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# Global Cobalt-Manganese-Bromine Three-Way Catalyst Supply, Demand and Key Producers, 2026-2032

https://marketpublishers.com/r/G20114A93C2CEN.html
Date: June 2026
Pages: 99
Price: US$ 4,480.00 (Single User License)
ID: G20114A93C2CEN

## Abstracts

The global Cobalt-Manganese-Bromine Three-Way Catalyst market size is expected to reach $ 151 million by 2032, rising at a market growth of 3.8% CAGR during the forecast period (2026-2032).

The cobalt-manganese-bromine three-way catalyst refers to a homogeneous liquid-phase oxidation catalytic system composed jointly of cobalt salts, manganese salts, and bromide promoters. Typical formulations involve a blend of cobalt acetate and manganese acetate combined with hydrobromic acid, sodium bromide, cobalt bromide, or manganese bromide. It is primarily utilized in the liquid-phase air oxidation of para-xylene (PX) to produce terephthalic acid (TA/PTA), and can also be applied to other aromatic oxidation reactions, such as the oxidation of meta-xylene to produce isophthalic acid. In this system, cobalt and manganese serve to promote the free-radical oxidation cycle, while bromide ions act as promoters to enhance the oxidation activity of methyl groups, facilitating the stepwise oxidation of PX into p-methylbenzoic acid and 4-carboxybenzaldehyde, ultimately yielding terephthalic acid. Commercial PTA production is typically conducted in an acetic acid/water solvent under conditions of elevated temperature, high pressure, and an oxygen atmosphere. Characterized by high catalytic activity, a high degree of industrial maturity, and suitability for large-scale continuous production, this catalyst stands as one of the most representative oxidation catalytic systems within the PTA industry.

The upstream segment of the cobalt-manganese-bromine three-way catalyst industry chain primarily encompasses raw materials such as cobalt sources, manganese sources, elemental bromine/hydrobromic acid, acetic acid, deionized water, complexing agents, stabilizers, packaging drums, and storage/transportation equipment; among

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these, cobalt salts, manganese salts, and bromides constitute the core raw materials. The midstream segment consists of manufacturers of the composite liquid cobalt-manganese-bromine catalyst, who typically blend cobalt acetate, manganese acetate, and hydrobromic acid (or bromide salts) in specific proportions?followed by purification, stabilization, and liquefaction?to create specialized catalysts for the liquid-phase oxidation of aromatics such as PTA, IPA, and TMA. The downstream segment is predominantly composed of manufacturers engaged in the oxidation of aromatics, including producers of PTA, isophthalic acid, and trimellitic anhydride; specifically, in PTA production, acetic acid is commonly employed as the solvent and oxygen as the oxidant, utilizing the combined cobalt/manganese/bromide ion catalytic system for the liquid-phase oxidation of para-xylene. The gross profit margin for cobalt-manganese-bromine ternary catalysts stands at approximately 33%.

In 2025, the average price of cobalt-manganese-bromine three-way catalysts is projected to be $4,200 per ton, with a sales volume of 26.9 k tons and a total production capacity of 38 k tons.

The core value of the cobalt-manganese-bromine three-way catalyst lies in supporting the highly efficient, continuous production of aromatic oxidation facilities, such as those for PTA. In the process of oxidizing para-xylene to produce terephthalic acid, cobalt, manganese, and bromine collectively form a mature free-radical oxidation catalytic system. This system enhances the rate of methyl oxidation and improves reaction conversion rates, making it one of the most widely utilized and technologically mature catalytic systems currently employed in the PTA industry. For PTA manufacturers, although the catalyst accounts for a smaller share of total costs compared to PX feedstock, it directly impacts oxidation reaction efficiency, product impurity levels, acetic acid consumption, equipment corrosion, and the operational stability of the facility.

Competition within the industry centers not merely on the pricing of metal content, but rather on formula stability, impurity control, and adaptability to specific plant configurations. Ternary cobalt-manganese-bromine catalysts are typically supplied as liquid blends; consequently, customers prioritize factors such as catalytic activity, batch-to-batch consistency, metal ion ratios, bromine content control, impurity levels, moisture control, and performance compatibility across various PTA oxidation processes. Given that PTA facilities are characterized by continuous operation, large-scale production, and high shutdown costs, suppliers must undergo rigorous, long-term validation processes to gain entry into a customer's supply chain. As a result, companies possessing robust capabilities in stable raw material sourcing, precision blending, quality control, and on-site technical support are better positioned to cultivate strong

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customer loyalty.

