



Introducing LUCENE™ POP for Stretch hood

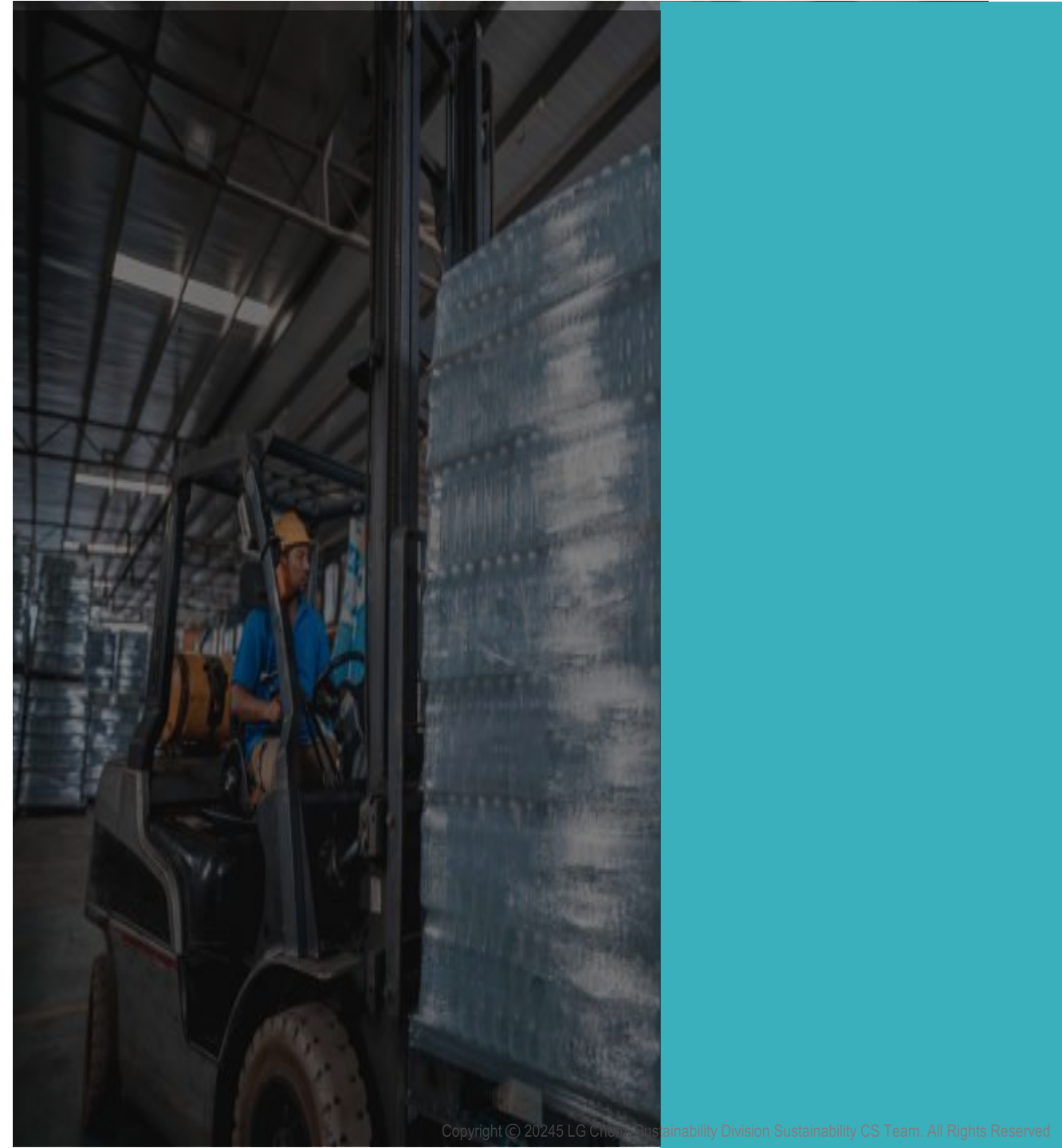
Best Quality through Technology Service

We, LG Chem Sustainability Business Unit, Provide Our Customers with Maximum Satisfaction



