

Liquid Nitrogen Market Report by Technology (Cryogenic Distillation, Pressure Swing Adsorption, and Others), Function (Coolant, Refrigerant), Storage Type (Cylinders and Packaged Gas, Merchant Liquid/Bulk, Tonnage, and Others), End User (Chemicals and Pharmaceuticals, Food and Beverage, Healthcare, Metal Manufacturing and Construction, Rubber and Plastic, and Others), and Region 2024-2032

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Report description:

The global liquid nitrogen market size reached US\$ 19.4 Billion in 2023. Looking forward, IMARC Group expects the market to reach US\$ 30.9 Billion by 2032, exhibiting a growth rate (CAGR) of 5.2% during 2024-2032.

Liquid nitrogen (LN) is a dry, condensed, scentless, inert and non-combustible cryogenic liquid used for rapid freezing. It is produced in air separation and liquefaction plants through cryogenic distillation and pressure swing adsorption processes and is usually stored in LN dewars, cryogenic liquid cylinders and cryogenic tanks. LN aids in rapid cooling and temporary shrinking of mechanical gears and components during machine assembly for improved intrusion fits. It is also used for cryosurgeries, cryotherapies and cryopreservation procedures to remove decayed tissues, warts, moles, skin tags and pre-cancerous cells in the body. LN also finds extensive applications for the freezing of food and beverages and creating an aesthetic cloud of vapor or fog over dishes in fine-dine restaurants, cafes and hotels.

Liquid Nitrogen Market Trends:

The increasing demand for cryogenic liquids for metal fabrication and manufacturing of electronics, healthcare, automotive and lighting systems is one of the key factors driving the market growth. LN is widely used as a coolant to prevent additional heat generation during the grinding process resulting in minimal corrosion and high-quality and uniformly sized ice particles. Moreover, the widespread adoption of LN as an organic additive for the development of generics, therapeutic medicines and active

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pharmaceutical ingredients is providing a thrust to the market growth. In line with this, significant growth in the food and beverage industry is also favoring the market growth. LN is widely used for rapid cooling freezing of bakery products, meat, poultry, fish, prepared meals, vegetables and fruits while retaining their original color, scent and flavor. Other factors, including rapid industrialization, along with the launch of innovative LN-compatible automobile engines for minimal carbon emissions, are anticipated to drive the market toward growth.

Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each sub-segment of the global liquid nitrogen market report, along with forecasts at the global, regional and country level from 2024-2032. Our report has categorized the market based on technology, function, storage type and end-user.

Breakup by Technology:

- Cryogenic Distillation
- Pressure Swing Adsorption
- Others

Breakup by Function:

- Coolant
- Refrigerant

Breakup by Storage Type:

- Cylinders and Packaged Gas
- Merchant Liquid/Bulk
- Tonnage
- Others

Breakup by End User:

- Chemicals and Pharmaceuticals
- Food and Beverage
- Healthcare
- Metal Manufacturing and Construction
- Rubber and Plastic
- Others

Breakup by Region:

- North America
 - o□United States
 - o□Canada
- Asia-Pacific
 - o□China
 - o□Japan
 - o□India
 - o□South Korea
 - o□Australia
 - o□Indonesia
 - o□Others

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- Europe
 - o□Germany
 - o□France
 - o□United Kingdom
 - o□Italy
 - o□Spain
 - o□Russia
 - o□Others
- Latin America
 - o□Brazil
 - o□Mexico
 - o□Others
- Middle East and Africa

Competitive Landscape:

The competitive landscape of the industry has also been examined along with the profiles of the key players being Air Liquide S.A., Air Products and Chemicals Inc., AMCS Corporation, Asia Industrial Gases Pte. Ltd., Cryomech Inc., Gulf Cryo, Linde plc, Messer Group GmbH, Statebourne Cryogenics Ltd and Taiyo Nippon Sanso Corporation (Mitsubishi Chemical Holdings Corporation).

Key Questions Answered in This Report:

- How has the global liquid nitrogen market performed so far and how will it perform in the coming years?
- What has been the impact of COVID-19 on the global liquid nitrogen market?
- What are the key regional markets?
- What is the breakup of the market based on the technology?
- What is the breakup of the market based on the function?
- What is the breakup of the market based on the storage type?
- What is the breakup of the market based on the end user?
- What are the various stages in the value chain of the industry?
- What are the key driving factors and challenges in the industry?
- What is the structure of the global liquid nitrogen market and who are the key players?
- What is the degree of competition in the industry?

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