

Cryogenic Equipment Market Forecasts to 2034 – Global Analysis By Equipment Type (Cryogenic Storage Tanks, Cryogenic Valves, Cryogenic Pumps, Cryogenic Vaporizers, Cryogenic Heat Exchangers and Cryogenic Refrigerators & Freezers), Cryogen Type, Application, End User and By Geography

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Abstracts

According to Statistics MRC, the Global Cryogenic Equipment Market is accounted for \$27.0 billion in 2026 and is expected to reach \$44.3 billion by 2034 growing at a CAGR of 6.4% during the forecast period. Cryogenic Equipment encompasses advanced machinery used for the storage, handling, and movement of substances at ultra-low temperatures, generally below -150°C. It plays a critical role across sectors such as aerospace, healthcare, energy, and metal processing, where gases like oxygen, nitrogen, and LNG are preserved in liquid states. These systems include insulated tanks, specialized valves, pumps, and vaporizers designed to reduce thermal exchange. Rising demand for liquefied natural gas, coupled with innovations in healthcare, is fueling market expansion. Furthermore, growing investments in sustainable energy and industrial gas usage are significantly boosting the global deployment of cryogenic equipment.

According to the International Gas Union (IGU) 2023 World LNG Report, global LNG trade reached 401 million tonnes in 2022, up from 379 million tonnes in 2021. This expansion directly drives demand for cryogenic tanks, pumps, and vaporizers used in LNG storage and transport.

Market Dynamics:

Driver:

Rising demand for liquefied natural gas (LNG)

Growing global consumption of liquefied natural gas (LNG) significantly drives the expansion of the cryogenic equipment market. With an increasing emphasis on cleaner fuels, LNG is gaining popularity due to its relatively lower environmental impact compared to traditional fossil fuels like coal and oil. Cryogenic systems play a crucial role in maintaining LNG in liquid form during storage and transportation at very low temperatures. Expanding industrial activities, rising urban populations, and higher energy needs in developing regions are fueling LNG demand. Moreover, continuous investments in LNG infrastructure are accelerating the adoption of efficient cryogenic technologies globally.

Restraint:

High capital and maintenance costs

The substantial initial investment and high maintenance expenses act as key limitations for the cryogenic equipment market. Establishing cryogenic systems involves sophisticated design, specialized materials, and high-performance insulation, leading to elevated upfront costs. Moreover, sustaining ultra-low temperatures requires constant energy consumption and system supervision, increasing operational spending. Many small and mid-sized businesses find it difficult to afford such investments. In addition, regular servicing, strict safety regulations, and the need for trained professionals contribute to overall ownership costs. These economic barriers can restrict broader adoption, particularly in price-sensitive regions and emerging economies.

Opportunity:

Growth in hydrogen economy and clean energy initiatives

Increasing emphasis on hydrogen-based energy systems and sustainable initiatives creates strong growth opportunities for the cryogenic equipment market. Liquid hydrogen must be maintained at ultra-low temperatures, making cryogenic technologies vital for its safe storage and transport. Governments and industries are significantly investing in hydrogen infrastructure to meet decarbonization targets. The rise of renewable energy sources like solar and wind also promotes hydrogen as an efficient energy carrier. As the global transition toward cleaner energy accelerates, demand for

innovative cryogenic solutions is expected to expand considerably across multiple sectors.

Threat:

Volatility in energy prices and supply chain disruptions

Unstable energy costs and disruptions in supply chains represent major threats to the growth of the cryogenic equipment market. Cryogenic systems rely on energy-intensive operations and consistent access to specialized materials, making them vulnerable to price fluctuations. Rising energy expenses can reduce affordability and limit adoption among end users. Furthermore, global supply chain interruptions due to geopolitical issues or trade barriers can lead to production delays and extended delivery schedules. Such uncertainties affect investment decisions and project execution, creating obstacles for manufacturers and hindering overall market expansion across regions.

