

A background image showing a large roll of white plastic film being processed in a factory. The film is being unwound from a large spool and is being guided by a series of rollers and frames. The scene is industrial, with metal structures and machinery visible. The image is partially covered by a large orange shape on the right side.

2024 PLASTICS INDUSTRY REPORT

Crayex

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2024 Overview

Overall In 2024, the plastic film industry experienced significant growth and expansion, driven by a number of key factors. Advances in technology led to the development of new and improved plastic film products with enhanced properties such as strength, flexibility, and transparency. This enabled the plastic film industry to tap into new markets and applications, such as flexible packaging, medical devices, and construction materials.

Increased demand for plastic film from emerging economies also contributed to the industry's expansion. Rapid urbanization and rising disposable incomes in these countries have led to a growing demand for consumer goods, food, and beverages, all of which rely heavily on plastic film packaging. Additionally, government regulations aimed at reducing plastic waste have stimulated the development of innovative and sustainable plastic film products, further driving industry growth.

The expansion of the plastic film industry has had a positive impact on the global economy. It has created new jobs, boosted innovation, and supported the growth of related industries such as chemicals, manufacturing, and transportation. As demand for plastic film continues to grow, the industry is well-positioned for further expansion and success in the years to come.

Some specific examples of how the plastic film industry has grown and expanded in 2024 include:

Increased production capacity: Many plastic film manufacturers have invested in new production lines and facilities to meet the growing demand for

their products. This has led to a significant increase in overall production capacity.

New product development: Plastic film manufacturers have introduced a range of new and innovative products in 2024, including biodegradable and compostable films, films with improved barrier properties, and films with specialized surface treatments.

Market expansion: The plastic film industry has expanded into new markets in 2024, such as the healthcare, automotive, and aerospace industries. This is due to the increasing use of plastic films in these industries for applications such as medical devices, automotive components, and aerospace parts.

The plastic film industry has achieved remarkable progress in sustainability in 2024, setting a commendable example for other sectors. Numerous manufacturers have embraced eco-friendly practices, making significant strides towards a greener future.

One pivotal initiative has been the reduction of energy consumption throughout the production process. Manufacturers have implemented state-of-the-art technologies that optimize energy usage, such as energy-efficient equipment, LED lighting, and solar panels. By minimizing their carbon footprint, they contribute positively to combating climate change.

Another significant step has been the widespread adoption of recycled materials. Many manufacturers now utilize post-consumer and post-industrial

recycled plastic resin in their production lines. This not only reduces the demand for virgin materials but also diverts waste from landfills and oceans. By incorporating recycled content into their products, manufacturers demonstrate their commitment to a circular economy.

Furthermore, the industry has made notable advancements in developing end-of-life solutions for its products. Manufacturers have partnered with recycling organizations and waste management companies to establish comprehensive recycling programs, ensuring that plastic film products are appropriately collected and reprocessed. Additionally, they have invested in research and development to explore innovative technologies, such as chemical recycling and bio-based films, that offer sustainable alternatives to traditional plastic materials. These initiatives have not only benefited the environment but have also enhanced the

reputation and competitiveness of the plastic film industry. Consumers are increasingly demanding sustainable products, and manufacturers that prioritize sustainability are well-positioned to meet this growing demand. As the industry continues to embrace eco-friendly practices, it sets a positive example for other industries and contributes to a more sustainable future.

The plastic film industry's commitment to sustainability in 2024 is commendable. By reducing energy consumption, using recycled materials, and developing end-of-life solutions, manufacturers have taken significant steps towards minimizing their environmental impact and creating a more sustainable future. Their efforts serve as an inspiration for other sectors and demonstrate that sustainable practices can be successfully integrated into industrial operations.

This report focuses on four major custom film markets:

The global **stretch hood films market** is expected to grow significantly from \$900 million in 2024 to \$1.49 billion by 2030, driven by a CAGR of 7.9%.

The global **form-fill-seal packaging** market reached \$9.40 billion in 2023, driven by demand for convenience food products, automated packaging systems, and the need to reduce food waste.

