Intrinsically Safe Equipment (IS Equipment) - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Intrinsically Safe Equipment Market size is estimated at USD 3.88 billion in 2025, and is expected to reach USD 5.56 billion by 2030, at a CAGR of 7.45% during the forecast period (2025-2030).

Intrinsically safe equipment is equipment and wiring that cannot release sufficient electrical or thermal energy under normal or abnormal conditions to cause the ignition of a specific hazardous atmospheric mixture in its most easily ignited concentration. This is achieved by limiting the amount of power available to the electrical equipment in the dangerous area to a level below that which will ignite the gases. Fuel, oxygen, and an ignition source must be present to have a fire or explosion.

An intrinsically safe system assumes that fuel and oxygen are present in the atmosphere. Still, the system is designed in a way that the electrical energy or thermal energy of a particular instrument loop can never be significant enough to cause ignition. Intrinsic safety (IS) is an approach to the design of equipment going into hazardous areas. The idea is to reduce the available energy to a level too low to cause ignition. That means preventing sparks and keeping temperatures down.

Key Highlights
- Flourishing industrialization is a significant factor driving the growth of intrinsically safe equipment. With the growing population, the outlook for process manufacturing is generally positive over the next year or so. According to United Nations Industrial Organizations, industrial economies ticked from a limited 2.5% Y-o-Y increase in the second quarter of 2022 to a 3.6% expansion in the third quarter. Other industrializing economies registered a Y-o-Y output increase of 4.9% in the third quarter of 2022, higher than the group of industrial economies.
- The rising oil and gas exploration activities have positively impacted the growth of the market studied, as intrinsically safe equipment is widely used in the oil and gas industry because of the highly explosive atmosphere and flammable gasses. The

industry is highly prone to risks, and emergency management systems are crucial. The International Energy Agency forecasts global upstream oil and gas investments to increase by about 11% to USD 528 billion in 2023, the highest level since 2015. The renewed appetite for oil and gas reserves and production - among European majors in particular - comes after Shell and BP slowed down plans to shift away from their legacy business and invest in renewables as part of the energy transition.
- Thus, the demand for intrinsically safe equipment is expected to increase during the forecast period because of the increased safety standards for hazardous areas. The oil and gas segment held over a 30.91% share in the intrinsically safe equipment market in 2022. The oil and gas industry broadly includes areas that are hazardous to the employees and the equipment used. Moreover, the oil and gas industry includes trunk pipelines, pumping and compressor stations, and other facilities requiring modern and reliable control and safety systems.
- Occupational health and safety (OHS) regulations are essential for protecting the health and safety of workers in any industry. However, these regulations can vary significantly from region to region, including North America, Europe, Asia, Australia, and New Zealand. Thus, complying with regulations in different countries can be challenging for companies, especially those that operate across borders. One significant challenge is the cultural differences that may affect how laws are interpreted or implemented.
- Furthermore, multinational companies working in global regions have to work toward customizing their products per the varying country requirements, making their production process more complex and minimizing the rate of economies of scale. On the contrary, some of the joint international standards set by organizations such as the International Electrotechnical Commission reduce the impact of this restraint in the global market.
- The conflict between Russia and Ukraine has dramatically affected the global economy. Countries that rely on importing oil and natural gas have been particularly impacted due to their dependence on energy imports. The ongoing conflict in Ukraine could potentially result in a surge in the demand for oil and gas from African nations, as they possess the necessary reserves and infrastructure to meet this growing need. Various countries, including Japan, EU nations, and others, actively invest in Africa's oil and gas sector to reduce their reliance on Russia. Furthermore, Africans and Europeans have already begun collaborating on oil and gas projects, which are expected to further enhance the market's opportunities.

Intrinsically Safe Equipment (IS Equipment) Market Trends

Oil and Gas End User Segment is Expected to Hold a Significant Market Share

- The growing safety concerns and increasing exploration activities across the industry in various regions are expected to drive market growth. In hazardous locations, such as those found in the oil and gas industry, intrinsic safety serves as a design technique to prevent explosions in electrical equipment and wiring. The intrinsically safe equipment finds significant demand in the oil and gas sector, which is one of its primary end-user markets. Governments worldwide are compelled to enforce strict safety regulations due to the industry's rising number of accidents and explosions. Furthermore, the expanding energy requirements and the growing exploration activities in offshore and onshore oil fields present a substantial opportunity for the market to establish a foothold in this sector.
- In the O&G industry, modern electrical equipment is specifically engineered to withstand the demanding conditions of various processes within the oil and gas industry, including motor controls and supports. As the utilization of electrical equipment continues to rise across the industry, there is a growing requirement for intrinsically safe equipment to mitigate the risk of explosions. In the oil and gas sector, intrinsically safe equipment is extensively employed in oil refineries, drilling rigs, and petrochemical plants to safeguard workers and prevent potential explosions.
- Similarly, in the oil and gas industry, intrinsic safety has emerged as a prevalent method for ensuring safety protection. This technique involves the use of lower voltage or power equipment, including electronics, controls, HMIs, and industrial monitors and displays. These devices are extensively utilized in this industry due to the presence of highly explosive atmospheres and flammable gases. Given the industry's susceptibility to risks, the implementation of emergency management systems has become imperative, leading to a growing demand for diverse safety standards.

