

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 CO₂ 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.

Younglin 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.

Contents

1. INTRODUCTION

- 1.1 The Insight Partners Research Report Guidance
- 1.2 Market Segmentation

2. EXECUTIVE SUMMARY

- 2.1 Key Insights
- 2.2 Market Attractiveness

3. RESEARCH METHODOLOGY

- 3.1 Coverage
- 3.2 Secondary Research
- 3.3 Primary Research

4. GAS CHROMATOGRAPHY (GC) MARKET LANDSCAPE

- 4.1 Overview
- 4.2 PEST Analysis
- 4.3 Ecosystem Analysis
 - 4.3.1 List of Vendors in the Value Chain
 - 4.3.2 Instrument Manufacturers:
 - 4.3.3 Accessories and Consumables Providers:
 - 4.3.4 End Users:
 - 4.3.5 List of Vendors in the Value Chain
- 4.4 Premium Insights
 - 4.4.1 Aftermarket Services

5. ASIA PACIFIC GAS CHROMATOGRAPHY (GC) MARKET - KEY MARKET DYNAMICS

- 5.1 Market Drivers
 - 5.1.1 Growing Emphasis on Quality Control Requirements
 - 5.1.2 Rising Adoption of Gas Chromatography-Mass Spectrometry Technique
 - 5.1.3 Proliferation of Oil & Gas Industry
- 5.2 Market Restraints

- 5.2.1 Lack of Skilled Professionals
- 5.2.2 High Cost of Gas Chromatography Equipment
- 5.3 Market Opportunities
 - 5.3.1 Emerging Proteomics Industry
- 5.4 Market Trends
 - 5.4.1 Surging Popularity in Emerging Regions
- 5.5 Impact of Drivers and Restraints:

6. GAS CHROMATOGRAPHY (GC) MARKET - ASIA PACIFIC ANALYSIS

- 6.1 Overview
- 6.2 Gas Chromatography (GC) Market Revenue (US\$ Million), 2021-2031
- 6.3 Gas Chromatography (GC) Market Forecast Analysis

7. ASIA PACIFIC GAS CHROMATOGRAPHY (GC) MARKET ANALYSIS - BY SAMPLE INTRODUCTION TECHNIQUES

- 7.1 Liquid Injection
 - 7.1.1 Overview
 - 7.1.2 Liquid Injection: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)
- 7.2 Static Headspace
 - 7.2.1 Overview
 - 7.2.2 Static Headspace: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)
- 7.3 Dynamic Headspace
 - 7.3.1 Overview
 - 7.3.2 Dynamic Headspace: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)
- 7.4 Thermal Desorption
 - 7.4.1 Overview
 - 7.4.2 Thermal Desorption: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)
- 7.5 Pyrolysis
 - 7.5.1 Overview
 - 7.5.2 Pyrolysis: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)
- 7.6 Others
 - 7.6.1 Overview

