

Chemical Sensors Market Report by Product Type (Electrochemical, Optical, Pellistor/Catalytic Bead, Semiconductor, and Others), Analyte (Solid, Liquid, Gas), Application (Industrial, Environmental Monitoring, Medical, Defense and Homeland Security, and Others), and Region 2024-2032

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Abstracts

The global chemical sensors market size reached US\$ 24.1 Billion in 2023. Looking forward, IMARC Group expects the market to reach US\$ 39.4 Billion by 2032, exhibiting a growth rate (CAGR) of 5.5% during 2024-2032.

Chemical sensors refer to various devices and instruments that are used to determine the presence, concentration and quantity of an analyte. The analyte is any molecule or element that is examined under a chemical condition. The sensors are used to transform chemical information into analytical signals and provide real-time information about a sample. The chemical information also indicates the presence of multiple chemical species in the sample. Apart from chemical species, they can also trace microorganisms using bio-compounds which have membrane components or nucleic acid similar to the sensor.

The growth of the automotive, food and beverage, and healthcare industries is the key factor driving the growth of the market. Chemical sensors are used to detect and monitor automotive and industrial emissions along with the functioning of wastewater treatment systems. In the healthcare sector, they are used in fertility systems, cancer diagnosis, portable glucose monitors, diagnosis of renal failure and alcohol and drug abuse. Furthermore, the increasing prevalence of diabetes and related diseases is also expected to increase the product demand as chemical sensors are used in the

manufacturing of blood sugar testing strips. Additionally, there is a growing demand for optical chemical sensors that are utilized in vehicle cabin air quality systems, owing to the increasing sales of automobiles. This, coupled with the rising adoption rate of centralized ventilation in residential and commercial spaces, is also favoring the growth of the market. Moreover, these sensors are finding extensive application in the defense and military sector, as they aid in the detection of explosive materials.

IMARC Group's latest report provides a deep insight into the global chemical sensors market covering all its essential aspects. This ranges from macro overview of the market to micro details of the industry performance, recent trends, key market drivers and challenges, SWOT analysis, Porter's five forces analysis, value chain analysis, etc. This report is a must-read for industry players, investors, researchers, consultants, business strategists, and all those who have any kind of stake or are planning to foray into the chemical sensors market in any manner.

Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each sub-segment of the global chemical sensors market report, along with forecasts at the global and regional level from 2024-2032. Our report has categorized the market based on product type, analyte and application.

Breakup by Product Type:

- Electrochemical
 - Potentiometric
 - Amperometric
 - Conductometric
 - Others
- Optical
 - Infrared
 - Photoionization
 - Others
- Pellistor/Catalytic Bead
- Semiconductor
- Others

Based on the product type, the report finds that electrochemical sensors represent the most popular type of chemical sensors. Other major product types are optical,

pellistor/catalytic bead and semiconductor. Electrochemical sensors are further divided as potentiometric, amperometric, conductometric and others.

Breakup by Analyte:

- Solid
- Liquid
- Gas

On the basis of the analyte, the market has been categorized into solid, liquid and gas.

Breakup by Application:

- Industrial
- Motor Vehicles
- Food & Beverage Processing
- HVAC
- Environmental Monitoring
- Industrial Safety & Emissions
- Water & Wastewater
- Automotive Emissions Testing
- Medical
- Clinical Diagnostics
- Nutritional
- Defense and Homeland Security
- Others

The market has been segregated based on the application into industrial, environmental monitoring, medical, defense and homeland security and others. Amongst these, industrial applications represent the largest segment, which also includes motor vehicles, food and beverage processing and HVAC.

Breakup by Region:

- Asia Pacific
- Europe
- North America
- Middle East and Africa
- Latin America

On the basis of geography, North America enjoys the leading position in the market. Other major regions are Europe, Asia Pacific, Latin America, and Middle East and Africa.

Competitive Landscape:

The report has also analyzed the competitive landscape of the market with some of the key players being Smiths Detection Inc., AirTest Technologies Inc., Hans Turck GmbH & Co. KG, General Electric, Thermo Fisher Scientific, Bayer, MSA Safety Incorporated, Honeywell International Inc., Pepperl+Fuchs Group, SICK AG, Siemens AG, ABB Ltd, SenseAir AB, Spectris PLC, Denso Corporation, Halma PLC, Owlstone Inc., etc.

