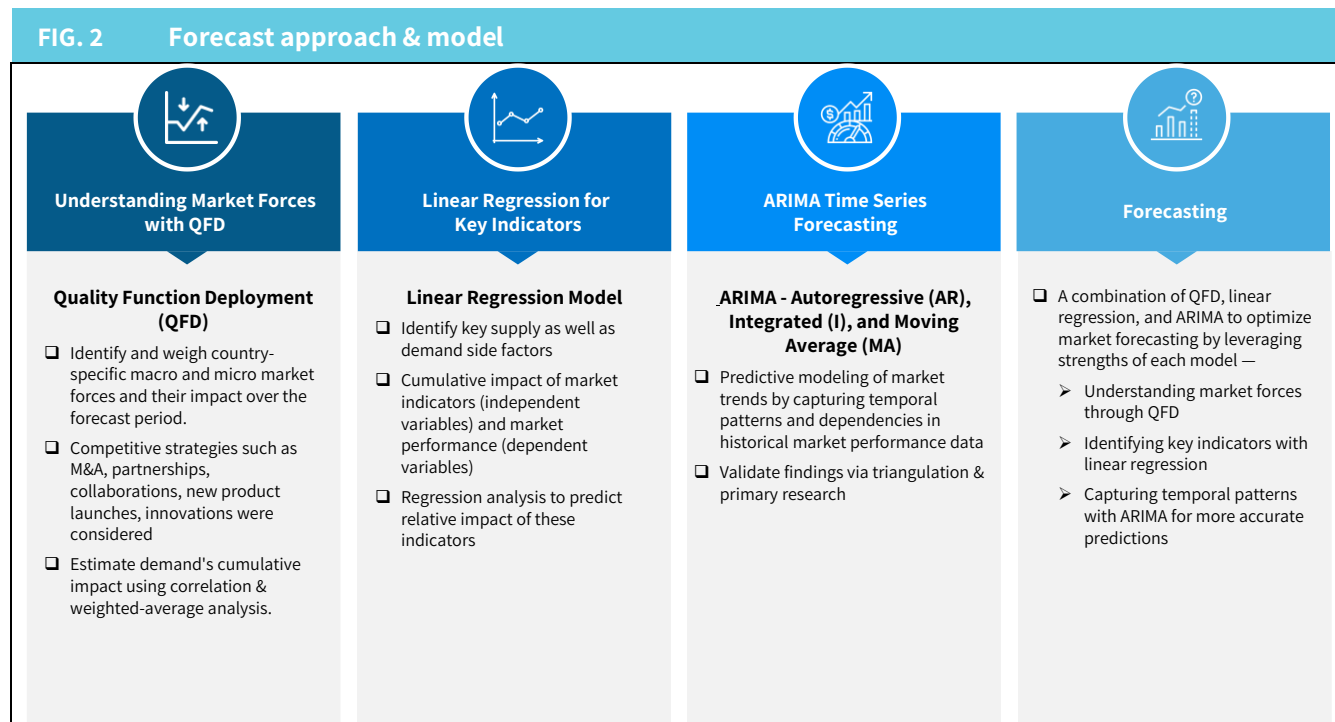
- The market for the phosphoric acid market was deciphered through data mining sources such as whitepapers and journals

1.1.2 Key trends for market estimate

- Historical market performance
- Macro and Micro-economic performance
- Market dynamics
- Regulatory framework
- Adoption trends
- Technological advancements
- Raw material trends
- Average selling prices

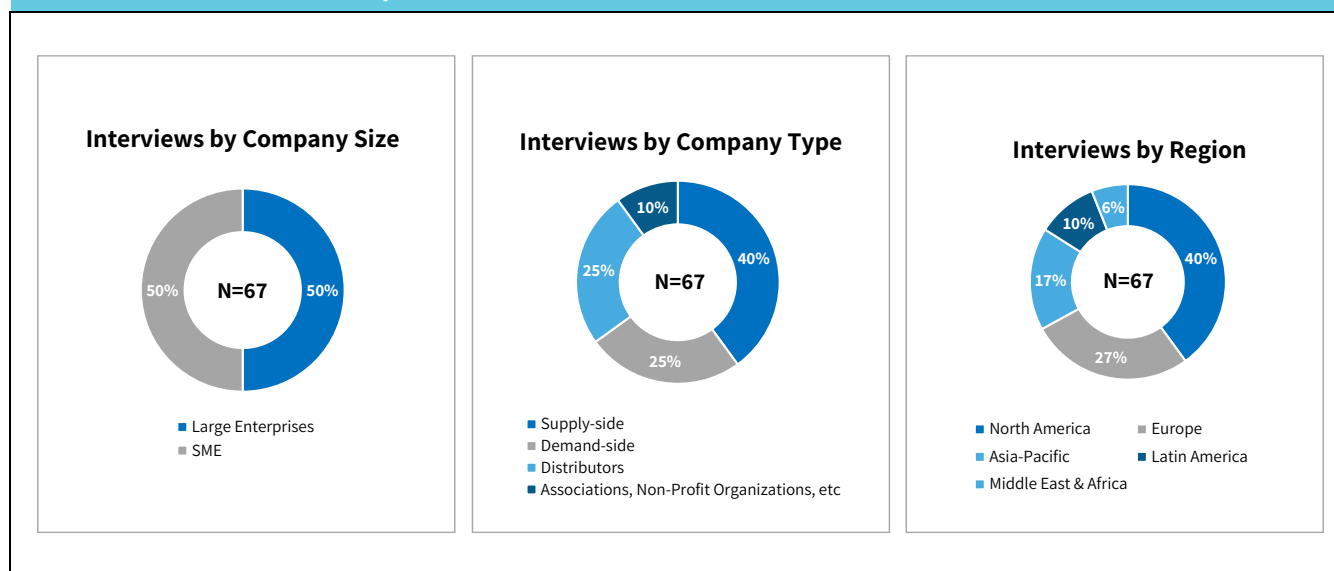
1.3 Forecast model

The forecast model was designed using multiple techniques coupled with weightages. This model is applied to each segment and sub-segment at country level.



1.4 Primary research & validation

To ensure the highest quality of data, a rigorous validation process was implemented, integrating both manual and automated techniques within the realm of primary research. The insights provided by individual respondents regarding market size and growth were considered during the interview process, spanning both regional and global perspectives. The validation of data occurred at both the initial market calculations and data forecasting stages to address any data gaps and affirm the accuracy of our findings at each step.

FIG. 3 Breakdown of respondents

1.1.3 Data mining sources

Some of the sources referred to for this study include (but not limited to):

- American Chemical Society (ACS)
- Bureau of Indian Standards (BIS)
- Chemical Safety Board (CSB)
- Food Chemical News (FCN)
- Indian Chemical Council (ICC)
- National Institute of Standards and Technology (NIST)
- The Fertilizer Institute (TFI)
- International Food Policy Research Institute (IFPRI)
- American Petroleum Institute (API)
- European Association of Chemical Distributors (FECC)
- National Agricultural Statistics Service (NASS)
- Society of Chemical Manufacturers and Affiliates (SOCMA)
- International Association for the Properties of Water and Steam (IAPWS)
- Chemical Manufacturers Association (CMA)
- Company Annual Reports

Chapter 2 Executive Summary

2.1 Industry snapshot

2.2 Business trends

	2021	2022	2023
USD Million	55,915.22	58,782.42	61,649.62
Kilo Tons	xx	xx	xx

Source: Global Market Insights, Paid Databases, Primary Research

- In the dynamic landscape of the phosphoric acid market, several key factors shape its evolution and growth. Phosphoric acid, a vital component in fertilizers, industrial processes, and food production, has seen increasing demand due to the global rise in agricultural activities and industrial applications. As the world's population grows and the need for food production intensifies, the agricultural sector's reliance on phosphoric acid-based fertilizers has surged. This heightened demand is driven by the necessity to enhance crop yields and ensure food security, placing phosphoric acid at the center of agricultural innovation and sustainability efforts.
- The market is influenced by both regional and global economic factors, including fluctuations in raw material prices and regulatory changes. Major producers such as OCP Group, Mosaic Company, and Yara International play a significant role in shaping market trends through their production capacities and strategic investments. These companies are continually adapting to evolving market conditions, including shifts in environmental regulations and sustainability demands. Additionally, the geopolitical landscape impacts the phosphoric acid market, as trade policies and tariffs can affect supply chains and pricing structures.
- Technological advancements and innovations are also crucial in the phosphoric acid market's evolution. The development of more efficient production processes and the exploration of alternative sources for phosphoric acid production contribute to market dynamics. Companies are investing in research and development to enhance the efficiency of phosphoric acid production, reduce environmental impacts, and explore new applications. The integration of advanced technologies and sustainable practices is expected to drive future growth, making the phosphoric acid market increasingly dynamic and responsive to global trends and challenges.