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Advantages of LUCENE™ POP/POE For Stretch hood

Property

Palletizing film

1 High Elasticity & Good holding force

2 Excellent Toughness
Puncture, Impact strength

3 Outstanding Transparency
More clearly visible

4 All PE Hood Formulation

1 Beverages, Water

2 Petrochemical raw material

3 Building material
Brick, Cement

LUCENE™

Introduction

Grades

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Grade Line-up

【 POE Grade 】

Grade		MI	Density	Tensile Strength	Elongation	Hardness (Shore A)	Melting Point
Test Method (ASTM)		D1238	D1505	D638	D638	D2240	LG method
Unit		g/10min	g/cm3	MPa	%	-	°C
EOR (Ethylene-Octene-Rubber)	LC170	1.1	0.870	9.0	>800	71	58
	LC180	1.2	0.885	28.0	>800	86	73
	LC100	1.2	0.902	38.0	>600	91	100

【 POP Grade 】

Grade		MI	Density	Tensile Strength		Elongation		EL Tear Strength		Melting Point
				MD	TD	MD	TD	MD	TD	
Test Method (ASTM)		D1238	D1505	D882	D882	D882	D882	D1922	D1922	LG method
Unit		g/10min	g/cm3	MPa	MPa	%	%	kgf/mm	kgf/mm	°C
EOR (Ethylene-Octene-Rubber)	LF100 (A)	1.2	0.902	49.0	46.0	540	640	11.5	15.5	98

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Grades

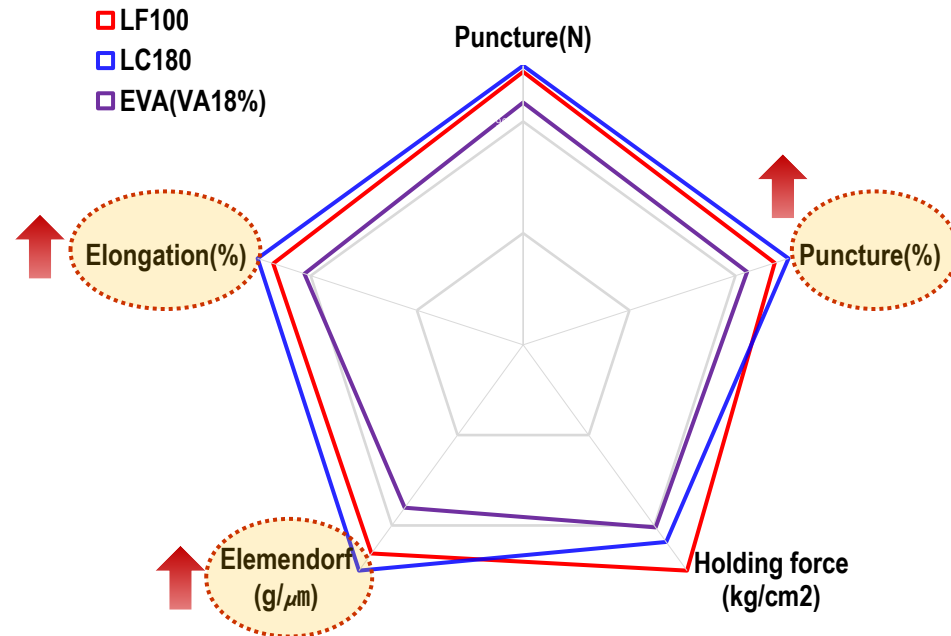
Properties

Application

Value Proposition

LUCENE™ POE/POP have a **Toughness & High Elasticity & Good holding force**

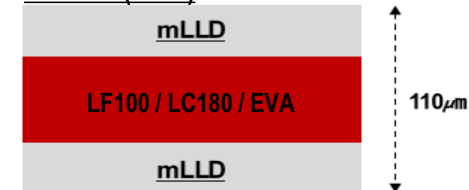
High Elasticity & Toughness



For packaging where elasticity & toughness are important, we recommend low-density elastomer products.

For packaging where holding force is important, we recommend plastomer products in the core layer.

