

LG EZP Introduction and Products

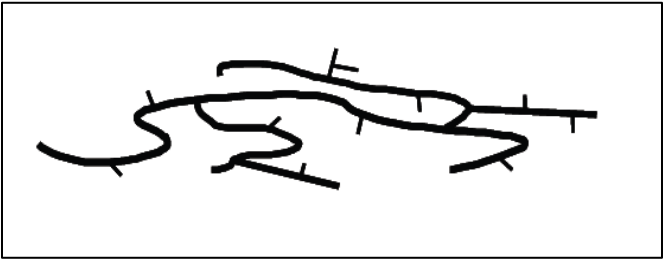


List of Contents

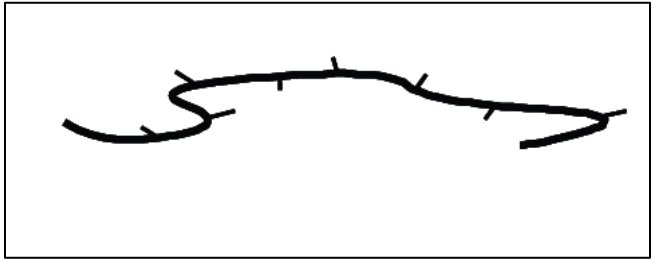
- Introduction of EZIP
- Characteristics of EZIP
- Applications of EZIP

Introduction of EZZ

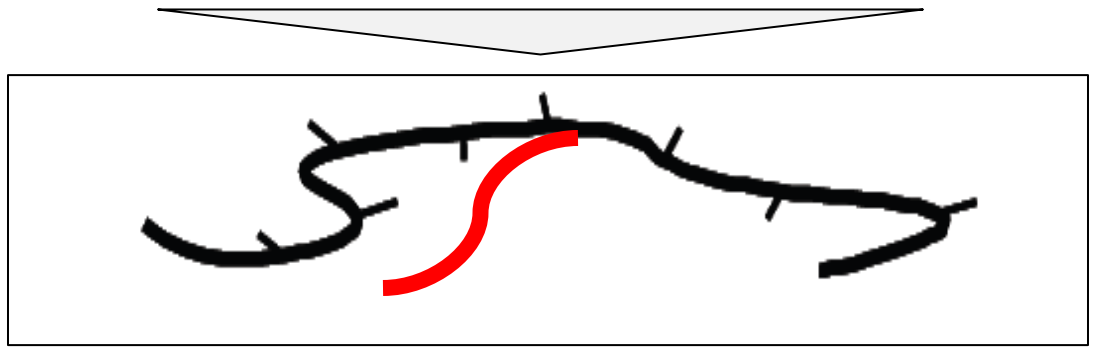
- **What is Easy Processing Polyethylene (EZZ)?**
 - Outstanding processibility containing LCB