- The industry's increasing investments and the rising global oil demand are projected to create employment opportunities in various countries. As a result, the market is expected to grow and prioritize safety measures for workers. According to the International Energy Agency (IEA), the global demand for crude oil was estimated to reach 101.9 million barrels per day (bpd) in 2023, surpassing the 2022 forecast by 2 million bpd. Additionally, the IEA predicts that by the end of the decade, global demand will increase by approximately eight million bpd, leading to a greater demand for offshore activities.
- Moreover, according to the report released by OPEC, the global consumption of crude oil, including biofuels, reached 99.57 million barrels per day in 2022. This figure is projected to climb to 101.89 million barrels per day in 2023 and eventually reach 109.8 million barrels per day by 2045. Additionally, the demand for diesel and gasoil is expected to rise to 30.1 million barrels per day in 2045, compared to 27.6 million barrels in 2021. These factors will contribute to increased awareness and the implementation of stricter safety regulations, placing a greater emphasis on workplace safety, thereby driving the need for various intrinsically safe equipment.
- For instance, in the industry, there is a growing trend of embracing intrinsically safe sensors to detect and react to environmental changes effectively. These sensors are extensively utilized in gas and oil facilities for various purposes, such as examining the state of pumps, filters, wellheads, and other components of pipelines. Additionally, they play a crucial role in evaluating the efficiency of above-ground pumps. Furthermore, these sensors are of great importance in monitoring inventory levels and proactively identifying potential issues before they become major concerns in the industry.

Asia-Pacific Expected to Register Major Growth

- China is one of the biggest countries in APAC, having major industries like mining, chemicals, oil and gas, process manufacturing, and others. Over the past few years, there have been significant changes in the field of intrinsically safe equipment across these industries in the region, as governments across the Chinese states have been advocating for more stringent workplace safety regulations. Moreover, increasing safety concerns owing to the increasing explosions and causalities across the industries in the region are expected to enhance the safety equipment applications.
- The demand for intrinsically safe equipment in Japan is being driven by the growing number of government regulations and increasing concerns about safety and security in the workplace, particularly due to the rise in explosion activities. An example of this is the explosion that occurred at a chemical plant in Niigata Prefecture in June 2023, resulting in the death of a contractor and injuries to two others. The industry is expected to adopt a range of safety equipment, including sensors, detectors, and others, to provide early warning of potential hazards.
- Similarly, various industries in Japan are continuously incorporating intrinsically safe equipment, including smoke detectors, sensors, transmitters, and other devices, across different sectors. This is particularly evident in industries such as power, manufacturing, mining, and others, where the utilization of flammable gases or liquids is prevalent. The growing investments in these sectors are anticipated to create more opportunities for safety equipment, aiming to prevent potential explosions. For example, Japan is consistently investing in nuclear power energy and heavily relies on electricity generated from nuclear plants. The escalating activities in nuclear power generation within the region are projected to drive the market forward.
- The market studied in India is anticipated to experience a surge in demand due to the growing investments and government initiatives aimed at promoting foreign direct investments (FDIs). This is particularly relevant in the oil and gas industry, where highly explosive atmospheres and flammable gases necessitate the use of these products. As the Indian oil and gas industry expands, the government is also intensifying safety regulations, which are expected to drive the market further. Notably, organizations such as the Oil Industry Safety Directorate (OISD) play a crucial role in formulating and coordinating the implementation of self-regulatory measures to enhance safety in the Indian oil and gas industry, thereby bolstering the market's potential.
- The regions of Indonesia, Korea, and others have a significant demand for intrinsically safe equipment in the oil and gas and mining sectors. These industries are witnessing a rise in casualties and explosions, which have compelled governments in these regions to implement strict safety regulations. Additionally, the market is being driven by the growing exploration activities in

these sectors.

Intrinsically Safe Equipment (IS Equipment) Market Overview

The intrinsically safe equipment market is fragmented with the presence of major players like Pepperl + Fuchs, Fluke Corporation (Fortive Corporation), OMEGA Engineering, R. Stahl AG, and Honeywell International Inc. Players in the market are adopting strategies such as partnerships and acquisitions to enhance their product offerings and gain sustainable competitive advantage.

- October 2023 - Omega Engineering announced the upgrade of its entire family of HANITM Temperature Sensors, a series of sensors. These improvements to the innovative, award-winning HANI temperature sensing technology include an IP67 rating for all HANI products.
- December 2023 - R. STAHL introduced new 8530 and 8550 Ex d e explosion-protected components for Ex e switching and power distribution boards. The highlight of both the new 8530 and 8550 series is the design, and the operating current - previously 40A - is increased to 63A for the 8530 series and even to 125A for the 8550 series.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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