The global **stretch and shrink film** market is valued at \$17.46 billion in 2023 and is projected to grow at a CAGR of 5.3% until 2030.

The **collation shrink film** market is anticipated to grow from \$4.1 billion in 2023 to \$6.9 billion in 2034, with a projected CAGR of 4.8%.

Stretch Hood

The global stretch hood films market, valued at \$900 million+ in 2024, is projected to witness significant growth over the forecast period from 2024 to 2030. This growth is expected to be driven by a notable compound annual growth rate (CAGR) of 7.9%, resulting in a market valuation of \$1.49 billion by the end of the forecast period.

The stretch hooder market is poised for substantial growth over the same period, driven by a remarkable CAGR. This growth is primarily attributed to the rising demand for stretch hooders across various industries, such as construction materials, paper industry, food and beverage, and textile industry, among others.

North America and Europe are expected to hold significant market shares throughout the forecast period due to the presence of well-established manufacturing and logistics industries. However, the Asia Pacific region is projected to witness the fastest growth rate during the forecast period, driven by the expanding manufacturing sector and increasing adoption of automated packaging solutions.

The construction materials sector is witnessing significant growth due to the rapid urbanization and infrastructure development projects worldwide. Stretch hooders are extensively used to protect construction materials from external factors such as moisture, dust, and damage during transportation and storage. This has led to an increased demand for stretch hooders in the construction industry.

The paper industry is another key contributor to the growth of the stretch hooder market. Stretch hooders provide effective packaging solutions for paper rolls, ensuring their protection during transit and handling. The increasing demand for paper products, such as packaging materials, printing papers, and tissue papers, has resulted in a corresponding increase in the demand for stretch hooders in the paper industry.



The food & beverage industry is also driving the growth of the stretch hooder market. Stretch hooders offer efficient and hygienic packaging solutions for food and beverage products, helping to preserve their freshness and quality. The growing demand for packaged food and beverages, coupled with stringent regulations regarding food safety, has fueled the demand for stretch hooders in this sector.

In the textile industry, stretch hooders are used to protect fabrics and textiles during transportation and storage. The growth of the textile industry, particularly in emerging economies, has contributed to the increasing demand for stretch hooders in this sector.

Other applications of stretch hooders include the packaging of agricultural products, automotive parts, and consumer goods. The versatility and effectiveness of stretch hooders in protecting a wide range of products have made them increasingly popular across various industries.

The growth of the stretch hooder market is further supported by factors such as the rising awareness of sustainable packaging solutions and the increasing adoption of automation in packaging processes. As a result, the market is expected to witness continued expansion in the coming years, with numerous opportunities for industry players to capitalize on.

Key factors driving the growth of the stretch hood films market include:

- 1. Increasing Demand for Automated Packaging Solutions:** The rising adoption of automation in various industries, particularly in the manufacturing and logistics sectors, has led to a growing demand for stretch hood films. These films offer efficient and cost-effective ways to secure and protect palletized goods during transportation and storage.
- 2. Enhanced Product Protection:** Stretch hood films provide excellent product protection against external elements such as moisture, dust, and dirt. This makes them ideal for packaging products that require a high level of protection, such as food, beverages, electronics, and pharmaceuticals.
- 3. Sustainability and Environmental Benefits:** Stretch hood films are environmentally friendly as they are made from recyclable materials. Additionally, they help reduce waste by minimizing the need for secondary packaging materials like cardboard boxes or wooden pallets.
- 4. Growing E-commerce Industry:** The rapid growth of e-commerce has increased the demand for stretch hood films. These films are widely used in e-commerce packaging as they offer a secure and efficient way to protect products during shipping and handling.
- 5. Expansion of the Food and Beverage Industry:** The expanding food and beverage industry has contributed to the growth of the stretch hood films market. These films are used to package a wide range of food and beverage products, ensuring their freshness, quality, and safety.

Research & Development

The stretch hooder market is witnessing significant investments in research and development (R&D) activities. Market players are recognizing the potential of advanced technologies and innovations to enhance the efficiency and capabilities of stretch hooders, leading to increased productivity and cost savings. These R&D initiatives are expected to drive market growth throughout the forecast period of 2024 to 2029.

