+357 96 030922
info@marketpublishers.com

1-Decene Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, 2018-2028 Segmented By Application (Surfactants, Poly Alpha Olefins, Polyethylene, Detergent Alcohols, Synthetic Lubricants, Others), By Region and Competition

https://marketpublishers.com/r/1DB51CA8B4B8EN.html
Date: October 2023
Pages: 177
Price: US$ 4,900.00 (Single User License)
ID: 1DB51CA8B4B8EN

Abstracts

In 2022, the Global 1-Decene Market was valued at USD 954.27 million, and it is expected to exhibit robust growth in the forecasted period with a Compound Annual Growth Rate (CAGR) of 5.22%. 1-Decene, categorized 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 known for its pleasant yet toxic odor.

The production of 1-Decene typically involves the oligomerization of ethylene or the cracking of petroleum waxes with a higher carbon content. This versatile compound finds extensive applications as a monomer in copolymer manufacturing and serves as a crucial intermediary in the production of various products, including oxo alcohols, epoxides, alkylated aromatics, amines, and synthetic fatty acids.

1-Decene is conventionally stored under a nitrogen atmosphere due to its anti-corrosive properties. As a result, it is employed across 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,

+357 96 030922
info@marketpublishers.com

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. 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 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.

Moreover, 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. As a result, the demand for 1-decene as a feedstock in LAS production has seen significant growth.

Furthermore, one of the prominent areas where surfactants are extensively used is the personal care industry. Personal care products such as shampoos, body washes, and facial cleansers rely on surfactants to create foaming and cleansing action. In these products, 1-decene-derived LAS is a preferred choice due to its effectiveness in removing dirt, oils, and impurities from the skin and hair. The gentle yet thorough cleaning provided by LAS-based formulations has contributed to their popularity among consumers. Along with this, household cleaning products constitute another major application area for surfactants. 1-Decene-based LAS is a key ingredient in laundry detergents, dishwashing liquids, and all-purpose cleaners. LAS not only helps in removing tough stains and grease but also enhances the overall cleaning performance of these products. With the increasing emphasis on cleanliness and hygiene, the demand for surfactant-based household cleaning products is on the rise, driving the need for 1-decene. Surfactants are essential components in agrochemical formulations.

+357 96 030922
info@marketpublishers.com

They aid in the dispersion and even distribution of pesticides, herbicides, and fungicides on crops, ensuring maximum efficacy. The demand for surfactants in agriculture is on the rise as modern farming practices focus on optimizing crop protection and yield. 1-Decene-derived surfactants are increasingly preferred for their effectiveness and low environmental impact, leading to the demand of market in the forecast period.

Increasing Demand of 1-Decene in Synthetic Lubricants Application

The world of lubricants is evolving rapidly, driven by the demand for enhanced performance, extended equipment life, and environmental sustainability. Within this landscape, synthetic lubricants have emerged as a game-changer, and at the heart of their formulation lies 1-decene, a long-chain alpha olefin. Synthetic lubricants are engineered lubricating oils designed to outperform conventional mineral-based lubricants. They are meticulously crafted to deliver exceptional performance in extreme conditions, such as high temperatures, heavy loads, and harsh environments. Unlike mineral oils, synthetic lubricants are produced through a complex chemical synthesis process, and their formulations can be tailored to meet specific performance requirements. 1-Decene, also known as dec-1-ene, is a critical building block in the synthesis of synthetic lubricants. Its unique chemical structure and properties make it an ideal starting material to produce alpha olefin-based synthetic base oils. These base oils form the foundation of synthetic lubricants, offering several advantages over traditional mineral oils.