LDPE
-LCB and SCB Branch Structure



mLLDPE
-SCB Branch
-Narrow MWD
-SP31X and SP330



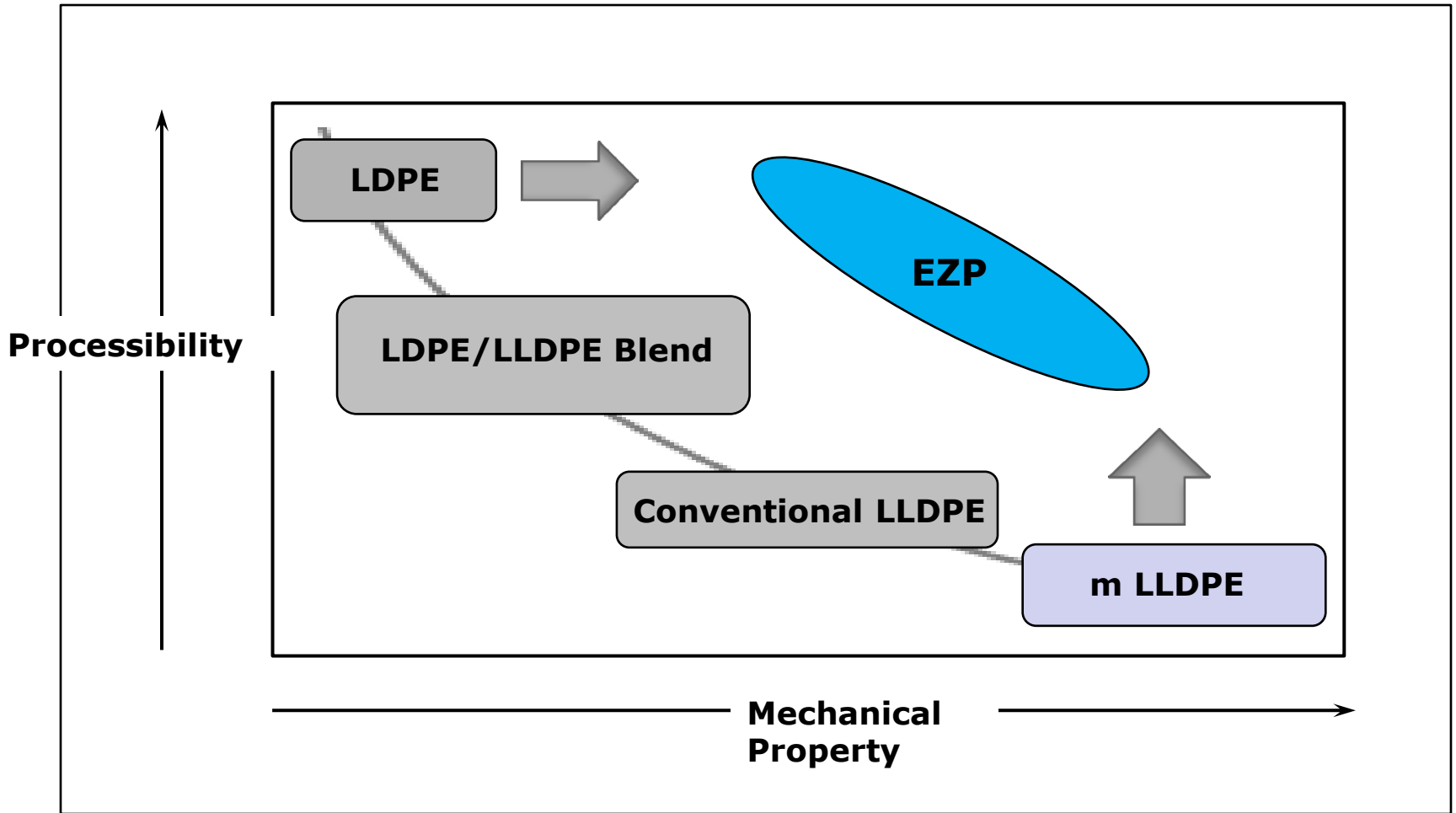
EZZ
-LCB Branch
-SE1020A, SE1020N, SE0327N

- **LCB (Long Chain Branch)**
 - **Processibility**
 - Pressure
 - Melt Tension (Bubble-stability)

- **SCB (Short Chain Branch)**
 - **Mechanical property**
 - Tensile Strength
 - Drop Resistance

