

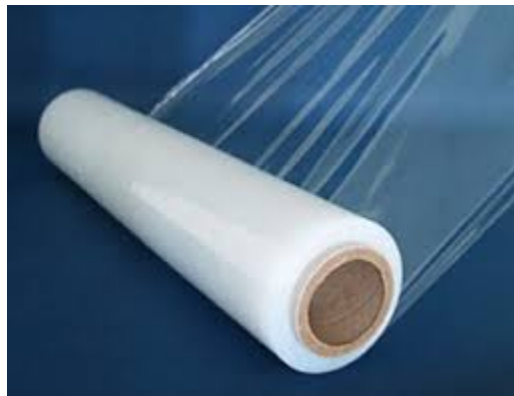


# PROSPECTUS

## POLYETHYLENE FILM MARKET ANALYSIS, VALUE-IN-USE, & TECHNOLOGIES

11<sup>TH</sup> EDITION

PUBLISHED MARCH 2020



# **\*\*Polyethylene Film Market Study 11th Edition\*\***

## *Highlights*

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- Published in March 2020. Includes a two-volume 700-page book set and an electronic version available in Excel and Adobe Acrobat formats.
- Interviews were conducted with hundreds of companies throughout North America.
- The study is divided into four major market categories: (1) Food Packaging; (2) Industrial Packaging; (3) Retail Packaging; and (4) Nonpackaging.
- The study includes an executive summary along with detailed data on 33 separate end-use markets.

### **Every chapter for each end-use market will provide in-depth coverage on the following topics:**

- Market size by total resin consumption and by resin type.
- Major processors and their locations.
- Total resin consumption and growth rates for each PE film extruder by market/chapter.
- Value-in-use analysis depicting the average selling price, which includes the margin, overhead and other costs related to manufacturing the various products.
- Detailed information on the factors that affect the growth or decline of each market provided in an Excel spreadsheet by market/chapter. (i.e. economy, material substitution, government regulations, environmental issues, technological trends, imports, shift of production from USA to foreign countries, mergers & acquisitions, NAFTA and other world trade issues, etc.)
- Growth rate comparison between the anticipated market growth and the anticipated processor growth per end-use markets. Where there is a difference, there will be qualitative data explaining the difference.
- 2019 capacity utilization and projected capacity utilization in 2020.
- What are the favorite resin(s) you use for polyethylene film extrusion? Who supplies the resin and why is it a favorite?
- What is your involvement in the solutions for sustainability within your organization?
- Do you believe the additional PE resin capacity coming online in the next few years will help you grow your business?
- Is there anything we didn't ask that we should have? Please elaborate.

## Selected Exhibits

**Total resin by type consumed for Polyethylene Film in U.S. and Canada for 2019 and projected for 2022 in MM lbs.**

	2019	2022
<b>Resin</b> ( <i>Sample list of resins</i> )	<b>Consumption</b> (MM lbs.)	<b>Consumption</b> (MM lbs.)
LLDPE (linear low density polyethylene)		
LLDPE-hexene		
LLDPE-butene		
LLDPE-octene		
LLDPE-metallocene		
<b>Total LLDPE</b>		
LDPE (low density polyethylene)		
LDPE-homopolymer		
LDPE-EVA (ethylene vinyl acetate) copolymer		
LDPE-EAA (ethylene acrylic acid) copolymer		
LDPE-EMA (ethylene methyl acrylate) copolymer		
<b>Total LDPE</b>		
HDPE (high density polyethylene)		
HMW-HDPE (high molecular weight)		
MMW-HDPE (medium molecular weight)		
<b>Total HDPE</b>		
MDPE (medium density polyethylene)		
PCR (post consumer resin)		
UHDPE (ultra high density polyethylene)		
ULDPE (ultra low density polyethylene)		
<b>GRAND TOTAL</b>		

Source: Mastio & Company Polyethylene Film Market Study

**Total resin consumption for 33 end-use markets for polyethylene film resins in U.S. and Canada for 2019 and projected for 2022 in MM lbs.**