2.3 Grade

TABLE 1 Global phosphoric acid historic market size, by grade, 2021 - 2023 (USD Million)

Grade	2021	2022	2023
Technical Grade	54,529.56	57,284.36	60,035.13
Food Grade	1,385.67	1,498.06	1,614.49
Total	55,915.22	58,782.42	61,649.62

Source: Global Market Insights, Paid Databases, Primary Research

TABLE 2 Global phosphoric acid historic market size, by grade, 2021 - 2023 (Kilo Tons)

Grade	2021	2022	2023
Technical Grade	XX	XX	XX
Food Grade	XX	XX	XX
Total	XX	XX	XX

Source: Global Market Insights, Paid Databases, Primary Research

- Based on grade type, the market is divided into technical grade and food grade. Technical grade held the dominant market of USD 60,035.13 Million in 2023. Technical grade phosphoric acid is utilized primarily in industrial applications, such as fertilizer production, detergents, and chemical formulations. It is also employed in water treatment and metal processing due to its high purity and effectiveness in various industrial processes.
- In contrast, food grade phosphoric acid is specifically designed for the food and beverage industry, where it acts as an acidulant, flavoring agent, and pH control agent. This grade adheres to stringent food safety regulations to ensure it is free from contaminants and safe for consumption. The distinction between these grades reflects their specialized applications; while technical grade focuses on industrial uses, food grade is tailored to meet the high standards required for food safety and quality. Each grade is produced under different specifications and quality controls to address the unique needs of their respective industries.

2.4 Concentration

TABLE 3 Global phosphoric acid historic market size, by concentration, 2021 - 2023 (USD Million)

Concentration	2021	2022	2023
Phosphoric acid 75%	44,496.55	46,705.56	48,907.48
Phosphoric acid 85%	7,370.18	7,814.38	8,265.06
Phosphoric acid 92%	35.01	37.97	41.05
Others	4,013.49	4,224.50	4,436.03
Total	55,915.22	58,782.42	61,649.62

Source: Global Market Insights, Paid Databases, Primary Research

TABLE 4 Global phosphoric acid historic market size, by concentration, 2021 - 2023 (Kilo Tons)

Concentration	2021	2022	2023
Phosphoric acid 75%	xx	xx	xx
Phosphoric acid 85%	xx	xx	xx
Phosphoric acid 92%	xx	xx	xx
Others	xx	xx	xx
Total	xx	xx	xx

Source: Global Market Insights, Paid Databases, Primary Research

- Based on concentration the market is categorized as phosphoric acid 75%, phosphoric acid 85%, phosphoric acid 92% and others. Phosphoric acid 75% accounted for 79.3% market share in 2023 and is projected to grow through 2032. The phosphoric acid market is categorized based on concentration into three primary segments: phosphoric acid 75%, phosphoric acid 85%, and phosphoric acid 92%. Phosphoric acid 75% is widely used in the production of phosphatic fertilizers, cleaning agents, and metal treatments. Its moderate concentration provides an effective balance for industrial applications requiring both efficiency and cost-effectiveness. Phosphoric acid 85% is predominantly utilized in the food and beverage industry as an acidulant and pH regulator, ensuring precise control over acidity levels in processed foods and beverages. Additionally, this concentration is used in pharmaceutical applications due to its higher purity, which is crucial for meeting stringent safety and quality standards. Phosphoric acid 92%, with its high concentration, finds applications in specialized industrial processes, including the manufacture of high-purity phosphoric acid products and advanced chemical solutions. It is also used in certain cleaning solutions where a stronger acid is required. Each concentration is specifically tailored to address the needs of different industries, optimizing performance and meeting various regulatory and application requirements.

2.5 Application trends

TABLE 5 Global phosphoric acid historic market size, by application, 2021 - 2023 (USD Million)

Application	2021	2022	2023
Fertilizer	43,806.10	46,027.92	48,247.35
Metal Treatment	2,328.65	2,439.84	2,550.23
Cleaning & Sanitizing agent	3,357.11	3,508.61	3,658.10
Catalyst	225.22	235.22	245.06
Food Additive	1,385.67	1,498.06	1,614.49
pH regulator	1,008.90	1,091.43	1,177.00
Cleaners	88.32	95.04	101.94
Additive	93.94	101.27	108.82
Emulsifying agent	140.84	152.68	165.00
Others	53.67	57.65	61.72
Others	4,812.48	5,072.78	5,334.39
Total	55,915.22	58,782.42	61,649.62

Source: Global Market Insights, Paid Databases, Primary Research

TABLE 6 Global phosphoric acid historic market size, by application, 2021 - 2023 (Kilo Tons)

Application	2021	2022	2023
Fertilizer	XX	XX	XX
Metal Treatment	XX	XX	XX
Cleaning & Sanitizing agent	XX	XX	XX
Catalyst	XX	XX	XX
Food Additive	XX	XX	XX
pH regulator	XX	XX	XX
Cleaners	XX	XX	XX
Additive	XX	XX	XX
Emulsifying agent	XX	XX	XX
Others	XX	XX	XX
Others	XX	XX	XX
Total	XX	XX	XX

Source: Global Market Insights, Paid Databases, Primary Research

- Based on application the market is categorized as Fertilizer, Metal Treatment, Cleaning & Sanitizing agent, Catalyst, Food Additive, (pH regulator, Cleaners, Additive, Emulsifying agent, Others) and Others Fertilizers

accounted for 78.2% market share in 2023 and is projected to grow through 2032. Fertilizer, where it is essential for producing phosphate-based fertilizers like monoammonium phosphate (MAP) and diammonium phosphate (DAP) that enhance soil fertility; Metal Treatment, where it is used for rust removal and surface preparation; Cleaning & Sanitizing Agents, where it serves as an effective component in industrial and household cleaners; Catalyst, where it facilitates various chemical reactions in industrial processes; and Food Additive, where it functions as a pH regulator, emulsifying agent, and flavor enhancer in processed foods and beverages. Additionally, phosphoric acid is used in other applications such as Additives in various products and Emulsifying Agents to stabilize mixtures. Each application area leverages the unique properties of phosphoric acid to meet specific industry needs, reflecting its versatility and significance across multiple sectors.