Introduction of EZP

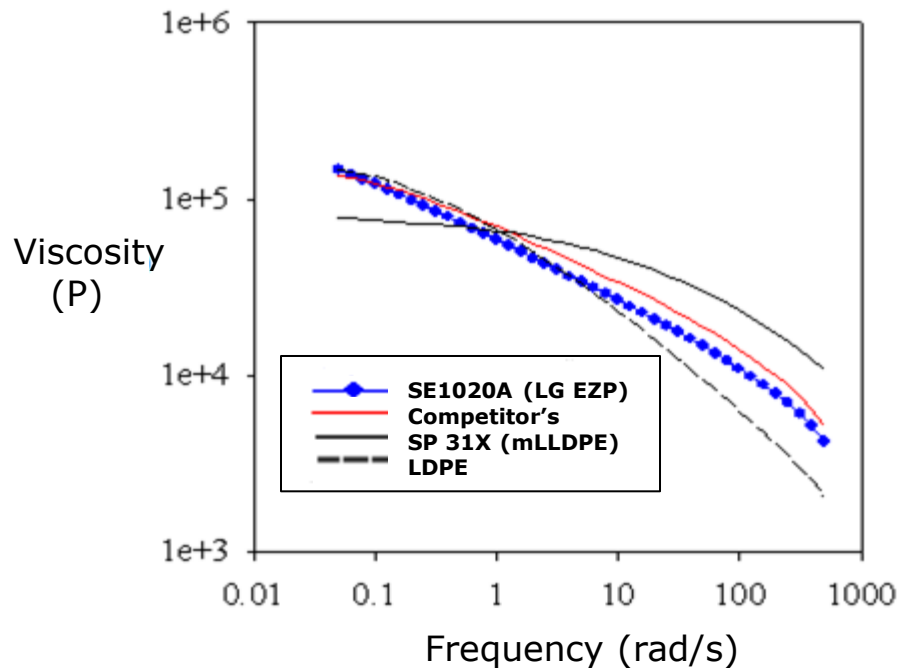
- Wide coverage of EZP



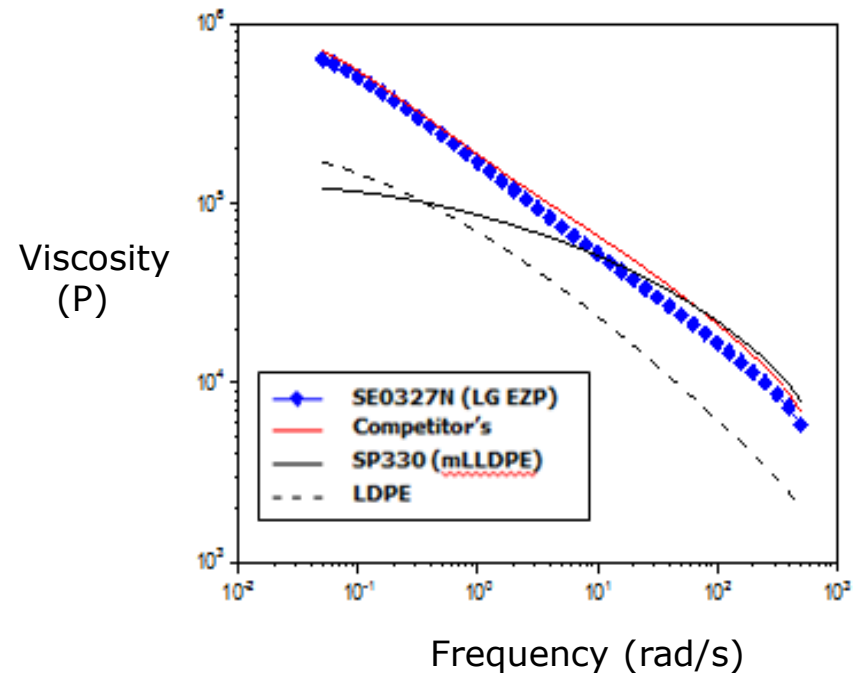
The information contained herein, including, but not limited to, data, statements and typical values, are given in good faith. LG Chem makes no warranty or guarantee, expressed or implied, (i) that the result described herein will be obtained under end - use conditions, or (ii) as to the effectiveness or safety of any design incorporating LG Chem materials, products, recommendations or advice. Further, any information contained herein shall not be construed as a part of legally binding offer. Especially, the typical values should be regarded as reference values only and not as binding minimum values. Each user bear full responsibility for making its own determination as to the suitability of LG Chem's materials, products, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished parts incorporating LG Chem material or products will be safe and suitable for use under end - use conditions. The data contained herein can be changed without notice as a result of the quality improvement of the products."

