

Global Free Bromine Sensor Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global Free Bromine Sensor market size is expected to reach \$ 27.70 million by 2032, rising at a market growth of 4.4% CAGR during the forecast period (2026-2032).

A free bromine sensor is an analytical instrument specifically designed for the continuous, online, and real-time detection of free bromine concentration in liquids (typically water). The core demand stems from the mandatory requirements of industrial circulating water systems for the precise dosing and safe, efficient operation of bromine-based disinfectants. The goal is to precisely control the free bromine concentration to achieve optimal disinfection, prevent equipment corrosion and biofilm growth, and meet environmental regulations. Its upstream supply chain focuses on the precision manufacturing and specialty chemical industries of electrochemical sensor chips, specific ion-selective membranes, precious metal electrode materials, microfluidic substrates, and corrosion-resistant housings (such as PVDF and titanium alloys). The downstream supply chain directly serves water treatment departments and system integrators of end-user industrial applications. As a key process control point, it is embedded in automatic dosing control loops, with real-time data directly driving metering pump actions, generating compliance reports, and providing early warnings of microbial risks. In 2025, the production volume of free bromine sensors is estimated at approximately 10,000 units, with an average selling price of approximately US\$2,000 per unit, a gross profit margin of approximately 35%, and a single-line capacity of approximately 600 units per year.

The core market drivers for free bromine sensor can be summarized as follows: First, the fundamental driving force is the rigid global demand for water safety and public health. As countries increasingly stringent disinfection standards for drinking water, industrial wastewater, and recreational water (such as swimming pools and spas), real-

time and accurate monitoring of free bromine concentrations via online or portable sensors is necessary to ensure disinfection effectiveness and control the formation of disinfection byproducts. Second, the technological advantages of bromine-based disinfectants are replacing traditional chlorine disinfection. Bromine exhibits better disinfection effects at higher pH values, lower volatility at high temperatures, and less irritation to mucous membranes. The trend of technological substitution has directly driven the market demand for dedicated free bromine sensors. Furthermore, the demand for industrial process control and asset protection is an important incremental driver. In industries such as cooling water circulation, petrochemicals, and power, excessive or insufficient bromine residue can lead to equipment corrosion or microbial growth. Using high-precision free bromine sensors to achieve automated dosing control can significantly reduce operation and maintenance costs and ensure production safety. Finally, the continuous investment and upgrading of global water treatment infrastructure, especially in the rapid urbanization and industrialization process in the Asia-Pacific region, has created a long-term and stable incremental market space for free bromine sensors.

This report studies the global Free Bromine Sensor production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for Free Bromine Sensor and provides market size (US\$ million) and Year-over-Year (YoY) Growth, considering 2025 as the base year. This report explores demand trends and competition, as well as details the characteristics of Free Bromine Sensor that contribute to its increasing demand across many markets.

Highlights and key features of the study

Global Free Bromine Sensor total production and demand, 2021-2032, (Units)

Global Free Bromine Sensor total production value, 2021-2032, (USD Million)

Global Free Bromine Sensor production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (Units), (based on production site)

Global Free Bromine Sensor consumption by region & country, CAGR, 2021-2032 & (Units)

U.S. VS China: Free Bromine Sensor domestic production, consumption, key domestic

manufacturers and share

Global Free Bromine Sensor production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (Units)

Global Free Bromine Sensor production by Type, production, value, CAGR, 2021-2032, (USD Million) & (Units)

Global Free Bromine Sensor production by Application, production, value, CAGR, 2021-2032, (USD Million) & (Units)

This report profiles key players in the global Free Bromine Sensor market based on the following parameters - company overview, production, value, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Endress+Hauser, ProMinent, Walchem, Kuntze Instruments, Pulse Instruments, DOSATRONIC GmbH, Jumo Italia Srl, Nanning Nobo Instrument Co., Ltd., Jiangsu Youtuo Precision Technology Co., Ltd., Bebur, etc.

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

Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the World Free Bromine Sensor market

Detailed Segmentation:

Each section contains quantitative market data including market by value (US\$ Millions), volume (production, consumption) & (Units) and average price (US\$/Unit) by manufacturer, by Type, and by Application. Data is given for the years 2021-2032 by year with 2025 as the base year, 2026 as the estimate year, and 2027-2032 as the forecast year.

Global Free Bromine Sensor Market, By Region:

United States

China

Europe

Japan

South Korea

ASEAN

India

Rest of World

Global Free Bromine Sensor Market, Segmentation by Type:

Immersion Type

Flow-through Type

Global Free Bromine Sensor Market, Segmentation by Consumable:

Reagent-free Type

Reagent-required Type

Global Free Bromine Sensor Market, Segmentation by Measurement Range:

Trace

Standard

High Concentration

Global Free Bromine Sensor Market, Segmentation by Application:

Petrochemical

Power

Food

Commercial Facility

Other

Companies Profiled:

Endress+Hauser

ProMinent

Walchem

Kuntze Instruments

Pulse Instruments

DOSATRONIC GmbH

Jumo Italia Srl

Nanning Nobo Instrument Co., Ltd.

Jiangsu Youtuo Precision Technology Co., Ltd.

Bebur

Key Questions Answered:

1. How big is the global Free Bromine Sensor market?
2. What is the demand of the global Free Bromine Sensor market?
3. What is the year over year growth of the global Free Bromine Sensor market?
4. What is the production and production value of the global Free Bromine Sensor market?
5. Who are the key producers in the global Free Bromine Sensor market?

6. What are the growth factors driving the market demand?

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