2.6 End Use

TABLE 7 Global phosphoric acid historic market size, by end use, 2021 - 2023 (USD Million)

End Use	2021	2022	2023
Agriculture	44,934.85	47,229.70	49,523.64
Energy	908.62	946.47	983.47
Industrial Cleaning	2,009.64	2,106.65	2,203.06
General Industrial	2,129.67	2,223.86	2,316.58
Construction	782.91	816.36	849.15
Water Treatment	1,331.22	1,403.63	1,476.45
Beverage	1,048.76	1,133.12	1,220.46
Carbonated beverages	780.31	841.47	905.54
Sports Drinks	197.18	214.05	231.87
Juices	47.04	50.96	55.10
Others	24.22	26.05	27.95
Nutritional supplement	20.64	22.48	24.40
Processed foods	89.67	97.42	105.48
Dairy products	167.35	181.36	195.89
Others	2,491.89	2,621.37	2,751.03
Total	55,915.22	58,782.42	61,649.62

Source: Global Market Insights, Paid Databases, Primary Research

TABLE 8 Global phosphoric acid historic market size, by end use, 2021 - 2023 (Kilo Tons)

End Use	2021	2022	2023
Agriculture	XX	XX	XX
Energy	XX	XX	XX
Industrial Cleaning	XX	XX	XX
General Industrial	XX	XX	XX
Construction	XX	XX	XX
Water Treatment	XX	XX	XX
Beverage	XX	XX	XX
Carbonated beverages	XX	XX	XX
Sports Drinks	XX	XX	XX
Juices	XX	XX	XX
Others	XX	XX	XX
Nutritional supplement	XX	XX	XX
Processed foods	XX	XX	XX
Dairy products	XX	XX	XX
Others	XX	XX	XX
Total	XX	XX	XX

Source: Global Market Insights, Paid Databases, Primary Research

- Based on end use the market is categorized as agriculture, energy, industrial cleaning, general industries, construction, water treatment, beverage (carbonated beverages, sports drinks, juices, others), nutritional supplement, processed foods, dairy products, and others. Agriculture accounted for 80.3% market share in 2023 and is projected to grow through 2032. The phosphoric acid market is categorized based on end use into several distinct sectors. In agriculture, it is primarily used in the production of phosphate fertilizers to enhance soil fertility and boost crop yields. In the energy sector, phosphoric acid plays a role in various industrial processes, including battery production. For industrial cleaning, it is utilized in rust removal, surface preparation, and sanitation. The general industries segment employs phosphoric acid in a range of applications such as metal treatment and chemical manufacturing. In construction, it is used in concrete and masonry treatments. Water treatment benefits from phosphoric acid's ability to control pH levels and remove impurities. In the beverage industry, it is used in carbonated drinks, sports drinks, and juices to adjust acidity and enhance flavor. Nutritional supplements utilize phosphoric acid for its role in mineral fortification, while processed foods and dairy products use it as an acidulant and pH regulator to ensure quality and preservation. Each end use leverages phosphoric acid's unique properties to meet specific industry needs, reflecting its broad applicability.

2.7 Region trends

TABLE 9 Global phosphoric acid historic market size, by region, 2021 - 2023 (USD Million)

Region	2021	2022	2023
North America	9,590.24	9,986.52	10,382.79
Europe	9,956.52	10,409.04	10,861.57
Asia Pacific	28,264.30	29,963.11	31,661.92
Latin America	3,593.88	3,752.79	3,911.70
Middle East Africa	4,510.29	4,670.96	4,831.64
Total	55,915.22	58,782.42	61,649.62

Source: Global Market Insights, Paid Databases, Primary Research

TABLE 10 Global phosphoric acid historic market size, by region, 2021 - 2023 (Kilo Tons)

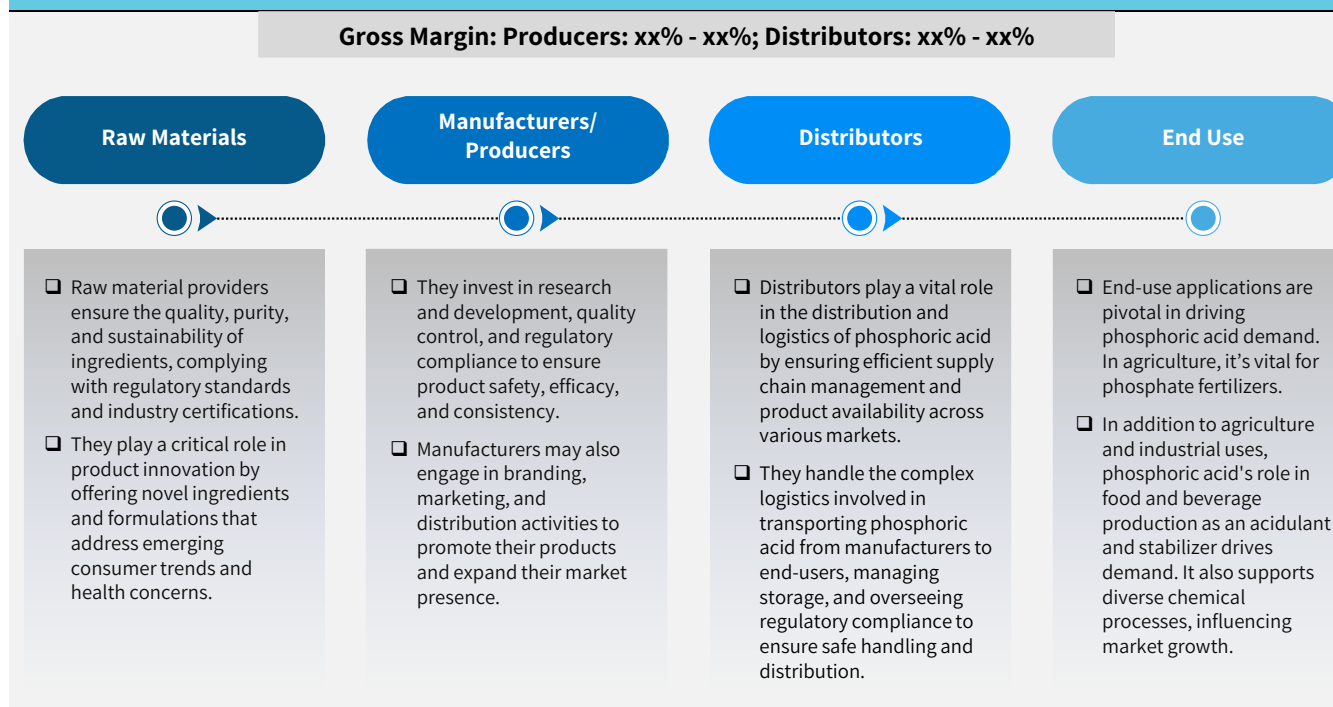
Region	2021	2022	2023
North America	XX	XX	XX
Europe	XX	XX	XX
Asia Pacific	XX	XX	XX
Latin America	XX	XX	XX
Middle East Africa	XX	XX	XX
Total	XX	XX	XX