One key area of focus in R&D is the development of stretch hooders with improved material handling capabilities. This includes advancements in stretch film technology, such as the use of lightweight, high-strength films that offer better protection and load stability. Additionally, manufacturers are exploring ways to optimize the hooding process by reducing cycle times and increasing the precision of film application.

Another area of emphasis in R&D is the integration of automation and robotics in stretch hooder operations. Automated stretch hooders can significantly reduce manual labor, leading to increased efficiency and lower operating costs. These systems use sensors, cameras, and advanced control algorithms to autonomously position and secure loads, ensuring consistent and reliable hooding.

Furthermore, market players are exploring R&D opportunities in sustainable stretch hooder applications. This includes the development of environmentally friendly stretch films made from recycled materials or biodegradable polymers. Additionally, manufacturers are focusing on reducing energy consumption and minimizing waste generation throughout the stretch hooding process. The R&D efforts in stretch hooder applications are

expected to yield numerous benefits for market players. These include improved productivity, reduced operating costs, increased flexibility, and enhanced sustainability. As a result, market players are well-positioned to capitalize on these advancements and drive innovation in the coming years.

In the ever-evolving world of packaging solutions, stretch hood film producers have made significant strides in both technological innovation and sustainable practices. One groundbreaking development is the conversion of used stretch hood film into biogas. This process diverts waste from landfills and transforms it into a renewable energy source. The biogas is captured, purified, and converted into electricity through anaerobic digestion, providing a clean and sustainable alternative to traditional energy sources.

Furthermore, plastomer material alternatives are now available as an environmentally friendly option to conventional EVA-based constructions used in stretch hood packaging. These alternatives are not only more sustainable but also enhance the performance of stretch hood films. By incorporating plastomer materials, manufacturers can produce films with improved holding power and puncture resistance. This translates to better protection for packaged goods, reduced waste, and increased efficiency in the supply chain.

Moreover, the advancement in stretch hood film technology has opened up new opportunities for recycling and reuse. Manufacturers now have the ability to produce films made from recycled plastics, contributing to a circular economy and reducing the environmental impact of packaging waste. These recycled films maintain the same high-quality standards as virgin films, ensuring reliable performance and protection for packaged goods.

The combination of biogas conversion and plastomer material alternatives represents a significant step forward in the stretch hood film industry. These innovations not only contribute to a more sustainable future but also enhance the functionality and effectiveness of stretch hood packaging. By embracing these advancements, manufacturers can reduce their environmental footprint, improve operational efficiency, and contribute to a more circular and sustainable packaging ecosystem.

Restraints/Challenges in stretch Hooder Material

Environmental Impact: Stretch hooder material is composed of polyethylene, a type of plastic that can harm the environment if it is not disposed of appropriately. The plastic can take hundreds of years to decompose and can accumulate in landfills and oceans, posing a threat to wildlife and marine life. The lack of government regulations and plastic recycling technology in some regions further exacerbates the issue, as it limits the ability to effectively manage and recycle stretch hooder material.

Cost of Recycling: Recycling stretch hooder material can be a costly process, especially when compared to other materials such as cardboard or paper. The cost of collecting, sorting, and processing stretch hooder material can make it challenging for businesses to implement recycling programs. Additionally, the availability of recycling facilities for stretch hooder material may be limited in certain areas, further increasing the cost and complexity of recycling.

Technical Challenges: Stretch hooder material can be challenging to recycle due to its unique

properties. The material is often contaminated with dirt, dust, and other debris, which can make it difficult to process and recycle. Additionally, the stretch hooder material is often treated with additives and coatings that can interfere with the recycling process. These technical challenges can make it difficult for recycling facilities to effectively process and recycle stretch hooder material.

Competition from Alternative Packaging

Solutions: Stretch hooder material faces competition from alternative packaging solutions such as shrink wrap and corrugated cardboard. These alternatives may be perceived as being more environmentally friendly and cost-effective, which can limit the demand for stretch hooder material. The availability of these alternatives can make it challenging for stretch hooder material suppliers to expand their market share.

