

CO Gas Sensors - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2024 - 2029)

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Abstracts

The CO Gas Sensors Market size is estimated at USD 1.30 billion in 2024, and is expected to reach USD 2.37 billion by 2029, growing at a CAGR of 6.20% during the forecast period (2024-2029).

Industries have different applications, with some industries using CO gas for their process-related works and other sectors releasing it as a byproduct. To ensure a secure working environment and avoid any life-threatening exposure to the workers, stringent regulations are followed in the industries. These regulations have been critical in the high-paced and early adoption of CO gas alarms and detectors. Thus, this has directly impacted the increased demand for CO gas sensors in industries.

These sensors play a vital role in safeguarding human lives by providing early warnings when carbon monoxide levels rise to hazardous concentrations. These sensors enable swift evacuation and intervention by alerting people to potential dangers and preventing carbon monoxide poisoning and fatalities.

Government regulations to ensure workplace safety primarily increase the growth of the carbon monoxide gas sensors market. For instance, the United Kingdom, Germany, and France have all implemented various rules to avoid the release of dangerous gasses into the atmosphere. Chemical industrial gasses are employed at low flashpoints with lower explosive limits (LEL) and a broad flammable/combustible spectrum. On the other hand, hazards induced by such gases can be minimized by continually using these gas sensors and monitors.

Additionally, the IIoT is advancing in various regions. Customers are becoming more interested in IoT carbon monoxide gas detectors, and players in the enterprise are

working on launching a product range tailored to IoT solutions. The necessity for wireless sensors owing to the requirement of constant and real-time monitoring and detection of emissions is anticipated to drive up demand for CO gas detectors in the coming years.

Further, product miniaturization has helped develop portable gas sensor devices that provide carrying flexibility. In these industries, there is a high focus on adopting automation and collecting all the data. Such a requirement has resulted in increased demand for wireless sensors that are enabled with two-way communication features.

However, the absence of regulatory requirements limits market growth as the urgency to adopt these sensors decreases. CO gas sensors have improved significantly, but there are certain technological limitations. For example, some sensors have difficulty detecting low levels of carbon monoxide, have a limited lifespan, and require frequent calibration. These technical limitations are expected to hinder the carbon monoxide gas sensor market.

Additionally, the Russia-Ukraine war is impacting the supply chain of semiconductors and electronic components, being a significant supplier of raw materials for producing semiconductors and electronic components, including sensors. The dispute has disrupted the supply chain, causing shortages and price increases for these materials, impacting carbon monoxide (CO) gas sensor manufacturers and potentially leading to higher costs for end users.

Carbon Monoxide Gas Sensors Market Trends

The Petrochemical Segment to Witness Growth

Carbon monoxide sensors are being rapidly deployed in the LPG and LNG sectors since these industries require a check at every stage of gas storage, production, or transportation. The demand for safety and security at processing installations has also been increasing while natural gas production is growing worldwide. The growth of this segment is expected to be driven by the continued increase in gas products, and according to MOSPI, petrochemicals accounted for 37% of India's total energy consumption that year.

With a current TWA of only 5,000 ppm, carbon dioxide is more than twice as heavy as air. Currently, 40,000 ppm or 4% by volume of IDLH is in use. Toxic exposure symptoms are headache, trouble breathing, increased heart rate, and convulsions.

In the petrochemical industry, oil recovery and urea and methanol production require CO₂ gas monitoring with a sensor that continuously detects CO₂ levels and issues constant alarm commands when the gas is in toxic quantities.

They are also used to detect gas leaks and monitor air quality. Carbon monoxide sensors can be used with other instruments, such as a thermal imager or an infrared camera, to help identify the source of the gas leak.

North America is Expected to Hold Significant Market Share

The region is investing significantly in market growth. The rising industrial safety measures, increasing applications in the industrial sector, and an increasing number of deaths due to CO across the region further create demand for CO gas sensors.

In addition, according to the Ontario Association of Fire Chiefs, more than 50 people die yearly from CO poisoning across Canada; as people use fuel-burning appliances more often to keep warm in winter, the deaths are mainly due to cold weather conditions. As a result, adopting carbon monoxide (CO) gas sensors is beneficial, as these appliances can unknowingly cause dangerous levels of CO gas to build up in the home. The CO gas sensors are primarily used in carbon monoxide detectors and alarms.

According to IEA's Annual Energy Outlook 2022, petroleum and natural gas are expected to be the most-consumed power sources in the United States through 2050. In contrast, renewable energy is expected to be the fastest growing. The increasing incentives for solar and wind energy and declining technology costs support robust competition with natural gas for electricity generation. Such initiatives will drive the demand for CO gas sensors during the forecast period.

North America will be a lucrative market during the forecast period due to huge investments by manufacturers in R&D activities concerning new environmentally friendly products.

There are laws in many states and provinces of the region that require CO gas sensors to be installed in homes and other buildings as a precautionary measure against carbon monoxide poisoning. The demand for CO gas sensors in the region has increased significantly owing to all regulations relating to sensor devices.

There have been a few incidents of CO poisoning recently. Nine people were sent to a hospital in Ontario, Canada, and one person died in a vehicle in Alberta. In light of such events, Health Canada is warning Canadians to be alert in their homes and elsewhere and aware of carbon monoxide's dangers. Such events will drive North America's demand for CO gas sensors.

Carbon Monoxide Gas Sensors Industry Overview

The carbon monoxide gas sensors market is semi-consolidated, has gained a competitive edge in the past three decades, and consists of several major players. In terms of market share, few of the prominent players currently dominate the market. However, with increasing innovations and safety regulations due to gas leakage incidents, the companies in the market are strategically innovating in providing these sensors, which meet the rules and policies.

April 2024: Honeywell announced that it will be the first gas detector manufacturer in the 'Made in Saudi' initiative, reaffirming its dedication to fostering localization and economic diversification in Saudi Arabia. It will locally assemble and calibrate three distinct gas detection solutions at its Dammam facility. Among these solutions is the Honeywell BW MaxXT^{II}, portable multi-gas detector workers use to detect gases like hydrogen sulfide and carbon monoxide in hazardous environments.

October 2023: ABB announced extending its carbon capture collaboration to support the future workforce and energy transition with Imperial College. ABB aims to equip the students with the skills needed to run industrial processes by demonstrating how the latest technology can help optimize plant performance and safely manage emergencies in real-life applications.

Additional Benefits:

The market estimate (ME) sheet in Excel format

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