Source: Global Market Insights, Paid Databases, Primary Research

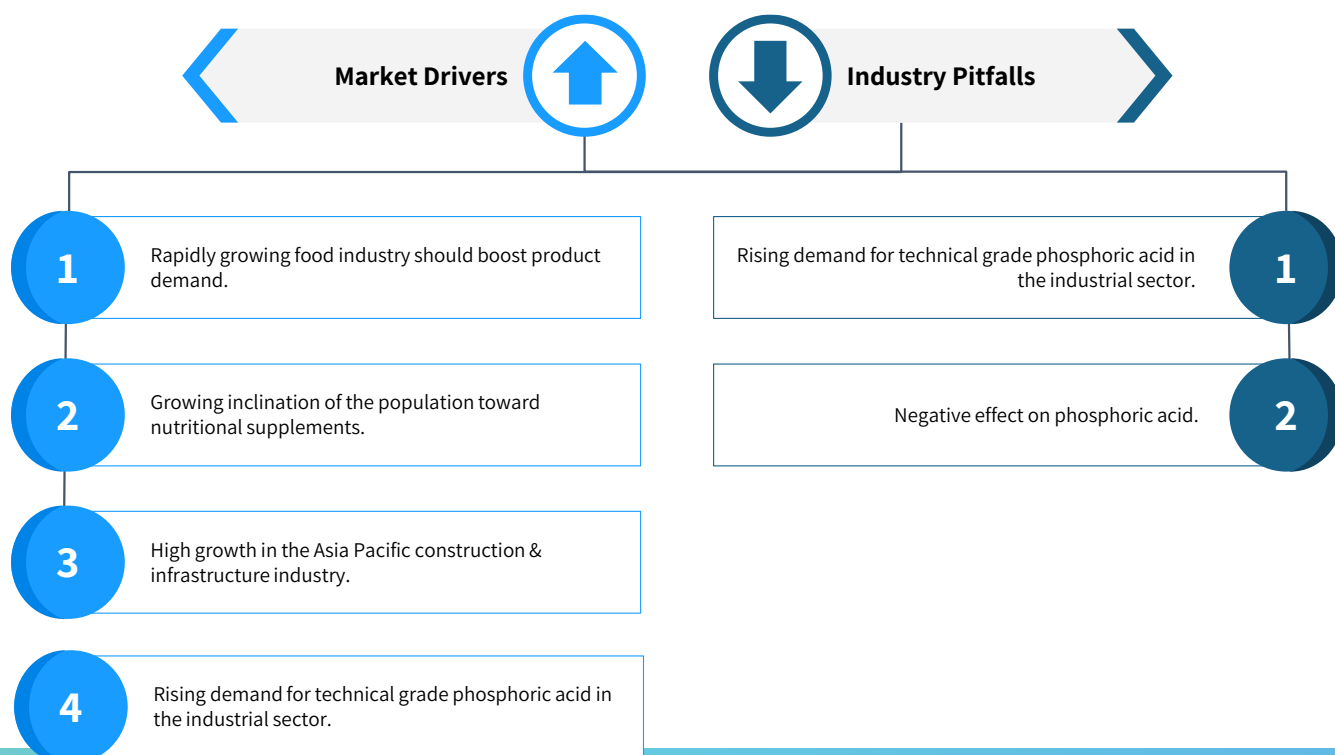
- Regional trends in the phosphoric acid market reflect varying demands and growth drivers across different areas. In North America, the market is driven by robust agricultural practices and advancements in fertilizer technologies, with a focus on sustainable farming practices and efficient nutrient management. Europe shows significant demand due to stringent environmental regulations, leading to innovations in cleaner production technologies and a shift towards more eco-friendly phosphate solutions. The Asia-Pacific region, particularly countries like China and India, exhibits rapid growth owing to its expanding agricultural sector and increasing industrial applications. This region's demand is also fueled by large-scale fertilizer production and infrastructure development. In Latin America, the market growth is supported by agricultural expansion and increasing investment in agribusiness. Africa presents opportunities for growth due to its agricultural potential and ongoing efforts to improve food security through enhanced fertilizer use. Each region's trends are shaped by local economic conditions, regulatory environments, and sector-specific needs, influencing the overall dynamics of the global phosphoric acid market.

Chapter 3 Industry Insights

FIG. 4 Industry ecosystem



3.1 Industry impact forces



3.2 Growth drivers

3.2.1 Rapidly growing food industry should boost product demand

The rapidly growing food industry is expected to significantly boost the demand for phosphoric acid, driven by its diverse applications and increasing consumption of processed and convenience foods. As the global population expands and urbanization accelerates, there is a rising demand for packaged and processed foods that require preservatives, flavor enhancers, and pH regulators to ensure product stability, taste, and shelf life. Phosphoric acid plays a critical role in the food industry as an acidulant, adjusting the acidity of beverages, including carbonated drinks and sports drinks, and in food processing for products such as dairy items and baked goods. Its use as a pH regulator ensures that food products maintain their desired texture and taste throughout their shelf life.

Additionally, phosphoric acid is utilized in the production of food-grade phosphates, which are essential for nutrient fortification and enhancing the nutritional profile of processed foods. As consumer preferences shift towards more convenient and processed food options, the demand for phosphoric acid is likely to increase, driven by the need for efficient preservation methods, improved food quality, and enhanced flavor profiles. This trend underscores the growing importance of phosphoric acid in meeting the evolving needs of the global food industry.

FIG. 5 Growth potential analysis, by application

Source: Global Market Insights, Paid Databases, Primary Research

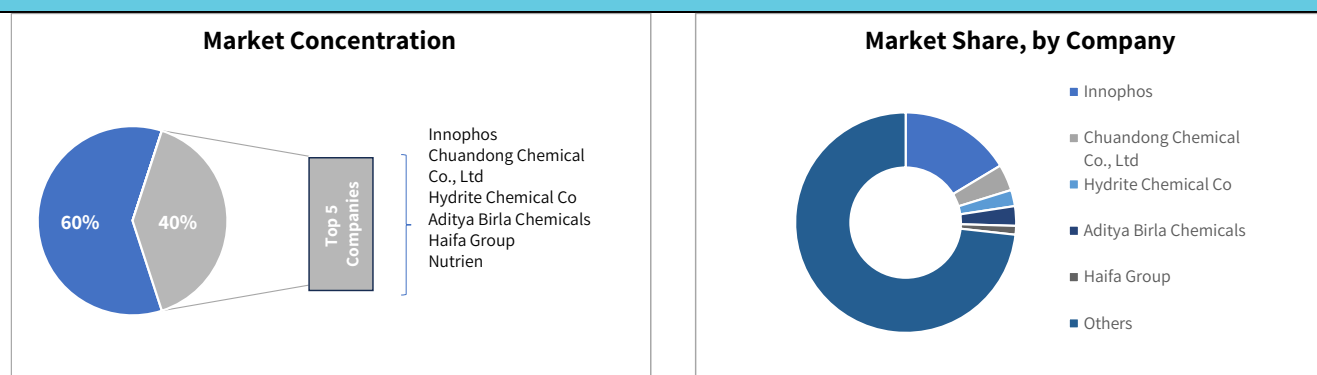
Chapter 4 Competitive Landscape, 2023

4.1 Competitive Landscape

The competitive landscape overview focuses on market competition, highlighting key players, their positions, market shares, and potential strategies. It helps stakeholders make informed decisions by providing insights into industry dynamics and competitors' strengths and weaknesses.

4.1.1 Company market share analysis, 2023

FIG. 6 Competition overview



Key Insights

- Several companies hold major market share in the global phosphoric acid market, Innophos, Chuandong Chemical Co., Ltd, Hydrite Chemical Co, Aditya Birla Chemicals, Haifa Group, Nutrien. Innophos is a key industry player known for its diverse product offerings and strong global presence, catering to both food and industrial sectors with high-quality phosphoric acid solutions. Chuandong Chemical Co., Ltd. stands out due to its substantial production capacity and comprehensive chemical portfolio, positioning itself as a major supplier in the market. Hydrite Chemical Co. specializes in providing high-performance phosphoric acid products designed for various industrial applications, enhancing its market position. Aditya Birla Chemicals leverages its extensive market reach to deliver reliable phosphoric acid solutions across multiple sectors. The Haifa Group integrates phosphoric acid into its specialty fertilizers and products, playing a crucial role in the agricultural sector. Nutrien, a leading agricultural company, utilizes phosphoric acid to enhance crop nutrition, driving growth in the agricultural market. Collectively, these companies drive market innovation and competition, shaping industry dynamics.

Note: The above chart is for representation only; actual data will be present in the final report.