Covid-19 Impact:

The outbreak of COVID-19 created both challenges and growth opportunities for the cryogenic equipment market. In the early stages, disruptions in supply chains, workforce limitations, and temporary shutdowns of industries negatively affected production and project execution. Nevertheless, rising demand from the healthcare sector played a crucial role in market expansion, especially for storing vaccines, medical gases, and biological materials at ultra-low temperatures. The global vaccine rollout increased the need for reliable cryogenic storage solutions. Furthermore, growing investments in healthcare systems and pharmaceutical development aided recovery, while the gradual restart of industrial activities contributed to sustained market growth.

The cryogenic storage tanks segment is expected to be the largest during the forecast period

The cryogenic storage tanks segment is expected to account for the largest market share during the forecast period because of their essential function in preserving liquefied gases at ultra-low temperatures. They are extensively utilized in sectors such as energy, healthcare, chemicals, and food industries, where reliable storage of gases like nitrogen, oxygen, and LNG is crucial. Their efficiency in maintaining stable temperatures and reducing evaporation losses makes them highly valuable. Growing demand for industrial gases, increasing LNG infrastructure development, and rising medical applications are boosting their usage. Consequently, cryogenic storage tanks

continue to lead as the most prominent segment in the market.

The LNG (liquefied natural gas) segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the LNG (liquefied natural gas) segment is predicted to witness the highest growth rate owing to its rising adoption as a cleaner alternative fuel. With increasing efforts to lower carbon emissions, many countries are shifting from conventional fuels like coal and oil to LNG for energy generation, transport, and industrial use. Cryogenic systems are essential for maintaining LNG in liquid form at very low temperatures during storage and transport. The rapid development of LNG infrastructure, such as processing plants and storage facilities, is boosting demand. Growing energy needs and sustainability investments are further driving this segment's expansion.

Region with largest share:

During the forecast period, the Asia-Pacific region is expected to hold the largest market share driven by strong industrial growth, rising urban population, and increasing energy requirements in countries like China, India, and Japan. Substantial investments in LNG infrastructure, such as storage and transport facilities, are fueling the need for cryogenic technologies. Moreover, the growth of healthcare services and the rising demand for industrial gases in sectors like electronics and manufacturing are supporting market expansion. Favorable government policies encouraging clean energy adoption and infrastructure development further strengthen the region's leading position in the global cryogenic equipment market.

Region with highest CAGR:

Over the forecast period, the Rest of the World (RoW) region is anticipated to exhibit the highest CAGR, supported by rising investments in energy infrastructure and increasing demand for liquefied natural gas. Regional countries are enhancing their LNG production, storage, and export capacities, boosting the requirement for efficient cryogenic technologies. Moreover, ongoing industrial development and efforts to diversify economies beyond oil are encouraging the use of industrial gases. Expanding healthcare infrastructure and large-scale development projects are also contributing to growth. Supportive government policies and strategic energy initiatives are further driving the rapid expansion of this regional market.

Key players in the market

Some of the key players in Cryogenic Equipment Market include Linde plc, Air Liquide, Air Products and Chemicals, Inc., Chart Industries, Parker Hannifin Corp, Flowserve Corporation, Nikkiso Co., Ltd., INOX India Limited, SHI Cryogenics Group, Emerson Electric Co., Sulzer Ltd, Taylor-Wharton, Wessington Cryogenics, Cryofab Inc, Acme Cryo, HEROSE GMBH, Alfa Laval AB and Fives SAS.

Key Developments:

In June 2026, Emerson Electric Co. inked a strategic collaboration with SiMa.ai to integrate SiMa.ai's MLSoC (Machine Learning System on Chip) technology into Emerson's industrial PCs. The integration of advanced artificial intelligence capabilities into industrial personal computers will enable Emerson to perform real-time data analysis in factory and remote site environments.