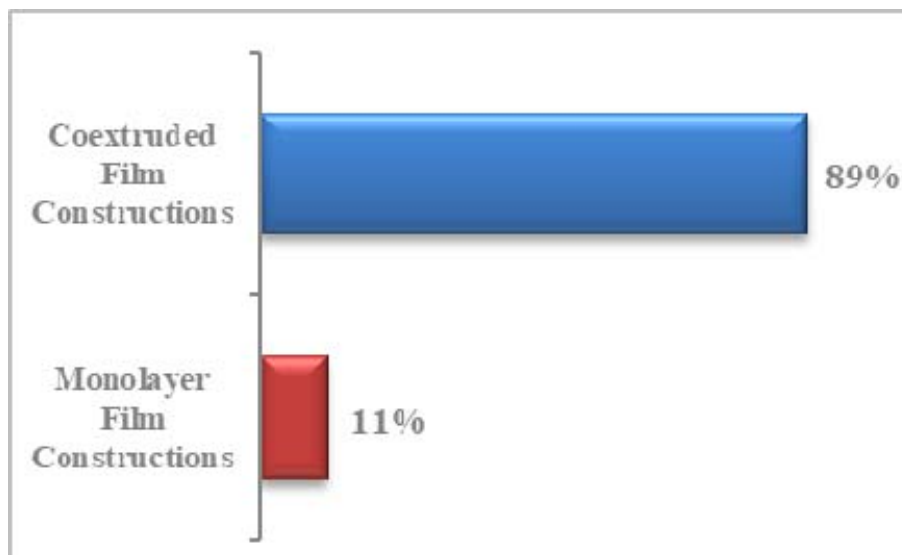
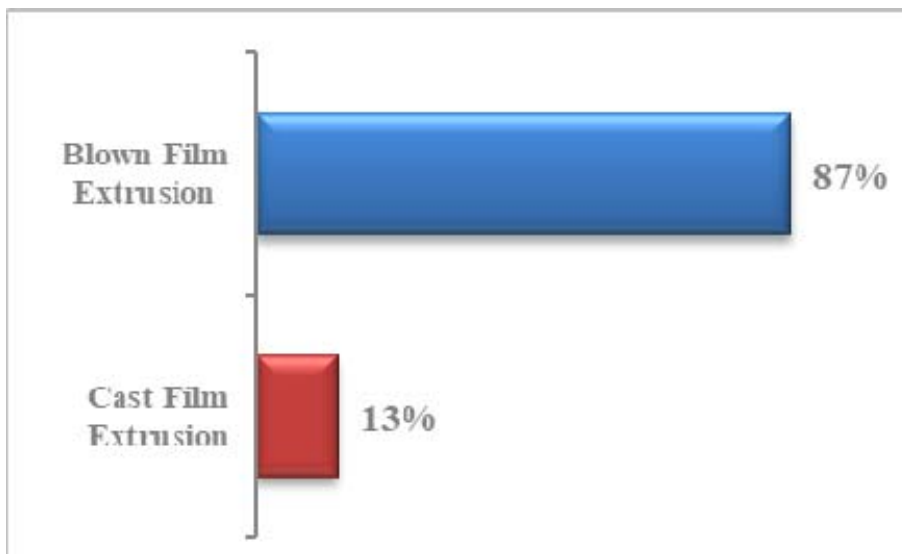
<b>TOTAL NORTH AMERICAN PE RESIN CONSUMPTION 2019 AND 2022</b>					
<b>Chapter</b>	<b>Market</b>	<b>2019 Consumption (MM lbs.)</b>	<b>2022 Consumption (MM lbs.)</b>	<b>AAGR 19-22 AAGR %</b>	<b>Growth/Decline 2019-2022 (MM lbs.)</b>
2	Baked Goods				
3	Meat & Poultry				
4	Fresh Produce and Self-Serve & Wet-Pack Bags				
5	Bag-In-Box				
6	Candy Packaging				
7	Deli Bags & Wrap				
8	Carton Liners & Slug Wrap				
9	Frozen Food				
10	Snack Food Packaging				
11	Cheese Packaging				
<b>Food Packaging Subtotal</b>					
12	Consumer & Industrial Product Liners				
13	Stretch Film				
14	Shrink Film				
15	Heavy Duty Sacks				
16	Sheet & Tubing				
17	Bubble Packaging				
18	Multi-Wall Sacks				
<b>Industrial Packaging Subtotal</b>					
19	Consumer Trash Bags				
20	Merchandise Bags				
21	Household Bags & Wrap				
22	Laundry, Dry Cleaning, Garment Bags				
23	T-Shirt Bags				
24	Pouches				
25	Paper and Personal Overwrap				
<b>Retail Packaging Subtotal</b>					
26	Institutional Trash Bags				
27	Construction Film				
28	Geomembrane Lining Systems				
29	Juvenile & Adult Hygiene Film				
30	Medical Film & Packaging				
31	Agricultural Film				
32	Drop Cloths, Tarps and Covers				
33	Envelope & Magazine Overwrap				
34	Miscellaneous				
<b>Nonpackaging Subtotal</b>					
<b>Grand Total</b>					

Source: Mastio & Company Polyethylene Film Market Study



**Breakdown of resin consumption by process type.**

	2019		2017
	Consumption (MM lbs.)	Market Share (%)	Market Share (%)
<b>Film Extrusion Process</b>			
Blown Film Extrusion	529.4	86.9	88.4
Cast Film Extrusion	79.6	13.1	11.6
<b>Totals</b>	<b>609.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Coextruded Film Constructions</b>			
Coextruded Film Constructions	543.2	89.2	79.9
Monolayer Film Constructions	65.8	10.8	20.1
<b>Totals</b>	<b>609.0</b>	<b>100.0</b>	<b>100.0</b>



