



Novel HDPE product for machine direction oriented (MDO) polyethylene films



Designed
for recyclability*



Excellent optical
properties



Outstanding
mechanical properties

ExxonMobil has developed its latest innovation in high-density polyethylene; ExxonMobil™ HD7165L for Machine Direction Oriented (MDO) PE film applications. Development of HD7165L has been driven by market demand from brand owners and processors seeking all-PE packaging, which has created a need for print webs made of blown MDO-PE films. Designed for recyclability, HD7165L enables the production of mono-material laminates to replace multi-material laminate structures, which can be difficult to recycle.

Capabilities

HD7165L enables converters to produce blown MDO-PE films with:

HDPE-rich structures:

- As much as 60-70% HDPE

High-output rates:

- As much as 400kg/hr or higher while bubble stability is maintained

High MDO stretch ratios:

- As much as 6:1 or 7:1

Very high stiffness:

- 1% secant modulus as high as >200 kpsi

Excellent optical properties:

- Haze as low as <10%
- Gloss as high as >60%

Applications

The platform is well suited for mono-material laminated packaging used for nuts, crackers, condiments, granola bars, potato chips, and more.

HDPE for print web of a PE-PE laminate

Main attributes:

- Heat resistance
- Stiffness (lack of extensibility)
- Printability
- Optical properties

Blown MDO-PE:

- High, uniform orientation
- Gauge stability
- Easy processability
- Low gels

Processability:

Compared to a reference HDPE with a density of 0.962 g/cm³, HD7165L 0.961 g/cm³ delivers:

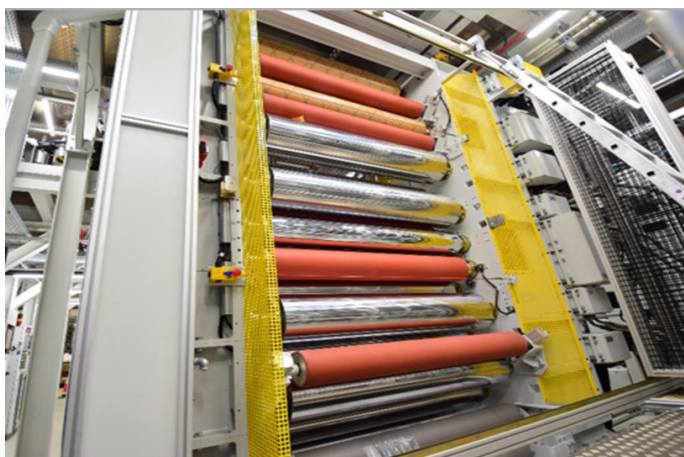
- Better shear thinning behaviour and better extrudability
- Higher melt strength enabling bubble stability
- Excellent orientability and gauge uniformity

Property	Blown MDO film #1	Blown MDO film #2
HDPE resin	HD7165L	HD7165L
MDO stretch ratio	6:1	7:1
Output (kg/hr)	250	400
Avg. gauge (mil)	1.02	0.99
1% secant modulus-MD (kpsi)	208	245
Total haze (%)	8.6	7.5
45° gloss-MD (%)	67	74
Elmendorf tear-MD (g)	105	228
Puncture peak force (lbf)	10.7	10.5

Data from tests performed by or on behalf of ExxonMobil

HD7165L-based MDO-HDPE film provides:

- Low neck in for MDO-PE films
- Gauge uniformity
- 1% secant modulus > 200,000 psi
- Total haze <10%; Gloss >60%



Why ExxonMobil PE? Why today?

tomorrow's
performance
today

What some might view as solutions that will only happen in the future, ExxonMobil PE is making possible today – through our innovative and reliable products, collaborative approach, technology leadership and support, and our unmatched global supply and resources. Why wait for tomorrow to advance your business today? Contact your ExxonMobil PE representative and begin experiencing tomorrow's performance today in your MDO-PE films.

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