Moreover, synthetic base oils derived from 1-decene exhibit a high resistance to thermal breakdown, even at elevated temperatures. This quality ensures that synthetic lubricants maintain their viscosity and lubricating properties over a wide temperature range, making them suitable for extreme operating conditions. In addition to their high-temperature stability, synthetic lubricants excel in low-temperature environments. They flow more easily at cold temperatures compared to mineral oils, ensuring efficient lubrication during cold starts and in sub-zero conditions. This feature is particularly crucial in industries where equipment operates in diverse climates. Synthetic lubricants provide superior wear protection, reducing friction and minimizing component wear and tear. As a result, equipment operating with synthetic lubricants tends to have a longer service life, ultimately leading to reduced maintenance costs and increased productivity.

Furthermore, the use of synthetic lubricants contributes to environmental sustainability. Their extended oil change intervals, reduced oil consumption, and lower environmental impact due to reduced emissions make them an eco-friendly choice. Furthermore, the exceptional performance and protection they offer help reduce energy consumption,

+357 96 030922
info@marketpublishers.com

contributing to overall energy efficiency. The automotive industry has embraced synthetic lubricants for engine oils, transmission fluids, and gear oils. Synthetic engine oils provide improved protection against engine wear, better fuel efficiency, and extended drain intervals. These benefits translate into reduced maintenance costs and a longer lifespan for vehicles. Additionally, in industrial settings, machinery operates under demanding conditions. Synthetic lubricants are preferred for their ability to withstand heavy loads, high temperatures, and extreme pressures. They are commonly used in hydraulic systems, compressors, and industrial gearboxes, ensuring smooth operation and equipment longevity.

Rising Demand of 1-Decene in Polyethylene Applications

Polyethylene, one of the most widely used plastics globally, owes much of its versatility and adaptability to the incorporation of various comonomers during its production. Among these comonomers, 1-decene, an alpha olefin, stands out as a key component in the development of high-density polyethylene (HDPE) and linear low-density polyethylene (LLDPE). 1-Decene, chemically known as dec-1-ene, is a long-chain alpha olefin with the formula C10H20. Its unique chemical structure and reactivity make it a valuable comonomer in polyethylene production. The incorporation of 1-decene into the polymer chain during polymerization results in enhanced performance and expanded application possibilities.

Moreover, HDPE is a versatile thermoplastic known for its high strength, chemical resistance, and excellent impact resistance. The addition of 1-decene during the polymerization process enables manufacturers to produce HDPE with enhanced properties. These HDPE variants are particularly sought after for applications where durability, corrosion resistance, and dimensional stability are critical. HDPE packaging materials benefit from 1-decene's influence on impact resistance, making them suitable for the transportation and storage of various products, including chemicals, food, and pharmaceuticals. HDPE components in industrial machinery benefit from the enhanced mechanical properties provided by 1-decene. These components offer a balance of strength and flexibility, contributing to the equipment's overall performance and longevity.

Furthermore, LLDPE is another type of polyethylene that incorporates 1-decene to achieve specific performance characteristics. LLDPE is known for its exceptional flexibility, puncture resistance, and sealing properties. These features make it ideal for a wide range of applications, particularly in the packaging industry. Along with this, LLDPE films with 1-decene modifications are used in agricultural applications such as

+357 96 030922
info@marketpublishers.com

greenhouse covers and mulch films. These films offer durability and resistance to environmental stress, extending their lifespan in outdoor conditions. LLDPE construction films benefit from 1-decene's influence on tear resistance and flexibility. These films are utilized as vapor barriers, concrete curing blankets, and protective covers in the construction industry.

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.

Furthermore, efficient transportation and logistics are essential for the smooth operation of the 1-decene market. Delays in shipping, port congestion, and disruptions in global supply chains can lead to delays in the delivery of raw materials and finished products. To overcome these challenges, companies must invest in logistics infrastructure and contingency planning to ensure uninterrupted supply and distribution.

