

Lipid Nanoparticle Raw Materials Market to Reach USD 378.13 Million by 2032, Driven by Advances in Drug Delivery

Rising Demand for mRNA Vaccines and Gene Therapy Boosts Growth; Market to Expand at a CAGR of 5.55% from 2024 to 2032

AUSTIN, TX, UNITED STATES, February 3, 2025 /EINPresswire.com/ --According to Research by SNS Insider, The Lipid Nanoparticle Raw Materials Market size was estimated at USD 233.10 million in 2023 and is expected to reach USD 378.13 million by 2032 at a CAGR of 5.55% during the forecast period of 2024-2032.



Lipid Nanoparticle Raw Materials Market Poised for Significant Growth Due to Advancements in Drug Delivery Systems

The Lipid Nanoparticle raw materials market is seeing significant expansion, fueled by the rising utilization of LNPs in mRNA vaccines, gene treatment, and customized healthcare. Recent research indicates that the use of LNPs in drug delivery has increased by more than 30% in recent years, driven by improvements in formulations and a growing need for targeted treatments. As chronic illnesses and genetic disorders rise, the demand for sophisticated drug delivery systems grows. LNPs play a crucial role in the effectiveness of mRNA vaccines and various novel therapies, thereby broadening the market. With continuous technological advancements and regulatory backing, such as fresh legislation and research funding, the LNP raw materials market is poised to sustain its expansion, fulfilling the demands of the changing pharmaceutical and biotechnology sectors.

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Key Players in Lipid Nanoparticle Raw Materials Market

- CordenPharma (Lipid formulations, Drug delivery services)
- Acuitas Therapeutics (LNP technology, mRNA delivery systems)
- SAB Biotherapeutics (Nanoparticle formulations, Therapeutic antibodies)
- Boehringer Ingelheim (Biologics manufacturing, LNP production)
- Evonik Industries (Lipid excipients, Customized LNP formulations)
- Moderna, Inc. (mRNA vaccines, LNP-based therapeutics)
- Pfizer Inc. (LNP delivery systems, Vaccine development)
- Bristol Myers Squibb (Nanoparticle drug delivery, Oncology therapeutics)
- AstraZeneca (Nanoparticle formulations, Biologics development)
- Alnylam Pharmaceuticals (RNAi therapeutics, LNP formulations)
- GSK (GlaxoSmithKline) (Lipid nanoparticle vaccines, Biopharmaceuticals)
- Roche (Gene therapy development, LNP technology)
- Novartis (Advanced drug delivery systems, Lipid-based formulations)
- Bayer AG (Nanoparticle-based drug delivery, Pharmaceutical development)
- Sientra, Inc.- (Lipid nanoparticle delivery systems, Breast reconstruction products)
- CureVac (mRNA therapies, LNP formulations)
- Genevant Sciences (LNP technology, RNA delivery solutions)
- Silence Therapeutics (RNA therapeutics, LNP formulations)
- Daiichi Sankyo (Nanoparticle drug delivery, Innovative drug formulations)
- Celyad Oncology (Cell therapy, LNP-based delivery systems)

Segment Analysis

By Application

In 2023, the therapeutics segment dominated the market with the highest market share of 62%. Lipid nanoparticles are increasingly used in drug delivery due to their ability to encapsulate and target therapeutic agents to specific sites in the body. With the increasing demand for innovative drug delivery systems, the demand for LNP raw materials has increased further with the development of nanotechnology and nanomedicine.

The research segment experiencing the fastest growth rate over the forecast period, primarily due to the need for efficient drug delivery systems, advancements in biotechnology, and increased use of LNPs in different kinds of research applications. Because of its biocompatibility, ability to carry drugs, and controlled release properties, this system is well-suited for hydrophobic and water-insoluble drugs.

By Product

The kits segment dominated the market in 2023, accounting for 54% of the market share. This is due to the increasing prevalence of Alzheimer's disease, and glaucoma, and the demand for better treatments. The increasing adoption of lipid nanoparticles (LNPs) for cellular imaging, drug screening, and biochemical assays, especially in personalized medicine and lipid-based drug delivery, further supports this market segment.

The reagent segment is expected to grow the fastest throughout the forecast period. Reagents are one of the primary raw materials for the production of LNPs, and as demand for lipid nanoparticles increases, so does the need for these reagents. Growing investments in pharmaceutical R&D and the increasing prevalence of chronic diseases are expected to drive growth in the reagent segment in the coming years.

By End- Use

In 2023, pharmaceutical and biotechnology companies dominated the market with a market share of 57% due to increasing demand for lipid nanoparticles (LNPs) in sophisticated drug delivery systems for cancer, gene therapy, and targeted medicine.

The academic and research institutes segment is anticipated to expand at the fastest rate throughout the forecast period, fueled by the demand for LNP raw materials in clinical trials, specifically in preclinical studies, and in scaling up the production for phase III trials.

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Lipid Nanoparticle Raw Materials Market Segmentation By Product

- Ionizable lipids
- PEGylated lipids
- Sterol lipids
- Neutral phospholipids
- Kits
- Reagents
- Other raw materials

By Disease Indication

- Cancer
- Infectious Diseases
- Blood Diseases
- Others

By Application

- Therapeutics
- Research

By End-use

- Pharmaceutical & Biotechnology Companies
- Academic & Research Institutes
- Others

Regional Insights

In 2023, North America dominated the market with a market share of 40%, driven by a wellestablished biopharmaceutical and biotechnological industry. The U.S. and Canada have made substantial R&D investments, enhancing the need for drugs utilizing intestinal permeability as a transporter. Also, with the region's emphasis on biologics and gene therapy, our lipid nanoparticle technologies are increasingly being used to deliver nucleic acids (e.g., mRNA, siRNA) and gene editing tools to treat a variety of diseases.

Asia Pacific is expected to grow at the fastest rate throughout the forecast year. Strong economic progress is balanced with related increases in healthcare expenses and investments in medical research. With healthcare facilities improving, the market for lipid nanoparticles is rising due to the demand for advanced drug-delivery systems. Lending additional momentum to the region's growth in life sciences research is government support through grants, subsidies, and incentives.

Recent Developments

July 2023, ModernaTX, Inc. partnered with McGill University to collaborate on two new research projects focused on lipid nanoparticles. The projects will explore specific properties of LNPs, potentially analyzing their characteristics or comparing them to naturally occurring particles.
In January 2022, Pfizer Inc. and Acuitas Therapeutics announced a Development and Option agreement, allowing Pfizer the option to license Acuitas' lipid nanoparticle (LNP) technology for up to 10 vaccine or therapeutic targets.

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