▪ Processibility of LG EZP

EZP for Agricultural Film



EZP for Shrinkage Film



- **Processibility: LDPE > LG EZP > Competitor's > mLLDPE**
- **LG EZP shows higher shear-thinning effect than the competitor's**

The information contained herein, including, but not limited to, data, statements and typical values, are given in good faith. LG Chem makes no warranty or guarantee, expressed or implied, (i) that the result described herein will be obtained under end - use conditions, or (ii) as to the effectiveness or safety of any design incorporating LG Chem materials, products, recommendations or advice. Further, any information contained herein shall not be construed as a part of legally binding offer. Especially, the typical values should be regarded as reference values only and not as binding minimum values. Each user bear full responsibility for making its own determination as to the suitability of LG Chem's materials, products, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished parts incorporating LG Chem material or products will be safe and suitable for use under end - use conditions. The data contained herein can be changed without notice as a result of the quality improvement of the products."

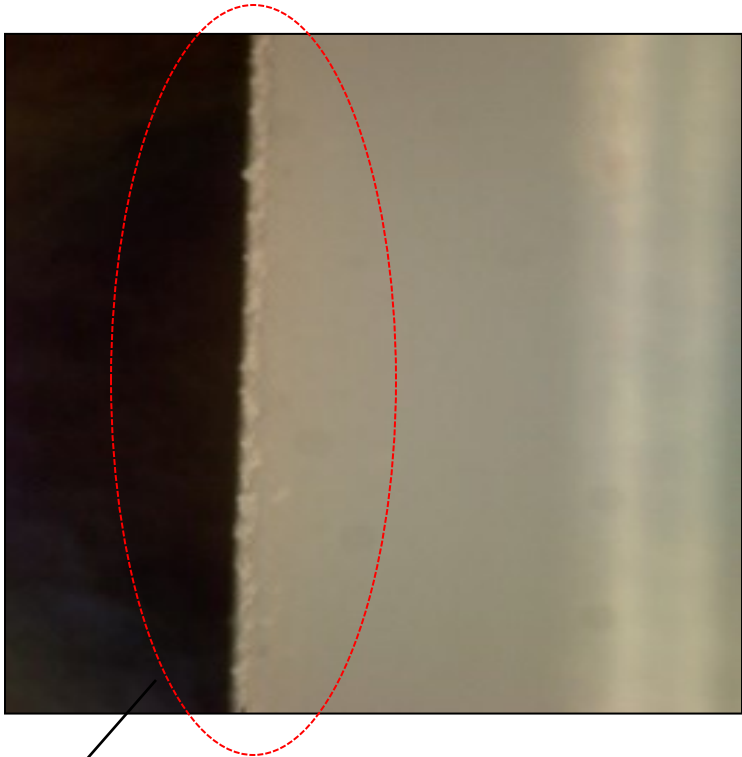
▪ Strand Surface of LG EZP

LG EZP



Melt fracture does not occur.