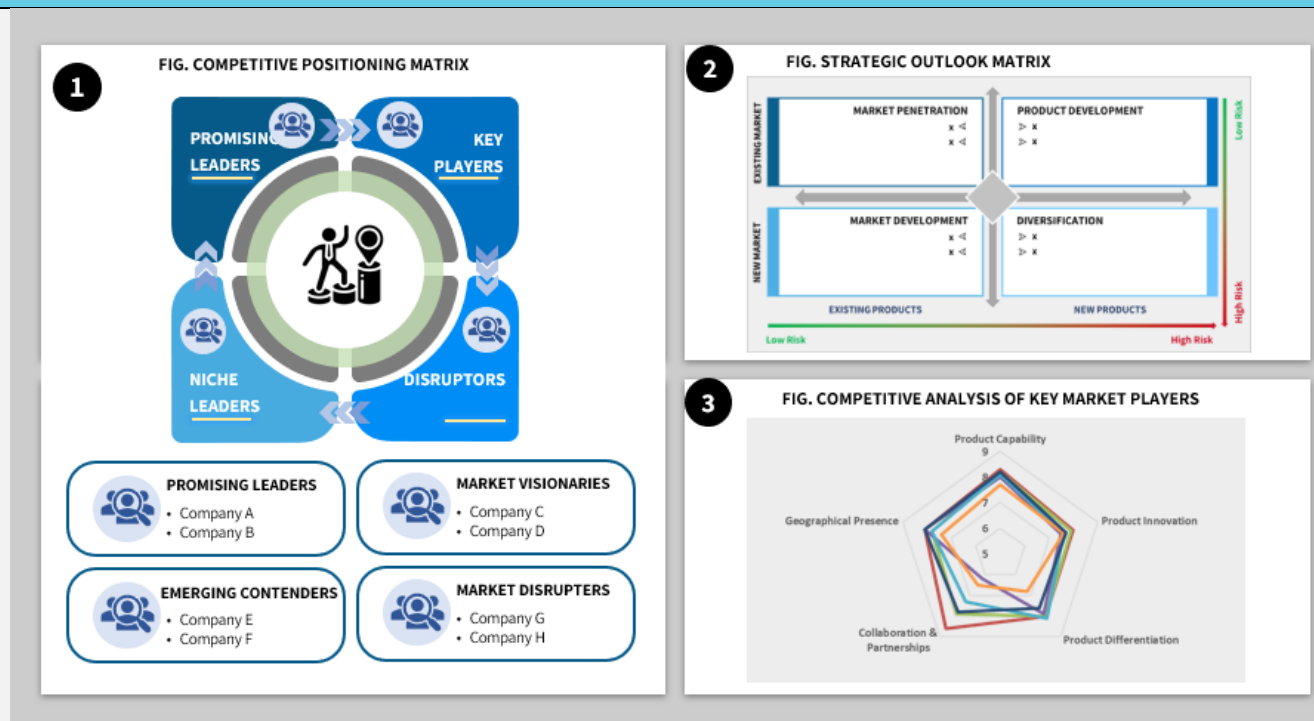
- To stay competitive in the phosphoric acid market, companies must focus on innovation, efficiency, and sustainability. Investing in advanced production technologies can enhance operational efficiency and reduce costs, while adopting sustainable practices helps meet regulatory standards and address environmental concerns. Additionally, developing high-quality products that meet diverse industry needs—such as food-grade and technical-grade phosphoric acids—can differentiate a company in the market. Strategic partnerships, market diversification, and expanding into emerging regions with growing demand, like Asia-Pacific and Africa, also play a crucial role. Staying attuned to market trends and customer needs enables companies to adapt and maintain a competitive edge in the dynamic phosphoric acid industry.

4.1.2 Strategic initiatives

Category	Most Active Companies	
New Product Launches	<ul style="list-style-type: none"> Company A Company B Company 6 	<ul style="list-style-type: none"> Company A Company B Company 6
Market Expansion	<ul style="list-style-type: none"> Company A Company B Company 6 	
JV/Strategic Partnership/Collaboration	<ul style="list-style-type: none"> Company A Company B Company 6 	
M&A/Divestment	<ul style="list-style-type: none"> Company A Company B Company 6 	

4.1.3 Company benchmarking

FIG. 7 Benchmarking depictions



Source: Global Market Insights, Paid Databases, Primary Research

Note: Detailed analysis for each figure will be present in final report.

Chapter 5 Phosphoric Acid Market, By Grade

5.1 Key trends

5.2 Technical Grade

Technical grade phosphoric acid is a high-purity form of phosphoric acid used predominantly in industrial applications. It is characterized by its effectiveness in diverse sectors such as metal treatment, cleaning agents, and chemical manufacturing. In the metal treatment industry, technical grade phosphoric acid is essential for rust removal, surface preparation, and passivation processes, ensuring improved metal durability and performance. For industrial cleaning applications, it acts as a powerful agent in removing scale and residues, contributing to cleaner and more efficient operations. Additionally, this grade is used in the production of various chemical formulations, including catalysts and intermediates, where its purity and reactivity are crucial for maintaining process quality. The demand for technical grade phosphoric acid is influenced by factors such as industrial growth, advancements in manufacturing technologies, and stringent regulatory standards. Companies in this market are investing in advanced production technologies and sustainable practices to enhance product quality, operational efficiency, and environmental compliance. As industries continue to expand and evolve, the need for high-quality technical grade phosphoric acid is expected to grow, driving innovation and competition in this sector. Ensuring consistency, meeting regulatory requirements, and adapting to industry trends are key for companies to maintain their competitive edge in the technical grade phosphoric acid market.

5.2.1 Global phosphoric acid market size for technical grade, (Kilo Tons) (USD Million)

TABLE 11 Global phosphoric acid market size for technical grade, 2021–2023 (Kilo Tons) (USD Million)

	2021	2022	2023
Kilo Tons	XX	XX	XX
USD Million	XX	XX	XX

Source: Global Market Insights, Paid Databases, Primary Research

Chapter 6 Phosphoric acid Market, By Region

6.1 Key trends

6.2 North America

In North America, the technical grade phosphoric acid market is driven by strong industrial activity and technological advancements. The region's well-established industrial sectors, including metal processing, chemical manufacturing, and cleaning solutions, rely heavily on high-quality technical grade phosphoric acid for various applications. North America's emphasis on advanced manufacturing technologies and stringent environmental regulations influences the demand for high-purity phosphoric acid. Companies in this region are focused on enhancing product quality and operational efficiency while adopting sustainable practices to meet regulatory standards. The market benefits from significant investments in research and development, fostering innovations in production processes and applications. Additionally, North America's robust infrastructure and strategic industry partnerships facilitate efficient supply chains and distribution networks. As industries continue to evolve and demand for technical grade phosphoric acid grows, companies in the region are positioning themselves to maintain a competitive edge through technological advancements and by addressing emerging market needs. The focus on sustainability and compliance with environmental regulations further shapes the market dynamics, driving continuous improvements and adaptation in the technical grade phosphoric acid sector.

6.2.1 North America phosphoric acid market estimate & forecast, 2021-2023, (Kilo Tons) (USD Million)

TABLE 12 North America phosphoric acid market estimate & forecast, 2021-2023, (Kilo Tons) (USD Million)

	2021	2022	2023
Kilo Tons	XX	XX	XX
USD Million	XX	XX	XX

Source: Global Market Insights, Paid Databases, Primary Research

6.2.2 North America phosphoric acid market estimates and forecast by grade, 2021–2023 (Kilo Tons) (USD Million)

TABLE 13 North America phosphoric acid market estimates and forecast by grade, 2021–2023 (Kilo Tons)

Grade	2021	2022	2023
Technical grade	XX	XX	XX
Food grade	XX	XX	XX
Total	XX	XX	XX

Source: Global Market Insights, Paid Databases, Primary Research

TABLE 14 North America phosphoric acid market estimates and forecast by grade, 2021–2023 (USD Million)

Grade	2021	2022	2023
Technical grade	XX	XX	XX
Food grade	XX	XX	XX
Total	XX	XX	XX

Source: Global Market Insights, Paid Databases, Primary Research

6.2.3 North America phosphoric acid market estimates and forecast by concentration, 2021–2023 (Kilo Tons) (USD Million)

TABLE 15 North America phosphoric acid market estimates and forecast by concentration, 2021–2023 (Kilo Tons)

Concentration	2021	2022	2023
Phosphoric acid 75%	XX	XX	XX
Phosphoric acid 85%	XX	XX	XX
Phosphoric acid 92%	XX	XX	XX
Others	XX	XX	XX
Total	XX	XX	XX

Source: Global Market Insights, Paid Databases, Primary Research

TABLE 16 North America phosphoric acid market estimates and forecast by concentration, 2021–2023 (USD Million)

Concentration	2021	2022	2023
Phosphoric acid 75%	XX	XX	XX
Phosphoric acid 85%	XX	XX	XX
Phosphoric acid 92%	XX	XX	XX
Others	XX	XX	XX
Total	XX	XX	XX

