

Diesel SCR Catalyst Market Report: Trends, Forecast and Competitive Analysis to 2030

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Abstracts

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Diesel SCR Catalyst Trends and Forecast

The future of the global diesel SCR catalyst market looks promising with opportunities in the three-wheel diesel vehicle and four-wheel diesel vehicle markets. The global diesel SCR catalyst market is expected to grow with a CAGR of 8.3% from 2024 to 2030. The major drivers for this market are the growth in the automotive industry, rising awareness about environmental sustainability, and stringent emission regulations.

Lucintel forecasts that, within the type category, the V-SCR catalyst is expected to witness the highest growth over the forecast period.

Within the application category, three-wheel diesel vehicle is expected to witness higher growth.

In terms of regions, APAC is expected to witness the highest growth over the forecast period.

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Emerging Trends in the Diesel SCR Catalyst Market

The Diesel selective catalytic reduction market is undergoing several key transformations driven by regulatory, technological, and market demands for cleaner



emissions. Innovations in catalyst materials, regulatory pressure, and advancements in SCR system integration are shaping the future of the market.

Technological Advancements in SCR Catalyst Materials: There is a growing trend towards the development of advanced materials for SCR catalysts, such as precious metals, high-thermal stability ceramics, and novel substrates. These materials improve the efficiency and durability of the SCR systems, leading to higher NOx conversion rates and longer lifespans, which are crucial for meeting stringent emissions regulations.

Integration with Hybrid and Electric Powertrains: As automakers adopt hybrid and electric vehicle technologies, there is an increasing integration of SCR catalysts into these powertrains to support cleaner diesel engines in commercial vehicles. This trend is focused on minimizing emissions while improving fuel efficiency, with SCR systems complementing other emissions-reduction technologies in vehicles.

Increased Focus on Ammonia Slip Catalysts (ASC): The development of ammonia slip catalysts (ASC) is a growing trend in the diesel SCR market. These catalysts help in further reducing ammonia slip emissions from SCR systems, ensuring that vehicles comply with environmental standards. Ammonia slip catalysts are becoming essential for optimizing SCR performance and enhancing overall system efficiency.

Sustainability and Recyclability in Catalyst Production: The trend towards sustainability is leading to the development of SCR catalysts with a focus on using recyclable materials. Manufacturers are adopting sustainable practices in the production of catalyst substrates and materials, reducing the environmental impact of the entire lifecycle of SCR systems.

Advanced Monitoring and Diagnostics: To enhance the efficiency and performance of SCR systems, manufacturers are increasingly incorporating advanced monitoring and diagnostic systems. These systems help optimize the functioning of SCR catalysts, ensuring that NOx emissions are kept to a minimum and that maintenance can be performed more effectively, extending the life of the catalyst.

These trends indicate a significant transformation in the diesel selective catalytic



reduction market, with advancements in materials, integration with other technologies, and a focus on sustainability reshaping how the industry operates and meets global emissions targets.

Recent Developments in the Diesel SCR Catalyst Market

The diesel selective catalytic reduction market has experienced significant developments, particularly driven by stricter emissions regulations, innovations in catalyst technology, and the growing demand for cleaner diesel vehicles and equipment. These developments are setting the stage for more efficient, durable, and environmentally friendly SCR systems in various industries.

Adoption of Ammonia Slip Catalysts (ASC): The adoption of ammonia slip catalysts (ASC) is becoming more common in SCR systems to address ammonia emissions, ensuring vehicles and industrial equipment meet increasingly stringent NOx standards. ASC technologies are being integrated with SCR systems to improve efficiency and reduce harmful byproducts from diesel engines.

Investment in High-Efficiency Catalyst Substrates: Companies are investing heavily in the development of advanced catalyst substrates made from highperformance materials that can withstand higher temperatures and operate more efficiently. These substrates are crucial for improving NOx conversion rates and reducing overall emissions from diesel engines.

