

Linear Low Density Polyethylene LL-118
Description:

LL-118 is a LLDPE Butene copolymer produced by Braskem. It is a general purpose product that shows a good processing performance balanced with good optical and mechanical properties as well as sealability. Very low gel amount.

Additive:

Slip Absent
 Antiblock Absent

Applications:

Heavy duty bags
 Stretch film
 "Liners"
 General purpose
 HDPE and LDPE blends

Process:

Blown Film Extrusion

Control Properties:

	ASTM Method	Unit	Value
Melt Index (190°C/2.160kg)	D-1238	g/10 min	1.0
Density	D-1505	g/cm ³	0.916

Properties:

Blown Film Properties^a

	ASTM Method	Unit	Value
Haze	D-1003	%	36.5
Gloss - Angle 60°	D-2457	%	4.8
Tensile Strength at Break (MD/TD)	D-882	MPa	46/38
Elongation at Break (MD/TD)	D-882	%	1131/1431
Secant Modulus at 1% (MD/TD)	D-882	MPa	183/196
Dart Drop Impact	D-1709	gF/50%f	120
Elmendorf tear strength (MD/TD)	D-1922	KgF/cm	ND/150

Plaque Properties^b

	ASTM Method	Unit	Value
Tensile Strength at Break	D-638	MPa	21
Tensile Strength at Yield	D-638	MPa	12
Elongation at Break	D-638	%	880
Flexual Modulus	D-790	MPa	224
Secant Modulus at 1%	D-638	MPa	228
Hardness	D-2240	Shore A	96
Hardness	D-2240	Shore D	50
Vicat softening temperature	D-1525	°C	98
Heat Deflection Temperature at 455	D-648	°C	49

kPa			
Heat Deflection Temperature at 1820 kPa	D-648	°C	42
Environmental Stress Cracking Resistance ^c	D-1693	h/50%f	>1000

(a) 25 µm thickness film, processed in a 40mm screw diameter extruder with blow up ratio of 2.2:1. (MD: Machine Direction; TD: Transversal Direction).

(b) Compression molded plaques, ASTM D-1928 Method, procedure C.

(c) Compression molded 3 mm notched plaques, 10% Igepal, 50°C.

Recommended Processing Conditions:

Blown Film

- Temperature Profile:..... from 180 to 210°C
- Blow up Ratio:..... from 2 to 3:1
- Die Gap:.....from 1.8 to 2.5 mm
- Screen Package:.....40/40 - 100% pure
40/60/40 – Blend
- Mass Temperature:.....190°C (max 210°C)

Final Remarks:

1. This resin meets the requirements for olefin polymers as defined in 21 CFR, section 177.1520 issued by FDA – *Food and Drugs Administration*. The additives present are covered in appropriate regulation by FDA.
2. These information reflect typical values obtained in our laboratories, but should not be considered as absolute or as warranted values. Only the properties and values mentioned on the Certificate of Quality are considered as guarantee of the product.
3. In some applications, Braskem has developed *tailor-made* resins to reach specific requirements.
4. In case of doubt regarding utilization, or for other applications, please contact our Technical Assistance.
5. For information about safety, handling, individual protection, first aids and waste disposal, please see MSDS. CAS Registry number: 25087-34-7.
6. The mentioned values in this report can be changed at any moment without Braskem previous communication.
7. Braskem does not recommend this grade for packages, parts or any kind of product manufacture that will be used for storage or contact with solution that will have internal contact with human body.
8. Braskem's resin do not contain aditives produced from metals or other substances which have the objective to promote oxi degradation. Such aditives and the decomposition and fragmentation of resins caused by the oxi degradation compromise the approval of the resin regarding requirements of the Resolution 105/99 of ANVISA (Brazilian National Agency of Sanitary Monitoring). The use of this aditives implicate the loss of the performance warranties described in this document.