

1-Decene Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Application (Surfactants, Poly Alpha Olefins, Polyethylene, Detergent Alcohols, Synthetic Lubricants, Others), By Region and Competition, 2020-2030F

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Report description:

Market Overview

Global 1-Decene Market was valued at USD 954.27 Million in 2024 and is expected to reach USD 1280.34 Million by 2030 with a CAGR of 5.22% during the forecast period. 1-Decene, classified as an alkene hydrocarbon, is characterized by a ten-carbon atom chain containing a single double bond. This substance is a clear, colorless, and mobile liquid with a pleasant yet toxic odor. Its production typically involves the oligomerization of ethylene or the cracking of petroleum waxes with higher carbon content. 1-Decene finds extensive application as a monomer in copolymer manufacturing and plays a crucial role as an intermediary in the production of oxo alcohols, epoxides, alkylated aromatics, amines, and synthetic fatty acids. It is conventionally stored under a nitrogen atmosphere and possesses anti-corrosive properties. Consequently, it is employed in various industries, including perfumery, oils, dye production, pharmaceuticals, resin formulation, dough dividing machinery, industrial gear systems, automatic transmission engines, and marine equipment.

Key Market Drivers

Rising Demand of 1-Decene in Surfactants Application

Surfactants, short for surface-active agents, play a pivotal role in various industries, ranging from personal care and household cleaning to oil and gas. These versatile compounds are essential for their ability to reduce the surface tension between two immiscible substances, such as oil and water, facilitating their interaction. 1-decene is a linear alpha olefin (LAO) used as a crucial feedstock in the production of detergent alcohols, which are further processed into linear alkylbenzene sulfonates (LAS), biodegradable anionic surfactants widely utilized in household detergents, industrial cleaners, personal care products, and agrochemical formulations. Among the key ingredients used in surfactant production, 1-decene has gained significant prominence due to its unique properties and applications. Before delving into the demand for 1-decene, it's crucial to grasp the fundamental role of surfactants. Surfactants are molecules with both hydrophilic (water-attracting) and hydrophobic (water-repelling) ends. This

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dual nature allows them to act as intermediaries between two substances that would not typically interact. They are commonly categorized into four types: anionic, cationic, nonionic, and amphoteric, depending on the charge of their hydrophilic group. Surfactants find applications in various industries and are essential for numerous everyday products. 1-Decene, also known as dec-1-ene, is an alpha-olefin with the chemical formula C₁₀H₂₀. It is a colorless, flammable liquid with a characteristic odor. One of its primary uses is as a feedstock in the production of linear alkylbenzene sulfonate (LAS), a widely employed anionic surfactant. LAS is the key active ingredient in many household detergents and cleaning products, such as laundry detergents, dishwashing liquids, and surface cleaners. 1-Decene serves as a critical starting material in the synthesis of LAS, making it indispensable in the surfactant industry. The production of LAS involves a series of reactions, including sulfonation and neutralization, which ultimately result in the formation of the LAS molecule. LAS is prized for its excellent detergent properties, high foaming ability, and biodegradability, making it the surfactant of choice for a wide range of cleaning applications.

Key Market Challenges

Supply Chain Vulnerabilities and Price Volatility Poses a Significant Obstacle to Market Expansion

One of the primary challenges faced by the 1-decene market is the vulnerability of its supply chain. The production of 1-decene relies heavily on petrochemical feedstocks, particularly linear alpha olefins (LAOs), which are derived from crude oil or natural gas. Any disruptions in the supply of these raw materials, such as geopolitical conflicts or fluctuations in oil prices, can impact the availability and pricing of 1-decene. Manufacturers must implement robust supply chain management strategies to mitigate these risks and ensure a consistent flow of raw materials.

Moreover, price volatility in the petrochemical industry is a recurring challenge for the 1-decene market. Fluctuations in oil prices, geopolitical tensions, and supply-demand imbalances can lead to sudden price swings, impacting the profitability of manufacturers and end-users. To manage this challenge, industry players often engage in long-term supply agreements and hedging strategies to mitigate the effects of price volatility.

Key Market Trends

Industrial Infrastructure Expansion

Global infrastructure investments spanning water distribution systems to urban pipeline networks are significantly accelerating the growth of the industrial-grade polyethylene market, particularly high-density (HDPE) and linear low-density polyethylene (LLDPE). These materials are increasingly favored for critical infrastructure projects due to their superior durability, corrosion resistance, and ease of installation.

As a comonomer, 1-decene enhances key polymer characteristics such as flexibility, impact strength, and processing efficiency, making it essential for producing high-performance piping systems. With infrastructure projects deploying hundreds of thousands of kilometers of piping worldwide, the resulting surge in resin consumption is driving up demand for upstream raw materials like 1-decene. This trend is particularly pronounced in countries such as India and China, where local polyethylene production capacity is expanding in parallel with infrastructure development. In Europe, the EU's Net Zero Industry Act (May 2024) has set an ambitious target of achieving 50 million tons per year of CO₂ injection capacity by 2030, spurring investments in pipeline infrastructure for hydrogen and carbon capture, segments where HDPE plays a crucial role. Government-led infrastructure programs across India, the U.S., and the EU are contributing to the deployment of millions of kilometers of HDPE and LLDPE pipelines, reinforcing the critical role of 1-decene in supporting global polymer performance. This sectoral momentum is emerging as a key market driver for sustained growth in 1-decene demand globally.

Key Market Players

- [] Chevron Phillips Chemical Company
- [] Exxon Mobil Corporation
- [] Ineos Group Limited
- [] Idemitsu Kosan Co.,Ltd
- [] Shell plc
- [] PJSC Nizhnekamskneftekhim
- [] Saudi Basic Industries Corporation
- [] Qatar Chemical Company Ltd.
- [] Sasol Limited

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- Merck KGaA

Report Scope:

In this report, the Global 1-Decene Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

- 1-Decene Market, By Application:

- o Surfactants
- o Polyethylene
- o Detergent Alcohols
- o Synthetic Lubricants
- o Others

- 1-Decene Market, By Region:

- o Asia-Pacific
 - ? China
 - ? India
 - ? Australia
 - ? Japan
 - ? South Korea
- o Europe
 - ? France
 - ? Germany
 - ? Spain
 - ? Italy
 - ? United Kingdom
- o North America
 - ? United States
 - ? Mexico
 - ? Canada
- o South America
 - ? Brazil
 - ? Argentina
 - ? Colombia
- o Middle East & Africa
 - ? South Africa
 - ? Saudi Arabia
 - ? UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global 1-Decene Market.

Available Customizations:

Global 1-Decene Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

- Detailed analysis and profiling of additional market players (up to five).

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