Competition from Alternative Feedstocks

The availability of alternative feedstocks poses a significant challenge to the 1-decene market. As the demand for more sustainable and renewable raw materials grows, manufacturers are exploring alternatives to traditional petrochemical sources. For example, bio-based olefins derived from biomass sources are gaining traction as environmentally friendly alternatives to LAOs. To remain competitive, the 1-decene market must adapt to this changing landscape and explore opportunities to diversify its

+357 96 030922
info@marketpublishers.com

feedstock sources.

Moreover, compliance with stringent environmental regulations is a continuous challenge for the 1-decene market. As governments around the world enact stricter emissions and waste disposal regulations, manufacturers must invest in technologies and processes that reduce environmental impact. This includes wastewater treatment, emissions control, and waste management systems. Failure to meet these regulatory requirements can lead to fines, legal liabilities, and damage to a company's reputation.

Additionally, maintaining product quality and consistency is paramount in the 1-decene market. Variations in product quality can lead to rejected batches, production delays, and customer dissatisfaction. Stringent quality control measures and testing protocols are essential to ensure that each batch of 1-decene meets the required specifications. Manufacturers must also invest in research and development to improve the quality and performance of their products.

Key Market Trends

Growing Application in Surfactants and Detergents

One of the prominent trends driving the 1-Decene market is increasing use in the production of surfactants and detergents. Surfactants are vital components in various cleaning products, including household cleaners, industrial detergents, and personal care items. The excellent surface-active properties of 1-decene-derived surfactants make them ideal for achieving effective cleaning and foaming in these products. As consumer awareness regarding cleanliness and hygiene rises, the demand for surfactants and detergents is growing, subsequently driving the demand for 1-decene.

Moreover, the plastics industry is a significant consumer of 1-decene, where it serves as a co-monomer in the production of polyethylene. The increasing need for plastics across various sectors, including packaging, automotive, and construction, is a notable trend driving the 1-decene market. The versatility and durability of polyethylene make it a preferred choice in the manufacturing of a wide range of plastic products. As these industries continue to expand, the demand for polyethylene, and consequently, 1-decene, is anticipated to rise.

Focus on Sustainable Practices

Sustainability has become a central theme in various industries, and the 1-decene

+357 96 030922
info@marketpublishers.com

market is no exception. As environmental concerns intensify, there is a growing emphasis on the use of sustainable feedstocks and processes in chemical manufacturing. The production of 1-decene from renewable sources and the development of eco-friendly processes are emerging trends in the market. Companies are exploring bio-based routes to produce 1-decene, aligning with the global shift towards greener and more sustainable practices.

Technological Advancements in Production

Technological advancements in the production of 1-decene are contributing to increased efficiency and cost-effectiveness. New catalysts and process optimization techniques are being developed to enhance the yield and purity of 1-decene. These innovations not only improve the overall production process but also have a positive impact on the competitiveness of the 1-decene market.

Furthermore, ongoing research and development activities in the 1-decene market are aimed at exploring new applications and improving existing processes. Manufacturers are investing in R&D to discover novel uses for 1-decene and to enhance its performance characteristics. This proactive approach to innovation is expected to open new avenues for the market in the coming years.

Segmental Insights

Application Insights

Based on the category of application, poly alpha olefins emerged as the dominant player in the global market for 1-Decene in 2022. Poly alpha olefins (PAOs) offer a range of benefits compared to conventional lubricants, including superior performance in terms of viscosity at both low and high temperatures, exceptional chemical and shear stability, and resistance to issues such as oxidation, thermal breakdown, and the formation of oil sludge. The lubricants market is experiencing significant growth, primarily fueled by rising demand from key industries like automotive and manufacturing.

Moreover, poly alpha olefin is expected to become the largest and most rapidly growing application segment. This is attributed to PAO's outstanding technical performance and its contribution to environmental protection. The increasing usage of 1-Decene in applications such as transmission oil, compressor oil, gear oil, and lubricating oil additives is expected to boost the growth of the poly alpha olefins (PAO) segment within

+357 96 030922
info@marketpublishers.com

the market. Additionally, 1-Decene serves as a common raw material in the PAO industry, enabling the production of high-performance lubricants that find extensive use in the oil and gas sector.