In December 2025, Air Liquide and Hyundai Motor Group reaffirm leadership in the hydrogen sector as co-chairs of the Hydrogen Council, driving global hydrogen ecosystem expansion. This partnership focuses on building a sustainable energy ecosystem across Europe, U.S. and South Korea, encompassing hydrogen production, storage, transportation and utilization. This collaboration expands beyond mobility to include infrastructure, logistics, and clean energy solutions, supporting the global energy transition.

In January 2024, Linde announced it has expanded its existing long-term agreement for the supply of industrial gases with Steel Authority of India Limited (SAIL), one of the largest steelmaking companies in India. Under the terms of the new agreement, Linde will now build, own and operate an additional 1,000 tons per day ASU, nearly doubling Linde's on-site production at Rourkela. Linde's investment is expected to be approximately \$60 million.

Equipment Types Covered:

Cryogenic Storage Tanks

Cryogenic Valves

Cryogenic Pumps

Cryogenic Vaporizers

Cryogenic Heat Exchangers

Cryogenic Refrigerators & Freezers

Cryogen Types Covered:

Liquid Nitrogen

Liquid Oxygen

Liquid Argon

Liquid Helium

LNG (Liquefied Natural Gas)

Other Cryogen Types

Applications Covered:

Energy & Power

Healthcare & Medical

Chemicals & Petrochemicals

Food & Beverage

Aerospace & Defense

Metallurgy & Electronics

Research & Laboratories

End Users Covered:

Industrial Gas Companies

Oil & Gas Companies

Chemical & Petrochemical Companies

Healthcare Institutions

Food & Beverage Companies

Research Organizations

Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

Netherlands

Belgium

Sweden

Switzerland

Poland

Rest of Europe

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Thailand

Malaysia

Singapore

Vietnam

Rest of Asia Pacific

South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

Africa

South Africa

Egypt

Morocco

Rest of Africa

What our report offers:

Market share assessments for the regional and country-level segments

Strategic recommendations for the new entrants

Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034

Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)

Strategic recommendations in key business segments based on the market estimations

Competitive landscaping mapping the key common trends

Company profiling with detailed strategies, financials, and recent developments

Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

Contents

1 EXECUTIVE SUMMARY

- 1.1 Market Snapshot and Key Highlights
- 1.2 Growth Drivers, Challenges, and Opportunities
- 1.3 Competitive Landscape Overview
- 1.4 Strategic Insights and Recommendations

2 RESEARCH FRAMEWORK

- 2.1 Study Objectives and Scope
- 2.2 Stakeholder Analysis
- 2.3 Research Assumptions and Limitations
- 2.4 Research Methodology
 - 2.4.1 Data Collection (Primary and Secondary)
 - 2.4.2 Data Modeling and Estimation Techniques
 - 2.4.3 Data Validation and Triangulation
 - 2.4.4 Analytical and Forecasting Approach

3 MARKET DYNAMICS AND TREND ANALYSIS

- 3.1 Market Definition and Structure
- 3.2 Key Market Drivers
- 3.3 Market Restraints and Challenges
- 3.4 Growth Opportunities and Investment Hotspots
- 3.5 Industry Threats and Risk Assessment
- 3.6 Technology and Innovation Landscape
- 3.7 Emerging and High-Growth Markets
- 3.8 Regulatory and Policy Environment
- 3.9 Impact of COVID-19 and Recovery Outlook

4 COMPETITIVE AND STRATEGIC ASSESSMENT

- 4.1 Porter's Five Forces Analysis
 - 4.1.1 Supplier Bargaining Power
 - 4.1.2 Buyer Bargaining Power
 - 4.1.3 Threat of Substitutes
 - 4.1.4 Threat of New Entrants

- 4.1.5 Competitive Rivalry
- 4.2 Market Share Analysis of Key Players
- 4.3 Product Benchmarking and Performance Comparison