Source: Global Market Insights, Paid Databases, Primary Research

6.2.4 North America phosphoric acid market estimates and forecast by application, 2021–2023 (Kilo Tons) (USD Million)

TABLE 17 North America phosphoric acid market estimates and forecast by application, 2021–2023 (Kilo Tons)

Application	2021	2022	2023
Fertilizer	XX	XX	XX
Metal Treatment	XX	XX	XX
Cleaning & Sanitizing agent	XX	XX	XX
Catalyst	XX	XX	XX
Food Additive	XX	XX	XX
pH regulator	XX	XX	XX
Cleaners	XX	XX	XX
Additive	XX	XX	XX
Emulsifying agent	XX	XX	XX
Others	XX	XX	XX
Others	XX	XX	XX
Total	XX	XX	XX

Source: Global Market Insights, Paid Databases, Primary Research

TABLE 18 North America phosphoric acid market estimates and forecast by application, 2021–2023 (USD Million)

Application	2021	2022	2023
Fertilizer	XX	XX	XX
Metal Treatment	XX	XX	XX
Cleaning & Sanitizing agent	XX	XX	XX
Catalyst	XX	XX	XX
Food Additive	XX	XX	XX
pH regulator	XX	XX	XX
Cleaners	XX	XX	XX
Additive	XX	XX	XX
Emulsifying agent	XX	XX	XX
Others	XX	XX	XX
Others	XX	XX	XX
Total	XX	XX	XX

Source: Global Market Insights, Paid Databases, Primary Research

6.2.5 North America phosphoric acid market estimates and forecast by end use, 2021–2023 (Kilo Tons) (USD Million)

TABLE 19 North America phosphoric acid market estimates and forecast by end use, 2021–2023 (Kilo Tons)

End Use	2021	2022	2023
Agriculture	XX	XX	XX
Energy	XX	XX	XX
Industrial Cleaning	XX	XX	XX
General Industrial	XX	XX	XX
Construction	XX	XX	XX
Water Treatment	XX	XX	XX
Beverage	XX	XX	XX
Carbonated beverages	XX	XX	XX
Sports Drinks	XX	XX	XX
Juices	XX	XX	XX
Others	XX	XX	XX
Nutritional supplement	XX	XX	XX
Processed foods	XX	XX	XX
Dairy products	XX	XX	XX

Others	XX	XX	XX
Total	XX	XX	XX

Source: Global Market Insights, Paid Databases, Primary Research

TABLE 20 North America phosphoric acid market estimates and forecast by end use, 2021–2023 (USD Million)

End Use	2021	2022	2023
Agriculture	XX	XX	XX
Energy	XX	XX	XX
Industrial Cleaning	XX	XX	XX
General Industrial	XX	XX	XX
Construction	XX	XX	XX
Water Treatment	XX	XX	XX
Beverage	XX	XX	XX
Carbonated beverages	XX	XX	XX
Sports Drinks	XX	XX	XX
Juices	XX	XX	XX
Others	XX	XX	XX
Nutritional supplement	XX	XX	XX
Processed foods	XX	XX	XX
Dairy products	XX	XX	XX
Others	XX	XX	XX
Total	XX	XX	XX

Source: Global Market Insights, Paid Databases, Primary Research

Please note: The study will provide market size and forecast for all the segments across each regional and country level markets listed in the table of contents.

Chapter 7 Company Profiles

7.1 Hydrite Chemical Co

7.1.1 Business overview

Snapshot	
Headquarters	Wisconsin, U.S.
Year of Establishment	1929
Employees	1000 (As of 2023)
Type	Private Company
Regional Presence	Global
Role in the Supply Chain	Manufacturer

Hydrite Chemical Co. chemical manufacturing industry, recognized for its diverse range of products and solutions tailored to various sectors including agriculture, food processing, industrial manufacturing, and water treatment. Privately held and founded on principles of innovation and sustainability, Hydrite offers an extensive portfolio of chemicals, additives, and specialty ingredients that cater to the unique needs of its global clientele. With a commitment to quality, safety, and customer satisfaction, Hydrite Chemical Co. continues to drive advancements in chemical technologies while maintaining a strong emphasis on environmental stewardship and community engagement.

7.1.2 Financial data

In 2023, the estimated annual revenue of Hydrite Chemical Co was USD 471.1 million.

7.1.3 Product landscape

Product	Feature
50% Phosphoric Acid	<ul style="list-style-type: none"> Provides a balance between effectiveness and safety for various applications. Suitable for industrial cleaning, metal treatment, and chemical manufacturing. Offers a lower cost alternative compared to higher concentration grades. Ideal for applications requiring moderate acidic properties without extreme

7.1.4 SWOT Analysis

Strengths

- ☐ Strong customer relationship.
- ☐ Strong operational network.
- ☐ Strong focus on R&D activities.

Weaknesses

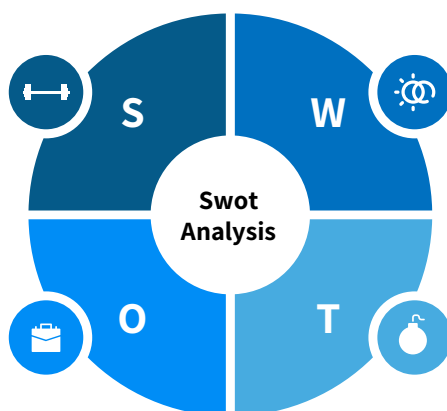
- ☐ High operational cost.
- ☐ High dependence on specific geographies for generating profits.

Opportunities

- ☐ Sustainable product demand growth.
- ☐ Expansion into emerging markets.
- ☐ Technological advancements utilization.

Threats

- ☐ Intense industry competition.
- ☐ Economic downturn impacts.



Chapter 8 Appendix

Market definitions

Phosphoric acid, with the chemical formula H_3PO_4 , is a colorless, odorless, and highly acidic inorganic compound widely used across various industries. It is a vital component in the production of fertilizers, where it supplies essential phosphorus, a key nutrient that promotes plant growth and enhances crop yields. In the food and beverage industry, phosphoric acid functions as an acidulant, regulating pH levels and improving flavor stability in products such as carbonated drinks, processed foods, and dairy items. Its role extends to metal treatment, where it is employed for rust removal, surface preparation, and passivation, ensuring better metal durability and performance. Additionally, phosphoric acid is used in cleaning agents, water treatment, and as a catalyst in numerous chemical processes, contributing to its versatility. The compound's ability to act effectively in a range of applications highlights its importance in industrial and consumer products. Its production and usage are governed by stringent standards to ensure safety and efficiency, reflecting its critical role in maintaining quality and functionality in various sectors. As industries evolve, phosphoric acid continues to play a central role in meeting diverse needs and driving advancements in manufacturing and product formulation.

By Grade:

- **Technical Grade:** Technical grade phosphoric acid is primarily used in industrial applications where high purity and specific chemical properties are essential. This grade is employed in diverse industries, including metal treatment, where it facilitates rust removal, passivation, and surface preparation, enhancing metal durability and performance. It also plays a significant role in chemical manufacturing as a reactant and catalyst in various processes. In the production of cleaning agents, technical grade phosphoric acid is valued for its effectiveness in removing mineral scale and deposits, ensuring efficient operation and maintenance of industrial equipment. Its versatility extends to other industrial applications such as the production of phosphates and catalysts, highlighting its importance in maintaining high standards across multiple sectors. The market for technical grade phosphoric acid is driven by advancements in industrial processes and the need for high-purity chemicals to meet specific regulatory and performance requirements. Companies focus on improving production technologies and adhering to strict quality standards to cater to the demands of various industrial applications, ensuring efficiency and effectiveness in their operations.
- **Food Grade:** Food grade phosphoric acid is used primarily in the food and beverage industry as an acidulant, pH regulator, and flavor enhancer. It is added to carbonated beverages, sports drinks, and juices to adjust acidity levels, enhance flavor stability, and preserve product quality. In processed foods, it plays a role in maintaining the desired texture and shelf life by controlling pH and preventing microbial growth. The use of food grade phosphoric acid is regulated to ensure safety and compliance with food safety standards, making

it suitable for direct consumption. Its application extends to dairy products, where it helps maintain product consistency and acidity. The market for food grade phosphoric acid is influenced by trends in food and beverage formulations, consumer preferences, and regulatory requirements. Companies in this sector invest in quality control and production processes to meet industry standards and deliver high-quality products. The increasing demand for processed and convenience foods contributes to the growth of the food grade phosphoric acid market, reflecting its essential role in maintaining food quality and safety.

