

Metal and Lipid Nanoparticle Manufacturing Market by Company Size (Very Small Companies, Small Companies, Mid-Sized Companies, and Large Companies), Type of Nanoparticle(s) Manufactured (Lipid and Metal Nanoparticles), Scale of Operation (Preclinical, Clinical, and Commercial), Type of End User (Educational Institutions, Pharmaceutical Companies, Research Institutions, and Other End Users), and Key Geographical Regions (North America, Europe, Asia, Middle East and North Africa (MENA), Latin America, and Rest of the World): Industry Trends and Global Forecasts, 2021-2035

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Abstracts

The projected value of metal and lipid nanoparticle manufacturing market is expected to be valued at USD 2,100 million in 2021 and is anticipated to grow at a CAGR of 8.6% during the forecast period 2021-2035. Over the past few decades, the pharmaceutical industry has witnessed substantial growth, marked by a continuous expansion of the drug development pipeline. However, a comprehensive study published in the Analytical and Pharmaceutical Research journal has shed light on a pressing issue within the industry. It revealed that approximately 90% of drug candidates in the preclinical development phase and over 40% of already marketed pharmacological products exhibit concerns related to solubility and permeability. Furthermore, the study underscored a noteworthy 10% reduction in the efficacy of products resulting from drug incompatibility when combined with other substances.

In response to these challenges, stakeholders in the metal and lipid nanoparticle manufacturing sector are proactively exploring avenues to enhance physiochemical properties and optimize drug behavior. Nanoparticles, particularly lipid nanoparticles, have garnered significant attention for their role in improving drug delivery, a phenomenon notably observed in the development of COVID-19 vaccines. Despite the evident advantages, the industry grapples with complexities in manufacturing processes, necessitating specialized expertise, dedicated infrastructure, and concerns related to stability.

As a pragmatic solution, pharmaceutical companies are increasingly turning to outsourcing for nanoparticle production, relying on specialized service providers. Engaging contract development and manufacturing organizations (CDMOs/CMOs) for the production of medical-grade nanoparticles presents several advantages, including access to cutting-edge technologies, increased production capacities, and operational flexibility. However, despite the claims of various service providers, global expertise in producing Good Manufacturing Practice (GMP)-grade nanoparticles remains limited.

Consequently, many CDMOs/CMOs are strategically aligning themselves through partnerships and alliances to fortify their positions in the metal and lipid nanoparticle manufacturing market. Noteworthy collaborations have emerged, particularly between vaccine developers and CMOs, aimed at addressing the urgent demand for nanoparticle-based solutions in the development of COVID-19 vaccines. Anticipating a sustained need for high-quality nanoparticles, the specialty contract manufacturing market is poised to experience significant growth in the forecast period. This trend is indicative of a broader industry shift toward collaborative efforts to overcome the challenges associated with advanced drug development and nanoparticle utilization.

Research Coverage

Introduction on nanoparticles, detailing types and applications in the pharmaceutical industry, addressing manufacturing challenges, and discussing the growing trend of outsourcing.

Detailed nanoparticle contract manufacturing landscape, covering over 50 providers with parameters like establishment year, company size, headquarters location, organization type, nanoparticle types, facilities, operations scale, end users, certifications, regulatory aspects, and services offered.

Market trends through six schematic representations, depicting company size, headquarters, scale of operation, regional distribution, leading players' analysis, and a grid representation based on various parameters.

A company competitiveness analysis, evaluating service and partnership strengths across very small, small, mid-sized, and large companies in nanoparticle contract manufacturing.

Detailed profiles of key players in the market, including company overview, establishment year, headquarters location, employee count, key executives, recent developments, and future outlook.

Collaborations and partnerships from 2015-2021, categorizing them by agreement type, year, partner type, nanoparticle types, focus areas, seniority levels, active players, and world map representation.

Insights for nanoparticle-based therapeutics developers, guiding them on the decision to manufacture in-house or engage CMOs, considering parameters relevant to different company sizes.

A comprehensive market forecast for 2021-2035, predicting growth and distribution across company size, nanoparticle types, scale of operation, end users, and geographical regions.

Key Market Companies

Ardena

CordenPharma

Curia

Evonik

LSNE Contract Manufacturing

Polymun

TechNanoIndia

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Bart Metselaar, Director, Research and Development

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