Key Questions Answered in This Report

1. What was the size of the global chemical sensors market in 2023?
2. What is the expected growth rate of the global chemical sensors market during 2024-2032?
3. What are the key factors driving the global chemical sensors market?
4. What has been the impact of COVID-19 on the global chemical sensors market?
5. What is the breakup of the global chemical sensors market based on the product type?
6. What is the breakup of the global chemical sensors market based on the analyte?
7. What is the breakup of the global chemical sensors market based on the application?
8. What are the key regions in the global chemical sensors market?
9. Who are the key players/companies in the global chemical sensors market?

Contents

1 PREFACE

2 SCOPE AND METHODOLOGY

- 2.1 Objectives of the Study
- 2.2 Stakeholders
- 2.3 Data Sources
 - 2.3.1 Primary Sources
 - 2.3.2 Secondary Sources
- 2.4 Market Estimation
 - 2.4.1 Bottom-Up Approach
 - 2.4.2 Top-Down Approach
- 2.5 Forecasting Methodology

3 EXECUTIVE SUMMARY

4 INTRODUCTION

- 4.1 Overview
- 4.2 Key Industry Trends

5 GLOBAL CHEMICAL SENSORS MARKET

- 5.1 Market Overview
- 5.2 Market Performance
- 5.3 Impact of COVID-19
- 5.4 Market Breakup by Product Type
- 5.5 Market Breakup by Analyte
- 5.6 Market Breakup by Application
- 5.7 Market Breakup by Region
- 5.8 Market Forecast

6 MARKET BREAKUP BY PRODUCT TYPE

- 6.1 Electrochemical
 - 6.1.1 Market Trends
 - 6.1.2 Major Types

- 6.1.2.1 Potentiometric
- 6.1.2.2 Amperometric
- 6.1.2.3 Conductometric
- 6.1.2.4 Others
- 6.1.3 Market Forecast
- 6.2 Optical
 - 6.2.1 Market Trends
 - 6.2.2 Major Types
 - 6.2.2.1 Infrared
 - 6.2.2.2 Photoionization
 - 6.2.2.3 Others
 - 6.2.3 Market Forecast
- 6.3 Pellistor/Catalytic Bead
 - 6.3.1 Market Trends
 - 6.3.2 Market Forecast
- 6.4 Semiconductor
 - 6.4.1 Market Trends
 - 6.4.2 Market Forecast
- 6.5 Others
 - 6.5.1 Market Trends
 - 6.5.2 Market Forecast

7 MARKET BREAKUP BY ANALYTE

- 7.1 Solid
 - 7.1.1 Market Trends
 - 7.1.2 Market Forecast
- 7.2 Liquid
 - 7.2.1 Market Trends
 - 7.2.2 Market Forecast
- 7.3 Gas
 - 7.3.1 Market Trends
 - 7.3.2 Market Forecast

8 MARKET BREAKUP BY APPLICATION

- 8.1 Industrial
 - 8.1.1 Market Trends
 - 8.1.2 Major Types

- 8.1.2.1 Motor Vehicles
- 8.1.2.2 Food & Beverage Processing
- 8.1.2.3 HVAC
- 8.1.3 Market Forecast
- 8.2 Environmental Monitoring
 - 8.2.1 Market Trends
 - 8.2.2 Major Types
 - 8.2.2.1 Industrial Safety & Emissions
 - 8.2.2.2 Water & Wastewater
 - 8.2.2.3 Automotive Emissions Testing
 - 8.2.3 Market Forecast
- 8.3 Medical
 - 8.3.1 Market Trends
 - 8.3.2 Major Types
 - 8.3.2.1 Clinical Diagnostics
 - 8.3.2.2 Nutritional
 - 8.3.3 Market Forecast
- 8.4 Defense and Homeland Security
 - 8.4.1 Market Trends
 - 8.4.2 Market Forecast
- 8.5 Others
 - 8.5.1 Market Trends
 - 8.5.2 Market Forecast

