

# Hydrogen Cyanide Market - Forecast from 2026 to 2031

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## Abstracts

Hydrogen Cyanide Market is forecasted to rise at a 3.45% CAGR, reaching USD 2.6 billion in 2031 from USD 2.121 billion in 2025.

The hydrogen cyanide (HCN) market is a specialized and essential segment of the industrial chemical industry, centered on a highly reactive and toxic compound that serves as a critical chemical building block. HCN is a colorless, volatile liquid produced primarily via the Andrussow process or methane ammoniation. Its fundamental role is as a precursor for a range of higher-value chemicals, rather than as an end-product itself. This positions the market as a crucial upstream supplier to several key downstream manufacturing chains, with demand intrinsically tied to the health of those end-use industries.

Market growth is overwhelmingly driven by its role as the primary raw material in the production of adiponitrile, which is subsequently converted into hexamethylene diamine (HMDA), a core monomer for nylon-66. The demand for nylon-66, prized for its strength, thermal resistance, and durability, is a primary market driver. Its extensive use in the automotive sector for components under the hood, in the interior, and in reinforced plastics ensures a steady consumption of HCN. This application represents the single most significant demand segment, linking HCN production directly to automotive manufacturing trends and the broader engineering plastics market.

Beyond adiponitrile, HCN is a fundamental feedstock for inorganic cyanides, notably sodium cyanide and potassium cyanide. These compounds are indispensable in the mining industry for the extraction of gold and silver via the cyanide leaching process. Consequently, activity levels in precious metal mining directly influence this segment of HCN demand. Furthermore, HCN and its derivatives are utilized in the synthesis of a

variety of specialty chemicals, including chelating agents, amino acids, and pharmaceuticals, adding diversified, albeit smaller, streams of demand.

A notable trend within the market is the ongoing exploration of more sustainable production pathways and novel applications. Research initiatives are investigating bio-based routes to HCN derivatives, such as exploring feedstocks derived from agricultural materials. Additionally, there is exploratory scientific interest in HCN's potential role in advanced energy systems, such as its use as an additive or intermediate in fuel cell research, though these applications remain in early-stage development and are not yet commercially significant drivers.

Geographically, North America is a significant and mature market, characterized by established production capacity and integrated supply chains. The region's strong presence in chemical manufacturing, automotive production, and mining activities underpins stable demand. The existence of major global chemical producers with captive HCN production for internal use in integrated nylon-66 or methyl methacrylate (MMA) manufacturing further solidifies the region's market structure.

The competitive landscape is defined by large, integrated chemical corporations that produce HCN predominantly for captive consumption within their own downstream chemical synthesis processes. These companies are typically backward-integrated into feedstocks like ammonia and methane. Success hinges on operational efficiency, process safety given the compound's extreme toxicity, and the ability to maintain reliable, large-scale production to feed continuous downstream operations. Market dynamics for merchant HCN (sold on the open market) are influenced by the balance between captive production and the needs of smaller downstream users.

In conclusion, the hydrogen cyanide market is a classic example of a driven intermediate chemical market, where growth is almost entirely a function of derivative demand. Its trajectory is predominantly tied to the fortunes of the nylon-66 value chain and, to a secondary extent, the mining industry. For industry experts, strategic focus must center on process optimization for safety and yield, monitoring raw material (natural gas, ammonia) cost volatility, and understanding the long-term demand signals from key end-use sectors like automotive lightweighting and electrification. The market's future will be shaped by the evolution of nylon-66 demand, potential shifts in mining practices, and the continuous imperative to manage the significant safety and environmental responsibilities inherent in HCN production and handling.

**Key Benefits of this Report:**

**Insightful Analysis:** Gain detailed market insights covering major as well as emerging geographical regions, focusing on customer segments, government policies and socio-economic factors, consumer preferences, industry verticals, and other sub-segments.

**Competitive Landscape:** Understand the strategic maneuvers employed by key players globally to understand possible market penetration with the correct strategy.

**Market Drivers & Future Trends:** Explore the dynamic factors and pivotal market trends and how they will shape future market developments.

**Actionable Recommendations:** Utilize the insights to exercise strategic decisions to uncover new business streams and revenues in a dynamic environment.

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Report Coverage:

Historical data from 2021 to 2025 & forecast data from 2026 to 2031

Growth Opportunities, Challenges, Supply Chain Outlook, Regulatory Framework, and Trend Analysis

Competitive Positioning, Strategies, and Market Share Analysis

Revenue Growth and Forecast Assessment of segments and regions including countries

Company Profiling (Strategies, Products, Financial Information, and Key

Developments among others.

