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Global pH Electrodes Market 2026 by Manufacturers, Regions, Type and Application, Forecast to 2032

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Abstracts

According to our (Global Info Research) latest study, the global pH Electrodes market size was valued at US$ 1145 million in 2025 and is forecast to a readjusted size of US$ 1500 million by 2032 with a CAGR of 4.0% during review period.

In 2025, the global output of pH electrodes is 4.88 million units, with an average price of US$230.6 per unit.

A pH electrode is a device that measures the acidity or alkalinity of a solution by detecting the hydrogen ion (H+) activity in the solution. It works by generating a measurable potential difference across a thin-walled glass membrane that is permeable to hydrogen ions, which is then correlated to the solution's pH value on a scale of 0-14. A pH electrode typically consists of a glass sensing electrode and a stable reference electrode, which together provide the necessary electrochemical signal to the connected pH meter.

The global pH electrode market is supported by stable and widespread demand from industries such as water and wastewater treatment, pharmaceuticals, food and beverages, chemical processing, and laboratories. The market continues to expand as industrial customers pursue tighter process control, increased uptime, and reduced calibration/maintenance costs.

Upstream in the supply chain are material and subassembly suppliers, whose quality determines product lifespan and stability. Critical upstream inputs include the pH-sensitive glass formulation for traditional glass membrane electrodes, reference electrode salts and KCl electrolyte, connection and diaphragm materials (ceramic, polymer, gel), connectors (BNC, DIN), preamplifier electronics, plastic/epoxy/metal

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housings, and silicon wafers, CMOS/ASIC preamplifiers, and packaging materials for ISFET sensors. Therefore, upstream suppliers of precision glass, specialty ceramics, vacuum/cleanroom processing for semiconductor ISFETs, and manufacturers of micro-reference systems significantly influence performance and cost.

Downstream demand is driven by both replacement purchases and initial installations. Municipal and industrial water treatment plants are among the largest recurring buyers, as probes require regular replacement and recalibration. Pharmaceutical and biotech manufacturers require certified and traceable probes and typically source them from qualified suppliers. Food and beverage customers favor hygienic and CIP-compatible probes. Environmental monitoring users prefer rugged, low-power field probes. Contract testing laboratories and educational buyers increase the steady flow of low-value, high-volume products, benefiting distributors and aftermarket channels. On the service side, recalibration, repairs, and sales of reference solutions and replacement connectors constitute a significant downstream revenue source, as many end users prefer service agreements to extend sensor life.

Glass electrode manufacturers have moderate production capacity and capital intensity, while ISFET and advanced probe manufacturers have significantly higher production capacity and capital intensity. Typical small and medium-sized electrode manufacturers can expand their scale by adding membrane forming and assembly lines, while ISFET producers require access to semiconductor processing and cleanroom capacity, prompting them to seek partnerships or foundries. Regional differences are significant: Asia boasts large and flexible commodity electrode production capacity, benefiting from lower labor and material costs; while Europe and North America focus on high-value, certified, and automated production, often aligned with standards for the aerospace, pharmaceutical, and power industries. Suppliers that disclose factory floor space or integrated production lines are generally better positioned to win large supply contracts and offer shorter lead times for high-volume orders.

Profitability varies across the supply chain, depending on product mix. Meter and instrument manufacturers typically have mid-range gross margins for the electronics industry, while electrodes, spare parts, and consumables offer significantly higher margins and generate attractive recurring revenue streams. Gross margins for aftermarket spare parts and consumables average approximately 40% to 60%, making service and consumables the primary profit lever. In contrast, commodity electrodes and low-cost laboratory probes face significant price pressure and shrinking equipment-based margins. Therefore, companies that can bundle calibration, spare parts, and long-term service contracts typically achieve higher lifetime profit margins. Broader electronic

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equipment benchmarks indicate that instrument gross margins are typically concentrated around 20% to 40%, depending on the vertical, while top aftermarket players can significantly increase overall business gross margins through consumables and services.