Test film(1:3:1)



LUCENE™

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LUCENE™ POE/POP can significantly **Enhance Transparency** of film

LUCENE™

Introduction

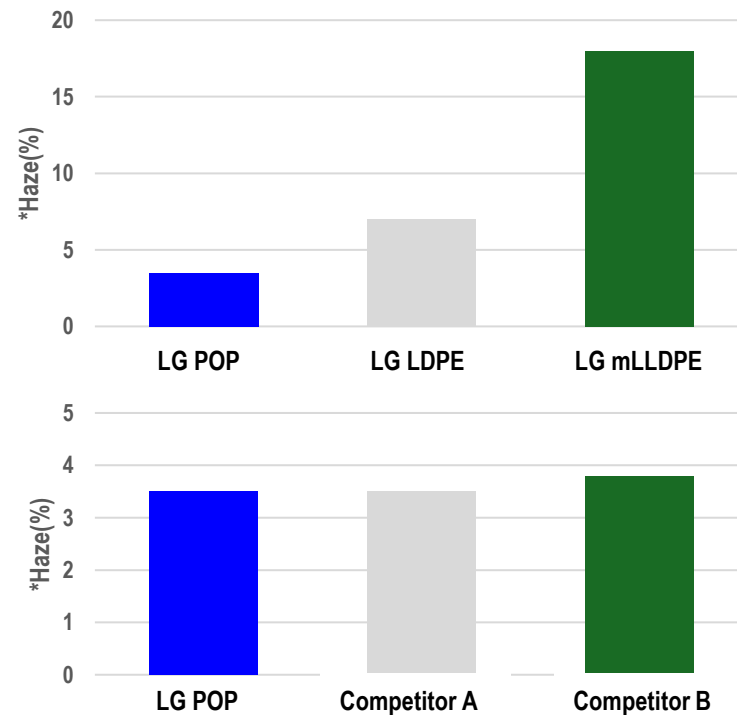
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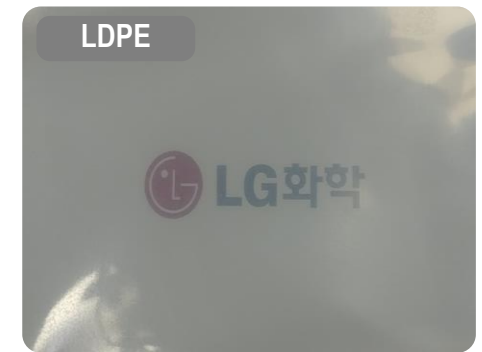
Transparency



* Measured on 50 μ m

LG POP has Superior transparency and gloss compared to LLD/LDPE

→ Adding POP content can improve the transparency of the film, making it ideal for applications where clarity is crucial



Representative formulation for **Stretch hood film(Holding force)**

LG Chem can provide all material and suggest the optimal design for Stretch hood film

Outer	20 μ m	XM3108 (90%) + LDPE (10%)
	20 μ m	XM3108 (40%) + LF100 (60%)
	30 μ m	XM3108 (40%) + LF100 (60%)
	20 μ m	XM3108 (40%) + LF100 (60%)
Inner	20 μ m	XM3108 (90%) + LDPE (10%)

Outer	25 μ m	XM3108 (90%) + LDPE (10%)
	20 μ m	XM3108 (40%) + LF100 (60%)
	20 μ m	XM3108 (40%) + LF100 (60%)
	20 μ m	XM3108 (40%) + LF100 (60%)
Inner	25 μ m	XM3108 (90%) + LDPE (10%)

Superior Mechanical Properties **High Stretching Packaging**

Superior Mechanical Properties **Medium Stretching Packaging**

Cost Down **Low Stretching Packaging**

Superior Mechanical Properties **Good Sealing Properties**



Outer	25 μ m	XM3108 (90%) + LDPE (10%)
	10 μ m	XM3108 (50%) + UF1001 (50%)
	40 μ m	XM3108 (40%) + LF100 (60%)
	10 μ m	XM3108 (50%) + UF1001 (50%)
Inner	25 μ m	XM3108 (90%) + LDPE (10%)

