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Global RDX (Cyclonite) and HMX (Octogen) Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global RDX (Cyclonite) and HMX (Octogen) market size is expected to reach $ 3929 million by 2032, rising at a market growth of 6.4% CAGR during the forecast period (2026-2032).
In 2025, global production of RDX (Cyclonite) and HMX (Octogen) reached 28,565 metric tons. The global average market price was approximately USD 79.62 per kilogram, with total production capacity of about 33,100 metric tons. The industry?s average gross margin was 31.32%.
Energetic materials refer to chemical compositions that are capable of sustaining themselves and undergoing rapid exothermic chemical reactions under certain external stimuli. They typically include propellants, explosives, and pyrotechnic compositions. To date, the development of energetic materials can be broadly divided into four generations. The first generation is marked by the synthesis of trinitrotoluene (TNT) in 1863, after which ?TNT equivalence? became a widely used standard for measuring explosive performance and the destructive power of warheads. The second generation is represented by RDX (Cyclonite) and HMX (Octogen), whose volumetric chemical energy is approximately 1.4?1.6 times that of TNT. The third generation, represented by materials such as CL-20 and DNTF, further increases volumetric chemical energy to about 1.7?1.9 times that of TNT. The fourth generation is mainly composed of synthetically prepared ionic polynitrogen compounds, covalent polynitrogen compounds, and associated new oxidizers, reflecting a trend toward higher energy density and more systematized development. The focus of this report is on RDX (Cyclonite) and HMX (Octogen).
Key upstream raw materials include concentrated nitric acid and hexamethylenetetramine (urotropine).
Major upstream suppliers include LSB Industries, Dyno Nobel, Metafrax, Shchekinoazot JSC, INEOS, Caldic, Hexion, and Metafrax.

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Downstream customers include Diehl Defence, SAAB Switzerland, Rheinmetall, AECI, STV, Maxam, and Orica.

As representative high-energy explosive materials, RDX (Cyclonite) and HMX (Octogen) have long seen their core demand supported by the defense and military sectors. Globally, the continued advancement of military modernization has sustained rigid growth in demand for high-energy, high-stability explosive materials used in advanced munitions, missile systems, and rocket propulsion systems. At the same time, some emerging economies are increasing defense spending, driving expansion across related military-industrial supply chains and leading to a structural rise in regional demand for such products. In addition, progress in production processes and material modification technologies has improved safety and controllability while also broadening application boundaries, further reinforcing the underlying demand base.

The RDX and HMX market is significantly constrained by a highly regulated environment. Due to their sensitive nature, production, storage, transportation, and trade must comply with stringent safety and regulatory requirements. Complex approval processes and high operational barriers limit the number of new entrants into the industry. Moreover, production activities require substantial and ongoing investment in safety management and environmental protection to meet regulatory standards, which to some extent compresses profit margins. Changes in the global geopolitical landscape and controls on military goods trade may also cause periodic fluctuations in international supply?demand dynamics.

Overall, the market exhibits a development trajectory characterized by ?steady progress with incremental growth.? While traditional military applications continue to dominate, usage in niche areas such as aerospace propulsion, specialized engineering, and scientific research and testing is gradually increasing, helping to diversify demand and mitigate risks associated with reliance on a single application scenario. Meanwhile, growing emphasis by countries on self-sufficiency and controllability in critical defense materials is driving the construction of local production capacity and technological substitution. As a result, the global supply landscape is evolving from high concentration toward a more regionally coordinated structure.

The RDX and HMX market demonstrates long-term persistence and strong strategic attributes. Although its growth pace is constrained by policy and safety considerations, rigid defense demand, technological upgrading, and regional market expansion together support a stable overall outlook. Future competition within the industry is expected to focus more on production safety standards, quality consistency, cost control capabilities, and the depth of integration with downstream defense systems. Market share is likely to become increasingly concentrated among companies with comprehensive capabilities and regulatory compliance advantages.