## Hydrogen Cyanide Market Segmentation

### By Form

Liquid

Gas

### By Process Type

Andrussow Process

BMA (Blausauere-Methan-Ammoniak) Process

### By Application

Acrylonitrile

Cyanoden Chloride

Acrylates & Methacrylates Cyanide

Others

### By End-User

Mining

Metallurgy

Agriculture

Chemicals & Petrochemicals

Others

## By Geography

North America

United States

Canada

Mexico

South America

Brazil

Argentina

Others

Europe

Germany

France

United Kingdom

Spain

Others

Middle East and Africa

Saudi Arabia

UAE

Israel

Others

Asia Pacific

China

India

Japan

South Korea

Indonesia

Thailand

Taiwan

Others

## Contents

### **1. EXECUTIVE SUMMARY**

### **2. MARKET SNAPSHOT**

- 2.1. Market Overview
- 2.2. Market Definition
- 2.3. Scope of the Study
- 2.4. Market Segmentation

### **3. BUSINESS LANDSCAPE**

- 3.1. Market Drivers
- 3.2. Market Restraints
- 3.3. Market Opportunities
- 3.4. Porter's Five Forces Analysis
- 3.5. Industry Value Chain Analysis
- 3.6. Policies and Regulations
- 3.7. Strategic Recommendations

### **4. TECHNOLOGICAL OUTLOOK**

### **5. HYDROGEN CYANIDE MARKET BY FORM**

- 5.1. Introduction
- 5.2. Liquid
- 5.3. Gas

### **6. HYDROGEN CYANIDE MARKET BY PROCESS TYPE**

- 6.1. Introduction
- 6.2. Andrussov Process
- 6.3. BMA (Blausauere-Methan-Ammoniak) Process

### **7. HYDROGEN CYANIDE MARKET BY APPLICATION**

- 7.1. Introduction
- 7.2. Acrylonitrile

- 7.3. Cyanoden Chloride
- 7.4. Acrylates & Methacrylates Cyanide
- 7.5. Others

## **8. HYDROGEN CYANIDE MARKET BY END-USER**

- 8.1. Introduction
- 8.2. Mining
- 8.3. Metallurgy
- 8.4. Agriculture
- 8.5. Chemicals & Petrochemicals
- 8.6. Others
- 8.7. Others

## **9. HYDROGEN CYANIDE MARKET BY GEOGRAPHY**

- 9.1. Introduction
- 9.2. North America
  - 9.2.1. By Form
  - 9.2.2. By Process Type
  - 9.2.3. By Application
  - 9.2.4. By End-User
  - 9.2.5. By Country
    - 9.2.5.1. USA
    - 9.2.5.2. Canada
    - 9.2.5.3. Mexico
- 9.3. South America
  - 9.3.1. By Form
  - 9.3.2. By Process Type
  - 9.3.3. By Application
  - 9.3.4. By End-User
  - 9.3.5. By Country
    - 9.3.5.1. Brazil
    - 9.3.5.2. Argentina
    - 9.3.5.3. Others
- 9.4. Europe
  - 9.4.1. By Form
  - 9.4.2. By Process Type
  - 9.4.3. By Application

9.4.4. By End-User

9.4.5. By Country

9.4.5.1. Germany

9.4.5.2. France

9.4.5.3. United Kingdom

9.4.5.4. Spain

9.4.5.5. Others

9.5. Middle East and Africa

9.5.1. By Form

9.5.2. By Process Type

9.5.3. By Application

9.5.4. By End-User

9.5.5. By Country

9.5.5.1. Saudi Arabia

9.5.5.2. UAE

9.5.5.3. Israel

9.5.5.4. Others

9.6. Asia Pacific

9.6.1. By Form

9.6.2. By Process Type

9.6.3. By Application

9.6.4. By End-User

9.6.5. By Country

9.6.5.1. China

9.6.5.2. India

9.6.5.3. Japan

9.6.5.4. South Korea

9.6.5.5. Indonesia

9.6.5.6. Thailand

9.6.5.7. Taiwan

9.6.5.8. Others

## **10. COMPETITIVE ENVIRONMENT AND ANALYSIS**

10.1. Major Players and Strategy Analysis

10.2. Market Share Analysis

10.3. Mergers, Acquisitions, Agreements, and Collaborations

10.4. Competitive Dashboard

## **11. COMPANY PROFILES**

- 11.1. Evonik Industries AG
- 11.2. INEOS Group Ltd
- 11.3. Air Liquide S.A
- 11.4. Ascend Performance Materials Operations LLC
- 11.5. Hindusthan Chemicals Company
- 11.6. Taekwang Industry Co., Ltd.
- 11.7. Merck KgaA
- 11.8. BASF SE
- 11.9. AnQore
- 11.10. Draslovka

## **12. APPENDIX**

- 12.1. Currency
- 12.2. Assumptions
- 12.3. Base and Forecast Years Timeline
- 12.4. Key Benefits for the Stakeholders
- 12.5. Research Methodology
- 12.6. Abbreviations

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