

Magnetite Nanoparticles Market Report by Type (Iron Based, Cobalt Based), Physical Form (Nanopowder, Solution, Dispersion), Application (Bio-medical, Electronics, Wastewater Treatment, Energy, and Others), and Region 2024-2032

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Abstracts

The global magnetite nanoparticles market size reached US\$ 81.9 Million in 2023. Looking forward, IMARC Group expects the market to reach US\$ 191.4 Million by 2032, exhibiting a growth rate (CAGR) of 9.6% during 2024-2032.

Magnetite nanoparticles (NPs) are structures composed of different metallic elements, such as iron, cobalt, nickel, and platinum, or metal alloys, which exhibit superparamagnetic properties at ambient temperatures. Their compact size and non-toxic properties make them viable for applications in catalysis, biosensors, ferrofluids, magnetic separations, and magnetic resonance imaging (MRI) contrast agents. Due to their high coercivity, low curie temperature, and excellent magnetic susceptibility, magnetite NPs have now become an important element in developing novel biomedical applications. They are consequently used in nanotoxicology and magnetic nanotechnology research and development (R&D) across the globe.

Magnetite Nanoparticles Market Trends:

Magnetite NPs find extensive applications in cancer therapy, drug nanocarriers (NCs), targeted delivery systems, and diagnosis involving two guided NPs as nanoprobe and contrast agents. This, in confluence with the increasing prevalence of chronic diseases and the rising need for improved diagnostic modalities and personalized treatments, represents one of the key factors bolstering the market growth. Moreover, magnetic NPs are gaining traction in magnetic bio-separation and detection of biological entities, such as cells, proteins, nucleic acids, enzymes, bacteria, and viruses. Besides this, as

the magnetic properties of magnetite NPS can efficiently remove contaminants from wastewater, they are considered suitable for wastewater treatment processes, including flocculation, demulsification, adsorption, filtration, and photocatalytic activities. In addition, rapidly diminishing freshwater resources and the growing wastewater complexities are driving the demand for magnetic NPs. Apart from this, researchers are focusing on obtaining functionalized magnetite NPs via green chemistry to reduce environmental pollution. Such developments are anticipated to aid the usage of magnetite NPs in various industrial applications and medical practices to improve the quality of life of the patients.

Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each sub-segment of the global magnetite 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, physical form and application.

Breakup by Type:

- Iron Based
- Cobalt Based

Breakup by Physical Form:

- Nanopowder
- Solution
- Dispersion

Breakup by Application:

- Bio-medical
- Electronics
- Wastewater Treatment
- Energy
- 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 along with the profiles of the key players being American Elements, Cytodiagnosics Inc., Merck KGaA, Nano Research Elements Inc., nanoComposix (Fortis Life Sciences), Nanografi Nano Technology, Nanoshel LLC, Reade International Corp., SkySpring Nanomaterials Inc., Strem Chemicals Inc. and US Research Nanomaterials Inc.

Key Questions Answered in This Report

1. What was the size of the global magnetite nanoparticles market in 2023?
2. What is the expected growth rate of the global magnetite nanoparticles market during 2024-2032?
3. What has been the impact of COVID-19 on the global magnetite nanoparticles market?
4. What are the key factors driving the global magnetite nanoparticles market?
5. What is the breakup of the global magnetite nanoparticles market based on the type?
6. What is the breakup of the global magnetite nanoparticles market based on the physical form?

7. What is the breakup of the global magnetite nanoparticles market based on the application?
8. What are the key regions in the global magnetite nanoparticles market?
9. Who are the key players/companies in the global magnetite nanoparticles market?

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