Against the backdrop of an increasingly complex and volatile international environment,

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the strategic value of the RDX and HMX market has been further amplified. On one hand, intensifying strategic competition among major powers has led countries to continuously enhance military capabilities to address uncertainty and risk, particularly in regions such as the Asia-Pacific and Europe where security dynamics are changing markedly and rising defense budgets have become the norm. As fundamental materials for high-energy explosives, RDX and HMX therefore enjoy solid demand support and have become indispensable components of military modernization worldwide.
Heightened geopolitical tensions and escalating security concerns have elevated the priority of building autonomous defense supply chains, prompting major military powers to accelerate the deployment of domestic high-energy material production capabilities. Traditional producing countries must not only meet their own military requirements but also face higher standards related to export controls and supply security. Emerging military powers and regional players, meanwhile, are seeking to reduce external dependence through capacity expansion and increased investment in R&D. This trend not only underpins long-term, steady growth in global demand, but also drives industry competition to shift from a focus on sheer output toward technological quality, supply reliability, and safety and controllability.
This report studies the global RDX (Cyclonite) and HMX (Octogen) production, demand, key manufacturers, and key regions.
This report is a detailed and comprehensive analysis of the world market for RDX (Cyclonite) and HMX (Octogen) and provides market size (US$ million) and Year-over-Year (YoY) Growth, considering 2025 as the base year. This report explores demand trends and competition, as well as details the characteristics of RDX (Cyclonite) and HMX (Octogen) that contribute to its increasing demand across many markets.

Highlights and key features of the study

Global RDX (Cyclonite) and HMX (Octogen) total production and demand, 2021-2032, (Tons)
Global RDX (Cyclonite) and HMX (Octogen) total production value, 2021-2032, (USD Million)
Global RDX (Cyclonite) and HMX (Octogen) production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (Tons), (based on production site)
Global RDX (Cyclonite) and HMX (Octogen) consumption by region & country, CAGR, 2021-2032 & (Tons)
U.S. VS China: RDX (Cyclonite) and HMX (Octogen) domestic production, consumption, key domestic manufacturers and share
Global RDX (Cyclonite) and HMX (Octogen) production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (Tons)
Global RDX (Cyclonite) and HMX (Octogen) production by Type, production, value, CAGR, 2021-2032, (USD Million) & (Tons)

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Global RDX (Cyclonite) and HMX (Octogen) production by Application, production, value, CAGR, 2021-2032, (USD Million) & (Tons)
This report profiles key players in the global RDX (Cyclonite) and HMX (Octogen) market based on the following parameters - company overview, production, value, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include BAE System, Ya. M. Sverdlov State Owned Enterprise, China North Chemical Research Institute, Eurenco, Chemring, Jiangsu Hongguang Chemical, PRVA ISKRA-NAMENSKA, etc.
This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.
Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the World RDX (Cyclonite) and HMX (Octogen) market
Detailed Segmentation:
Each section contains quantitative market data including market by value (US$ Millions), volume (production, consumption) & (Tons) and average price (US$/Kg) by manufacturer, by Type, and by Application. Data is given for the years 2021-2032 by year with 2025 as the base year, 2026 as the estimate year, and 2027-2032 as the forecast year.
Global RDX (Cyclonite) and HMX (Octogen) Market, By Region:

United States

China

Europe

Japan

South Korea

ASEAN

India

Rest of World

Global RDX (Cyclonite) and HMX (Octogen) Market, Segmentation by Type:

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HMX (Octogen)

RDX (Cyclonite)

Global RDX (Cyclonite) and HMX (Octogen) Market, Segmentation by Crystal Form:

? Form

? Form

Others

Global RDX (Cyclonite) and HMX (Octogen) Market, Segmentation by Application:

Military

Civilian

Companies Profiled:

BAE System

Ya. M. Sverdlov State Owned Enterprise

China North Chemical Research Institute

Eurenco

Chemring

Jiangsu Hongguang Chemical

PRVA ISKRA-NAMENSKA

Key Questions Answered:

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1. How big is the global RDX (Cyclonite) and HMX (Octogen) market?
2. What is the demand of the global RDX (Cyclonite) and HMX (Octogen) market?
3. What is the year over year growth of the global RDX (Cyclonite) and HMX (Octogen) market?
4. What is the production and production value of the global RDX (Cyclonite) and HMX (Octogen) market?
5. Who are the key producers in the global RDX (Cyclonite) and HMX (Octogen) market?
6. What are the growth factors driving the market demand?

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