

Key Growth Driver in Medical Grade Liquid Nitrogen Market 2025: Rising Demand for Cryopreservation & Surgery

The Business Research Company's Key Growth Driver in Medical Grade Liquid Nitrogen Market 2025: Rising Demand for Cryopreservation & Surgery

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Explores Market Driver, Trends, Regional Insights - Market Sizing & Forecasts Through 2034

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What Is The Growth Trajectory Of The Medical Grade Liquid Nitrogen Market?

Despite historical strong growth, the medical grade liquid nitrogen market is expected to see even further acceleration. It grew from \$2.34 billion in 2024 to an estimated value of \$2.50 billion in 2025 at a compound annual growth rate CAGR of 6.8%. This growth stemmed from the increased demand for cryopreservation in biobanks, the expansion of minimally invasive surgical procedures, burgeoning use in dermatology treatments, growth in the food processing sector, and rising demands from the electronics manufacturing segment.

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It will grow to \$3.23 billion in 2029 at a compound annual growth rate (CAGR) of 6.6%.”

*The Business Research
Company*

What Is The Projected Growth Of The Medical Grade Liquid Nitrogen Market?

In the next few years, the [medical grade liquid nitrogen market size](#) is expected to see robust growth, surging to \$3.23 billion by 2029 at a compound annual growth rate CAGR of 6.6%. Rising investments in healthcare infrastructure, the increasing adoption of cryotherapy for cancer treatment, significant growth in stem cell and regenerative medicine research, expansion in the use of the substance in pharmaceutical cold chain logistics, and the rise in veterinary applications can all be credited for the forecasted growth. Technological advancements in storage and transport systems, the rising popularity of personalized medicine, increasing use of liquid nitrogen in cosmetic procedures, a focus on sustainability and safe handling practices, as

well as the integration of artificial intelligence AI and automation in cryogenic systems are expected as major trends in the forecast period.

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What Drives The Growth Of The Medical Grade Liquid Nitrogen Market?

Cryopreservation and cryosurgery applications in the medical field are expected to propel the expansion of the medical-grade liquid nitrogen market. These applications use extremely low temperatures, often via liquid nitrogen, to preserve biological samples or treat medical conditions by freezing and removing abnormal tissues. Medical grade liquid nitrogen supports these applications by providing a reliable, high-purity cryogenic solution crucial for maintaining the viability of biological samples and ensuring efficient, secure cryosurgical treatments. The escalating demand for such applications in fertility treatments and stem cell banking, as individuals increasingly opt to preserve reproductive cells and stem cells for future use due to medical needs, lifestyle choices, or advancements in regenerative medicine, is driving the expansion of the medical grade liquid nitrogen market.

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Who Are The Key Industry Players In The Medical Grade Liquid Nitrogen Market?

Key actors in the medical grade liquid nitrogen market include Linde Gas & Equipment Inc., Air Liquide Healthcare, Air Products and Chemicals Inc., Airgas Inc., Nippon Sanso Holdings Corporation, Matheson Tri-Gas Inc., Gruppo SIAD, Gulf Cryo, AMCS Corporation, Red Ball Oxygen, MVS Engineering Pvt. Ltd., Coregas Pty Ltd., Kansal Industrial Gases, Stirling Cryogenics, CalOx Inc., US Gas, N-Two Medical Inc., Nitrogen Express, Cryogen part of the Antares Alliance, and Abhijit Enterprises.

What Are The Emerging Trends In The Medical Grade Liquid Nitrogen Market?

Emerging innovation trends involving liquid nitrogen cryotherapy devices are sparking interest in the medical field. Such devices use extremely cold liquid nitrogen to freeze and destroy abnormal or damaged tissues for therapeutic purposes, such as treating warts, precancerous cells, and skin lesions. This strategy marks a significant advancement in the treatment of chronic respiratory conditions like chronic obstructive pulmonary disease COPD by addressing the root cause of mucus overproduction and airway damage.

How Is The Medical Grade Liquid Nitrogen Market Segmented?

The medical grade liquid nitrogen market report for medical grade liquid nitrogen covers various segments and subsegments. They include:

- 1 By Type: Below 99%, 99%-99.9%, Above 99.9%
- 2 By Container Type: Dewar Flasks, Pressurized Cylinders, Storage Tanks, Portable Cryogenic Containers, Bulk Liquid Nitrogen Tanks
- 3 By Distribution Channel: Direct Sales, Online Sales, Medical Supply Distributors, Retail Pharmacies, Specialty Medical Suppliers
- 4 By Application Area: Cryopreservation, Cryosurgery, Medical Laboratories, Pharmaceutical Applications, Dermatological Uses
- 5 By End-User: Hospitals And Clinics, Biotechnology And Pharmaceutical Companies, Research Laboratories, Other End-Users

This versatility in applications extends to its sub-segments:

- 1 By Below 99%: Industrial Grade Liquid Nitrogen, Food Grade Liquid Nitrogen, Laboratory Grade Low Purity Liquid Nitrogen
- 2 By 99%–99.9%: Research Grade Liquid Nitrogen, Pharmaceutical Support Grade Liquid Nitrogen, Semi-Medical Grade Liquid Nitrogen
- 3 By Above 99.9%: High-Purity Medical Grade Liquid Nitrogen, Ultra-High Purity Cryogenic Liquid Nitrogen, Electronic And Biotech Grade Liquid Nitrogen

What Are The Regional Insights Into The Medical Grade Liquid Nitrogen Market?

In 2024, North America was the largest region in the medical grade liquid nitrogen market. Meanwhile, Asia-Pacific is anticipated to be the fastest-growing region. Other regions covered in the report include Western Europe, Eastern Europe, South America, Middle East, and Africa.

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