By Concentration:

- **Phosphoric Acid 75%:** Phosphoric acid with a concentration of 75% is commonly used in various industrial applications where a moderate concentration of the acid is required. This grade is often employed in the production of fertilizers, particularly in the formulation of phosphate-based products. It is also utilized in metal treatment processes, where it aids in rust removal and surface preparation. The 75% concentration provides a balance between effectiveness and safety, making it suitable for applications that require a less aggressive acid solution. In addition, it serves in the production of phosphates and other chemical intermediates, supporting its role in diverse industrial processes.
- **Phosphoric Acid 85%:** Phosphoric acid at 85% concentration is widely used in industries requiring higher acidity and more concentrated solutions. This grade is frequently applied in the production of high-grade fertilizers and phosphates, where its strong acidic properties enhance nutrient availability and efficacy. It is also utilized in cleaning agents, where its higher concentration improves rust removal and scale dissolution. Additionally, phosphoric acid 85% is used in food processing as an acidulant and pH regulator, ensuring product stability and flavor enhancement. The 85% concentration provides greater efficiency in chemical reactions and industrial applications, making it a preferred choice for many sectors.
- **Phosphoric Acid 92%:** Phosphoric acid with a concentration of 92% is a high-purity grade used in specialized industrial and chemical applications. This concentration is ideal for processes that require extremely high acidity and precise chemical properties. It is commonly employed in the production of high-purity phosphates, where its strong acidic nature contributes to the effectiveness of the end products. Additionally, phosphoric acid 92% is used in advanced metal treatment processes, where it provides superior rust removal and surface conditioning. Its high concentration also makes it suitable for use in laboratory settings and research applications, where purity and precision are critical.
- **Others:** The "others" category includes phosphoric acid solutions with concentrations outside the standard 75%, 85%, and 92% ranges. These concentrations may vary based on specific industrial requirements or customized formulations. Such variations are often tailored for unique applications in specialized sectors, including niche chemical manufacturing, research, and custom formulations. The flexibility in concentration

allows for the optimization of phosphoric acid properties to meet the specific needs of diverse industries, ensuring effective performance across a range of applications.

By Application:

- **Fertilizer:** In the fertilizer industry, phosphoric acid is essential for producing phosphate-based fertilizers such as monoammonium phosphate (MAP) and diammonium phosphate (DAP). These fertilizers supply plants with phosphorus, a critical nutrient for root development, energy transfer, and photosynthesis. Phosphoric acid's role in fertilizer production enhances soil fertility, leading to improved crop yields and sustainable agricultural practices. Its effectiveness in delivering phosphorus to crops helps ensure optimal plant growth and productivity, making it a cornerstone in modern farming.
- **Metal Treatment:** Phosphoric acid is widely used in metal treatment processes to improve the durability and performance of metals. It is employed for rust removal, passivation, and surface preparation. In rust removal, phosphoric acid effectively dissolves corrosion and scale, restoring the metal's surface. In passivation, it forms a protective phosphate layer on metals, enhancing corrosion resistance. Additionally, it is used in etching and cleaning processes to prepare metal surfaces for further treatment or coating, ensuring better adhesion and longevity of the final product.
- **Cleaning & Sanitizing Agent:** In cleaning and sanitizing applications, phosphoric acid is valued for its effectiveness in removing mineral deposits, scale, and rust. It is commonly used in industrial and household cleaning products to tackle tough stains and residues. Its acidic properties help dissolve limescale and other deposits from surfaces and equipment, ensuring thorough cleaning. In sanitizing applications, phosphoric acid helps maintain hygiene and prevent microbial growth, contributing to a clean and safe environment in various settings, including food processing and manufacturing.
- **Catalyst:** Phosphoric acid serves as a catalyst in several chemical reactions, particularly in the production of chemicals and intermediates. It is used in processes such as esterification, where it facilitates the formation of esters from acids and alcohols. In the production of certain organic chemicals and phosphates, phosphoric acid's catalytic properties help drive reactions to completion, improving efficiency and yield. Its role as a catalyst is crucial in optimizing chemical processes and ensuring the effective production of various industrial chemicals.
- **Food Additive:** In the food industry, phosphoric acid functions as an acidulant, pH regulator, and flavor enhancer. It is added to carbonated beverages, sports drinks, and processed foods to adjust acidity levels and stabilize flavor. By controlling pH, phosphoric acid helps maintain the desired taste, texture, and shelf life of food products. Its use ensures product stability, enhances flavor profiles, and prevents spoilage, making it an important ingredient in maintaining the quality and safety of food and beverages.

- **pH Regulator:** Phosphoric acid is used as a pH regulator in various applications, including food processing and industrial processes. It helps control and maintain desired pH levels, which is essential for product stability, quality, and performance. In food and beverage products, phosphoric acid adjusts acidity to achieve the right taste and preserve freshness. In industrial processes, it ensures that chemical reactions proceed under optimal conditions by maintaining appropriate pH levels, contributing to overall process efficiency and product quality.
- **Cleaners:** In cleaning products, phosphoric acid is employed for its ability to remove tough stains, scale, and mineral deposits. It is commonly used in household and industrial cleaners to tackle buildup on surfaces and equipment. Its acidic nature helps dissolve and eliminate residues, ensuring thorough cleaning. By improving the effectiveness of cleaning solutions, phosphoric acid contributes to maintaining cleanliness and hygiene in various environments, including kitchens, bathrooms, and industrial facilities.
- **Additive:** Phosphoric acid is used as an additive in various industries to enhance product performance and functionality. In pharmaceuticals, it helps in the formulation of certain drugs by adjusting pH and stability. In cosmetics, it acts as a pH regulator and stabilizer. Its role as an additive extends to industrial applications where it contributes to the properties of chemicals and materials, ensuring optimal performance and quality.
- **Emulsifying Agent:** In the production of emulsions, phosphoric acid is used to stabilize and enhance the mixing of immiscible liquids, such as oil and water. Its role as an emulsifying agent ensures the formation of stable emulsions in products like lotions, creams, and certain food products. By improving the consistency and stability of emulsions, phosphoric acid contributes to the quality and effectiveness of various consumer and industrial products.
- **Others (Food Additive):** In addition to its primary roles as an acidulant and pH regulator, phosphoric acid has several other applications within the food additive category. It is used as a stabilizer in certain processed foods and beverages, helping to maintain consistency and prevent separation of ingredients. In the production of baked goods, phosphoric acid can act as a leavening agent, assisting in the rising process by reacting with baking soda. It is also employed in the production of artificial flavorings and colorings, where it helps in maintaining the desired color and flavor profile. Additionally, phosphoric acid may be used in the formulation of dietary supplements and functional foods to enhance nutrient bioavailability or to adjust the acidity to improve the stability and shelf life of these products. Its role in these varied applications demonstrates its versatility and importance in ensuring the quality and functionality of food products across different categories.

- **Others:** The "others" category encompasses various niche applications of phosphoric acid that do not fall into the standard categories. These applications may include uses in specialized chemical processes, research and development, and custom formulations. Phosphoric acid's versatility allows it to be tailored for unique applications across different sectors, reflecting its broad utility and importance in various specialized fields.