Conventional mLLDPE



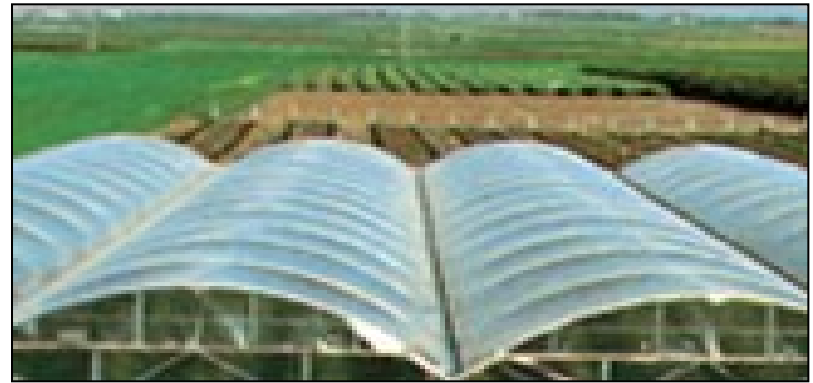
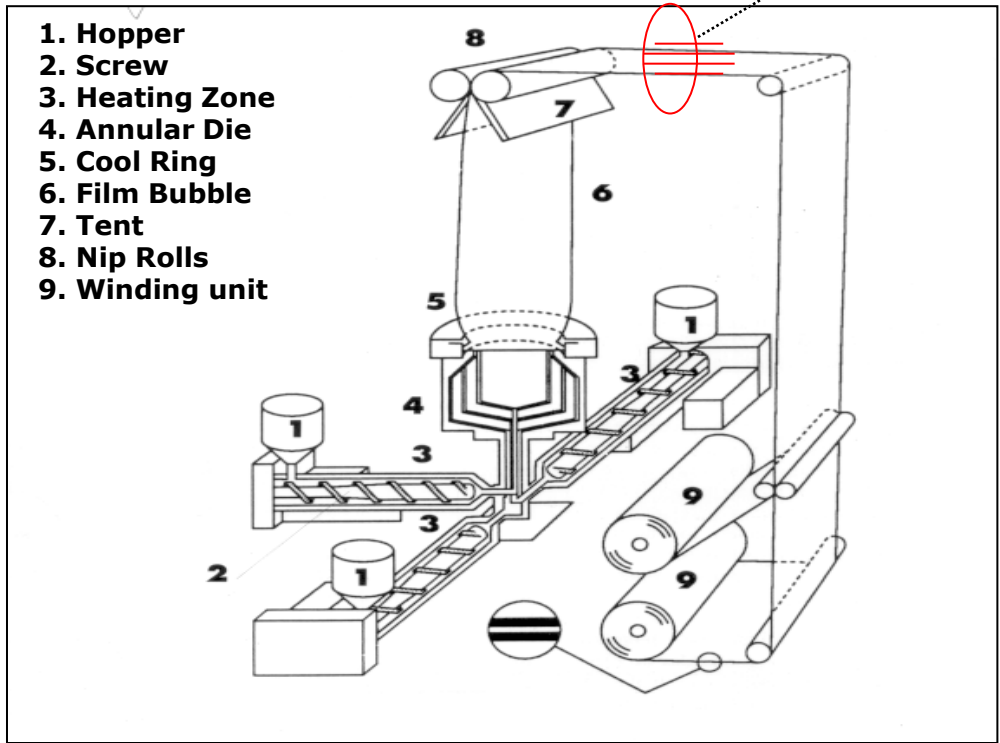
Melt Fracture

EZP for Agricultural Film

- 3 Layer Extruder

3-Layer

- Outer (UV): LD + EZP
- Middle: EVA + Heat-retention Agent
- Inner: EVA + Anti-fogging Agent