**Detailed listing of participants and their location.**

<b>Company</b>	<b>Location</b>
Company A	Van Buren, Arkansas
Company B	Oshkosh, Wisconsin
Company C	St. Louis, Missouri
Company D	Paris, Illinois
Company E	Elyria, Ohio
Company F	Jacksonville, Florida

**Capacity Utilization –provided in the electronic edition.**

<b>Processor</b>	<b>Current Utilization 2019</b>	<b>Anticipated Utilization 2020</b>	<b>Reason for increase or decline</b>
Company A	50%	75%	
Company B	80%	70%	
Company C	75%	80%	
Company D	75%	95%	
Company E	63%	70%	
Company F	93%	87%	

**What are the favorite resins that you use for PE film extrusion and who supplies them to you? – included in the electronic edition.**

<b>Resin Supplier</b>	<b>Why is this resin a favorite of yours?</b>

## Resin consumption, market share, and AAGR by resin type, 2019 and 2022

Resin	2019		2022		2019-2022 AAGR (%)
	Consumption (MM lbs.)	Market Share (%)	Consumption (MM lbs.)	Market Share (%)	
mLLDPE	128.3	20.4	146.4	20.7	4.4
LLDPE-octene	98.6	15.7	110.7	15.6	3.9
LLDPE-hexene	88.4	14.1	94.5	13.3	2.2
LLDPE-butene	51.9	8.3	56.6	8.0	2.9
LLDPE-super hexene	28.5	4.5	33.0	4.7	5.0
<b>Total LLDPE</b>	<b>395.7</b>	<b>62.9</b>	<b>441.2</b>	<b>62.3</b>	<b>3.7</b>
LDPE-homopolymer	61.7	9.8	73.4	10.4	5.9
LDPE-EVA copolymer	39.3	6.2	42.4	6.0	2.5
LDPE-EAA copolymer	22.9	3.6	26.3	3.7	4.6
<b>Total LDPE</b>	<b>123.9</b>	<b>19.7</b>	<b>142.1</b>	<b>20.1</b>	<b>4.6</b>
HMW-HDPE	14.4	2.3	16.9	2.4	5.4
MMW-HDPE	4.8	0.8	5.2	0.7	2.8
<b>Total HDPE</b>	<b>19.2</b>	<b>3.1</b>	<b>22.1</b>	<b>3.1</b>	<b>4.8</b>
EVOH	29.4	4.7	32.8	4.6	3.7
Nylon	22.7	3.6	26.9	3.8	5.8
PVDC	18.7	3.0	20.7	2.9	3.3
VLDPE	17.6	2.8	19.5	2.8	3.4
Tie-resin	0.9	0.1	1.7	0.2	22.6
MDPE	0.8	0.1	1.1	0.2	9.9
<b>GRAND TOTAL</b>	<b>628.9</b>	<b>100.0</b>	<b>708.0</b>	<b>100.0</b>	<b>4.0</b>

Alphabetical listing of polyethylene film processors by total resin consumption for each of the 33 end-use markets.

Polyethylene Film Processors and their Primary Markets														
Company	Total Resin Use (MM lbs.)	Market Amounts in MM lbs.												
		2	3	4	5	6	7	8	9	10	11	12	13	14
Company A	91.6	0.6				1.0								
Company B	72.2									0.8	0.4			0.8
Company C	2.7	0.7					0.2	0.2	0.2					
Company D	55.0													
Company E	11.2												0.2	
Company F	5.3													
Company G	71.5													
Company H	55.9											5.9		
Company I	22.0				0.3			0.4		0.1				
Company J	82.0							2.0						
Company K	170.1		168.3	0.9	0.9									
Company L	7.0		1.9											
<b>GRAND TOTAL</b>	<b>xx</b>	<b>xx</b>	<b>xx</b>	<b>xx</b>	<b>xx</b>	<b>xx</b>	<b>xx</b>	<b>xx</b>	<b>xx</b>	<b>xx</b>	<b>xx</b>	<b>xx</b>	<b>xx</b>	<b>xx</b>

Source: Mastio & Company Polyethylene Film Market Study



**Listing of PE Film extruders by total resin consumption (largest to smallest).**

<b>Exhibit</b>	
<b>2019 PE FILM ANNUAL CONSUMPTION BY COMPANY</b>	
Note: Multi-divisional companies have been listed separately along with their parent company in brackets.	
<b>Company</b>	<b>Quantity (MM lbs.)</b>
Company A	1,275.0
Company B	702.0
Company C	601.8
Company D	600.0
Company E	540.0
Company F	484.0
Company G	458.9
Company H	412.1
Company I	402.8
Company J	385.2
Company K	382.0
Company L	360.0
Company M	320.0
Company N	319.6
Company O	315.0
Company P	310.5
Company Q	300.2
Company R	300.0
Company S	274.9
Company T	230.2
Company U	213.5
Company V	209.0
Company W	181.5
Company X	175.0
Company Y	168.0
Company Z	166.8

Source: Mastio & Company Polyethylene Film Market Study