Expansion of SCR Systems in Heavy-Duty Vehicles: In regions like India and China, there is a growing focus on the deployment of SCR systems in heavyduty vehicles to meet stricter emission standards. Manufacturers are increasing their investments in SCR systems for buses, trucks, and construction equipment, which are expected to play a key role in reducing NOx emissions.

Growth in the Marine Diesel SCR Market: Japan and other countries are expanding the use of Diesel SCR catalysts in the marine industry. New regulations such as IMO 2020 require ships to meet stringent NOx emission standards, pushing the demand for SCR technologies in marine engines. SCR systems are playing an increasingly important role in reducing the environmental impact of maritime transport.

Increased Research into Catalyst Durability: The market is witnessing a rise in



research aimed at improving the durability of SCR catalysts. Manufacturers are focusing on enhancing the longevity of catalysts to reduce maintenance costs and improve the overall efficiency of diesel engines in challenging environments, such as those found in construction and mining industries.

These developments reflect the dynamic nature of the diesel selective catalytic reduction market, driven by innovations in materials, stricter regulatory frameworks, and expanding application areas across industries.

Strategic Growth Opportunities for Diesel SCR Catalyst Market

The diesel selective catalytic reduction market is seeing significant growth across various applications due to the rising demand for cleaner emissions and advanced diesel technologies. Manufacturers are well-positioned to leverage these opportunities by focusing on emerging trends in vehicle electrification, industrial applications, and regulatory compliance.

Expansion in Electric and Hybrid Vehicle Applications: The rise of hybrid and electric vehicles is a growth opportunity for SCR systems, particularly in the commercial vehicle sector. SCR technologies will be essential in improving emissions standards for diesel engines used in hybrid powertrains, driving demand for advanced catalysts, and boosting market growth.

Increased Deployment in Heavy-Duty Vehicle Applications: Heavy-duty vehicles, including trucks, buses, and construction machinery, are a key application area for SCR catalysts. With stricter emissions regulations in place, there is a growing need for high-performance SCR systems in these sectors, offering manufacturers an opportunity to provide tailored solutions to meet regulatory requirements.

Marine Industry Adoption of SCR Technologies: As global marine regulations tighten, there is an expanding opportunity for SCR catalysts in the shipping and maritime industry. Countries with large shipping sectors, such as Japan and Germany, are adopting SCR technologies to meet IMO regulations on NOx emissions, creating a robust market for SCR systems in marine engines.

Sustainability Initiatives in Industrial Applications: Industries like mining, construction, and agriculture are also seeking to meet emissions reduction



targets, providing an opportunity for SCR systems in diesel-powered machinery. Companies that offer efficient, durable SCR catalysts tailored for these heavyduty applications will capture significant market share.

Emerging Markets Adoption of SCR Technology: Emerging markets, such as India, Southeast Asia, and South America, are becoming increasingly important as they adopt stricter emissions regulations. Manufacturers that cater to these markets with affordable, high-performance SCR solutions will see significant growth opportunities in these regions.

These growth opportunities in various applications reflect a promising future for the diesel selective catalytic reduction market, as increasing regulatory pressure and technological advancements create new avenues for expansion and innovation.

Diesel SCR Catalyst Market Driver and Challenges

The diesel selective catalytic reduction market is influenced by several key drivers and challenges, ranging from technological advancements to regulatory changes. Understanding these factors is crucial for stakeholders in the market.

The factors responsible for driving the diesel SCR catalyst market include:

Stricter Emissions Regulations: Governments worldwide are implementing stricter emissions standards, which is a major driver for the Diesel SCR catalyst market. Regulations like Euro VI in Europe, Bharat Stage VI in India, and the Tier 3 standard in the U.S. are pushing the need for advanced SCR technologies.

Technological Advancements: Continuous improvements in SCR catalyst materials, substrates, and systems have driven market growth. These advancements enhance NOx conversion efficiency and the durability of SCR systems, helping diesel engines comply with emission standards.