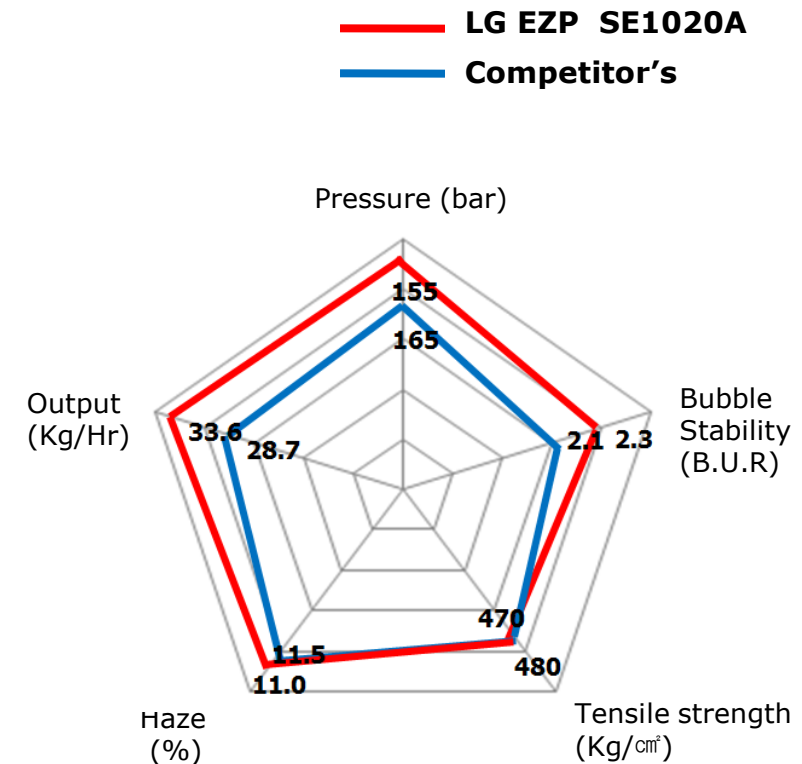
The information contained herein, including, but not limited to, data, statements and typical values, are given in good faith. LG Chem makes no warranty or guarantee, expressed or implied, (i) that the result described herein will be obtained under end - use conditions, or (ii) as to the effectiveness or safety of any design incorporating LG Chem materials, products, recommendations or advice. Further, any information contained herein shall not be construed as a part of legally binding offer. Especially, the typical values should be regarded as reference values only and not as binding minimum values. Each user bear full responsibility for making its own determination as to the suitability of LG Chem's materials, products, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished parts incorporating LG Chem material or products will be safe and suitable for use under end - use conditions. The data contained herein can be changed without notice as a result of the quality improvement of the products."

Physical Properties of Agricultural Film

Item	Property	LG EZP SE1020A / *SE1020N	Competitor's	
Basic Properties	MI (g/10min)	1.0	1.0	
	Density (g/cm ³)	0.921	0.920	
Processibility	Bubble Stability (B.U.R)	2.3	2.1	
	Pressure (Bar)	155	165	
	Output (Kg/Hr)	33.6	28.7	
Physical Properties	Haze (%)	11.0	11.5	
	Tensile Strength (kgf/cm ²)	MD	470	480
		TD	470	480
	Elongation [%]	MD	650	610
		TD	680	660
	Tear Strength [g/μm]	MD	7.1	6.2
TD		16.0	16.3	

* SE1020N does not contain slip& anti-blocking agent.

