

## Linear Low Density Polyethylene LL318

### Description:

LL318 is a Linear Low Density Polyethylene, copolymer of **butene-1**, produced by Spherilene process. Developed for cast film extrusion. Films obtained with this product show good mechanical properties and enhanced sealability. It contains antioxidant additives.

### Applications:

Stretch films; liners; LDPE and HDPE blends and packages for general use.

Others applications: blends for irrigation pipes; insulation for low and medium tension XLPE wires and cables.

### Process:

Recommended processing conditions for film extrusion about 170 - 210 °C. The optimum processing conditions will vary according to the type of equipment used and cannot be considered as performance guarantee.

### Control Properties:

|                           | ASTM Method | Units             | Values |
|---------------------------|-------------|-------------------|--------|
| Melt Flow Rate (190/2.16) | D 1238      | g/10 min          | 2.70   |
| Density                   | D 1505      | g/cm <sup>3</sup> | 0.918  |

### Typical Properties:

#### Blown Film Properties<sup>a</sup>

|                                   | ASTM Method | Units | Values    |
|-----------------------------------|-------------|-------|-----------|
| Tensile Strength at Break (MD/TD) | D 882       | MPa   | 34/27     |
| Elongation at Break (MD/TD)       | D 882       | %     | 1216/1441 |
| Flexural Modulus – 1% Secant      | D 882       | MPa   | 179/198   |
| Dart Drop Impact                  | D 1709      | g/F50 | 90        |
| Elmendorf Tear Strength (MD/TD)   | D 1922      | gF    | 120/345   |
| Haze                              | D 1003      | %     | 61        |
| Gloss - Angle 60°                 | D 2457      | %     | 19        |

(a) 38 µm thickness film, processed in a 40 mm screw diameter extruder with blow up ratio of 2,2:1 (MD = Machine Direction; TD = Transversal Direction)

### Final Remarks:

1. This resin meets the requirements for olefin polymers as defined in 21 CFR, section 177.1520 issued by FDA – Food and Drug Administration in force on the date of publication of this specification. The additives present are covered in appropriate regulation by FDA.
2. The information presented in this Data Sheet reflects 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 polyolefin products do not have additives with metals or other substances on purpose of oxidegradation. These additives and the decomposition and disintegration of polyolefins caused by oxidegradation phenomenon can cause environmental pollution, decrease the package performance and increase migration of package constituent to food, compromising resin approval regarding the requirements of Anvisa Resolution 105/99. The use of these additives with Braskem polyolefin products implies immediate loss of performance guarantee described in this data sheet.
9. The content of this Data Sheet replaces previous revisions published for this product.