Increasing Demand for Diesel Vehicles: Diesel-powered vehicles, especially in heavy-duty applications, remain popular in sectors like transportation, construction, and mining. Their emissions control needs are driving the demand for SCR catalysts to reduce NOx emissions.



Focus on Environmental Sustainability: Growing global concern over air pollution and environmental sustainability is encouraging industries to invest in emissionsreduction technologies like SCR systems, thereby driving demand for advanced catalysts.

Government Incentives for Cleaner Technologies: Many governments are offering incentives and subsidies for cleaner diesel technologies, boosting investment in SCR systems and supporting market growth.

Challenges in the diesel SCR catalyst market are:

Rising Material Costs: The costs of key materials used in SCR catalysts, such as precious metals, can fluctuate, impacting production costs and profitability for manufacturers.

Regulatory Compliance: Staying compliant with evolving emissions standards requires constant innovation and investment, making it challenging for companies to maintain profitability.

Supply Chain Constraints: Disruptions in the supply chain, especially for critical catalyst materials, can impact production and delivery timelines, posing challenges to meeting market demands.

The diesel selective catalytic reduction market faces a dynamic landscape of drivers and challenges, including regulatory pressures, technological advancements, and cost fluctuations. Adaptability and continuous innovation are key to success in this evolving market.

List of Diesel SCR Catalyst Companies

Companies in the market compete on the basis of product quality offered. Major players in this market focus on expanding their manufacturing facilities, R&D investments, infrastructural development, and leverage integration opportunities across the value chain. Through these strategies diesel SCR catalyst companies cater increasing demand, ensure competitive effectiveness, develop innovative products & technologies, reduce production costs, and expand their customer base. Some of the diesel SCR catalyst companies profiled in this report include-



BASF

Umicore

Faurecia

Clariant

Johnson Matthey

Heraeus

Cataler

Actblue

Shenzhou Catalytic Purifier

Zhejiang Da-Feng Automobile Technology

Diesel SCR Catalyst by Segment

The study includes a forecast for the global diesel SCR catalyst by type, application, and region.

Diesel SCR Catalyst Market by Type [Analysis by Value from 2018 to 2030]:

V-SCR Catalyst

Molecular Sieve SCR Catalyst

Diesel SCR Catalyst Market by Application [Analysis by Value from 2018 to 2030]:

Three-Wheel Diesel Vehicle

Four-Wheel Diesel Vehicle



Diesel SCR Catalyst Market by Region [Analysis by Value from 2018 to 2030]:

North America

Europe

Asia Pacific

The Rest of the World

Country wise Diesel SCR Catalyst Market

The diesel Selective Catalytic Reduction (SCR) catalyst market has experienced significant growth driven by stringent emissions regulations and the global shift toward cleaner, more sustainable transportation and industrial operations. SCR technology is critical in reducing nitrogen oxide (NOx) emissions from diesel engines, particularly in the automotive, heavy-duty transport, and industrial sectors. The rising adoption of SCR systems is influenced by government mandates, technological advancements, and the push for environmental sustainability.

United States: In the U.S., the diesel SCR catalyst market has been primarily driven by stringent EPA (Environmental Protection Agency) regulations targeting the reduction of NOx and particulate matter emissions from diesel vehicles. The introduction of advanced SCR systems has been a crucial element in meeting these regulatory standards, especially for heavy-duty trucks and commercial fleets. Technological improvements have focused on enhancing catalyst efficiency and durability, with a growing trend toward using high-performance materials like platinum, palladium, and rhodium. The growing shift to cleaner diesel engines, alongside the rise of electric and hybrid vehicles, is shaping the future trajectory of the SCR market in the U.S.

China: China, as one of the world's largest automotive markets, has seen rapid adoption of diesel SCR technology due to the government's increasingly stringent environmental regulations. The Chinese government has implemented stricter emission standards, such as the China VI standards, which are on par with Euro VI emissions standards. These regulations have driven the adoption of SCR systems in diesel-powered vehicles, particularly in commercial transportation and construction equipment. Chinese manufacturers are focusing



on cost-effective SCR catalyst solutions, while also improving performance and longevity. Additionally, China's push toward reducing air pollution and transitioning to cleaner fuels has further boosted the demand for SCR technologies.