- LG EZP SE1020A
- Good processibility
- Outstanding output
- Good transparency



- **Film Processing**

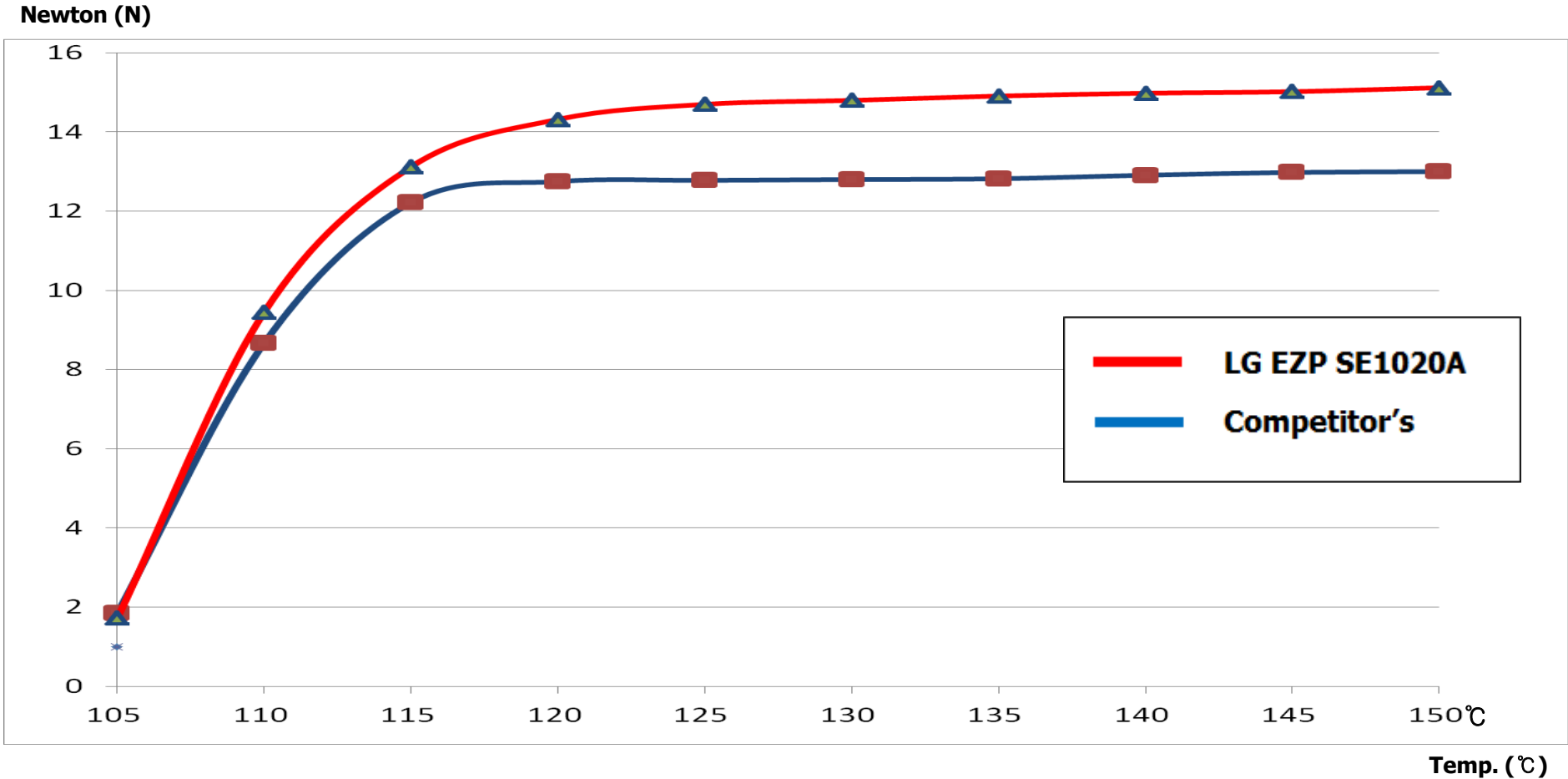
- **Blown Film**
- **Cast Film**

- **Required property**

- **Processibility**
- **Transparency**
- **Heat sealing property**



- **Heat sealing Property of Lamination Film**
 - LG EZP shows higher sealing strength than the competitor's



The information contained herein, including, but not limited to, data, statements and typical values, are given in good faith. LG Chem makes no warranty or guarantee, expressed or implied, (i) that the result described herein will be obtained under end - use conditions, or (ii) as to the effectiveness or safety of any design incorporating LG Chem materials, products, recommendations or advice. Further, any information contained herein shall not be construed as a part of legally binding offer. Especially, the typical values should be regarded as reference values only and not as binding minimum values. Each user bear full responsibility for making its own determination as to the suitability of LG Chem's materials, products, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished parts incorporating LG Chem material or products will be safe and suitable for use under end - use conditions. The data contained herein can be changed without notice as a result of the quality improvement of the products."