This report is a detailed and comprehensive analysis for global pH Electrodes market. Both quantitative and qualitative analyses are presented by manufacturers, by region & country, by Type and by Application. As the market is constantly changing, this report explores the competition, supply and demand trends, as well as key factors that contribute to its changing demands across many markets. Company profiles and product examples of selected competitors, along with market share estimates of some of the selected leaders for the year 2025, are provided.

Key Features:

Global pH Electrodes market size and forecasts, in consumption value ($ Million), sales quantity (Units), and average selling prices (US$/Unit), 2021-2032

Global pH Electrodes market size and forecasts by region and country, in consumption value ($ Million), sales quantity (Units), and average selling prices (US$/Unit), 2021-2032

Global pH Electrodes market size and forecasts, by Type and by Application, in consumption value ($ Million), sales quantity (Units), and average selling prices (US$/Unit), 2021-2032

Global pH Electrodes market shares of main players, shipments in revenue ($ Million), sales quantity (Units), and ASP (US$/Unit), 2021-2026

The Primary Objectives in This Report Are:

To determine the size of the total market opportunity of global and key countries

To assess the growth potential for pH Electrodes

To forecast future growth in each product and end-use market

To assess competitive factors affecting the marketplace

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This report profiles key players in the global pH Electrodes market based on the following parameters - company overview, sales quantity, revenue, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include BOQU, Sentek, Hamilton, Hanna Instruments, Jenway, Metrohm, Mettler Toledo, XS Instruments, Xylem Analytics, PCE, etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Market Segmentation

pH Electrodes market is split by Type and by Application. For the period 2021-2032, the growth among segments provides accurate calculations and forecasts for consumption value by Type, and by Application in terms of volume and value. This analysis can help you expand your business by targeting qualified niche markets.

Market segment by Type

Composite Electrode

Split Electrode

Three-in-One Electrode

Market segment by Sensitive Membrane Material

Glass Membrane

Solid Polymer Membrane

ISFET Semiconductor

Metal Oxide

Market segment by Maintenance Method

Refillable

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Non-refillable Gel Type

Disposable

Market segment by Application

Water Quality Monitoring

Chemical Industry

Food and Beverage

Biomedicine

Agriculture

Laboratory

Major players covered

BOQU

Sentek

Hamilton

Hanna Instruments

Jenway

Metrohm

Mettler Toledo

XS Instruments

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Xylem Analytics

PCE

ABB

Iwaki

Sensorex

Market segment by region, regional analysis covers

North America (United States, Canada, and Mexico)

Europe (Germany, France, United Kingdom, Russia, Italy, and Rest of Europe)

Asia-Pacific (China, Japan, Korea, India, Southeast Asia, and Australia)

South America (Brazil, Argentina, Colombia, and Rest of South America)

Middle East & Africa (Saudi Arabia, UAE, Egypt, South Africa, and Rest of Middle East & Africa)

The content of the study subjects, includes a total of 15 chapters:

Chapter 1, to describe pH Electrodes product scope, market overview, market estimation caveats and base year.

Chapter 2, to profile the top manufacturers of pH Electrodes, with price, sales quantity, revenue, and global market share of pH Electrodes from 2021 to 2026.

Chapter 3, the pH Electrodes competitive situation, sales quantity, revenue, and global market share of top manufacturers are analyzed emphatically by landscape contrast.

Chapter 4, the pH Electrodes breakdown data are shown at the regional level, to show the sales quantity, consumption value, and growth by regions, from 2021 to 2032.

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Chapter 5 and 6, to segment the sales by Type and by Application, with sales market share and growth rate by Type, by Application, from 2021 to 2032.

Chapter 7, 8, 9, 10 and 11, to break the sales data at the country level, with sales quantity, consumption value, and market share for key countries in the world, from 2021 to 2026.and pH Electrodes market forecast, by regions, by Type, and by Application, with sales and revenue, from 2027 to 2032.

Chapter 12, market dynamics, drivers, restraints, trends, and Porters Five Forces analysis.

Chapter 13, the key raw materials and key suppliers, and industry chain of pH Electrodes.

Chapter 14 and 15, to describe pH Electrodes sales channel, distributors, customers, research findings and conclusion.

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