Outer	20 μ m	XM3108 (90%) + LDPE (10%)
	20 μ m	XM3108 (40%) + LF100 (60%)
	30 μ m	XM3108 (40%) + LF100 (60%)
	20 μ m	XM3108 (40%) + LF100 (60%)
Inner	20 μ m	XM5137 (90%) + LDPE (10%)

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Representative formulation for **Stretch hood film(Puncture, Stretchable)**

LG Chem can provide all material and suggest the optimal design for Stretch hood film

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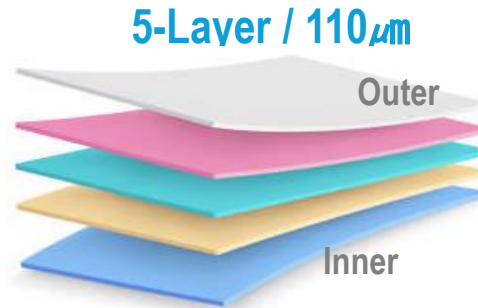
Value Proposition

Outer	
25μm	XM3108 (90%) + LDPE (10%)
20μm	XM3108 (40%) + LC170, 180 (60%)
20μm	XM3108 (40%) + LC170, 180 (60%)
20μm	XM3108 (40%) + LC170, 180 (60%)
25μm	XM3108 (90%) + LDPE (10%)
Inner	

Superior Mechanical properties **High stretching packaging**

Cost Down **Low Stretching Packaging**

Outer	
25μm	XM3108 (90%) + LDPE (10%)
10μm	XM3108 (50%) + <u>UF1001</u> (50%)
40μm	XM3108 (40%) + LC170, 180 (60%)
10μm	XM3108 (50%) + <u>UF1001</u> (50%)
25μm	XM3108 (90%) + LDPE (10%)
Inner	



[Additive Formulation for Inner layer]
 ① Silp agent : 500 ~ 1,000ppm
 ② Anti-blocking : 2,500 ~ 3,500ppm

Outer	
27μm	XM3108 (90%) + LDPE (10%)
18μm	XM3108 (40%) + LC170, 180 (60%)
20μm	XM3108 (40%) + LC170, 180 (60%)
18μm	XM3108 (40%) + LC170, 180 (60%)
27μm	XM3108 (90%) + LDPE (10%)
Inner	

Superior Mechanical properties **Medium stretching packaging**

Superior Mechanical properties **Good Sealing properties**

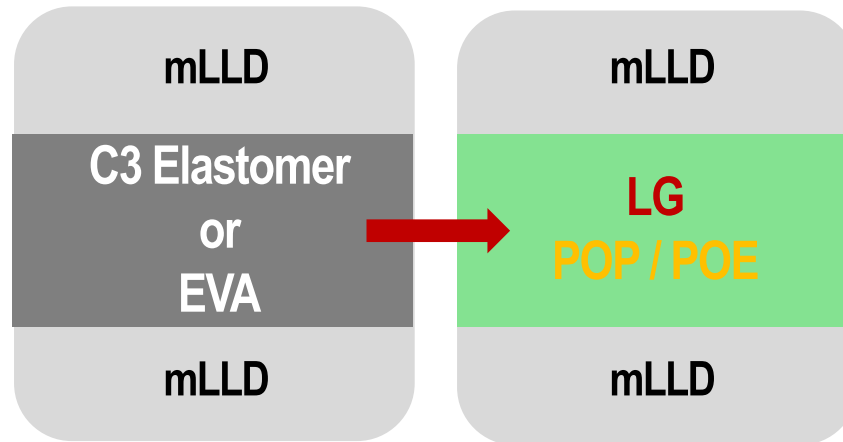
Outer	
25μm	XM3108 (90%) + LDPE (10%)
20μm	XM3108 (40%) + LC170, 180 (60%)
20μm	XM3108 (40%) + LC170, 180 (60%)
20μm	XM3108 (40%) + LC170, 180 (60%)
25μm	<u>XM5137</u> (90%) + LDPE (10%)
Inner	

LG Chem can provide all raw materials used in **All-PE stretch hood formulation** for sustainability