Availability of Alternatives: Stretch hood films will face competition from traditional packaging alternatives such as film wraps, shrink wraps, and containers over the forecast period, which will challenge the stretch hood films market growth rate.

Market Segments and Growth

The COVID-19 pandemic has had a significant impact on the global stretch hood films market, both positively and negatively. On the one hand, the increased demand for packaged goods due to the shift towards online shopping and home deliveries has boosted the demand for stretch hood films. These films provide an effective and efficient way to protect and secure goods during transportation, making them an essential part of the supply chain. This has led to increased sales and production of stretch hood films during the pandemic.

On the other hand, the pandemic has also presented challenges for the stretch hood films market. The initial outbreak of the virus led to disruptions in the supply chain, making it difficult to obtain raw materials needed for the production of stretch hood films. This resulted in delays in production and increased costs. Additionally, the implementation of strict government regulations and safety measures, such as social distancing and lockdowns, further impacted the production and distribution of stretch hood films.

However, as the pandemic progressed, manufacturers and government authorities began to develop effective strategies to mitigate the negative effects of COVID-19 on the stretch hood films market. They implemented measures such as increased automation, enhanced safety protocols, and improved logistics to ensure the continuous production and delivery of stretch hood films. These efforts have resulted in a gradual recovery of the market, with production and sales starting to increase again in 2021-2022.

Looking ahead, the stretch hood films market is expected to continue to grow. The increasing demand for packaged goods, combined with the effectiveness and efficiency of stretch hood films, is likely to drive market growth. Additionally, the development of new technologies, such as biodegradable and sustainable stretch hood films, is expected to further expand market opportunities.

The stretch hood films market is divided into segments based on material, form, thickness, application, and end user. The growth among these segments can help analyze underperforming segments in the industries and provide valuable market overviews and insights. This information can assist users in making strategic decisions to identify core market applications.

Material:

- Polyethylene: This is the most commonly used material for stretch hood films due to its high strength, toughness, and flexibility.
- Plastomers: Plastomers are polymers that have been modified to improve their properties, such as toughness and flexibility.
- Elastomers: Elastomers are polymers that can stretch and recover their original shape. They are often used in stretch hood films to provide increased stretchability and elasticity.
- Ethylene Vinyl Acetate (EVA): EVA is a copolymer of ethylene and vinyl acetate. It is a tough, flexible material that is often used in stretch hood films for applications that require a high level of puncture resistance.
- Others: Other materials that may be used in stretch hood films include polypropylene, polystyrene, and polyamide.

Thickness:

- Up to 50 Microns: These films are typically used for lightweight applications, such as packaging food and beverages.
- 50-100 Microns: These films are used for general-purpose applications, such as packaging building materials and other industrial products.
- 100-150 Microns: These films are used for heavy-duty applications, such as packaging machinery and other large items.
- 150 Microns and Above: These films are used for specialized applications, such as packaging hazardous materials.

The stretch hood films market is also analyzed by region, including North America, Europe, Asia-Pacific, Latin America, the Middle East, and Africa. Each region's market size, growth trends, and competitive landscape are examined. This information can help businesses make informed decisions about where to expand their operations.

North America's dominance in the stretch hood films market is primarily driven by various factors. The region's well-established retail industry plays a crucial role in driving demand for stretch hood films. The rising consumer spending and the growth of e-commerce have led to an increased need for efficient and cost-effective packaging solutions, making stretch hood films a preferred choice. Moreover, the presence of major manufacturers and suppliers in North America contributes to the region's prominent position in the market. These companies have been actively investing in research and development, introducing innovative products and technologies to meet the evolving needs of customers.

On the other hand, Asia-Pacific is projected to witness significant growth over the forecast period due to several factors. The pharmaceutical industry in the region has been experiencing remarkable expansion, driven by rising healthcare awareness and increasing disposable income

levels. Stretch hood films are extensively used in the pharmaceutical industry to ensure the safety and integrity of pharmaceutical products during transportation and storage. The rapid urbanization in the Asia-Pacific region has also contributed to the growing demand for stretch hood films. Major cities in the region are experiencing a surge in construction activities, leading to an increased need for packaging solutions for building materials and other construction-related products.