- **Film Processing**

- **Blown Film**
- **Cast Film**

- **Required property**

- **Processibility**
- **Transparency**
- **Shrinkage Ratio**



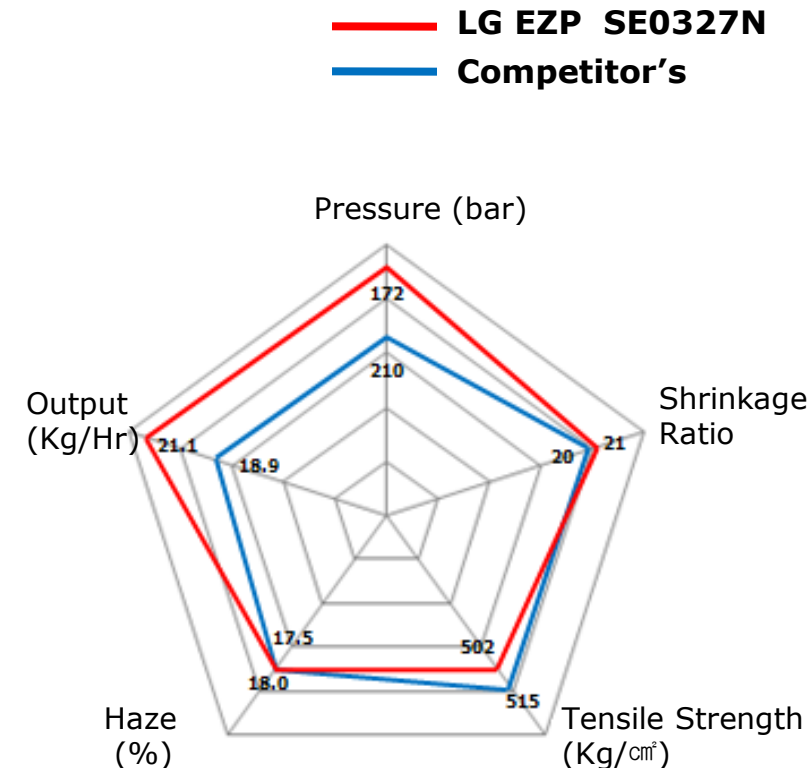
The information contained herein, including, but not limited to, data, statements and typical values, are given in good faith. LG Chem makes no warranty or guarantee, expressed or implied, (i) that the result described herein will be obtained under end - use conditions, or (ii) as to the effectiveness or safety of any design incorporating LG Chem materials, products, recommendations or advice. Further, any information contained herein shall not be construed as a part of legally binding offer. Especially, the typical values should be regarded as reference values only and not as binding minimum values. Each user bear full responsibility for making its own determination as to the suitability of LG Chem's materials, products, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished parts incorporating LG Chem material or products will be safe and suitable for use under end - use conditions. The data contained herein can be changed without notice as a result of the quality improvement of the products."

Physical Properties of Shrinkage Film

Item	Property	LG EZP SE0327N	Competitor's	
Basic Properties	MI (g/10min)	0.3	0.3	
	Density (g/cm ³)	0.930	0.927	
Processibility	Pressure (Bar)	172	210	
	Output (Kg/Hr)	21.1	18.9	
Physical Properties	Haze (%)	18.0	17.5	
	Tensile Strength (kgf/cm ²)	MD	500	515
		TD	480	500
	Elongation [%]	MD	660	550
		TD	700	660
	Tear Strength [g/μm]	MD	4.1	4.0
TD		16.5	17.1	

Shrinkage Properties	Shrinkage ratio (%)	MD	70	70
		TD	21	20

- LG EZP SE0327N
 - Good processibility
 - Higher output
 - Outstanding shrinkage ratio



The information contained herein, including, but not limited to, data, statements and typical values, are given in good faith. LG Chem makes no warranty or guarantee, expressed or implied, (i) that the result described herein will be obtained under end - use conditions, or (ii) as to the effectiveness or safety of any design incorporating LG Chem materials, products, recommendations or advice. Further, any information contained herein shall not be construed as a part of legally binding offer. Especially, the typical values should be regarded as reference values only and not as binding minimum values. Each user bear full responsibility for making its own determination as to the suitability of LG Chem's materials, products, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished parts incorporating LG Chem material or products will be safe and suitable for use under end - use conditions. The data contained herein can be changed without notice as a result of the quality improvement of the products."