All-PE Stretch hood formulation

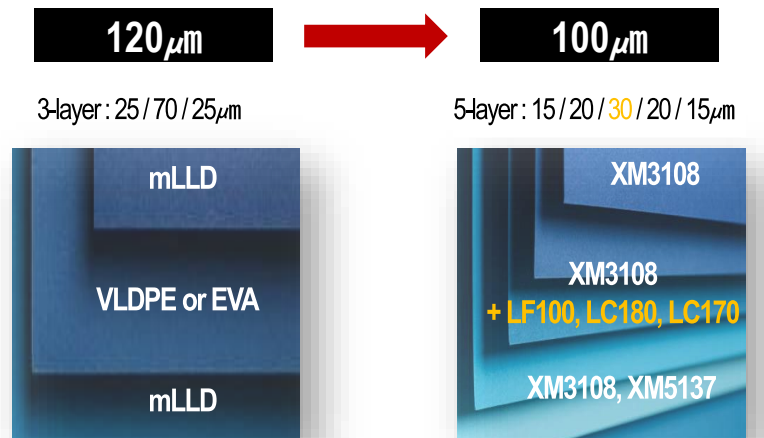
Recyclable

Compared to C3 elastomers or EVA, the film is easier to recycle



Down-gauging

Blending LG POP/POE and XM series in multiple layers allows for effective down-gauging



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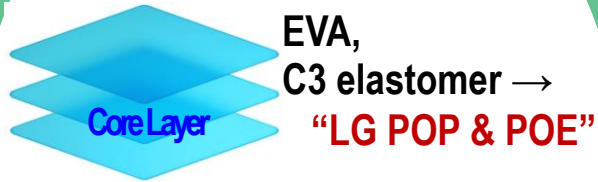
Properties

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LG POP & POP can optimize recycling through All-PE formulation

All-PE Stretch hood film



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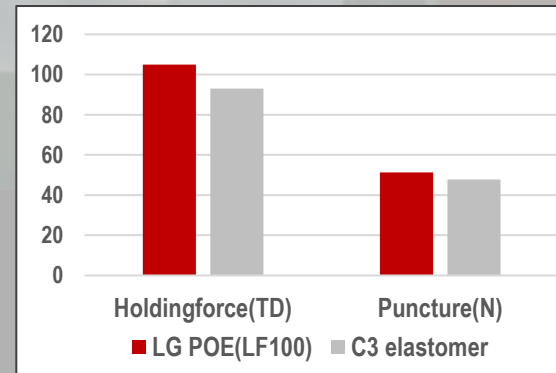
Properties

Formulation

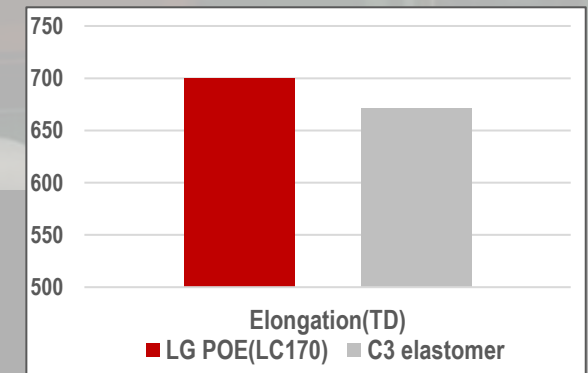
Value Proposition

Value ① LG POP & POE

have **Superior mechanical properties** for Hood packaging compared to C3 elastomer



mLLD(70%)+POP(30%)



Value ② LG POP & POE

can **Maximize properties** when used with the XM series

Core - Formulation	Puncture(N)	Tensile strength (TD, kg/cm ²)	Elongation (TD, %)
XM3108 + LG POP(LF100)	58.0	594	670
Conventional mLLD + LF100	56.6	485	634

mLLD(40%)+POP(60%)



About 10%

LG POP & POE can provide safer packaging that prevent tearing

Value ① **LG POP & POE**

have **Superior Elastic properties** such as High elongation & Puncture compared to VLDPE.

VLDPE → **LG POE/POP**



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