Additionally, the growing emphasis on sustainability in the Asia-Pacific region is driving the demand for eco-friendly packaging solutions. Stretch hood films made from recyclable materials (e.g., polyethylene) are gaining popularity as they offer a sustainable alternative to traditional packaging materials. Government regulations and initiatives promoting sustainability have also played a role in shaping the market landscape in the Asia-Pacific region.



Form-Fill-Seal

The global form-fill-seal packaging market has been experiencing steady growth over the past few years. In 2023, the market size reached \$9.40 billion. This growth can be attributed to factors such as the increasing demand for convenience food products, the rising adoption of automated packaging systems, and the growing need to reduce food waste.

The form-fill-seal packaging process involves forming a container from a flexible film, filling it with the product, and then sealing it. This type of packaging is commonly used for products such as snacks, confectionery, pet food, and medical devices. The market for form-fill-seal packaging is expected to continue growing in the coming years, driven by the aforementioned factors as well as the increasing demand for sustainable packaging solutions.

The Asia-Pacific region is expected to be the largest market for form-fill-seal packaging, followed by North America and Europe. The growth in the Asia-Pacific region is expected to be driven by the rising middle class and the increasing demand for convenience food products. In North America, the market is expected to be driven by the growth of the e-commerce industry and the increasing demand for sustainable packaging solutions. In Europe, the market is expected to be driven by the growing demand for convenience food products and the increasing adoption of automated packaging systems.



Key Trends

The form-fill-seal packaging market is undergoing a transformative phase, driven by the integration of advanced technologies and evolving consumer preferences. These are the key trends shaping the future of packaging solutions by driving innovation, efficiency, sustainability, and consumer-centricity:

Robotics, AI, and ML for Enhanced Efficiency and Error Reduction:

- **Robotics:** Automated robots are increasingly deployed in packaging lines, performing repetitive tasks such as product handling, placement, and sealing with precision and speed.
- **Artificial Intelligence (AI) and Machine Learning (ML):** AI algorithms analyze data from sensors and cameras to optimize packaging processes, predict maintenance needs, and detect anomalies in real-time, minimizing errors and downtime.

Tailoring Designs and Sizes to Diverse Product Specifications and Consumer Preferences:

- **Customization:** Packaging solutions are customized to accommodate a wide range of product shapes, sizes, and weights, ensuring optimal protection and presentation.
- **Consumer Insights:** Market research and consumer behavior analysis help manufacturers understand preferences for convenience, sustainability, and aesthetics.

RFID and IoT Technologies for Real-Time Monitoring, Tracking, and Tracing:

- **Radio Frequency Identification (RFID):** RFID tags attached to packaging provide real-time visibility into product location, inventory levels, and shipping status throughout the supply chain.
- **Internet of Things (IoT):** IoT sensors integrated into packaging solutions monitor temperature, humidity, and other environmental conditions, ensuring product quality and compliance.

Eco-Friendly Materials and Designs to Minimize Environmental Impact:

- **Sustainable Packaging:** Manufacturers are adopting eco-friendly materials (e.g, biodegradable plastics, recycled content, plant-based alternatives) to reduce carbon footprint.
- **Design for Recycling:** Packaging is designed with recyclability in mind, using mono-materials and minimizing the use of adhesives and coatings that hinder the recycling process.

Smart Packaging Solutions for Enhanced Consumer Engagement:

- **Interactive Packaging:** QR codes and augmented reality (AR) elements on packaging provide consumers with additional product information, promotional offers, and interactive experiences, enhancing brand engagement.
- **Anti-Counterfeiting Technologies:** Advanced printing techniques and tamper-evident seals help combat counterfeiting, protecting brand reputation and consumer safety.

