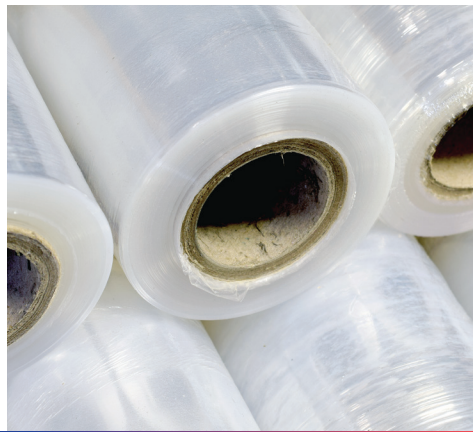


Film, Extrusion Coating & Geomembrane Products



Performance by design.
Caring by choice.™

Marlex® Polyethylene

Chevron Phillips Chemical produces a variety of polyethylene products. These products are designed to meet the needs of a wide range of flexible packaging applications, such as blown and cast films, extrusion coating, laminations and more.

Polyethylene	Attributes	Applications
METALLOCENE	Superior Toughness, Improved Optics	High Clarity; Coextrusion
HIGH DENSITY	Low Moisture and Gas Permeability, Higher Softening Temperature, Chemically Resistant	Liner Films - Cereal, Crackers; Grocery Bags; Extrusion Coating
LOW DENSITY	Processibility, Clarity, Low Temperature Sealing, Good Shrink Properties	Bakery; Shrink Film; Coex Films (seal layer); Extrusion Coating
LINEAR LOW DENSITY	Improved Toughness, Higher Tensile Strength	Trash Bags; Industrial Liners
MEDIUM DENSITY	Processibility, Stiffness	Heavy Bags; Industrial Films

Film & Extrusion Coating Products

Chevron Phillips Chemical offers a full range of innovative film & extrusion coating products designed to meet the most challenging customer needs. With multiple manufacturing platforms, you can count on our leading-edge technologies and application development expertise when selecting the right material for your application. If you're in need of polyethylene, we have the right product for you.

Cast Film

The cast film process differs dramatically from the blown film process primarily due to the fast quench cooling of the chill roll. This fast quench is responsible for the unidirectional orientation characteristics of cast film. These characteristics allow a cast film line to operate at higher production rates, while producing amazing optics. Applications in food and retail packaging take advantage of these strengths. The products below are our solutions to your cast film application needs.

Product	MI	Density	Slip	Antiblock	PPA	Applications
HDPE - CAST FILM						
9608XD	8.0	0.962	0	0	Yes	Food & Retail Packaging
METALLOCENE - CAST FILM						
D173	3.5	0.918	0	0	No	Stretch Film
D174	4.5	0.918	0	0	No	Stretch Film
LLDPE - CAST FILM						
7120X	2.0	0.919	0	0	No	Food & Retail Packaging
7120B	2.0	0.919	1000	0	No	Food & Retail Packaging

Product	MI	Density	Slip	Antiblock	PPA	Applications
LDPE - CAST FILM						
1122	2.1	0.920	0	0	No	General Purpose Packaging
4571	4.1	0.924	0	0	No	Personal Care
5428	2.2	0.930	1000	10000	No	Converter Film, Bakery Bag
5429	2.2	0.930	600	10000	No	Converter Film, Bakery Bag
5430	2.2	0.925	0	0	No	Overwrap & Converter Film
5440	2.2	0.925	1000	0	No	Overwrap & Converter Film



In addition to a wide variety of traditional film resins, Chevron Phillips Chemical is pleased to offer Marlex® metallocene resins. These products combine the characteristically superior strength and sealability of metallocenes with unprecedented optics. Marlex® resins have the lowest haze and highest gloss across a variety of densities compared to other competitive products.

Blown Film

The blown film process is the most diverse conversion system used for polyethylene. ASTM defines films as less than 0.254 mm (10 mils) in thickness. Monolayer and multilayer coextrusion technologies lay the groundwork for finding the right products for the application. The blown film process allows some control of properties such as clarity, toughness, and strength via process conditions and resin type. Our highly experienced technical support team can help customers define the blown film processing conditions needed to optimize performance, while our world-class sales and marketing team can assist customers with resin selection and provide other valuable customer services. The products below are our solutions to your blown film application needs.

Product	MI	HLMI	Density	Slip	Antiblock	PPA	Applications
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HMW-HDPE - BLOWN FILM

TRB-115	0.06	9.5	0.950	0	0	No	Blown Film
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Product	MI	Density	Slip	Antiblock	PPA	Applications
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HDPE - BLOWN FILM

9656	0.75	0.956	0	0	No	General Purpose Packaging
9659	1.0	0.962	0	0	No	Food & Retail Packaging (WVTR)

Product	MI	Density	Slip	Antiblock	PPA	Applications
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MDPE - BLOWN FILM

TR-130	0.3	0.937	No	No	No	Food & Retail Packaging
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Product	MI	Density	Slip	Antiblock	PPA	Applications
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METALLOCENE - BLOWN FILM