9 MARKET BREAKUP BY REGION

- 9.1 Asia Pacific
 - 9.1.1 Market Trends
 - 9.1.2 Market Forecast
- 9.2 Europe
 - 9.2.1 Market Trends
 - 9.2.2 Market Forecast
- 9.3 North America
 - 9.3.1 Market Trends
 - 9.3.2 Market Forecast
- 9.4 Middle East and Africa
 - 9.4.1 Market Trends
 - 9.4.2 Market Forecast
- 9.5 Latin America

9.5.1 Market Trends

9.5.2 Market Forecast

10 SWOT ANALYSIS

10.1 Overview

10.2 Strengths

10.3 Weaknesses

10.4 Opportunities

10.5 Threats

11 VALUE CHAIN ANALYSIS

12 PORTER'S FIVE FORCES ANALYSIS

12.1 Overview

12.2 Bargaining Power of Buyers

12.3 Bargaining Power of Suppliers

12.4 Degree of Competition

12.5 Threat of New Entrants

12.6 Threat of Substitutes

13 PRICE ANALYSIS

14 COMPETITIVE LANDSCAPE

14.1 Market Structure

14.2 Key Players

14.3 Profiles of Key Players

14.3.1 Smiths Detection Inc.

14.3.2 AirTest Technologies Inc.

14.3.3 Hans Turck GmbH & Co. KG

14.3.4 General Electric

14.3.5 Thermo Fisher Scientific

14.3.6 Bayer

14.3.7 MSA Safety Incorporated

14.3.8 Honeywell International Inc.

14.3.9 Pepperl+Fuchs Group

14.3.10 SICK AG

- 14.3.11 Siemens AG
- 14.3.12 ABB Ltd
- 14.3.13 SenseAir AB
- 14.3.14 Spectris PLC
- 14.3.15 Denso Corporation
- 14.3.16 Halma PLC
- 14.3.17 Owlstone Inc.

List Of Tables

LIST OF TABLES

Table 1: Global: Chemical Sensors Market: Key Industry Highlights, 2023 and 2032

Table 2: Global: Chemical Sensors Market Forecast: Breakup by Product Type (in Billion US\$), 2024-2032

Table 3: Global: Chemical Sensors Market Forecast: Breakup by Analyte (in Billion US\$), 2024-2032

Table 4: Global: Chemical Sensors Market Forecast: Breakup by Application (in Billion US\$), 2024-2032

Table 5: Global: Chemical Sensors Market Forecast: Breakup by Region (in Billion US\$), 2024-2032

Table 6: Global: Chemical Sensors Market Structure

Table 7: Global: Chemical Sensors Market: Key Players

List Of Figures

LIST OF FIGURES

Figure 1: Global: Chemical Sensors Market: Major Drivers and Challenges

Figure 2: Global: Chemical Sensors Market: Sales Value (in Billion US\$), 2018-2023

Figure 3: Global: Chemical Sensors Market: Breakup by Product Type (in %), 2023

Figure 4: Global: Chemical Sensors Market: Breakup by Analyte (in %), 2023

Figure 5: Global: Chemical Sensors Market: Breakup by Application (in %), 2023

Figure 6: Global: Chemical Sensors Market: Breakup by Region (in %), 2023

Figure 7: Global: Chemical Sensors Market Forecast: Sales Value (in Billion US\$), 2024-2032

Figure 8: Global: Chemical Sensors Industry: SWOT Analysis

Figure 9: Global: Chemical Sensors Industry: Value Chain Analysis

Figure 10: Global: Chemical Sensors Industry: Porter's Five Forces Analysis

Figure 11: Global: Chemical Sensors (Electrochemical) Market: Sales Value (in Billion US\$), 2018 & 2023

Figure 12: Global: Chemical Sensors (Electrochemical) Market Forecast: Sales Value (in Billion US\$), 2024-2032

Figure 13: Global: Chemical Sensors (Optical) Market: Sales Value (in Billion US\$), 2018 & 2023

Figure 14: Global: Chemical Sensors (Optical) Market Forecast: Sales Value (in Billion US\$), 2024-2032