Projected Growth

Overall, the global form-fill-seal packaging market is expected to continue growing in the coming years. This growth is expected to be driven by the increasing demand for convenience food products, the rising adoption of automated packaging systems, the growing need to reduce food waste, and the increasing demand for sustainable packaging solutions.

Short term (2024 to 2025)

- The increasing popularity of single-serve packaging is driving demand for FFS films. These films are ideal for products such as snacks, ready-to-eat meals, and drinks, as they provide a convenient and efficient way to package and consume food and beverages.
- The flexibility of FFS films makes them suitable for a wide range of applications. They can be customized to fit a variety of product shapes and sizes, making them ideal for products such as fresh produce, meat, and fish.

Medium term (2025 to 2028)

- The food and beverage industry is the largest market for FFS films, and this trend is expected to continue in the medium term. As the industry grows, there will be an increasing need for automated packaging solutions. FFS films are well-suited for automated packaging, as they can be easily integrated into automated packaging lines.
- In addition to the food and beverage industry, FFS films are also used in a variety of other industries, such as the pharmaceutical, cosmetic, and personal care industries.

Long term (2028 to 2033)

- The development of new technologies and machinery for the production of FFS films is driving innovation in the form-fill-seal films market. These new technologies are improving the efficiency of FFS film production, reducing waste, and improving the quality of FFS films.
- The development of new materials and additives is also improving the performance of FFS films. For example, new materials are being developed that are puncture-resistant, heat-sealable, and have enhanced oxygen and moisture barriers. These new materials are making FFS films more suitable for a wider range of applications.



Stretch & Shrink

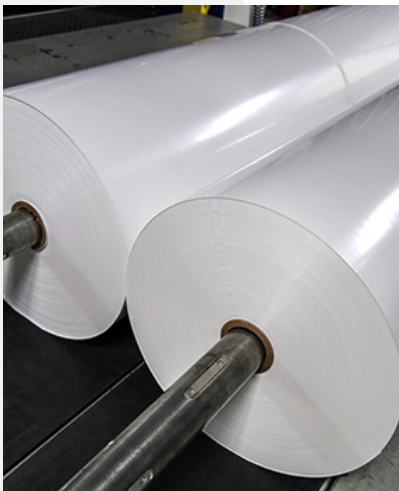
The global stretch and shrink film market is a rapidly growing industry, with a market size estimated at \$17.46 billion in 2023. This growth is expected to continue in the coming years, with a projected CAGR of 5.3% from 2024 to 2030. This growth can be attributed to several factors, including:

Increasing Demand for Packaged Food Products: The rising demand for packaged food products such as frozen meat, seafood, and poultry is a significant driver of the stretch and shrink film market. These films offer excellent protection for food items, extending their shelf life and maintaining their quality. As consumers become increasingly health-conscious and seek convenient food options, the demand for packaged food products is expected to remain strong.

Growth of E-commerce: The rapid growth of e-commerce has led to a surge in demand for stretch and shrink films. These films are used to secure and protect products during shipping, ensuring that they arrive at their destination in pristine condition. The convenience and efficiency of online shopping have made e-commerce a popular choice for consumers, further boosting the demand for stretch and shrink films.

Sustainable Packaging Solutions: Stretch and shrink films offer sustainable packaging solutions, contributing to their growing popularity. These films are lightweight and recyclable, reducing their environmental impact compared to traditional packaging materials. As consumers become more environmentally conscious, they are increasingly seeking sustainable packaging options, which has led to an increased demand for stretch and shrink films.

Technological Advancements: Technological advancements have played a crucial role in the growth of the stretch and shrink film market. The development of high-performance films with improved barrier properties, puncture resistance, and clarity



has enhanced the quality and effectiveness of packaging. Additionally, advancements in machinery and equipment have increased production efficiency and reduced costs, making stretch and shrink films a more cost-effective packaging solution.

Expanding Applications: Stretch and shrink films are finding applications in various industries beyond food packaging. These films are used in the automotive, construction, and healthcare industries, among others. Their versatility and adaptability have contributed to the growth of the stretch and shrink film market, as they offer efficient packaging solutions for a wide range of products.

