Hexamethylenediamine -Adiponitrile

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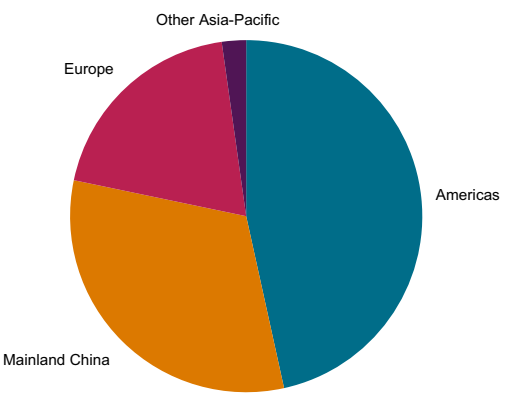
Abstract

Adiponitrile (ADN) is a key precursor to hexamethylenediamine (HMDA) production. Nearly 86% of HMDA is consumed in the polyamide 66 chain, with nonpolyamide uses mostly in hexamethylene diisocyanate (HDI) for high-performance polyurethane paints and coatings, and epoxy curing agents, which grew strongly in 2014–19 and remained consistent during the last five years (2019–24). Over the last several years, ADN supply has been extremely tight as it bumps against the upper end of its effective capacity, thus crimping the supply of downstream HMDA and polyamide 66. HMDA demand slowly recovered from the 2008 downturn through 2018 but then declined in 2020 because of the impact of COVID-19 on the global market. HMDA consumption is expected to grow faster in the forecast period backed by investments in mainland China.

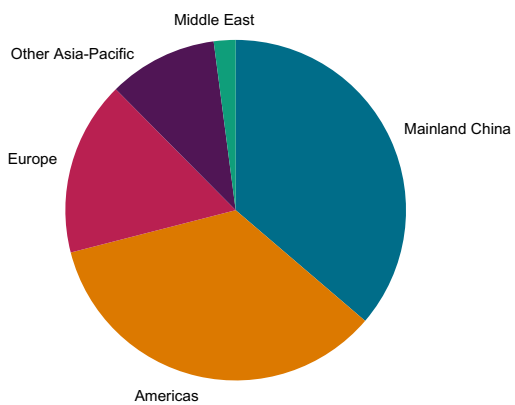
Eastern Asian HMDA demand has grown the fastest over the last five years, led by mainland China, following its capacity expansions for polyamide 66 and HDI. HMDA demand in Eastern Asia will continue to be the major driver in the global market; mainland China is expected to remain the largest consumer of HMDA during the forecast period.

World consumption of adiponitrile (ADN) — 2024



Data compiled March 4, 2025.
Source: S&P Global Commodity Insights.

World consumption of hexamethylenediamine (HMDA) — 2024



Data compiled March 4, 2025.
Source: S&P Global Commodity Insights.

S&P Global
Commodity Insights

Adiponitrile is produced only in the United States, France and Japan, and since 2019, in mainland China. The United States continues to be the main exporter of ADN, as gradual capacity increases in the United States have led to increased production over the last decade. As capacity of ADN consistently increases in mainland China, global trade in ADN has declined sharply since 2019; this trend is expected to continue in the forecast period as mainland China becomes more self-sufficient.

Investments in new ADN capacity have come onstream and are expected to continue over the next five years, as consumption is expected to grow at a moderate rate; global operating rates are expected to increase steadily during the forecast period. The capacity for HMDA is projected to grow more rapidly at a compound rate of 6% per year compared to the consumption growth rate of 2.9% over the next five years. This will lead to a decline in operating levels at a compound rate of 3% per year during the same period.

For more detailed information, see the table of contents, shown below.

S&P Global's Chemical Economics Handbook – *Hexamethylenediamine-Adiponitrile* is the comprehensive and trusted guide for anyone seeking information on this industry. This latest report details global and regional information, including


Global summary; regional coverage


Producers with annual capacities and plant sites


Production figures and trends


Consumption and forecasts by end use application


Manufacturing processes and environmental issues


Trade – imports and exports

Key benefits

S&P Global's Chemical Economics Handbook – *Hexamethylenediamine-Adiponitrile* has been compiled using primary interviews with key suppliers and organizations, and leading representatives from the industry in combination with S&P Global's unparalleled access to upstream and downstream market intelligence and expert insights into industry dynamics, trade and economics.

This report can help you

– Identify trends and driving forces influencing chemical markets

– Forecast and plan for future demand

– Understand the impact of competing materials

– Identify and evaluate potential customers and competitors

– Evaluate producers

– Track changing prices and trade movements

– Analyze the impact of feedstocks, regulations and other factors on chemical profitability

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