By End Use:

- **Agriculture:** In the agriculture sector, phosphoric acid plays a pivotal role as a key component in the production of phosphate fertilizers such as monoammonium phosphate (MAP) and diammonium phosphate (DAP). These fertilizers are essential for delivering phosphorus, an indispensable nutrient that supports plant growth and development. Phosphorus, a critical macronutrient, is vital for various physiological processes, including energy transfer, photosynthesis, and root development. By enhancing soil fertility and ensuring an adequate supply of phosphorus, phosphoric acid helps increase crop yields and improve the overall health of plants. The application of phosphoric acid-based fertilizers contributes to sustainable agricultural practices by boosting productivity and supporting the efficient use of land resources. Furthermore, as agricultural practices evolve to meet global food demands, phosphoric acid remains crucial for addressing the nutritional needs of crops and maintaining soil health, thereby playing a significant role in global food security.
- **Energy:** In the energy sector, phosphoric acid is used in several key applications, particularly in the production of phosphoric acid fuel cells and the processing of petroleum products. Phosphoric acid fuel cells are electrochemical devices that convert chemical energy directly into electrical energy, offering a clean and efficient power source. The use of phosphoric acid in these cells helps improve their performance and longevity. Additionally, phosphoric acid is employed in the refining of petroleum products, where it acts as a catalyst and cleaning agent, aiding in the removal of impurities and enhancing the quality of refined fuels. Its role in energy applications underscores its versatility and importance in advancing energy technologies and improving energy efficiency.
- **Industrial Cleaning:** Phosphoric acid is a critical component in industrial cleaning processes due to its effectiveness as a rust remover, scale dissolver, and surface preparator. In industrial settings, it is used to clean and maintain equipment, machinery, and facilities by removing tough deposits, such as mineral scale and corrosion. Its ability to effectively dissolve these deposits ensures that equipment operates efficiently and has an extended lifespan. Phosphoric acid's role in industrial cleaning helps maintain high standards of hygiene and performance in various industries, including manufacturing, automotive, and food processing.

By ensuring the proper functioning and maintenance of industrial assets, phosphoric acid contributes to operational efficiency and cost savings.

- **General Industries:** In general industries, phosphoric acid finds diverse applications, including in metal treatment, chemical manufacturing, and as a reactant in various chemical processes. It is used in the production of metal phosphates and in passivation treatments to enhance the corrosion resistance of metals. In chemical manufacturing, phosphoric acid acts as a reactant and catalyst, facilitating the production of other chemicals and intermediates. Its versatility and effectiveness make it a valuable asset across multiple industrial processes. By supporting various manufacturing and processing activities, phosphoric acid plays a crucial role in driving efficiency and innovation in general industries.
- **Construction:** In the construction industry, phosphoric acid is used in several applications, including concrete treatments and masonry work. It plays a role in improving the properties of construction materials by enhancing their chemical resistance and durability. For concrete, phosphoric acid is used in cleaning and etching processes to prepare surfaces for better adhesion of coatings and sealants. It also helps in removing contaminants and residues that could affect the performance of construction materials. In masonry applications, phosphoric acid aids in the cleaning and maintenance of stone and brick surfaces, ensuring longevity and aesthetic appeal. By improving the quality and durability of construction materials, phosphoric acid contributes to the overall performance and longevity of construction projects.
- **Water Treatment:** Phosphoric acid is widely used in water treatment processes to control pH levels and remove impurities. In municipal water treatment, it helps adjust the pH of water to ensure it is safe for consumption and meets regulatory standards. It is also used in industrial water treatment to manage water quality in various processes, including cooling systems and boiler feedwater. By effectively controlling pH and removing contaminants, phosphoric acid plays a crucial role in maintaining water quality and ensuring the efficient operation of water treatment systems. Its use helps prevent scale formation, corrosion, and other issues that could affect water systems and infrastructure.
- **Beverage:** In the beverage industry, phosphoric acid is utilized as an acidulant in products such as carbonated drinks, sports drinks, and juices. It helps regulate the acidity of beverages, contributing to flavor enhancement and product stability. By adjusting pH levels, phosphoric acid ensures that beverages maintain their taste, freshness, and quality throughout their shelf life. It also plays a role in preserving the integrity of flavor compounds and preventing spoilage. Its application in beverages is essential for achieving the desired taste profile and ensuring the overall quality and consumer acceptance of various drink products.

- **Carbonated Beverages:** Phosphoric acid is commonly used in carbonated soft drinks to adjust pH levels and enhance flavor. It provides a tangy taste and helps balance sweetness, contributing to the overall flavor profile of sodas. Additionally, it acts as a preservative by maintaining the acidity that inhibits microbial growth, thus extending the shelf life of the product.
- **Sports Drinks:** In sports drinks, phosphoric acid serves as an acidulant to regulate pH and improve taste. It helps maintain the stability of flavor compounds and enhances the drink's refreshment quality. By adjusting the pH, it also aids in the prevention of spoilage and ensures the drink remains effective in replenishing electrolytes during physical activity.
- **Juices:** For fruit and vegetable juices, phosphoric acid is used to adjust acidity and stabilize flavor. It ensures that the juice maintains its desired taste profile and shelf stability. By controlling pH, phosphoric acid helps in preserving the juice's freshness and preventing spoilage over time.
- **Others:** In other beverage categories, such as flavored water or certain alcoholic beverages, phosphoric acid may be used similarly to adjust pH levels and enhance flavor stability. Its role in these beverages is to maintain quality, taste, and shelf life, ensuring a consistent consumer experience.
- **Nutritional Supplement:** Phosphoric acid is used in nutritional supplements to provide essential phosphorus, a critical mineral that supports various bodily functions. Phosphorus is vital for energy production, bone health, and cellular processes. In supplements, phosphoric acid helps fortify products with phosphorus to address dietary deficiencies and support overall health. Its role in nutritional supplements contributes to balanced nutrition and helps individuals meet their daily phosphorus needs. By enhancing the nutritional profile of supplements, phosphoric acid supports health and wellness objectives and addresses specific dietary requirements.
- **Processed Foods:** In processed foods, phosphoric acid serves as an acidulant and pH regulator, contributing to flavor, texture, and preservation. It helps maintain the desired acidity levels in foods, which is essential for product stability and shelf life. By regulating pH, phosphoric acid also influences the texture and consistency of processed foods, ensuring they meet quality standards. Additionally, it plays a role in preventing microbial growth and spoilage, thereby extending the shelf life of food products. Its application is crucial for maintaining the overall quality and safety of processed foods, contributing to consumer satisfaction and product reliability.
- **Dairy Products:** In dairy products, phosphoric acid is used to adjust acidity levels and enhance product stability. It plays a role in maintaining the desired pH in various dairy items, including cheese, yogurt, and milk-based beverages. By controlling acidity, phosphoric acid helps improve the texture, consistency, and shelf life of dairy products. It also contributes to flavor development and prevents spoilage by inhibiting

microbial growth. Its application in dairy products ensures quality and safety, supporting the production of consistent and high-quality dairy offerings.

- Others:** Phosphoric acid finds application in various other sectors, including pharmaceuticals, cosmetics, and specialty chemicals. In pharmaceuticals, it is used in drug formulations and as an ingredient in medications, where its purity is crucial for efficacy and safety. In cosmetics, phosphoric acid acts as a pH regulator and ingredient in various beauty products. Its use in specialty chemicals includes applications in cleaning agents, adhesives, and coatings. The versatility of phosphoric acid across diverse applications underscores its significance in multiple industries, reflecting its broad utility and importance in various formulations and processes.

Available customization



The scope of this research study can be customized to include (not limited to):

- Additional country-level markets
- Additional / modified industry segments
- Additional company profiles
- Region or country-specific competitive analysis
- Pricing analysis
- Voice of Customer Study
- Brand perception analysis
- Go-to-market strategy

- Partner identification
- Product benchmarking

Related studies

- **Phosphate Esters Market**
- **Phosphorescent Pigments Market**
- **Phosphonates Market**
- **Phosphate Salts Market**
- **Phosphate Conversion Coatings Market**

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