

Ester for Synthetic and Bio-Based Lubricants Market Size and Forecast (2021 - 2031), Global and Regional Share, Trend, and Growth Opportunity Analysis Report Coverage: By Ester Type [Monoesters, Diesters, Polyol Esters (Trimethylolpropane Esters, Pentaerythritol Esters, Neopentyl Glycol Esters, Trimethylol Ethane Esters, and Dipentaerythritol Esters), Trimellitate Esters, Complex Esters, and Others], Lubricant Type (Synthetic Lubricants and Biobased Lubricants), Application [Engine Oil (MCO, PCMO, HDEO, and Other Engines), Compressor Oil, (Refrigeration, Air Compressors, Natural Gas Compressors, and Others Compressors), Hydraulic Fluids, Gear Oil, Transmission Oil, Coolants, and Others], and End Use [Automotive (Conventional Vehicles and Electric Vehicles), Textile, Marine, Mining and Metallurgy, Aviation, Energy and Power, and Others]

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Abstracts

The global ester for synthetic and bio-based lubricants market size is projected to reach US\$ 9.54 billion by 2031 from US\$ 6.85 billion in 2024. The market is expected to

register a CAGR of 5.0% from 2025 to 2031.

Lubricants play a crucial role in keeping machinery or engines well functioning, along with maintaining their good condition without any difficulties. While standard lubricants are enough for machines delivering everyday applications, high-performance lubricants are essential for high-stress environments and demanding conditions prevailing in the automotive, aviation, motorsports, and manufacturing industries. Various industrial machines operate in high temperatures and stress environments, such as furnaces, heavy-duty engines, and kilns, which can cause conventional lubricants to break down, resulting in increased wear, friction, and even catastrophic failures. Heavy-duty machinery in the construction and mining sector also operates under intense pressure, and standard lubricants may not withstand these conditions, which signifies the need for high-performance lubricants. Esters derived from organic and inorganic sources have a uniform structure and polarity, and offer multiple high-performance lubricant functions. As an additive or base stock, they improve cleanliness and sludge control, enhance the solubility of additives, and have an affinity for metal surfaces. These properties allow esters to form strong boundary lubricating films on metal surfaces, reducing wear and friction along with contributing to smoother engine operation and prolonged engine life. These factors are driving the global ester for synthetic and bio-based lubricants market growth.

Based on ester type, the global ester for synthetic and bio-based lubricants market is segmented into monoesters, diesters, polyol esters (trimethylolpropane esters, pentaerythritol esters, neopentyl glycol esters, trimethylol ethane esters, and dipentaerythritol esters), trimellitate esters, complex esters, and others. The diesters segment held the largest global ester for synthetic and bio-based lubricants market share in 2024, and polyol esters are expected to register the highest CAGR from 2025 to 2031. The polyol esters segment holds significant importance in the global ester for synthetic and bio-based lubricants market, particularly due to their exceptional thermal and oxidative stability. These esters are synthesized by reacting polyhydric alcohols (polyols) such as trimethylolpropane or pentaerythritol with fatty acids, resulting in complex molecular structures that deliver superior performance under high-temperature conditions. Their high flash point, low volatility, and excellent lubricity make them ideal for use in high-performance applications such as aviation engines, refrigeration compressors, and automotive lubricants.

Some of the key players in the global ester for synthetic and bio-based lubricants market include Emery Oleochemicals, BASF SE, Kao Corp, Lanxess, Cargill Inc, Evonik Industries AG, Exxon Mobil Corp, Polynt SpA, Zschimmer & Schwarz Chemie GmbH,

IOI Corporation Berhad, ABITEC, Esterchem Ltd, Teknor Apex, K?ach Pacific Speciality Oils, and Peter Greven GmbH & Co. KG. Players operating in the global ester for synthetic and bio-based lubricants market focus on providing high-quality products to fulfill customer demand. Also, they focus on adopting various strategies such as new product launches, collaborations, and others in order to stay competitive in the global ester for synthetic and bio-based lubricants market.

The overall global ester for synthetic and bio-based lubricants market size has been derived using both primary and secondary sources. To begin the research process, exhaustive secondary research has been conducted using internal and external sources to obtain qualitative and quantitative information related to the global ester for synthetic and bio-based lubricants market. Also, multiple primary interviews have been conducted with industry participants to validate the data and gain more analytical insights into the topic. The participants of this process include industry experts such as VPs, business development managers, market intelligence managers, and national sales managers—along with external consultants such as valuation experts, research analysts, and key opinion leaders—specializing in the global ester for synthetic and bio-based lubricants market.

Reason to buy

Save and reduce time carrying out entry-level research by identifying the growth, size, leading players and segments in the global Ester for Synthetic and Bio-Based Lubricants market.

Highlights key business priorities in order to assist companies to realign their business strategies

The key findings and recommendations highlight crucial progressive industry trends in the global Ester for Synthetic and Bio-Based Lubricants market, thereby allowing players across the value chain to develop effective long-term strategies

Develop/modify business expansion plans by using substantial growth offering developed and emerging markets

Scrutinize in-depth global Ester for Synthetic and Bio-Based Lubricants market trends and outlook coupled with the factors driving the market, as well as those hindering it.

Enhance the decision-making process by understanding the strategies that underpin commercial interest with respect to client products, segmentation, pricing and distribution

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