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# Stretch & Shrink Film

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US Industry Study with Forecasts for **2011 & 2016**

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*Continued requirements for product packaging, as well as the bundling and protection of goods during transportation and storage, will drive advances for stretch and shrink film demand.*

## US demand to rise 4.7% annually through 2011

Stretch and shrink film demand in the US is forecast to grow 4.7 percent annually to \$4.7 billion in 2011, requiring 3.2 billion pounds of resin. Value gains will decelerate from the 2001-2006 period, reflecting more moderate price increases following price spikes resulting from escalating feedstock costs since 2003. Advances will reflect continued requirements for product packaging, as well as the bundling and protection of goods during transportation and storage. Demand will also be supported by the popularity of club stores and other mass market retailers that utilize shrink wrap for multipack items, and pallet wrap for product warehousing.

## Stretch hoods to lead gains among stretch films

Stretch film demand is expected to reach \$2.7 billion in 2011, stimulated by increased manufacturing activity, and resin and processing improvements that heighten cost competitiveness. A weaker US dollar vis-a-vis other currencies is also stimulating export markets by making US goods more price competitive in international markets. Best growth is anticipated for stretch hoods, which are elastic film tubes used to wrap stacked pallets. Stretch hoods have higher throughput compared to other unitization methods, as well as energy and machinery cost advantages over shrink hoods.



## Shrink film to benefit from use in retail multipacks for mass retailers

Shrink film demand will expand to nearly \$2 billion in 2011. Advances will reflect the continued popularity of bulk purchasing and shrink film's rising use in the unitizing of multipacks for mass retailers. Shrink film provides a better seal and moisture barrier than stretch film, and is frequently used in tandem with corrugated trays as a case overwrap -- which provides greater product visibility as well as cost savings over corrugated boxes. Further shrink film advances will be constrained by the advantages offered by less energy- and equipment-intensive stretch films.

## Storage, distribution markets to grow the fastest

Product packaging will remain the leading market for stretch and shrink film, accounting for 56 percent of the total in 2011. Stretch and shrink film advances in this area will be predicated on the cost-effectiveness and source reduction capabilities of film compared to corrugated boxes and other types of packaging. However, better growth is anticipated for storage and distribution markets based on increased manufacturing and export activity, and subsequent expanded requirements for the bundling and protection of goods during warehousing and distribution.

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## Sample Text, Table & Chart

### TYPES

**Wrap** - Demand for stretch wrap in the US will rise in 2011, fueled by widespread use of stretch film in pallet unitization and bundling applications. Stretch wrap is an elastic film that is mechanically stretched like a wide rubber band. It is used to secure loads, so it is applied in plies and overwraps. Stretch wrap has a number of advantages over shrinking film, including superior elastic recovery as loads shift and change shape. Stretch wrap is also more cost effective than shrink wrap because less material is required to perform the same function. The market is being driven by downgauging, with more film layers economically allowing the use of high-end resins. Downgauging and the introduction of sophisticated coextruded film structures also make stretch film go farther. Metallocene films have up to twice the tear and puncture resistance of conventionally produced films.

Multi-layer stretch films exhibit a plywood effect, providing better strength and bonding power. In the US, the use of five to seven stretch layers dominates, allowing opportunities to hide any defects in the center layers from the inclusion of regrind, which has a higher gel and speck tendency than virgin material. Highly layered films only apply to cast stretch film for machine wrap. Blown stretch film for hand wrap more commonly has one to three layers of hexene/octene LLDPE blends with expensive cling additives that are not used in cast films.

Stretch wrap may be applied by manually pulling the film around the pallet or products or by using semi- or fully automatic machines that are part of automatic palletizing and conveying systems. The film is stretched to increase its yield and create a "rubber band" effect, which applies force to the load to keep it unitized throughout the material handling and distribution cycle. The latest machine technology can wrap

TABLE V-1

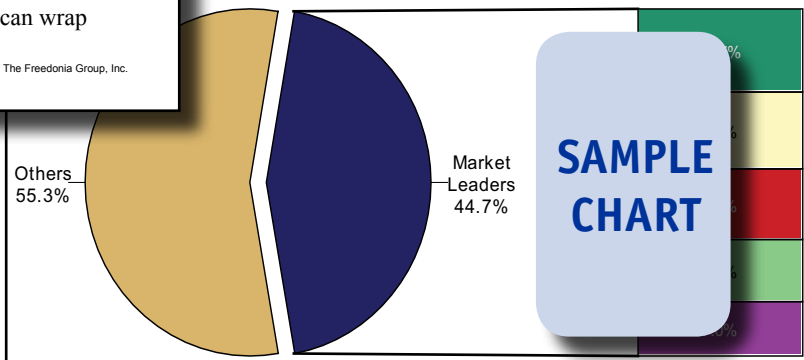
STRETCH & SHRINK FILM DEMAND BY RESIN  
(million pounds)

Item	1996	2001	2006	2011	2016
Plastic Film Demand	104	110	116	122	126
% stretch & shrink					18
Stretch & Shrink Film Demand					65
Low Density Polyethylene:					10
LLDPE					50
Conventional LDPE					60
Polyvinyl Chloride					40
Other					15
\$/lb					56
Stretch & Shrink Film (mil \$)	1720	2100	3135	4710	3870

SAMPLE  
TABLE

CHART VI-1

STRETCH & SHRINK FILM MARKET SHARE, 2006  
(\$3.7 billion)



SAMPLE  
CHART

## Sample Profile, Table & Forecast

### COMPANY PROFILES

#### Paragon Films Incorporated

3500 West Tacoma  
 Broken Arrow, OK 74012  
 918-250-3456  
<http://www.paragon-films.com>

Annual Sales:  
 Employment:

Key Products:  
 stretch films

Paragon is used for... and bundling applications.

