

# **Asia Pacific Gas Chromatography (GC) Market Forecast to 2031 - Regional Analysis - by Sample Introduction Technique (Liquid Injection, Static Headspace, Dynamic Headspace, Thermal Desorption, Pyrolysis, and Others), Injection Type (Split Injection, Splitless Injection, and Others), Detector Type (Flame Ionization Detector, Thermal Conductivity Detector, Electron Capture Detector, Thermionic Specific Detector, Flame Photometric Detector, Photo Ionization Detector, Mass Spectrometers, and Others), and End User (Oil & Gas, Chemical and Energy, Consumer Products, Pharmaceutical, and Others)**

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## **Abstracts**

The Asia Pacific gas chromatography (GC) market was valued at US\$ 551.53 million in 2023 and is expected to reach US\$ 960.67 million by 2031; it is estimated to register a CAGR of 7.2% from 2023 to 2031.

Rising Adoption of Gas Chromatography-Mass Spectrometry Technique Boosts Asia Pacific Gas Chromatography (GC) Market

Gas chromatography-mass spectrometry (GC-MS) combines the separation capabilities of this chromatography method with the detection and identification capabilities of this spectrometry technique, making it a highly versatile and powerful analytical tool. The adoption of GC-MS in industries such as pharmaceuticals, environmental testing, and

Food safety is fueling the growth of the gas chromatography market. This technology enables precise identification and quantification of complex mixtures, including trace-level compounds, impurities, and contaminants. The sensitivity of the GC-MS technique allows it to detect tiny amounts of substances from analytes, which is crucial for ensuring product quality and safety, and regulatory compliance. In June 2022, Agilent Technologies introduced a range of advanced liquid chromatography-mass spectrometry (LC/MS) and GC/MS quadrupole mass spectrometers that incorporate enhanced instrument intelligence and diagnostics. These cutting-edge instruments are designed with optimum system uptime, enabling the proactive scheduling of routine maintenance and minimizing effects on laboratory productivity. By reducing the need for manual management of an instrument, operators can dedicate more time and attention to their analytical work. Such innovations in GC-MS further add to their popularity in end-user industries.

### Asia Pacific Gas Chromatography (GC) Market Overview

The Asia Pacific gas chromatography market is segmented into Australia, China, India, Japan, South Korea, and the Rest of Asia Pacific. As per the Gas Report data published by the International Energy Agency in 2020, the global LNG trade is expected to reach 585 bcm/y by 2025, with an increase of 21% compared to 2019. The growth of the markets in Asia is prominently attributed to the increase in LNG imports, led by China and India. Furthermore, the growing investment in the oil & gas industry will propel oil and gas production. As per the Shell LNG Outlook 2021, the global LNG demand is expected to reach 700 million tons by 2040, and the demand for natural gas continues to grow strongly in Asia Pacific countries, generating the demand for gas production, where gas chromatography technology will be widely used. With the rise in population and industrial growth, the energy demand in the region has increased. According to the International Energy Agency (IEA), Southeast Asia's energy demand rose by an average of 3% every year from 2000 to 2020. It is further expected to grow by an average of 5% every year till 2030. Such a rise in energy demand in the region made the governments expand oil production units by introducing new refineries and expanding the production capacity of the existing oil refineries. As per the Energy Information Administration (EIA), at least nine refinery projects are expected to be completed by the end of 2030 in Asia and the Middle East. The rise in oil production generates the need for gas chromatography in plants and refineries, which further fuels its market growth in Asia Pacific. Market players in the region are researching and exploring advanced technologies that help achieve carbon neutrality. For instance, in December 2023, PTT Global Chemical Public Company Limited (GC) signed a Memorandum of Understanding (MoU) with Mitsubishi Heavy Industries Asia Pacific

Pte. Ltd. (MHI-AP) to jointly study the technologies required to develop a large-scale petrochemical complex that aims to support Thailand's Carbon Neutrality by 2050. This collaboration between GC and MHI-AP will involve the study of solutions that use low-carbon fuels such as hydrogen and ammonia, as well as Carbon Capture and Storage technologies. Thus, focus to bring carbon neutrality by the market players generate the demand for gas chromatography techniques to quantify CO<sub>2</sub> produced in various industrial sectors.

Asia Pacific Gas Chromatography (GC) Market Revenue and Forecast to 2031 (US\$ Million)

Asia Pacific Gas Chromatography (GC) Market Segmentation

The Asia Pacific gas chromatography (GC) market is categorized into sample introduction technique, injection type, detector type, end user, and country.

Based on sample introduction technique, the Asia Pacific gas chromatography (GC) market is segmented into liquid injection, static headspace, dynamic headspace, thermal desorption, pyrolysis, and others. The liquid injection segment held the largest share of Asia Pacific gas chromatography (GC) market share in 2023.

In terms of injection type, the Asia Pacific gas chromatography (GC) market is segmented into split injection, splitless injection, and others. The split injection segment held the largest share of Asia Pacific gas chromatography (GC) market in 2023.

By detector type, the Asia Pacific gas chromatography (GC) market is divided into flame ionization detector, thermal conductivity detector, electron capture detector, thermionic specific detector, flame photometric detector, photo ionization detector, mass spectrometers, and others. The others segment held the largest share of Asia Pacific gas chromatography (GC) market in 2023.

Based on end user, the Asia Pacific gas chromatography (GC) market is categorized into oil and gas, chemical and energy, consumer products (polymer plastic), pharmaceutical, and others. The oil and gas chemical and energy segment held the largest share of Asia Pacific gas chromatography (GC) market in 2023.

By country, the Asia Pacific gas chromatography (GC) market is segmented into Australia, China, India, Japan, South Korea, and the Rest of Asia Pacific. China dominated the Asia Pacific gas chromatography (GC) market share in 2023.

YoungIn Chromass, Agilent Technologies Inc; Thermo Fisher Scientific Inc; Shimadzu Corp; Wasson-ECE Instrumentation; Merck KGaA; PerkinElmer, Inc. (Revvity Inc); Restek Corporation; and VUV Analytics are some of the leading companies operating in the Asia Pacific gas chromatography (GC) market.

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