Future trends in the sector are gravitating toward low-corrosion, low-consumption, recyclable, and environmentally friendly oxidation technologies. While the traditional cobalt-manganese-bromine system is both mature and highly efficient, the bromine promoter introduces challenges related to equipment corrosion, tail gas treatment, and wastewater disposal; furthermore, fluctuations in the price of cobalt resources can significantly impact catalyst costs. Moving forward, the PTA and aromatic oxidation industries will continue to optimize the ratios of cobalt, manganese, and bromine; enhance catalyst recycling rates; and strengthen the recovery of mother liquor and metal components. Concurrently, the industry will explore low-bromine, low-cobalt, high-selectivity, or alternative oxidation catalytic systems with the aim of reducing plant operating costs and alleviating environmental management burdens.

This report studies the global Cobalt-Manganese-Bromine Three-Way Catalyst production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for Cobalt-Manganese-Bromine Three-Way Catalyst 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 Cobalt-Manganese-Bromine Three-Way Catalyst that contribute to its increasing demand across many markets.

Highlights and key features of the study
Global Cobalt-Manganese-Bromine Three-Way Catalyst total production and demand, 2021-2032, (Tons)
Global Cobalt-Manganese-Bromine Three-Way Catalyst total production value, 2021-2032, (USD Million)
Global Cobalt-Manganese-Bromine Three-Way Catalyst production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (Tons), (based on production site)
Global Cobalt-Manganese-Bromine Three-Way Catalyst consumption by region & country, CAGR, 2021-2032 & (Tons)
U.S. VS China: Cobalt-Manganese-Bromine Three-Way Catalyst domestic production, consumption, key domestic manufacturers and share
Global Cobalt-Manganese-Bromine Three-Way Catalyst production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (Tons)
Global Cobalt-Manganese-Bromine Three-Way Catalyst production by Type,

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production, value, CAGR, 2021-2032, (USD Million) & (Tons)
Global Cobalt-Manganese-Bromine Three-Way Catalyst production by Application, production, value, CAGR, 2021-2032, (USD Million) & (Tons)

This report profiles key players in the global Cobalt-Manganese-Bromine Three-Way Catalyst 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 Zhejiang Golden Bay Holding, Zhejiang Lexsung Technology, Nanjing Angyang New Materials, CoreMax, Mechema Chemicals International, OS Company, Jiangsu Grandchem Industrial, Mechema Chemicals Thailand, 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 Cobalt-Manganese-Bromine Three-Way Catalyst market

Detailed Segmentation:

Each section contains quantitative market data including market by value (US$ Millions), volume (production, consumption) & (Tons) and average price (US$/Ton) 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 Cobalt-Manganese-Bromine Three-Way Catalyst Market, By Region:

United States

China

Europe

Japan

South Korea

ASEAN

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India

Rest of World

Global Cobalt-Manganese-Bromine Three-Way Catalyst Market, Segmentation by Type:

Homogeneous Catalysts

Heterogeneous Catalysts

Others

Global Cobalt-Manganese-Bromine Three-Way Catalyst Market, Segmentation by Bromine Content:

Low-Bromine Type (Br
Medium-Bromine Type (Br 8%?15%)

High-Bromine Type (Br > 15%)

Global Cobalt-Manganese-Bromine Three-Way Catalyst Market, Segmentation by Product Form:

Solid Salt Compound Type

Liquid Compound Type

Regenerative Liquid Type

Global Cobalt-Manganese-Bromine Three-Way Catalyst Market, Segmentation by Application:

New Energy Industry

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Organic Chemical Industry

Environmental Protection Industry

Others

Companies Profiled:

Zhejiang Golden Bay Holding

Zhejiang Lexsung Technology

Nanjing Angyang New Materials

CoreMax

Mechema Chemicals International

OS Company

Jiangsu Grandchem Industrial

Mechema Chemicals Thailand

Key Questions Answered:
1. How big is the global Cobalt-Manganese-Bromine Three-Way Catalyst market?
2. What is the demand of the global Cobalt-Manganese-Bromine Three-Way Catalyst market?
3. What is the year over year growth of the global Cobalt-Manganese-Bromine Three-Way Catalyst market?
4. What is the production and production value of the global Cobalt-Manganese-Bromine Three-Way Catalyst market?
5. Who are the key producers in the global Cobalt-Manganese-Bromine Three-Way Catalyst market?
6. What are the growth factors driving the market demand?

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