D139	1.0	0.918	0	0	Yes	Blown Film
D139DK	1.0	0.918	0	5000	Yes	Blown Film
D139FJ	1.0	0.918	1000	2500	Yes	Blown Film
D139FK	1.0	0.918	1000	5000	Yes	Blown Film
D143	1.4	0.916	0	0	Yes	Blown Film
D143FK	1.4	0.916	1000	5000	Yes	Blown Film
D163	0.9	0.914	0	0	Yes	Blown Film
D170DK	0.9	0.923	0	5000	Yes	Blown Film
D350	0.9	0.933	0	0	Yes	Blown Film

Product	MI	Density	Slip	Antiblock	PPA	Applications
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LLDPE - BLOWN FILM

7105D	0.5	0.918	0	0	Yes	Industrial Packaging
7109	0.9	0.918	0	0	No	Blown Film
7109DJ	0.9	0.918	0	2500	Yes	Blown Film
7109DL	0.9	0.918	0	7500	Yes	Blown Film
7109FJ	0.9	0.918	1000	2500	Yes	Blown Film
7109M	0.9	0.918	1600	6500	No	Blown Film
7120X	2.0	0.919	0	0	No	Food & Retail Packaging
7120B	2.0	0.919	1000	0	No	Food & Retail Packaging
7308DK	0.8	0.925	0	3000	Yes	Industrial Packaging
7308FK	0.8	0.925	1200	3500	Yes	Industrial Packaging

Product	MI	Density	Slip	Antiblock	PPA	Applications
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LDPE - BLOWN FILM

1122	2.1	0.920	0	0	No	Industrial Packaging
5335	2.0	0.926	750	2750	No	Food & Retail Packaging
5561	1.3	0.925	0	3000	No	Food & Retail Packaging
5563	1.3	0.925	850	3500	No	Food & Retail Packaging
5613	0.5	0.923	0	6000	No	Industrial Packaging
5619	0.4	0.922	400	1500	No	Industrial Packaging
5754	0.8	0.925	625	2500	No	Food & Retail Packaging
5755	0.8	0.925	0	3000	No	Food & Retail Packaging

Extrusion Coating & Lamination

With more than 50 years experience in the extrusion coating and lamination industry, Chevron Phillips Chemical is one of the leading North American suppliers of extrusion coating polyolefin products. Marlex® polyethylene extrusion coating products are designed to meet the challenging processing demands of extrusion coating and are optimized to provide minimal neck-in with maximum draw properties and excellent adhesion to a wide variety of substrates. The products below are our solutions to your extrusion coating application needs.

Product	MI	Density	Slip	Antiblock	PPA	Applications
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LDPE - EXTRUSION COATING & LAMINATION

1017	7.0	0.917	0	0	No	Minimal Neck-In Extrusion & Lamination Grade
1018	8.0	0.917	0	0	No	Minimal Neck-In Extrusion & Lamination Grade
1013	13.0	0.917	0	0	No	Medium Drawdown Designed for Med. Ct. Wt
1019	16.0	0.917	0	0	No	Maximum Drawdown Designed for Low Ct. Wt.
4517	5.1	0.923	0	0	No	General Purpose & Board Coating

Product	MI	Density	Slip	Antiblock	PPA	Applications
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HDPE - EXTRUSION COATING & LAMINATION

9608XD	8.0	0.962	0	0	Yes	Board Coating & Flexible -HDPE Blend Component
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Notes: MI = g/10 min, Density = g/cc, Slip/Antiblock = ppm



Geomembrane

As the innovation leader in polyethylene geomembrane resins, Chevron Phillips Chemical offers a complete portfolio of LLDPE and MDPE grades designed to meet or exceed the demanding requirements of geomembrane applications in round and flat die processes.

PRODUCT	MI	HLMI	DENSITY	TYPE	APPLICATION
PREMIUM GEOMEMBRANE RESINS					
7104	0.35		0.919	LLDPE	Covers
K306		12.0	0.937	MDPE	Liners
K307		21.0	0.937	MDPE	Liners

Notes: MI = g/10 min, Density = g/cc

Technical Support

Chevron Phillips Chemical provides support to customers using fabrication and lab equipment available in the Bartlesville Technology Center. These resources include fabrication facilities for extrusion coating & laminating, blown film and cast film. This equipment allows our customers to screen various packaging concepts and structures for application development before using valuable commercial production line time. Our equipment is capable of both single-layer and co-extrusion, slitting, and surface treatment. We offer additional laboratory support to our customer base with analytical and physical testing tailored to the packaging and geomembrane industry. Contact your sales or technical service representative for details and scheduling opportunities.

Fabrication

Film

- Blown film (3-layer coextrusion)
- Cast film (5-layer coextrusion)

Extrusion Coating & Lamination

- 1 - 5 layer coextrusion
- Secondary unwind
- Various chill roll finishes

Testing

Resin

- GPC
- Rheology
- Structure

Film and Coating

- Optics
- Surface
- Barrier
- Mechanical
- Strength
- Structural

Geomembrane

- HP-OIT and OIT
- SP-NCTL
- ESCR
- Puncture
- UV-aging



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For more information about these and other products, call 800-231-1212. Safety and Technical Data Sheets available online at www.cpchem.com/polyethylene