Germany: Germany, known for its advanced automotive industry, has been at the forefront of adopting diesel SCR catalysts to comply with the European Union's stringent Euro VI emissions standards. SCR technology is widely used in passenger vehicles, commercial trucks, and industrial machinery to reduce NOx emissions. The country's focus on innovation and environmental responsibility has driven research into more efficient SCR catalyst formulations, with a growing emphasis on improving catalyst longevity and reducing the use of precious metals. Germany is also a leader in the development of hybrid and electric vehicle technologies, which could impact the future demand for diesel SCR catalysts as emissions regulations continue to tighten.

India: In India, the diesel SCR catalyst market is gaining momentum as the government introduces stricter BS-VI emission standards, which are aligned with Euro VI standards. The implementation of these regulations has spurred the need for advanced SCR systems, particularly in commercial vehicles and heavy-duty machinery. As India has one of the fastest-growing automotive markets, the adoption of diesel SCR technology is crucial in curbing vehicular pollution, especially in urban areas. Local manufacturers are focusing on providing affordable and efficient SCR solutions, while international suppliers are capitalizing on India's expanding market. The adoption of SCR systems in industrial applications is also increasing as India pushes for greater sustainability.

Japan: Japan, with its advanced technological capabilities, has been a leader in the development and adoption of diesel SCR catalyst systems. Strict emission regulations, including Japan's Post New Long-Term Emission Standards, have driven the use of SCR systems across various sectors, including automotive, industrial, and maritime industries. Japanese automakers are focusing on improving the efficiency of SCR catalysts to meet both domestic and global emissions standards. The country's emphasis on innovation and sustainability has led to the development of high-performance SCR catalysts using advanced materials. Japan is also investing in hybrid and alternative fuel technologies, which may impact the future demand for traditional diesel SCR catalysts.



Features of the Global Diesel SCR Catalyst Market

Market Size Estimates: Diesel SCR catalyst market size estimation in terms of value (\$B).

Trend and Forecast Analysis: Market trends (2018 to 2023) and forecast (2024 to 2030) by various segments and regions.

Segmentation Analysis: Diesel SCR catalyst market size by type, application, and region in terms of value (\$B).

Regional Analysis: Diesel SCR catalyst market breakdown by North America, Europe, Asia Pacific, and Rest of the World.

Growth Opportunities: Analysis of growth opportunities in different type, application, and regions for the diesel SCR catalyst market.

Strategic Analysis: This includes M&A, new product development, and competitive landscape of the diesel SCR catalyst market.

Analysis of competitive intensity of the industry based on Porter's Five Forces model.

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This report answers following 11 key questions:

Q.1. What are some of the most promising, high-growth opportunities for the diesel SCR catalyst market by type (V-SCR catalyst and molecular sieve SCR catalyst), application (three-wheel diesel vehicle and four-wheel diesel vehicle), and region (North America, Europe, Asia Pacific, and the Rest of the World)?

Q.2. Which segments will grow at a faster pace and why?

Q.3. Which region will grow at a faster pace and why?

Q.4. What are the key factors affecting market dynamics? What are the key challenges and business risks in this market?



Q.5. What are the business risks and competitive threats in this market?

Q.6. What are the emerging trends in this market and the reasons behind them?

Q.7. What are some of the changing demands of customers in the market?

Q.8. What are the new developments in the market? Which companies are leading these developments?

Q.9. Who are the major players in this market? What strategic initiatives are key players pursuing for business growth?

Q.10. What are some of the competing products in this market and how big of a threat do they pose for loss of market share by material or product substitution?

Q.11. What M&A activity has occurred in the last 5 years and what has its impact been on the industry?



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