7.6.2 Others: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)

8. ASIA PACIFIC GAS CHROMATOGRAPHY (GC) MARKET ANALYSIS - BY INJECTION TYPE

8.1 Split Injection

8.1.1 Overview

8.1.2 Split Injection: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)

8.2 Splitless Injection

8.2.1 Overview

8.2.2 Splitless Injection: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)

8.3 Others

8.3.1 Overview

8.3.2 Others: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)

9. ASIA PACIFIC GAS CHROMATOGRAPHY (GC) MARKET ANALYSIS - BY DETECTOR TYPE

9.1 Flame Ionization Detector

9.1.1 Overview

9.1.2 Flame Ionization Detector: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)

9.2 Thermal Conductivity Detector

9.2.1 Overview

9.2.2 Thermal Conductivity Detector: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)

9.3 Electron Capture Detector

9.3.1 Overview

9.3.2 Electron Capture Detector: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)

9.4 Thermionic Specific Detector

9.4.1 Overview

9.4.2 Thermionic Specific Detector: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)

9.5 Flame Photometric Detector

9.5.1 Overview

9.5.2 Flame Photometric Detector: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)

9.6 Photo Ionization Detector

9.6.1 Overview

9.6.2 Photo Ionization Detector: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)

9.7 Mass Spectrometers

9.7.1 Overview

9.7.2 Mass Spectrometers: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)

9.8 Others

9.8.1 Overview

9.8.2 Others: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)

10. ASIA PACIFIC GAS CHROMATOGRAPHY (GC) MARKET ANALYSIS - BY END USER

10.1 Oil and Gas

10.1.1 Overview

10.1.2 Oil and Gas: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)

10.2 Chemical and Energy

10.2.1 Overview

10.2.2 Chemical and Energy: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)

10.3 Consumer Products

10.3.1 Overview

10.3.2 Consumer Products: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)

10.4 Pharmaceutical

10.4.1 Overview

10.4.2 Pharmaceutical: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)

10.5 Others

10.5.1 Overview

10.5.2 Others: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)

11. ASIA PACIFIC GAS CHROMATOGRAPHY (GC) MARKET - COUNTRY ANALYSIS

11.1 Asia Pacific Market Overview

11.1.1 Asia Pacific: Gas Chromatography (GC) Market, By Key Country - Revenue and Forecast to 2023 (US\$ Million)

11.1.2 Asia Pacific: Gas Chromatography (GC) Market - Revenue and Forecast Analysis - by Country

11.1.2.1 Asia Pacific: Gas Chromatography (GC) Market - Revenue and Forecast Analysis - by Country

11.1.2.2 Australia: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)

11.1.2.2.1 Australia: Gas Chromatography (GC) Market Breakdown, by Sample Introduction Techniques

11.1.2.2.2 Australia: Gas Chromatography (GC) Market Breakdown, by Injection Type

11.1.2.2.3 Australia: Gas Chromatography (GC) Market Breakdown, by Detector Type

11.1.2.2.4 Australia: Gas Chromatography (GC) Market Breakdown, by End User

11.1.2.3 China: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)

11.1.2.3.1 China: Gas Chromatography (GC) Market Breakdown, by Sample Introduction Techniques

11.1.2.3.2 China: Gas Chromatography (GC) Market Breakdown, by Injection Type

11.1.2.3.3 China: Gas Chromatography (GC) Market Breakdown, by Detector Type

11.1.2.3.4 China: Gas Chromatography (GC) Market Breakdown, by End User

11.1.2.4 India: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)

11.1.2.4.1 India: Gas Chromatography (GC) Market Breakdown, by Sample Introduction Techniques

11.1.2.4.2 India: Gas Chromatography (GC) Market Breakdown, by Injection Type

11.1.2.4.3 India: Gas Chromatography (GC) Market Breakdown, by Detector Type

11.1.2.4.4 India: Gas Chromatography (GC) Market Breakdown, by End User

11.1.2.5 Japan: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)

11.1.2.5.1 Japan: Gas Chromatography (GC) Market Breakdown, by Sample Introduction Techniques

11.1.2.5.2 Japan: Gas Chromatography (GC) Market Breakdown, by Injection Type

- 11.1.2.5.3 Japan: Gas Chromatography (GC) Market Breakdown, by Detector Type
- 11.1.2.5.4 Japan: Gas Chromatography (GC) Market Breakdown, by End User
- 11.1.2.6 South Korea: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)
 - 11.1.2.6.1 South Korea: Gas Chromatography (GC) Market Breakdown, by Sample Introduction Techniques
 - 11.1.2.6.2 South Korea: Gas Chromatography (GC) Market Breakdown, by Injection Type
 - 11.1.2.6.3 South Korea: Gas Chromatography (GC) Market Breakdown, by Detector Type
 - 11.1.2.6.4 South Korea: Gas Chromatography (GC) Market Breakdown, by End User
- 11.1.2.7 Rest of Asia Pacific: Gas Chromatography (GC) Market - Revenue and Forecast to 2031 (US\$ Million)
 - 11.1.2.7.1 Rest of Asia Pacific: Gas Chromatography (GC) Market Breakdown, by Sample Introduction Techniques
 - 11.1.2.7.2 Rest of Asia Pacific: Gas Chromatography (GC) Market Breakdown, by Injection Type
 - 11.1.2.7.3 Rest of Asia Pacific: Gas Chromatography (GC) Market Breakdown, by Detector Type
 - 11.1.2.7.4 Rest of Asia Pacific: Gas Chromatography (GC) Market Breakdown, by End User

12. COMPETITIVE LANDSCAPE

- 12.1 Heat Map Analysis by Key Players
- 12.2 Company Positioning & Concentration

13. INDUSTRY LANDSCAPE

- 13.1 Overview
- 13.2 Market Initiative

14. COMPANY PROFILES

- 14.1 YoungIn Chromass
 - 14.1.1 Key Facts
 - 14.1.2 Business Description
 - 14.1.3 Products and Services

- 14.1.4 Financial Overview
- 14.1.5 SWOT Analysis
- 14.1.6 Key Developments
- 14.2 Agilent Technologies Inc
 - 14.2.1 Key Facts
 - 14.2.2 Business Description
 - 14.2.3 Products and Services
 - 14.2.4 Financial Overview
 - 14.2.5 SWOT Analysis
 - 14.2.6 Key Developments
- 14.3 Thermo Fisher Scientific Inc
 - 14.3.1 Key Facts
 - 14.3.2 Business Description
 - 14.3.3 Products and Services
 - 14.3.4 Financial Overview
 - 14.3.5 SWOT Analysis
 - 14.3.6 Key Developments
- 14.4 Shimadzu Corp
 - 14.4.1 Key Facts
 - 14.4.2 Business Description
 - 14.4.3 Products and Services
 - 14.4.4 Financial Overview
 - 14.4.5 SWOT Analysis
 - 14.4.6 Key Developments
- 14.5 Wasson-ECE Instrumentation
 - 14.5.1 Key Facts
 - 14.5.2 Business Description
 - 14.5.3 Products and Services
 - 14.5.4 Financial Overview
 - 14.5.5 SWOT Analysis
 - 14.5.6 Key Developments
- 14.6 Merck KGaA
 - 14.6.1 Key Facts
 - 14.6.2 Business Description
 - 14.6.3 Products and Services
 - 14.6.4 Financial Overview
 - 14.6.5 SWOT Analysis
 - 14.6.6 Key Developments
- 14.7 PerkinElmer, Inc. (Revvity Inc)

- 14.7.1 Key Facts
- 14.7.2 Business Description
- 14.7.3 Products and Services
- 14.7.4 Financial Overview
- 14.7.5 SWOT Analysis
- 14.7.6 Key Developments
- 14.8 Restek Corporation
 - 14.8.1 Key Facts
 - 14.8.2 Business Description
 - 14.8.3 Products and Services
 - 14.8.4 Financial Overview
 - 14.8.5 SWOT Analysis
 - 14.8.6 Key Developments
- 14.9 VUV Analytics
 - 14.9.1 Key Facts
 - 14.9.2 Business Description
 - 14.9.3 Products and Services
 - 14.9.4 Financial Overview
 - 14.9.5 SWOT Analysis
 - 14.9.6 Key Developments

15. APPENDIX

- 15.1 About the Insight Partners
- 15.2 Word Index

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Product name: 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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