Projected Growth

Companies operating in the stretch and shrink film industry are undertaking strategic initiatives such as new product launches and mergers & acquisitions to strengthen their market presence. For instance, on March 21, 2024, shrink film manufacturer Shantou Mingca Packaging and ExxonMobil Asia Pacific Research & Development introduced a double bubble polyethylene (PE)-based shrink film (PEF) solution. This next-generation polyolefin shrink film (POF) has been developed using ultra-low density Exceed XP performance PE. The new shrink film solution is versatile and suitable for a wide range of products, including personal care products, electronics, medicines, household items, and others. Its PE-based structure is designed to facilitate easier mechanical recycling than traditional POF solutions.

Low-density polyethylene (LDPE) dominates the market, accounting for 30.5% of revenue in 2023. Its availability in various gauges and sizes for product

protection, showcasing, and packaging integrity drives growth.

The linear low-density polyethylene (LLDPE) films segment is poised for growth due to increased collaborations among key players. For example, LyondellBasell Industries Holdings B.V. and AFA Nord GmbH partnered to form LMF Nord GmbH, which will offer recycled LLDPE stretch and shrink films by early 2025. Such developments are expected to propel demand for LLDPE films.

The stretch and shrink film market in the United States is poised for robust growth, driven by several key factors. One of the primary drivers is the country's status as a major producer of processed food. Processed food manufacturers extensively utilize stretch films for both primary and secondary packaging to protect and preserve their products. This high demand for stretch films in the food packaging industry contributes significantly to the market's growth.

Within the stretch and shrink film market, LDPE-based films are anticipated to witness increased demand over the forecast period. LDPE (low-density polyethylene) is a flexible and affordable plastic material that offers excellent clarity and moisture resistance. These properties make LDPE-based films ideal for packaging food materials, ensuring product freshness and quality. As processed food production continues to rise in the U.S., the demand for LDPE-based films is expected to soar.

Furthermore, LLDPE (linear low-density polyethylene) is another key resin used in the production of stretch films. LLDPE-based stretch films are known for their exceptional transparency, making them visually appealing for product packaging. Moreover, LLDPE films exhibit superior

performance as food contact materials, meeting stringent safety and regulatory standards. This combination of high transparency and food-grade performance is driving the demand for LLDPE-based stretch films in the U.S. market.

The growth of the stretch and shrink film market in the U.S. is also influenced by factors such as increasing consumer awareness of sustainability and the rising demand for convenient packaging solutions. As consumers become more environmentally conscious, manufacturers are exploring sustainable alternatives to traditional

plastic films. The development of biodegradable and compostable stretch films is gaining traction, catering to the evolving preferences of consumers and stringent environmental regulations.

Overall, the stretch and shrink film market in the U.S. is expected to thrive in the coming years due to the country's robust processed food industry, the growing popularity of LDPE-based films for food packaging, the superior performance of LLDPE-based films, and the increasing demand for sustainable packaging solutions.



Collation Shrink Film

The collation shrink film market is poised for significant growth, with a projected CAGR of 4.8% during the forecast period from 2024 to 2034. By 2034, the market is anticipated to reach a revenue of \$6.9 billion, up from \$4.1 billion in 2023.

Low-density polyethylene (LDPE) collation shrink films are expected to lead the market, capturing a significant share of the revenue in 2024. The increasing adoption of LDPE shrink films can be attributed to their flexibility, allowing them to be wrapped around a variety of materials. Additionally, LDPE films with low melting points are ideal for wrapping temperature-sensitive products. Their clarity, gloss, salability, and recyclability further contribute to their popularity.

The food and beverage industry is a major consumer of collation shrink films, accounting for over a quarter of the overall market share in 2024. The cosmetic industry is also anticipated to witness substantial growth during the forecast period.

Stringent regulations driven by concerns over food safety and quality have resulted in increased demand for collation shrink films. These films help protect products from dirt, moisture, and other external factors, making them a preferred choice for manufacturers and retailers. Additionally, properties such as high packaging efficiency, product stability, cost-effectiveness, visibility, and aesthetics contribute to their growing adoption.

