

# **Nanoemulsions Market Forecasts to 2030 – Global Analysis By Type (Oil-in-Water (O/W) , Water-in-Oil (W/O), Bi-Continuous and Other Types), Composition, Functionality, Application, End User and By Geography**

<https://marketpublishers.com/r/N8A6817B0386EN.html>

Date: February 2025

Pages: 150

Price: US\$ 4,150.00 (Single User License)

ID: N8A6817B0386EN

## **Abstracts**

According to Statistics MRC, the Global Nanoemulsions Market is accounted for \$12.6 billion in 2024 and is expected to reach \$22.1 billion by 2030 growing at a CAGR of 9.8% during the forecast period. Nanoemulsions are ultrafine dispersions of one liquid in another, typically consisting of oil and water phases, stabilized by surfactants. The droplets in nanoemulsions typically range from 20 to 200 nanometers in diameter, making them transparent or translucent. These systems exhibit improved stability, enhanced bioavailability, and unique physicochemical properties, such as reduced droplet size, which increases surface area and enhances the absorption of active compounds. Nanoemulsions are used in various applications, including pharmaceuticals, cosmetics, and food products, for their effectiveness and versatility.

According to the World Health Organization (WHO), approximately 40% of new drug candidates face solubility issues, highlighting the need for innovative delivery solutions.

Market Dynamics:

Driver:

Rising demand in cosmetics and personal care

The rising demand for nanoemulsions in cosmetics and personal care is driven by their ability to improve the delivery of active ingredients, such as vitamins and moisturizers,

enhancing skin penetration and effectiveness. Nanoemulsions also offer stability, transparency, and improved texture in formulations. These benefits have led to their widespread use in skincare, haircare, and anti-aging products, as consumers increasingly seek advanced, effective, and aesthetically pleasing cosmetic solutions.

#### Restraint:

##### Limited consumer awareness

Limited consumer awareness of nanoemulsions can hinder their widespread adoption, particularly in industries like cosmetics, and pharmaceuticals. Without proper understanding, consumers may be skeptical about the safety, effectiveness, and benefits of nanoemulsion-based products, leading to lower demand. This lack of awareness may also prevent companies from fully leveraging the potential of nanoemulsions, slowing innovation and limiting market growth in sectors where these technologies could offer significant advantages.

#### Opportunity:

##### Improved pesticide delivery

Nanoemulsions are increasingly used in pesticide delivery due to their ability to enhance the solubility, stability, and effectiveness of active ingredients. The small droplet size allows for better coverage and penetration of plant surfaces, improving pesticide absorption and reducing environmental impact. This leads to more efficient use of pesticides, lower dosages, and reduced risks of toxicity, driving their adoption in agriculture for more sustainable and effective pest control solutions.

#### Threat:

##### High production costs

High production costs of nanoemulsions can limit their adoption, particularly in price-sensitive industries. The specialized equipment, surfactants, and processing techniques required for their manufacture contribute to elevated costs. This can make nanoemulsion-based products more expensive than traditional alternatives, deterring consumers and companies from embracing the technology. As a result, market growth may be slower, and manufacturers may face challenges in achieving cost-efficiency and competitive pricing.

### Covid-19 Impact:

The COVID-19 pandemic had a mixed impact on the market. On one hand, demand for nanoemulsion-based products in healthcare, sanitizers, and personal care surged as consumers sought more effective solutions. On the other hand, supply chain disruptions, manufacturing delays, and decreased investment in R&D hindered market growth. Despite these challenges, the pandemic underscored the importance of innovative delivery systems, potentially accelerating future adoption in various industries.

The lipids segment is expected to be the largest during the forecast period

The lipids segment is expected to account for the largest market share during the forecast period. Lipid-based nanoemulsions enhance the solubility, bioavailability, and stability of active ingredients, making them ideal for use in pharmaceuticals, cosmetics, and food industries. Their ability to encapsulate hydrophobic compounds improves delivery efficiency, while their biocompatibility ensures safe and effective formulations. This has led to increased adoption of lipid-based nanoemulsions in various applications.

The food & beverages segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the food & beverages segment is predicted to witness the highest growth rate. They are used to encapsulate and stabilize essential oils, vitamins, and functional ingredients, making them more effective in fortified foods and beverages. Nanoemulsions also offer better texture and appearance, catering to consumer demands for healthier, functional, and aesthetically appealing food products, driving market growth.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share. Increased demand for innovative drug delivery systems, enhanced skincare formulations, and functional food products drives growth. The region's strong research and development infrastructure, along with consumer preference for advanced, effective solutions, further supports market expansion. Additionally, the region's focus on sustainability and eco-friendly products accelerates the adoption of nanoemulsion technologies in various sectors.

### Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR. Advances in nanotechnology, such as ultrasonic emulsification, high-pressure homogenization, and microfluidization, are helping improve the formulation of nanoemulsions with better stability and performance. Additionally, The market for nanoemulsions in skincare, hair care, and other cosmetic products is growing rapidly due to their ability to improve the penetration of active ingredients and improve product performance.

### Key players in the market

Some of the key players in Nanoemulsions market include BASF SE, Croda International Plc, Evonik Industries AG, Solvay S.A., Dow Chemical Company, AkzoNobel N.V., Honeywell International Inc., Afton Chemical Corporation, L'Oreal S.A., Procter & Gamble Co., Unilever PLC, Clariant AG, Alcan Packaging, Formulacion and Encap Technologies.

### Key Developments:

In October 2024, BASF's Personal Care business has expanded its portfolio of natural-based emulsifiers. The newly launched ingredient Emulgade® Verde 10 OL addresses several upcoming trends in the personal care industry. It is suitable for cold manufacturing processes, thus enabling cost, time and energy savings.

In August 2024, Evonik has collaborated with KNAUER Wissenschaftliche Gerate GmbH, a manufacturer of scientific instruments, to improve the upscaling of lipid nanoparticle (LNP) formulations. By combining Evonik's formulation and scale-up expertise with KNAUER's technological know-how, customers can improve efficiency and increase speed to market, significantly cutting the initial pre-clinical development time.

### Types Covered:

Oil-in-Water (O/W)

Water-in-Oil (W/O)

Bi-Continuous

Other Types

#### Compositions Covered:

Lipids

Surfactants

Polymers

Protein-Based

#### Functionalities Covered:

Stability

Solubility Enhancement

Bioavailability

#### Applications Covered:

Drug Delivery

Skin Care

Nutraceuticals

Pesticides & Herbicides

Coatings & Paints

Lubricants

## Other Applications

### End Users Covered:

Pharmaceuticals

Cosmetics & Personal Care

Food & Beverages

Agriculture

Industrial

Other End Users

### Regions Covered:

North America

US

Canada

Mexico

Europe

Germany

UK

Italy

France

Spain

Rest of Europe

Asia Pacific

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

## Rest of Middle East & Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2022, 2023, 2024, 2026, and 2030
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

### Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

### Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

### Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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