Figure 15: Global: Chemical Sensors (Pellistor/Catalytic Bead) Market: Sales Value (in Billion US\$), 2018 & 2023

Figure 16: Global: Chemical Sensors (Pellistor/Catalytic Bead) Market Forecast: Sales Value (in Billion US\$), 2024-2032

Figure 17: Global: Chemical Sensors (Semiconductor) Market: Sales Value (in Billion US\$), 2018 & 2023

Figure 18: Global: Chemical Sensors (Semiconductor) Market Forecast: Sales Value (in Billion US\$), 2024-2032

Figure 19: Global: Chemical Sensors (Other Product Types) Market: Sales Value (in Billion US\$), 2018 & 2023

Figure 20: Global: Chemical Sensors (Other Product Types) Market Forecast: Sales Value (in Billion US\$), 2024-2032

Figure 21: Global: Chemical Sensors (Solid) Market: Sales Value (in Billion US\$), 2018 & 2023

Figure 22: Global: Chemical Sensors (Solid) Market Forecast: Sales Value (in Billion US\$), 2024-2032

Figure 23: Global: Chemical Sensors (Liquid) Market: Sales Value (in Billion US\$), 2018 & 2023

Figure 24: Global: Chemical Sensors (Liquid) Market Forecast: Sales Value (in Billion US\$), 2024-2032

Figure 25: Global: Chemical Sensors (Gas) Market: Sales Value (in Billion US\$), 2018 & 2023

Figure 26: Global: Chemical Sensors (Gas) Market Forecast: Sales Value (in Billion US\$), 2024-2032

Figure 27: Global: Chemical Sensors (Industrial) Market: Sales Value (in Billion US\$), 2018 & 2023

Figure 28: Global: Chemical Sensors (Industrial) Market Forecast: Sales Value (in Billion US\$), 2024-2032

Figure 29: Global: Chemical Sensors (Environmental Monitoring) Market: Sales Value (in Billion US\$), 2018 & 2023

Figure 30: Global: Chemical Sensors (Environmental Monitoring) Market Forecast: Sales Value (in Billion US\$), 2024-2032

Figure 31: Global: Chemical Sensors (Medical) Market: Sales Value (in Billion US\$), 2018 & 2023

Figure 32: Global: Chemical Sensors (Medical) Market Forecast: Sales Value (in Billion US\$), 2024-2032

Figure 33: Global: Chemical Sensors (Defense and Homeland Security) Market: Sales Value (in Billion US\$), 2018 & 2023

Figure 34: Global: Chemical Sensors (Defense and Homeland Security) Market Forecast: Sales Value (in Billion US\$), 2024-2032

Figure 35: Global: Chemical Sensors (Other Applications) Market: Sales Value (in Billion US\$), 2018 & 2023

Figure 36: Global: Chemical Sensors (Other Applications) Market Forecast: Sales Value (in Billion US\$), 2024-2032

Figure 37: Asia Pacific: Chemical Sensors Market: Sales Value (in Billion US\$), 2018 & 2023

Figure 38: Asia Pacific: Chemical Sensors Market Forecast: Sales Value (in Billion US\$), 2024-2032

Figure 39: Europe: Chemical Sensors Market: Sales Value (in Billion US\$), 2018 & 2023

Figure 40: Europe: Chemical Sensors Market Forecast: Sales Value (in Billion US\$), 2024-2032

Figure 41: North America: Chemical Sensors Market: Sales Value (in Billion US\$), 2018 & 2023

Figure 42: North America: Chemical Sensors Market Forecast: Sales Value (in Billion

US\$), 2024-2032

Figure 43: Middle East and Africa: Chemical Sensors Market: Sales Value (in Billion US\$), 2018 & 2023

Figure 44: Middle East and Africa: Chemical Sensors Market Forecast: Sales Value (in Billion US\$), 2024-2032

Figure 45: Latin America: Chemical Sensors Market: Sales Value (in Billion US\$), 2018 & 2023

Figure 46: Latin America: Chemical Sensors Market Forecast: Sales Value (in Billion US\$), 2024-2032

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