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Global VOC Sensors and Monitors Market Size Study & Forecast, by Type (Sensors, Monitors) by Application (Industrial Process Monitoring, Environmental Monitoring) by End-Use (Oil & Gas Industry, Transportation) and Regional Forecasts 2025-2035

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Abstracts

The Global VOC Sensors and Monitors Market is valued approximately at USD 0.16 billion in 2024 and is anticipated to grow at a CAGR of 4.52% over the forecast period 2025–2035. Volatile Organic Compound (VOC) sensors and monitors are vital instruments engineered to detect, measure, and manage organic gases emitted from both natural and anthropogenic sources. These compounds, often invisible yet highly reactive, have emerged as key contributors to air pollution and environmental degradation. The surge in industrial emissions, coupled with the rising global awareness of air quality and occupational safety, has driven the adoption of VOC detection technologies across diverse sectors. Governments and environmental agencies are enforcing strict air-quality standards, compelling industries to deploy continuous emission monitoring systems. Furthermore, growing investments in smart city infrastructure and environmental surveillance technologies are reinforcing market expansion, creating fertile ground for innovation and integration of IoT-enabled VOC sensing systems.

The steady growth of this market is underpinned by increasing industrialization, escalating health concerns related to air pollution, and the growing shift toward sustainable operational frameworks. VOC sensors and monitors play a pivotal role in maintaining air quality standards across industries such as petrochemicals, transportation, and manufacturing, where real-time monitoring ensures compliance and

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prevents environmental hazards. According to the World Health Organization, air pollution continues to be one of the leading causes of premature deaths worldwide, accounting for approximately 7 million fatalities annually. This staggering statistic has motivated policymakers and corporate leaders alike to adopt stringent emission control measures. Moreover, advancements in sensor miniaturization, wireless communication, and data analytics have made VOC monitoring systems more accessible and cost-efficient, further amplifying their deployment in both fixed and portable applications. However, high initial installation costs and calibration challenges in extreme environments may constrain widespread adoption during the forecast period.

The detailed segments and sub-segments included in the report are:

By Type:

Sensors

Monitors

By Application:

Industrial Process Monitoring

Environmental Monitoring

By End-Use:

Oil & Gas Industry

Transportation

By Region:

North America

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- Canada

Europe

- UK
- Germany
- France
- Spain
- Italy
- ROE

Asia Pacific

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

Latin America

- Brazil
- Mexico

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Middle East & Africa

UAE

Saudi Arabia

South Africa

Rest of Middle East & Africa

Among these segments, Industrial Process Monitoring is projected to dominate the VOC Sensors and Monitors Market throughout the forecast period. This segment's dominance stems from the increased deployment of continuous VOC detection systems in refineries, chemical plants, and production facilities to ensure worker safety, prevent equipment corrosion, and maintain compliance with environmental regulations. The integration of real-time sensor networks in industrial ecosystems has enabled companies to detect leakages early and optimize ventilation and emission control systems. As industries accelerate their digital transformation efforts, the demand for intelligent VOC monitoring integrated with AI-driven analytics is expected to skyrocket, reinforcing the leadership of this segment.

From a revenue perspective, Environmental Monitoring currently leads the VOC Sensors and Monitors Market. The segment's growth is propelled by the escalating need to measure air quality in urban environments, transportation hubs, and residential areas. With government agencies and environmental bodies introducing stricter emission norms and sustainability reporting mandates, demand for portable and stationary monitoring devices has soared. Continuous innovation in photoionization detectors, metal oxide semiconductor sensors, and non-dispersive infrared technologies has enhanced measurement precision and reliability. Furthermore, the proliferation of community-based air monitoring networks and IoT-enabled smart city initiatives has elevated the adoption rate of VOC monitors in public infrastructure projects, making this segment the revenue frontrunner.

The key regions considered for the Global VOC Sensors and Monitors Market study include North America, Europe, Asia Pacific, Latin America, and the Middle East & Africa. North America held the largest market share in 2024 and is expected to maintain its dominance owing to the presence of established players, stringent environmental standards, and widespread adoption of industrial monitoring technologies. The United

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States, in particular, continues to lead the innovation curve through robust R&D initiatives and regulatory support from agencies such as the EPA. Meanwhile, Asia Pacific is expected to exhibit the fastest growth over the forecast period. Rapid industrialization, urban expansion, and increasing governmental emphasis on pollution control in countries like China and India are driving regional demand. Europe remains a steady contributor, supported by the European Union’s comprehensive air quality directives and growing public health awareness. Latin America and the Middle East & Africa are also witnessing notable growth, driven by rising investments in oil and gas infrastructure and a gradual shift toward sustainable industrial operations.

Major market players included in this report are:

Aeroqual Ltd.

Honeywell International Inc.

Siemens AG

Thermo Fisher Scientific Inc.

Dr?gerwerk AG & Co. KGaA

Emerson Electric Co.

RAE Systems Inc.

Alphasense Ltd.

AMETEK, Inc.

Ion Science Ltd.

Figaro Engineering Inc.

Global Detection Systems Corp.

ABB Ltd.

3M Company

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Agilent Technologies, Inc.

Global VOC Sensors and Monitors 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 to 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:

Key Takeaways:

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

Annualized revenues and regional-level analysis for each market segment.

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Detailed analysis of the 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 the competitive structure of the market.

Demand side and supply side analysis of the market.

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CHAPTER 9. COMPETITIVE INTELLIGENCE

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