5 GLOBAL CRYOGENIC EQUIPMENT MARKET, BY EQUIPMENT TYPE

- 5.1 Cryogenic Storage Tanks
- 5.2 Cryogenic Valves
- 5.3 Cryogenic Pumps
- 5.4 Cryogenic Vaporizers
- 5.5 Cryogenic Heat Exchangers
- 5.6 Cryogenic Refrigerators & Freezers

6 GLOBAL CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN TYPE

- 6.1 Liquid Nitrogen
- 6.2 Liquid Oxygen
- 6.3 Liquid Argon
- 6.4 Liquid Helium
- 6.5 LNG (Liquefied Natural Gas)
- 6.6 Other Cryogen Types

7 GLOBAL CRYOGENIC EQUIPMENT MARKET, BY APPLICATION

- 7.1 Energy & Power
- 7.2 Healthcare & Medical
- 7.3 Chemicals & Petrochemicals
- 7.4 Food & Beverage
- 7.5 Aerospace & Defense
- 7.6 Metallurgy & Electronics
- 7.7 Research & Laboratories

8 GLOBAL CRYOGENIC EQUIPMENT MARKET, BY END USER

- 8.1 Industrial Gas Companies
- 8.2 Oil & Gas Companies
- 8.3 Chemical & Petrochemical Companies
- 8.4 Healthcare Institutions
- 8.5 Food & Beverage Companies

8.6 Research Organizations

9 GLOBAL CRYOGENIC EQUIPMENT MARKET, BY GEOGRAPHY

9.1 North America

9.1.1 United States

9.1.2 Canada

9.1.3 Mexico

9.2 Europe

9.2.1 United Kingdom

9.2.2 Germany

9.2.3 France

9.2.4 Italy

9.2.5 Spain

9.2.6 Netherlands

9.2.7 Belgium

9.2.8 Sweden

9.2.9 Switzerland

9.2.10 Poland

9.2.11 Rest of Europe

9.3 Asia Pacific

9.3.1 China

9.3.2 Japan

9.3.3 India

9.3.4 South Korea

9.3.5 Australia

9.3.6 Indonesia

9.3.7 Thailand

9.3.8 Malaysia

9.3.9 Singapore

9.3.10 Vietnam

9.3.11 Rest of Asia Pacific

9.4 South America

9.4.1 Brazil

9.4.2 Argentina

9.4.3 Colombia

9.4.4 Chile

9.4.5 Peru

9.4.6 Rest of South America

9.5 Rest of the World (RoW)

9.5.1 Middle East

9.5.1.1 Saudi Arabia

9.5.1.2 United Arab Emirates

9.5.1.3 Qatar

9.5.1.4 Israel

9.5.1.5 Rest of Middle East

9.5.2 Africa

9.5.2.1 South Africa

9.5.2.2 Egypt

9.5.2.3 Morocco

9.5.2.4 Rest of Africa

10 STRATEGIC MARKET INTELLIGENCE

10.1 Industry Value Network and Supply Chain Assessment

10.2 White-Space and Opportunity Mapping

10.3 Product Evolution and Market Life Cycle Analysis

10.4 Channel, Distributor, and Go-to-Market Assessment

11 INDUSTRY DEVELOPMENTS AND STRATEGIC INITIATIVES

11.1 Mergers and Acquisitions

11.2 Partnerships, Alliances, and Joint Ventures

11.3 New Product Launches and Certifications

11.4 Capacity Expansion and Investments

11.5 Other Strategic Initiatives

12 COMPANY PROFILES

12.1 Linde plc

12.2 Air Liquide

12.3 Air Products and Chemicals, Inc.

12.4 Chart Industries

12.5 Parker Hannifin Corp

12.6 Flowserve Corporation

12.7 Nikkiso Co., Ltd.

12.8 INOX India Limited

12.9 SHI Cryogenics Group

- 12.10 Emerson Electric Co.
- 12.11 Sulzer Ltd
- 12.12 Taylor-Wharton
- 12.13 Wessington Cryogenics
- 12.14 Cryofab Inc
- 12.15 Acme Cryo
- 12.16 HEROSE GMBH
- 12.17 Alfa Laval AB
- 12.18 Fives SAS

