India Nitric Acid Market Assessment, By Type [Concentrated Nitric Acid, Dilute Nitric Acid], By Application [Ammonium Nitrate, Adipic Acid, Toluene Di-Isocyanate, Nitrobenzene, Others], By End-user Industry [Fertilizers, Chemical Manufacturing, Explosives, Mining, Semiconductor, Others], By Region, Opportunities and Forecast, FY2019-FY2033F

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Report description:

Indian nitric acid market is projected to witness a CAGR of 4.09% during the forecast period FY2026-FY2033, growing from USD 688.56 million in FY2025 to USD 948.89 million in FY2033F. The market is led by rising agrochemical industry in the country as nitric acid is majorly employed in fertilizer manufacturing. Nitrogen-based fertilizers are increasing in demand due to the need for increased agricultural production to meet increasing food requirements. Additionally, it is utilized in the manufacturing of ammonium nitrate which finds end uses in the mining and construction industries. The mining and construction sectors which consume ammonium nitrate explosives witnessing rapid growth. Investment in the manufacture of concentrated nitric acid is also fueling growth.

For instance, in February 2024, Coal India Limited (CIL) and Bharat Heavy Electricals Limited (BHEL) signed a joint venture agreement to establish an ammonium nitrate plant in Odisha. The plant, to produce 2000 tons per day, will use surface coal gasification technology. The plant will require 1.3 million tons of coal annually, with BHEL utilizing pressurized fluidized bed gasification. This partnership is a significant step towards the National Coal Gasification Mission. The plant designed to cater for the demand in manufacturing bulk explosives which CIL uses in large quantities in its open cast mining operations, a major source of its coal production.

Rising Demand for Nitrogen Based Fertilizers

The growing demand for nitrogenous fertilizers in India is mainly pushing the demand for nitric acid. With the country still having a growing demand for agricultural productivity to meet the food requirements of its growing population, nitrogenous fertilizers are

still in demand. India is among the biggest users of nitrogenous fertilizers, and nitrogen is the most used nutrient in field crops with an average of 223.5 kg per hectare. Also supporting this demand is the large-scale production of nitrogen-requiring crops such as rice and wheat. Nitric acid, the main raw material for the production of ammonium nitrate, still commands high demand as a result of its contribution to the higher yields of crops. The trend is driven by government policies that promote balanced fertilization and sustainable farming, hence ensuring a steady demand for nitric acid in India.

As per Fertilizer Association of India, fertilizer nutrient consumption in India went up by 2.7% in FY2024 while consumption of N, P_2O_5, and K_2O rose by 1.2%, 4.9%, and 9.5% respectively. Overall fertilizer nutrient consumption ($N+P_2O_5+K_2O$) estimated at 30.64 million MT in 2023-2024 grew by 2.7% compared to FY2023. In addition, the consumption of N, P_2O_5 and K_2O at 20.46 million MT, 8.31 million MT and 1.88 million MT during FY2024 showed an increase of 1.2%, 4.9% and 9.5%, respectively, over FY2023. The All-India NPK use ratio changed to 10.9:4.4:1 in FY2024.

Rising Demand for Nitroaromatic and Downstream Industry Fueling the Demand

The growing demand for nitric acid is mainly driven by its vital application in the production of explosives, both military and civilian. In the military sector, nitric acid is used in the production of high explosives like trinitrotoluene (TNT) and royal demolition explosive (RDX), which are of vital application in military operations. It is used as a major ingredient in the production of ammonium nitrate, a major ingredient in the production of ammonium nitrate fuel oil (ANFO), which is used extensively in civil explosives used in quarrying and mining.

For instance, in August 2023, Deepak Fertilizers and Petrochemicals Corporation Ltd., a leading producer of industrial chemicals, mining chemicals, and fertilizers in India, has announced its plan to expand its Nitric Acid plant in Dahej, Gujarat. The company plans to set up a Weak Nitric Acid (WNA) plant with a capacity of 300 kilo tons per annum and two Concentrated Nitric Acid (CNA) plants with a total capacity of 150 kilo tons per annum. The demand-supply gap for WNA is expected to rise from 140 KT in FY24 to 330 KT by FY30, driven by captive and merchant demand from Nitroaromatics and downstream industries. Both expansion projects aim to bridge the demand gap and strengthen the company's position as a reliable partner for meeting Nitric Acid requirements.

Technological Innovation in the Manufacturing Process

Rising technological innovation in nitric acid manufacturing is driving growth in the Indian market. New-age technologies are making the manufacturing process more efficient by reducing energy consumption and emissions, with advantages like lower maintenance costs. For instance, in November 2023, KBR, Inc. successfully commissioned its second plant using MAGNAC concentrated nitric acid (CNA) technology in Gujarat, India, with a throughput capacity of 150 metric tons per day. The plant utilizes sustainable technologies that recycle process water without treatment, improve energy efficiency, and reduce emissions. This achievement demonstrates use of technology in delivering environmentally responsible solutions and contributing to the global drive for circular industrial practices.

The wave of technological advancement is crucial for India's nitric acid sector as it navigates increasing domestic demand from key end-use industries like fertilizers, agrochemicals, and defense. By adopting more efficient and environmentally friendly processes, Indian manufacturers can not only enhance their cost competitiveness on a global scale but also significantly contribute to the nation's ambitious sustainable development goals and net-zero commitments. Such innovations also attract further foreign investment and foster a culture of research and development within the country, solidifying India's position as a hub for advanced chemical manufacturing.

Dilute Nitric Acid Dominates the Market

Dilute nitric acid (DNA) is experiencing robust growth in the Indian market because of its multi-application usage for application in the various sectors such as agriculture, chemicals, and mining. Dilute nitric acid plays a crucial role in the production of ammonium nitrate and other nitrogen-based fertilizers. Its lower corrosiveness compared to concentrated nitric acid makes it widely applicable in various industrial settings, including the cleaning of equipment in the food and dairy sectors to remove mineral deposits. Additionally, it serves as a reactant in the synthesis of numerous other chemical compounds.

For instance, in August 2024, Gujarat Narmada Valley Fertilizers & Chemicals Limited (GNFC) Board approved an investment proposal to establish 600 metric tons per day of weak nitric acid, enhancing its capacity by 57%.

Future Market Scenario (FY2026 - FY2033F)

-The application of nitric acid is dominated by its use in fertilizers, such as ammonium nitrate, which is utilized to a great extent to

increase agricultural production in a bid to address the growing food needs of the population.
-Sectors such as chemicals, explosives, and metals processing are increasing their capacities too, and resulting in the higher demand for nitric acid.
-The focus on the production of cleaner and more energy-efficient processes for nitric acid will open up new business opportunities.
Key Players Landscape and Outlook
India nitric acid market is featured by the large players, with the key players aiming on strategic expansions and technological innovation. The players are investing in capacity expansion and adopting sustainable technologies to meet the increasing demand and comply with environmental regulations. The market is dominated by major fertilizer and chemical manufacturers that utilize nitric acid as a critical raw material. These companies are expanding their production capacity to meet the increasing demand from the agricultural and industrial sectors. Additionally, they are exploring opportunities in emerging applications such as pharmaceuticals and electronics. The competitive landscape is evolving, with companies focusing on efficiency, sustainability, and innovation to maintain market share and capitalize on future growth opportunities.
For instance, in 2023, Deepak Fertilisers and Petrochemicals Corporation Ltd. launched solar grade nitric acid, a premium specialty product, which has received positive response from solar cell manufacturers with multiple repeat orders.

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