

# Nitrogen Trifluoride Market Research by Material and Applications - Forecast to 2027

*Nitrogen Trifluoride Market, by Product, by Material (Cr-Mo steel, Mn steel), by Application (Solar, Semiconductors, Flat panel display) - Global Forecast 2027.*

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Global Nitrogen Trifluoride: Market Overview

Nitrogen Trifluoride offers the advantages of relative ease of use at ambient conditions and the ability to act as a fluorinating agent. Because of these factors, Nitrogen Trifluoride Market has gained commercial acceptance in a number of end use applications. The electronics industry uses Nitrogen Trifluoride in plasma and thermal cleaning applications because the gas outperforms other alternatives, it is easier and safer to handle, and it helps to reduce greenhouse gas emissions. It has other advantages also, such as high etch rates, high selectivity, carbon-free etching, and minimal residual contamination.

Nitrogen Trifluoride is an inorganic compound which is used as an etchant in microelectronics. It is chemically known as  $\text{NF}_3$ . It is a colorless, odorless, nonflammable, and oxidized compressed gas. It is Very toxic by inhalation, slightly soluble in water. Under prolonged exposure to fire or heat the containers may rupture violently and it is also used to make other chemicals and components of rocket fuels. It is 2.5 times heavier than air and will tend to settle in low-lying areas. Nitrogen Trifluoride is a stable chemical. It is safe to transport and store. At high temperatures, nitrogen Trifluoride becomes less stable. It will split into fluorine radicals that react with most materials.

Taste the market data and market information presented through more than 50 market data tables and figures spread in 118 numbers of pages of the project report. Avail the in-depth table of content TOC & market synopsis on "[Nitrogen Trifluoride Market Research Report- Global Forecast to 2027](#)"

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Global Nitrogen Trifluoride: Market Application

Nitrogen Trifluoride has been used in various applications such as: Used for cleaning CVD Chamber or etching vapor deposition layer (film) during the production process of semiconductor, TFT-LCD and solar cell. It boasts of purity level of more than 99.99%. As



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comparison with other products, NF<sub>3</sub> offers customers' significant reductions in emissions, throughput increases of up to 30%, longer chamber life and faster clean rates. Nitrogen Trifluoride is also used as a fluorine source in high-energy chemical lasers, owing to its ease of use relative to fluorine gas. Nitrogen Trifluoride is also used as an intermediate in the production of specialized chemicals. Nitrogen Trifluoride is available in a variety of grades and at purity levels in excess of 99.999% due to advanced purification techniques developed by Air Products.

#### Global Nitrogen Trifluoride Market: Growth Influencer

Nitrogen Trifluoride demand is expected to rise over the forecast period due to application in solar cells. With increasing environmental concern and lucrative policies implemented by government for installation of solar power units, there is a drastic increase in solar panel demand. Semiconductor is the principal growth driver of Nitrogen Trifluoride market because of rise in demand for electronic gases in the semiconductor and solar cell industries continues to outpace global GDP growth by more than two times.

Consumer electronics is also driving the Nitrogen Trifluoride market, Semiconductors are indispensable components in consumer electronics products and Nitrogen Trifluoride is used in cleaning of silicon wafers of semiconductors. Growing demand for LCD televisions and other electronic products is expected to fuel the Nitrogen Trifluoride market. Rising disposable income and changing lifestyle in developing countries is driving consumer electronics market.

However, the toxic nature of Nitrogen Trifluoride making it difficult to handle, store and transport, also imposed regulations for handling and storing the gas is constraining the market growth of Nitrogen Trifluoride.

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#### Global Nitrogen Trifluoride: Market Segmentation

The Global Nitrogen Trifluoride market can be segmented into product types, material types, application types.

Nitrogen Trifluoride Market on the basis of product type:

- TON Cylinders
- ISO Containers
- Bundles Air check monitors
- Others

Nitrogen Trifluoride Market on the basis of Material Type:

- Magnesium steel (Mn steel)
- Chromium- Molybdenum alloy steel (Cr-Mo steel)
- Others

Nitrogen Trifluoride Market on the basis of Application Type:

- Semiconductors Solar cells
- Flat panel displays
- Air check products
- Others

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