List Of Tables

LIST OF TABLES

Table 1 Global Cryogenic Equipment Market Outlook, By Region (2023-2034) (\$MN)

Table 2 Global Cryogenic Equipment Market Outlook, By Equipment Type (2023-2034) (\$MN)

Table 3 Global Cryogenic Equipment Market Outlook, By Cryogenic Storage Tanks (2023-2034) (\$MN)

Table 4 Global Cryogenic Equipment Market Outlook, By Cryogenic Valves (2023-2034) (\$MN)

Table 5 Global Cryogenic Equipment Market Outlook, By Cryogenic Pumps (2023-2034) (\$MN)

Table 6 Global Cryogenic Equipment Market Outlook, By Cryogenic Vaporizers (2023-2034) (\$MN)

Table 7 Global Cryogenic Equipment Market Outlook, By Cryogenic Heat Exchangers (2023-2034) (\$MN)

Table 8 Global Cryogenic Equipment Market Outlook, By Cryogenic Refrigerators & Freezers (2023-2034) (\$MN)

Table 9 Global Cryogenic Equipment Market Outlook, By Cryogen Type (2023-2034) (\$MN)

Table 10 Global Cryogenic Equipment Market Outlook, By Liquid Nitrogen (2023-2034) (\$MN)

Table 11 Global Cryogenic Equipment Market Outlook, By Liquid Oxygen (2023-2034) (\$MN)

Table 12 Global Cryogenic Equipment Market Outlook, By Liquid Argon (2023-2034) (\$MN)

Table 13 Global Cryogenic Equipment Market Outlook, By Liquid Helium (2023-2034) (\$MN)

Table 14 Global Cryogenic Equipment Market Outlook, By LNG (Liquefied Natural Gas) (2023-2034) (\$MN)

Table 15 Global Cryogenic Equipment Market Outlook, By Other Cryogen Types (2023-2034) (\$MN)

Table 16 Global Cryogenic Equipment Market Outlook, By Application (2023-2034) (\$MN)

Table 17 Global Cryogenic Equipment Market Outlook, By Energy & Power (2023-2034) (\$MN)

Table 18 Global Cryogenic Equipment Market Outlook, By Healthcare & Medical (2023-2034) (\$MN)

Table 19 Global Cryogenic Equipment Market Outlook, By Chemicals & Petrochemicals (2023-2034) (\$MN)

Table 20 Global Cryogenic Equipment Market Outlook, By Food & Beverage (2023-2034) (\$MN)

Table 21 Global Cryogenic Equipment Market Outlook, By Aerospace & Defense (2023-2034) (\$MN)

Table 22 Global Cryogenic Equipment Market Outlook, By Metallurgy & Electronics (2023-2034) (\$MN)

Table 23 Global Cryogenic Equipment Market Outlook, By Research & Laboratories (2023-2034) (\$MN)

Table 24 Global Cryogenic Equipment Market Outlook, By End User (2023-2034) (\$MN)

Table 25 Global Cryogenic Equipment Market Outlook, By Industrial Gas Companies (2023-2034) (\$MN)

Table 26 Global Cryogenic Equipment Market Outlook, By Oil & Gas Companies (2023-2034) (\$MN)

Table 27 Global Cryogenic Equipment Market Outlook, By Chemical & Petrochemical Companies (2023-2034) (\$MN)

Table 28 Global Cryogenic Equipment Market Outlook, By Healthcare Institutions (2023-2034) (\$MN)

Table 29 Global Cryogenic Equipment Market Outlook, By Food & Beverage Companies (2023-2034) (\$MN)

Table 30 Global Cryogenic Equipment Market Outlook, By Research Organizations (2023-2034) (\$MN)

Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) Regions are also represented in the same manner as above.

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