

North America Liquid Nitrogen Market Forecast to 2031 - Regional Analysis - by Manufacturing Method (Cryogenic Distillation and Pressure Swing Adsorption) and End-use Industry (Aerospace and Defense, Automotive, Chemical, Food and Beverage, Metal Fabrication, Pharmaceutical, Electronics and Semiconductors, and Others)

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Abstracts

The North America liquid nitrogen market was valued at US\$ 4,022.18 million in 2023 and is expected to reach US\$ 6,102.70 million by 2031; it is estimated to register a CAGR of 5.3% from 2023 to 2031.

Increasing Use of Liquid Nitrogen in Pharmaceutical Industry Fuels North America Liquid Nitrogen Market

Liquid nitrogen is extensively used in various pharmaceutical applications. It acts as an organic additive for the development of generics, therapeutic medicines, and an active pharmaceutical ingredient. Nitrogen is used in its pure form or mixtures for a wide range of quality control applications, medical and nonmedical analysis, as well as to preserve living tissues and cells at cryogenic temperatures. Also, it is used to store cells at low temperatures for lab work, promession (a way to dispose of human remains through freeze drying), and cryonic preservation. Liquid nitrogen acts as a coolant; it has become a commonly used anesthetic for minor surgical procedures. For instance, liquid nitrogen is primarily used in healthcare settings to power surgical tools, medical research equipment, and other medical instruments.

Liquid nitrogen is significantly used for cryotherapy medical spas. Medical spas that

offer cryotherapy use whole-body cryosaunas to submerge the clients in nitrogen gas, therefore reducing their skin temperature. Removing toxins, reducing inflammation, and enhancing circulation are among the medical advantages of liquid nitrogen in cryotherapy. It is also used to store and freeze tissues, blood, and cells at cryogenic temperatures to prevent oxidation of samples. Thus, the widespread application of liquid nitrogen in the pharmaceutical industry fuels the market growth.

North America Liquid Nitrogen Market Overview

The chemical and electronics & semiconductors industries are growing significantly in North America, majorly in the US. According to the US Department of Homeland Security, the market share for specialty chemicals in North America accounted for 23.4% as of 2022, which was higher than the global average. In addition, in April 2024, SAMSUNG collaborated with the Biden-Harris Administration to sign a nonbinding preliminary memorandum of terms (PMT). According to this PMT, US\$ 6.4 billion will be raised in direct funding under the Science Act and CHIPS to strengthen the region's semiconductor supply chain, support advancement in technology leadership, and fuel global competition. With this collaboration, SAMSUNG is expected to invest over US\$ 40 billion in the development and production of leading-edge chips in North America. Liquid nitrogen is widely used as a cryopump in cooling shields that help create an ultra-pure vacuum space where chips can be manufactured by molecular layer building via multi-beam epitaxy systems. Thus, the growing operations in the chemical and electronics & semiconductors industries in the region drive the demand for liquid nitrogen.

North America Liquid Nitrogen Market Revenue and Forecast to 2031 (US\$ Million)

North America Liquid Nitrogen Market Segmentation

The North America liquid nitrogen market is categorized into manufacturing method, end-use industry, and country.

Based on manufacturing method, the North America liquid nitrogen market is bifurcated into cryogenic distillation and pressure swing adsorption. The cryogenic distillation segment held a larger North America liquid nitrogen market share in 2023.

In terms of end-use industry, the North America liquid nitrogen market is segmented into aerospace and defense, automotive, chemical, food and beverage, metal fabrication, pharmaceutical, electronics and semiconductors, and others. The metal fabrication

segment held the largest North America liquid nitrogen market share in 2023.

By country, the North America liquid nitrogen market is segmented into the US, Canada, and Mexico. The US dominated the North America liquid nitrogen market share in 2023.

Linde Plc; L'Air Liquide SA; Air Products and Chemicals Inc; Praxair Technology Inc; Nippon Sanso Holdings Corp; Ube Corporation; Air Water Inc; Osaka Gas Co Ltd; Messer SE & Co KGaA; nexAir, LLC; and Matheson Tri-Gas, Inc. are some of the leading companies operating in the North America liquid nitrogen market.

Reason to buy

Save and reduce time carrying out entry-level research by identifying the growth, size, leading players, and segments in the North America liquid nitrogen market.

Highlights key business priorities in order to assist companies to realign their business strategies.

The key findings and recommendations highlight crucial progressive industry trends in the North America liquid nitrogen market, thereby allowing players across the value chain to develop effective long-term strategies.

Develop/modify business expansion plans by using substantial growth offering developed and emerging markets.

Scrutinize in-depth North America market trends and outlook coupled with the factors driving the North America liquid nitrogen market, as well as those hindering it.

Enhance the decision-making process by understanding the strategies that underpin commercial interest with respect to client products, segmentation, pricing, and distribution.

The List of Companies - North America Liquid Nitrogen Market

Linde Plc

L'Air Liquide SA

Air Products and Chemicals Inc

Praxair Technology Inc

Nippon Sanso Holdings Corp

Ube Corporation

Air Water Inc

Osaka Gas Co Ltd

Messer SE & Co KGaA

nexAir, LLC

Matheson Tri-Gas, Inc

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