The Company participates in the US stretch and shrink film industry through the production and marketing of stretch films in hand- and machine-wrap types. Hand-wrap stretch films are marketed under the EDGE and GLOBAL brand names. EDGE films feature enhanced stretch and load-holding properties, while GLOBAL films are engineered with high puncture resistance, toughness and cling.

Paragon's machine-wrap stretch films include GLOBAL and ULTIMATE FORCE products. Both lines of film are offered in one-side and two-side cling types. GLOBAL machine-wrap films feature enhanced tensile strength and puncture resistance, and are made in gauges ranging from 50 to 200 and widths up to 80 inches. ULTIMATE FORCE films are five-layer cast films that feature enhanced puncture resistance for product protection, as well as clarity for product identification. ULTIMATE FORCE films, which are intended for prestretch applications, are produced in 20- and 30-inch widths.



**TABLE IV-3**  
**FOOD MARKETS FOR STRETCH & SHRINK FILM**  
**BY TYPE & USE**  
**(million dollars)**

Item	1996	2001	2006	2011	2016
Food Shipments (bil \$)					73
\$ film/000\$ food shipments					6
Food Stretch & Shrink Film					2
By Type:					
Stretch					8
Shrink					4
By Use:					
Meat, Poultry & Seafood					1
Dairy					1
Fresh Produce					4
Other Food					6
% food					9
Stretch & Shrink Product Packaging					20



"Food markets for stretch and shrink film are expected to expand 3.2 percent annually to \$1.1 billion in 2011, accounting for 40 percent of all product packaging films. Stretch film is dominant in food markets due to the widespread use of PVC film in meat, poultry and seafood packaging. Better growth, however, is anticipated for dairy products in light of health concerns over cholesterol problems associated with red meat consumption. Shrink film is widely used in ..."  
 --Section IV, pg. 86

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Credit Card #

MM	YY

Expiration

Signature \_\_\_\_\_

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Title \_\_\_\_\_

Company \_\_\_\_\_

Division \_\_\_\_\_

Street \_\_\_\_\_  
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**OTHER STUDIES**

**Converted Flexible Packaging**

US converted flexible packaging demand will grow 4.2% annually through 2011. Gains will be driven in part by advantages over most rigid packaging and by developments in breathable and self-venting films and resealable features. Pouches will be the fastest growing type while bags remain the largest segment. This study analyzes the \$13.4 billion US converted flexible packaging industry, with forecasts for 2011 and 2016 by material, product and market. It also evaluates market share and profiles major players.

#2275 ..... 11/2007..... \$4600

**Flexible Bulk Packaging**

US demand for flexible bulk packaging will grow 3.4% yearly through 2011. Film wrap, plastic strapping and plastic shipping sacks will lead gains. Plastic such as polyethylene will remain the dominant material, with the limiting effect of downgauging softened by new applications and further inroads on paper sacks. This study analyzes the \$6.1 billion US flexible bulk packaging industry, with forecasts for 2011 and 2016 by material, product and market. It also details market share and profiles major players.

#2238 ..... 09/2007..... \$4500

**Active & Intelligent Packaging**

US demand for active and intelligent packaging will grow 13% yearly through 2011. Intelligent packaging will grow the fastest, driven by the emergence of lower cost time-temperature indicator (TTI) labels. Active packaging will be paced by gas scavengers. Pharmaceuticals, beverages and food will offer the best market prospects. This study analyzes the US active and intelligent packaging industry, with forecasts for 2011 and 2016 by product and market. It also details market share and profiles major players.

#2236 ..... 08/2007..... \$4400

**Food Containers: Rigid & Flexible**

US food container demand will reach \$23.5 billion in 2011. Growth trends include heightened demand for more convenient foods and a shift toward value-added packaging. Plastic containers, and bags and pouches will log the fastest growth. Meat and dairy products and frozen specialties will lead gains by market. This study analyzes the 263 billion unit US food container industry, with forecasts given for 2011 and 2016 by product and market. It also evaluates company market share and profiles major players.

#2208 ..... 07/2007..... \$4500

**World Pressure Sensitive Tapes**

The global market for pressure sensitive adhesive (PSA) tapes will grow 4.7% yearly through 2010. Demand will benefit from a firming global economy and advantages over other joining, sealing and bonding methods. Corrugated carton sealing tapes will remain dominant while technical and specialty tapes grow the fastest. This study analyzes the \$20.5 billion world PSA tape industry to 2010 and 2015 by type, material, world region and for 23 countries. It also evaluates market share and profiles 42 players.

#2169 ..... 03/2007..... \$5500

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