

# **Gold Nanoparticles Market Report by Type (Water Soluble, Oil Soluble, and Others), Application (Imaging, Targeted Drug Delivery, Sensors, In Vitro Diagnostics, Probes, Catalysis, and Others), End-Use Industry (Electronics, Healthcare, Chemicals, and Others), and Region 2024-2032**

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## **Abstracts**

The global gold nanoparticles market size reached US\$ 5.2 Billion in 2023. Looking forward, IMARC Group expects the market to reach US\$ 13.1 Billion by 2032, exhibiting a growth rate (CAGR) of 10.5% during 2024-2032.

Gold nanoparticles, represented as AuNPs, are gold particles with a diameter of 1 to 100 nanometers (nm). They are majorly used in biomedical and biotechnological sciences for their large surface area and bio-inertness. They also have high electron conductivity, stability and solubility. These particles are manufactured in the form of nanospheres, nanocages, nanorods, nanoshells, nanocubes and nanoclusters and find extensive application in targeted drug administration and as agents in biomolecules delivery. Gold nanoparticles are also utilized as optical imaging probes for detection of biomarkers of various diseases and in imaging procedures such as positron emission tomography (PET), computed tomography (CT), magnetic resonance imaging (MRI) and ultrasound scans.

**Gold Nanoparticles Market Trends:**

The growing medical industry, along with the growing demand for nanotechnological medical products, represent as the key factors driving the growth of the market. Gold nanoparticles are increasingly being used in the medical industry, especially in the dental sector, for various purposes including target imaging for cancer therapy and

dental filling. Furthermore, the flourishing electronics industry is also significantly contributing to the market growth as these nanoparticles are extensively utilized to produce inks used in storage devices, hard disks and microchips. They are also used in the manufacturing of thin-film transistors and photo-sensors. Additionally, the food and beverage industry widely utilize colorimetric sensors that are manufactured using these particles. These sensors assist in detecting the freshness and consumability of food products. Various technological advancements, such as the development of injectable plant plastids to enhance biosynthesis and extensive research and development (R&D), are also driving the market further.

#### Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each sub-segment of the global gold nanoparticles market report, along with forecasts at the global, regional and country level from 2024-2032. Our report has categorized the market based on type, application and end-use industry.

#### Breakup by Type:

- Water Soluble
- Oil Soluble
- Others

#### Breakup by Application:

- Imaging
- Targeted Drug Delivery
- Sensors
- In Vitro Diagnostics
- Probes
- Catalysis
- Others

#### Breakup by End-Use Industry:

- Electronics
- Healthcare
- Chemicals
- Others

## Breakup by Region:

North America

United States

Canada

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Others

Europe

Germany

France

United Kingdom

Italy

Spain

Russia

Others

Latin America

Brazil

Mexico

Others

Middle East and Africa

## Competitive Landscape:

The competitive landscape of the industry has also been examined with some of the key players being Agilent Technologies, BBI Solutions, Cline Scientific, Cytodiagnosics, Expedeon, Goldsol, Meliorum Technologies, Merck Group, Metalor Technologies International, Nanocomposix, NanoHybrids, Nanopartz, Sigma-Aldrich, Solaris Nanosciences Corporation, Tanaka Kikinzoku, etc.

## Key Questions Answered in This Report:

How has the global gold nanoparticles market performed so far and how will it perform in the coming years?

What are the key regional markets?

What has been the impact of COVID-19 on the global gold nanoparticles market?

- What is the breakup of the market based on the type?
- What is the breakup of the market based on the application?
- What is the breakup of the market based on the end-use industry?
- What are the various stages in the value chain of the industry?
- What are the key driving factors and challenges in the industry?
- What is the structure of the global gold nanoparticles market and who are the key players?
- What is the degree of competition in the industry?

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