Based on current trends and consumer behavior, there is a notable surge in demand for LDPE collation shrink films. This is primarily due to the increasing preference for sustainable and eco-friendly packaging solutions. LDPE shrink films are recyclable and offer enhanced sustainability credentials, which is expected to positively impact market dynamics and drive growth.

The food and beverage industry is particularly focused on finding solutions to preserve food quality and extend shelf life. Collation



shrink films with exceptional barrier properties are gaining traction among food and beverage manufacturers as they prevent the contamination of delicate food products. Governments in regions like North America, East Asia, and Europe have imposed strict regulations in response to growing concerns about fatalities linked to consuming contaminated food. The food and beverage industry in these regions has begun adopting collation shrink films to comply with these regulatory measures.

Collation shrink films with a glossy finish are also gaining popularity in the beverage industry. Manufacturers are using these films to enhance product aesthetics and branding opportunities. Leading film manufacturers continually invest in product development, design, and chemical compositions to gain a competitive edge.

Key players in the collation shrink film industry can enhance their market position by focusing on material innovation and customization to meet specific product requirements. Improving temperature efficiency and ensuring inertness towards food and beverage items can further contribute to growth.

The booming e-commerce business has also fueled demand for collation shrink films. The COVID-19 pandemic accelerated the trend towards convenient online shopping, leading to substantial growth in e-commerce. Industries such as food and beverage, personal care, and home care are increasingly adopting collation shrink films for packaging to protect products during shipping. Key players in the e-commerce sector often utilize collation shrink films for branding purposes due to their glossy finish and transparent nature.

Companies in the collation shrink film industry are focusing on increasing sustainability and

recyclability in their product offerings to comply with regulatory requirements. They are also investing in research and development to enhance product quality and safety.

However, the growing awareness of the harmful effects of plastics and concerns regarding climate change could potentially hamper market growth. Regions like North America and Europe have been updating their regulatory requirements for plastic-related material usage. Manufacturers are expected to adopt recyclability measures and use sustainable materials to navigate these challenges and ensure future growth.

India is poised to make significant strides in the South Asian collation shrink film market, with an anticipated 5.7% CAGR by 2024. The country's food sector, particularly the food service industry, is experiencing remarkable growth and is projected to continue thriving in the years to come. According to the India Brand Equity Foundation, the Indian food industry is set to expand from \$41 billion in 2022 to \$80 billion by 2028, representing an impressive annual growth rate of 11.2%.

This burgeoning food and beverage sector is driving demand for collation shrink film solutions in India. The implementation of stringent regulatory frameworks is prompting manufacturers and retailers to adopt safe and convenient packaging options such as collation shrink films. These films offer superior protection against contamination, moisture, and tampering, ensuring the quality and freshness of food and beverage products.

The United States is anticipated to dominate the North American collation shrink film market, with a projected value of \$1.2 billion by 2034, capturing over three-fifths of the regional market. The country's food sector has witnessed significant

growth, with sales soaring from \$697 billion in 2023 to \$701 billion in February 2024, according to the United States Census Bureau.

This growth can be attributed to the country's expanding population, rising disposable incomes, and evolving consumer preferences. Notably, organic and plant-based food segments have experienced remarkable sales growth, reflecting consumers' increasing inclination towards healthier and sustainable food options. Additionally, the surge in e-commerce sales has further contributed to the growth of the collation shrink film market in the

United States, as consumers increasingly turn to online platforms for their food and beverage purchases.

Germany's e-commerce industry is a significant revenue generator in Europe, renowned for its exceptional supply chain resilience and ability to attract key industrial leaders. The country's e-commerce sector demands sustainable, lightweight, and secure packaging solutions, driving the need for innovative options like collation shrink films. Germany's collation shrink film market is projected to reach \$206 million by 2034, growing at a steady CAGR of 1.8% over the forecast period.

The surge in e-commerce sales has further contributed to the growth of the collation shrink film market in the United States, as consumers increasingly turn to online platforms for their food and beverage purchases.

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