Furthermore, the surfactants segment currently holds a dominant position in the 1-decene market. The utilization of 1-Decene as a primary raw material for surfactants is poised to sustain market growth in the foreseeable future. Producers of 1-Decene are actively expanding their production capabilities to cater to the increasing demand emanating from the surfactant industry.

Regional Insights

North America emerged as the dominant player in the global 1-Decene market in 2022. North America boasts the most extensive industrial presence across sectors including oil and gas, petrochemicals, packaging, electronics, automotive, pulp and paper, paints, and coatings, as well as pharmaceuticals. This region holds considerable growth prospects, thanks to the accessibility of cost-effective raw materials and advancements in shale gas exploration. Within North America, the United States takes the lead as both a prominent producer and consumer in the global 1-Decene market. The upsurge in demand for derivatives from diverse industries such as automotive, packaging, and more is propelling the growth of the 1-Decene market in the United States. Furthermore, the substantial presence of key industry players like ExxonMobil Corp., Shell Chemicals, Chevron Phillips Chemical Company LP, and INEOS Oligomers, who possess patented technologies for alpha olefin production, has propelled the demand for 1-decene in North America.

Moreover, on the other hand, the Asia Pacific region is expected to emerge as a significant market in the foreseeable future. This can be attributed to the growing dishwashing and detergent industry, where detergent alcohols and related compounds serve as crucial raw materials for surfactants in laundry and dishwashing applications.

Additionally, the European region is anticipated to maintain its prominent position and continue its steady growth trajectory throughout the forecasted period. This sustained growth can be attributed to the escalating production of poly alpha olefins (PAO) and synthetic lubricants by major product manufacturers in the region. Additionally, the availability of raw materials in abundance contributes to regional expansion.

Key Market Players

+357 96 030922
info@marketpublishers.com

Chevron Phillips Chemical Company

Exxon Mobil Corporation

Ineos Group Limited

Idemitsu Kosan Co.,Ltd

Shell plc

PJSC Nizhnekamskneftekhim

Saudi Arabia's Basic Industries Corporation

Qatar Chemical Company Ltd.

Sasol Limited

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:

Surfactants

Polyethylene

Detergent Alcohols

Synthetic Lubricants

Others

1-Decene Market, By Region:

+357 96 030922
info@marketpublishers.com

Asia-Pacific

China

India

Australia

Japan

South Korea

Europe

France

Germany

Spain

Italy

United Kingdom

North America

United States

Mexico

Canada

South America

Brazil

Argentina

Colombia

+357 96 030922
info@marketpublishers.com

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, Tech Sci 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).

+357 96 030922
info@marketpublishers.com

Contents

+357 96 030922
info@marketpublishers.com

7. ASIA PACIFIC 1-DECENE MARKET OUTLOOK

8. EUROPE 1-DECENE MARKET OUTLOOK

+357 96 030922
info@marketpublishers.com

9. NORTH AMERICA 1-DECENE MARKET OUTLOOK

+357 96 030922
info@marketpublishers.com

10. SOUTH AMERICA 1-DECENE MARKET OUTLOOK

+357 96 030922
info@marketpublishers.com

11. MIDDLE EAST AND AFRICA 1-DECENE MARKET OUTLOOK

12. MARKET DYNAMICS

13. MARKET TRENDS & DEVELOPMENTS

14. GLOBAL 1-DECENE MARKET: SWOT ANALYSIS

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

I would like to order

Product name: 1-Decene Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, 2018-2028 Segmented By Application (Surfactants, Poly Alpha Olefins, Polyethylene, Detergent Alcohols, Synthetic Lubricants, Others), By Region and Competition

Product link: https://marketpublishers.com/r/1DB51CA8B4B8EN.html

Price: US$ 4,900.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:
info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/1DB51CA8B4B8EN.html